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The impact of regulated cost accounting on financial management: Evidence from Belgian hospitals.

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- **APR-DRG:** All Patient Refined Diagnosis Related Group
- **BMF:** Budget des Moyens Financiers
- **CF :** Cash-Flow
- **CPNMH :** Commission Paritaire Nationale Médecins-Hôpitaux - National Joint Commission for Doctors-Hospitals
- **DI-RHM :** Données Infirmières du Résumé Hospitalier Minimum **-** Nursing Data from the Minimum Hospital Summary
- **FPS:** Federal Public Service
- **FTE:** Full Time Equivalent
- **GDP:** Gross Domestic Product
- **HEC:** Haute École du Commerce – Business School in Liège
- **ICD-10-BE:** International Classification of Diseases, 10th Revision, Belgian Edition
- **IFIC:** Institut de Formation Inter hospitalier Catholique - Institute for Classification of Functions in the Healthcare Sector
- **INAMI:** Institut National d'Assurance Maladie-Invalidité - National Institute for Health and Disability Insurance
- **ISM:** Information System Management
- **LT:** Long-Term
- **MAHA:** Model for Automatic Hospital Analysis
- **NC:** Net-Cash
- **NRG:** Nursing Related Group
- **OCDE:** Organisation de Coopération et de Développement Économiques - Organisation for Economic Co-operation and Development
- **RCM:** Résumé Clinique Minimum – Minimum Clinical Summary
- **RIZIV:** Rijksinstituut voor Ziekte- en Invaliditeitsverzekering (INAMI in dutch)
- **ROA:** Return on Assets
- **ROE:** Return on Equity
- **SPF SPSCAE:** Service Public Fédéral Santé Publique, Sécurité de la Chaîne Alimentaire et Environnement - Belgian Federal Public Service for Public Health, Food Chain Safety, and Environment
- **VAT:** Valued Added Tax
- **WC:** Working Capital
- **WCR:** Working Capital Requirement

0. Introduction [1]

The hospital sector is a fundamental pillar of the Belgian healthcare system, playing a crucial role in delivering healthcare services to citizens. In 2021, this sector represented a turnover of €21.3 billion, highlighting its economic importance and organizational complexity (*Directorate-General for Healthcare, under the Federal Public Service (FPS) Health, Food Chain Safety, and Environment of Belgium. Responsible publisher: Ramaekers, D., 2023*). Given this significance, the financial management of hospitals is a critical area of focus, particularly in how regulated cost accounting influences operational efficiency and financial sustainability. By investigating the details of cost accounting methods and the financing system, this study aims to highlight a potential link between these two concepts within the Belgian hospital landscape.

The importance of this research lies in the growing challenges that hospitals face in maintaining financial stability among evolving healthcare demands, stringent regulatory requirements, and the recent financial strains exacerbated by the COVID-19 pandemic. By examining the regulatory framework through both theoretical and empirical lenses, this study aims to contribute to the academic discourse on healthcare financial management and offer practical insights for policymakers and hospital administrators.

The general framework of this thesis focuses on analyzing the current regulated cost accounting practices in Belgian hospitals. For instance, each hospital must comply with the regulations set forth in the Royal Decree of August 14, 1987, concerning the standardized minimum accounting plan for hospitals, as well as the Royal Decree of June 19, 2007, regarding the annual accounts of hospitals. There are also more specific regulations related to hospital financing, such as the Royal Decree of April 25, 2002, concerning the establishment and liquidation of the "Budget des Moyens Financiers" (BMF) for hospitals. These regulations can have a direct or indirect impact on the research question at hand. The study delves into these specific regulations by which cost accounting is structured and potentially influences decision-making, resource allocation, and financial outcomes. Through the empirical analysis, the research seeks to elucidate the relationship that can exist between regulated cost accounting and the financial management of hospitals.

The methodology adopted in this thesis is a mixed-methods approach, which strategically combines quantitative financial analysis with qualitative interviews to provide a comprehensive understanding of the impact of regulated cost accounting on hospital financial management. The quantitative component involves a detailed financial analysis of annual accounts from a representative sample of 7 Belgian hospitals, spanning a period of five years (2019-2023). This analysis aims to identify trends, patterns, and anomalies in the financial performance of these hospitals, particularly in the context of the evolving regulatory environment and the significant pressures brought on by the COVID-19 pandemic.

In parallel, the qualitative component consists of semi-structured interviews with key financial officers from the selected hospitals. These interviews are designed to capture in-depth insights into the perceptions, challenges, and strategic responses of hospital financial managers regarding regulated cost accounting practices and the financial system in their sector. The selection of participants was carefully considered to ensure a broad representation across regions within Belgium (Flanders, Wallonia, and Brussels-Capital Region).

Key findings from this study reveal that while the current regulated cost accounting system offers a certain level of predictability and control for hospital financial management, it also presents significant

[1] Number of words: 20.914

challenges, particularly in terms of complexity, rigidity, and adaptability. The system, as it currently stands, is marked by a dense web of regulations, such as the royal decrees cited before, which are crucial for ensuring standardization and accountability but often lead to a cumbersome and inflexible financial environment. In addition, one of the most prominent issues identified is the complexity of the cost accounting system. The myriad of regulations governing hospital finances are not only intricate but also frequently updated or even new ones are created, making it difficult for financial officers to maintain a comprehensive understanding of the full scope of the system. Furthermore, the rigidity of the current system poses significant challenges in an environment where healthcare needs and technologies are rapidly evolving. The fixed budgets and standardized reimbursement rates, while useful for ensuring a baseline of financial stability, do not adequately account for the dynamic nature of hospital operations. Hospitals are often required to adhere to outdated financial models that do not reflect the current realities of healthcare delivery, such as the increasing costs of innovative treatments and the shift towards more outpatient and preventative care services.

To address these issues, this thesis calls for a comprehensive modernization of the regulatory framework, particularly through updates on budgeting processes and reimbursement models to ensure they are better aligned with the evolving healthcare landscape. Moreover, there is a critical need for a more streamlined and comprehensible cost accounting system that alleviates the administrative burden on hospitals and enables more agile financial management. The study underscores the necessity for reforms that introduce greater flexibility into the financial regulations governing hospitals. Such reforms could include re-evaluating the rigidity of fixed budgets and considering innovative approaches, such as those proposed in the PACHA study, to more accurately align hospital funding with actual operational needs.

The structure of this thesis is carefully designed to explore the research question and articulate the findings in a logical way. Section 1 provides a comprehensive review of the literature, synthesizing the basic concepts on cost accounting, hospital financial management, and relevant regulatory frameworks. In Section 2, we introduce the empirical research with the general methodology before continuing with the approaches and results of the financial analyses and interviews. At the end of this section, the discussion relating the different results with studies done by Belfius can be found. Finally, section 3 offers a drawing of the conclusions, and proposing recommendations for future policy development and potential areas for further research.

For information, in this thesis, AI tools were employed exclusively for enhancing the quality of English language usage. The platform “QuillBot” was primarily used to refine sentence structure, improve grammar, and ensure the text was clear and coherent. The use of AI was strictly limited to linguistic improvements, ensuring the academic integrity of the work.

1. Literature Review

1.1. Basic concepts of cost accounting

Cost accounting is a managerial accounting practice that emphasizes the meticulous recording, categorization, analysis, and summarization of all costs incurred during production or service provision (*Tuovila, A., updated July 2024*). This practice is essential for internal management, offering detailed information that aids in cost control, budget planning, and the evaluation of operational performance. Businesses may incur various types of costs depending on the industry in which they operate (*Maher, M., & Deakin, E. B. 1994*). The most common types of costs include:

- **Fixed costs:** These are costs that remain constant regardless of the activity, such as the rent, salaries or insurance.

- **Variable costs:** On the other hand, these are the cost amounts that vary directly with the level of activity, including for example raw materials or transportation.
- **Direct costs:** Direct costs are associated with the execution of the primary activity of the business, making them unavoidable. These costs can include direct labor or materials used.
- **Indirect costs:** Indirect costs are not directly linked to the core activity of the business. Examples of these ones include building maintenance, electricity, and gas.

Analytical accounting is a crucial tool for the financial management of hospitals. It aims to break down the costs of medical and non-medical services to provide a detailed view of expenditures. This detailed breakdown allows for comparison with other institutions' costs and prevailing tariffs, aiding hospital managers in making informed decisions and improving operational efficiency (*Shepard, D. S., Hodgkin, D., & Anthony, Y. E.,2000*).

To highlight the different types of costs, hospitals employ the method of segmentation into cost centers. A cost center is an organizational unit within the hospital where costs are collected, recorded, and analyzed (*Newbrander, W., & Lewis, E., 1999*). It is a distinct segment where expenses are grouped to facilitate financial management and cost control. In Belgium, hospital institutions segment their costs into two main categories (*Brochure Finhosta, version June 2022*):

- **Allocable cost centers**
  Allocable cost centers include indirect costs that benefit multiple services or departments within the hospital. These costs cannot be directly attributed to a single care unit and must be proportionally distributed among the different services that benefit from them. These indirect costs can be of two types:
  - **Common costs:** These include expenses that cannot be directly linked to a specific service, such as management fees, electricity, heating, and infrastructure maintenance.
  - **Auxiliary costs:** Auxiliary cost centers in Belgian hospitals are segments that group expenses related to support services that are not directly involved in medical care but are essential to the hospital's operation, such as the morgue, medical secretarial services, or emergency services.

- **Definitive cost centers**
  Definitive cost centers, on the other hand, include costs that can be directly attributed to a specific activity or service, such as physicians' salaries, medication costs, and medical supplies. These direct costs are directly related to patient care. They can be divided into three subsections based on the services provided:
  - **Hospital services:** These cost centers group expenses directly related to various medical units and services involved in traditional hospital care, such as surgery, anesthesia, or intensive care units.
  - **Non-hospital services:** This category includes services and activities that, although operated by the hospital, are not directly related to traditional hospital care. They cover services such as nursing homes, nursing schools, and medical transport services.
  - **Medical-technical services, consultations, and pharmacy:** This third category includes costs associated with diagnostic, laboratory, and external consultation services.

In Belgium, cost allocation in hospitals is primarily governed by the Belgian accounting standard for hospitals, as outlined in the Royal Decree of September 23, 2020, which specifies the accounting rules that hospitals must follow. Cost allocation methods include (*Finhosta brochure, 2024)*:

- **Functional Unit Allocations:** where costs are distributed based on hospital units such as care services or operating theaters, considering factors like bed count or service activity.

- **Activity-Based Allocations:** Costs are allocated according to specific activities, such as outpatient consultations or day hospitalizations, based on activity indicators like consultation numbers or time spent.
- **Direct and Indirect Cost Allocations:** Direct costs (specific to an activity/service) and indirect costs (shared across activities/services) are allocated using appropriate criteria for each. For these costs, the is also a specific method called the "bed sheet" principle. It refers to a process used to allocate both direct and indirect costs across various cost centers within a hospital. These cost centers include primary care units, specific functions like operating rooms, support functions such as accounting and HR, and medical-technical functions like radiology. The principle involves transferring costs from support functions to business cost centers (e.g., hospital staff and care units) using predefined allocation keys. This creates an analytical cascade of cost prices, ensuring that all hospital services are accurately costed. The allocation keys used are standardized and detailed in the Finhosta brochure, which has been guiding this process since 1997/1998.

To understand how regulated cost accounting affects the financial management of hospitals, it is essential to begin with an understanding of the funding system for this sector in our country, as these aspects are closely linked. Indeed, the funding is based on information derived from cost accounting. This detailed cost analysis helps determine the actual costs of all services provided and secure adequate amounts to cover these costs. This is precisely why numerous current regulations have been established: to promote transparency and honesty in each institution.

1.2. Hospitals in Belgium

Belgium has a decentralized hospital system, meaning that management and decision-making are distributed among various autonomous entities rather than being centralized under a single government authority. Each hospital, whether general, university, medium-stay, or psychiatric, operates independently and is responsible for its own financial, administrative, and medical management (*Durant, G., 2022*). This autonomy allows institutions to adapt to local needs and respond quickly to their patients' specific requirements. However, this autonomy comes with numerous regulations.

In 2023, our country accounted for 103 general hospitals, including 7 university hospitals (*Directorate-General for Healthcare, under the Federal Public Service (FPS) Health, Food Chain Safety, and Environment of Belgium. Responsible publisher: Ramaekers, D., 2023*). These various institutions are classified into four distinct types (*Durant, G., 2022)*:

- **General Hospitals** provide a wide range of medical services to patients, ranging from primary to specialized care. Their primary focus is on diagnosing, treating, and managing diseases. According to the Coordinated Hospital Law of July 10, 2008, these institutions are required to have at least three departments: surgery, medicine, and maternity.
- **University General Hospitals** are distinguished from the first category by several specific criteria, including the presence of a medical faculty and a minimum of 70% salaried physicians. In addition to patient care, physicians in these hospitals have research and teaching responsibilities. They may be involved in clinical trials, research projects, and supervising medical students.
- **Medium-Stay Hospitals** specialize in specific care following a general hospitalization.
- **Psychiatric Hospitals** offer specialized care related to mental health.

In the context of this research thesis, our attention will specifically focus on general hospitals, including those with a university vocation.

1.3. The competent entities

To fully understand the responsibilities and competencies in hospital financing in Belgium, it is essential to distinguish the roles at the federal level and the federated entities (*Durant, G., 2022*).

- **The federal level**

  - **INAMI (National Institute for Health and Disability Insurance)**: consolidates the overall healthcare budget for the coming year, although the FPS (Public Health Service) sets the "Budget des Moyens Financiers" (BMF). Unlike many countries where healthcare is tax-funded, Belgium employs a mixed funding model of social contributions (two-thirds) and taxes (one-third). INAMI also sets the tariff schedule for medical fees, medications, and medical devices.
  - **FPS Public Health**: is responsible for establishing the legislation around the BMF and calculating its value for each hospital.

- **The federated entities**

Federated entities have the power to define hospital operating standards and have been responsible since the sixth state reform in 2011 for providing the necessary resources to build, renovate, and equip these institutions. They ensure that hospitals offer quality and safe services to patients. Since 2016, each entity defines its own rules and criteria for granting accreditation to hospitals and health services.

1.4. The hospitals financing system in Belgium

Before understanding the influence of regulated cost accounting on the financial management of hospitals in the Belgian context, it is essential to begin by comprehending how the financing system of these institutions operates. This system is divided into four main sources *(Compagnie, V., slides 2022-2023)*, namely:

1. The "Budget des Moyens Financier" (BMF)
2. The medical fees
3. The pharmaceutical products
4. INAMI's flat rates and agreements

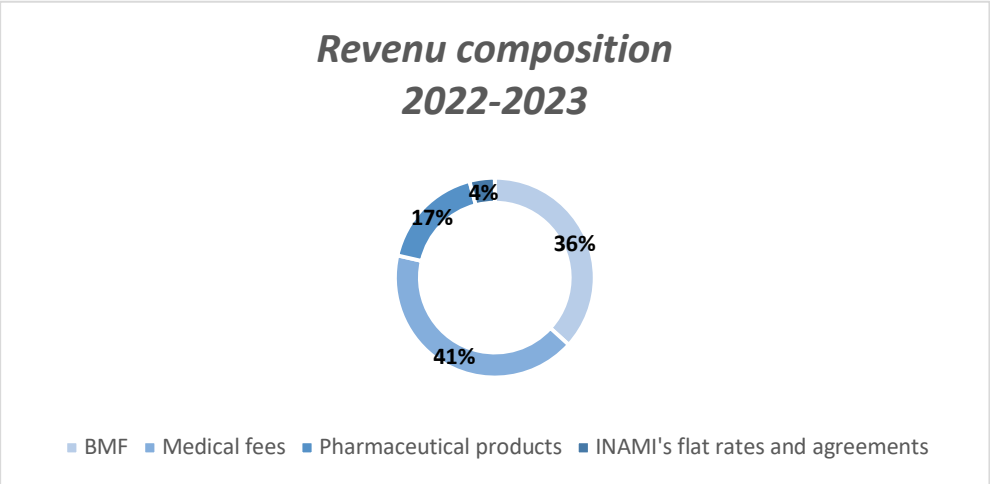

Figure 1 - Financial Revenue Composition of hospitals

This distinction between the various revenue sources reveals the complexity of the Belgian system governed by numerous rules. Consequently, the system is criticized for its lack of transparency and difficulty in understanding (*Poncé, A. 2023*).

1.4.1. The Financial Medium Budget (BMF)

In the past, the financing of Belgian hospitals was carried out through a system called 'price per day,' where a fixed daily rate was uniformly applied to all hospitals, covering mainly accommodation costs and basic care (*Durant, G., 2022)*. This system, administered by the FPS Public Health, was criticized for its lack of transparency and flexibility, as it did not account for the actual and varied costs of the care provided. Thus, in 2002, it was replaced by the "Budget des Moyens Financiers" (BMF) with the royal decree of April 25th concerning the establishment and liquidation of this source of financing of hospitals to better reflect the specific needs and complexity of the care provided by each establishment (*KCE report, 2014*).

The BMF consists of a federal overall envelope, a fixed amount determined by law, intended to cover all costs related to hospitalizations, whether classic or day surgery. This budget is reassessed each year and distributed among the various establishments based on previous financial analyses. This amount covers several essential elements *(Compagnie, V., slides 2022-2023)*:

- **Patient stay costs in common rooms:**
  Hospital stays in common rooms are free, requiring financing to cover these costs, excluding doctors' fees, medications, and medical devices. In private rooms, doctors may increase their fees, sometimes by up to 150%.
- **Pharmacy operating costs:**
  The budget covers the operational costs of hospital pharmacies for hospitalized patients.
- **Medico-technical services:**
  Since the sixth state reform, some medico-technical services are funded by the regions. The BMF also covers the infrastructure of care units, emergency services, childbirth blocks, operating blocks and intensive-care units.

In 2023, this budget was set at a total of 994 billion euros, marking a 34% increase over the past five years, significantly influenced by the health crisis (*Directorate-General for Healthcare, under the Federal Public Service (FPS) Health, Food Chain Safety, and Environment of Belgium. Responsible publisher: Ramaekers, D., 2023*). The impact of COVID-19 on this sector's financing will be addressed later in this section.

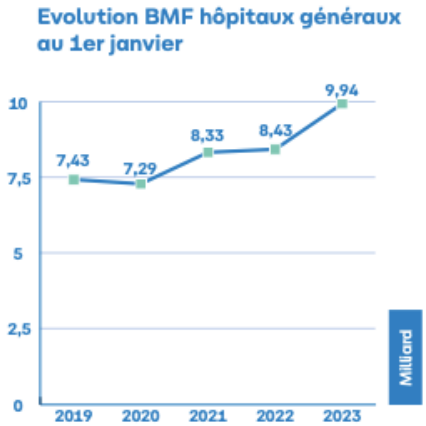

Figure 2 - BMF evolution at 1st January 2023

The complexity of the financial system is evident in the composition of the BMF, divided into three general categories, themselves subdivided into 16 subsections *(Compagnie, V., slides 2022-2023)*:

Sous partie	Libellé
A1	Charges d'investissement
A2	Charges d'investissement ISMT lourds
A3	Crédits financiers à court terme
B1	Services communs
B2	Services cliniques, quartier opératoire, urgences et stérilisation centrale
B3	Frais de fonctionnement
B4	Montants forfaitaires
B5	Pharmacie
B6	Accords sociaux médicaux
B7	Hôpitaux universitaires
B8	Social
B9	Accords sociaux fédéraux depuis 2005
C1	Frais de préexploitation
C2	Montants de rattrapage
C3	Supplément de chambre
C4	Surplus de recettes

Figure 3 - BMF composition

Fundamentally, the first section A covers investment expenses and costs associated with short-term loans borrowed by hospitals to maintain their liquidity. Section B, on the other hand, encompasses the daily operating costs of hospitals, including staff charges, medical supplies and support services. Finally, category C deals with the regularization of a posteriori financing, adjusting the financial resources to the actual costs and services provided.

2.2- Evolution du budget des moyens financiers par sous-parties: Budget notifié au 1er juillet
Evolutie van het budget van financiële middelen per onderdeel: betekend budget op 1 juli

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A1	€ 482.118.789,39	€ 516.521.062,85	€ 558.198.232,95	€ 602.860.086,22	€ 690.683.474,47	€ 783.267.069,44	€ 772.931.894,21	€ 708.572.400,86	€ 658.819.264,71	€ 645.633.314,79	€ 641.347.543,03	€ 630.573.582,31	€ 611.038.897,33	€ 626.446.912,72
A2	€ 66.066.917,87	€ 68.965.480,97	€ 71.934.657,37	€ 60.314.383,03	€ 61.894.591,40	€ 62.939.930,52	€ 58.428.688,56	€ 42.435.368,19	€ 45.805.707,13	€ 44.651.492,71	€ 46.987.038,73	€ 50.030.644,40	€ 60.287.947,76	€ 58.903.304,26
A3	€ 25.427.180,06	€ 26.987.876,89	€ 26.787.918,37	€ 26.570.387,11	€ 26.438.967,25	€ 26.751.456,02	€ 25.714.338,72	€ 20.690.172,65	€ 13.017.279,48	€ 12.382.383,64	€ 11.249.582,74	€ 8.982.958,72	€ 7.535.555,16	€ 6.986.322,79
B1	€ 1.653.245.916,01	€ 1.708.376.906,67	€ 1.772.781.313,09	€ 1.784.649.698,58	€ 1.803.436.215,02	€ 1.794.093.612,58	€ 1.831.083.375,12	€ 1.844.708.010,32	€ 1.875.107.810,33	€ 1.884.671.030,08	€ 1.901.654.221,32	€ 1.929.035.156,40	€ 2.090.303.776,66	€ 2.229.394.855,00
B2	€ 2.978.459.832,56	€ 3.072.293.774,91	€ 3.182.489.376,82	€ 3.201.582.634,46	€ 3.283.231.670,16	€ 3.232.623.328,67	€ 3.298.820.389,63	€ 3.364.416.421,59	€ 3.415.878.465,59	€ 3.427.191.837,87	€ 3.459.769.301,35	€ 3.797.889.936,33	€ 3.803.230.551,20	€ 4.064.877.434,91
B3	€ 57.488.913,67	€ 62.099.593,82	€ 66.133.278,04	€ 68.047.802,78	€ 69.419.959,46	€ 67.738.635,21	€ 72.189.482,97	€ 74.575.334,85	€ 77.809.536,57	€ 81.889.357,26	€ 84.008.009,58	€ 90.311.704,38	€ 100.918.784,52	€ 107.634.029,73
B4	€ 862.123.817,22	€ 924.374.261,76	€ 953.355.263,68	€ 1.033.891.479,55	€ 1.099.124.514,01	€ 1.076.178.539,11	€ 1.243.443.596,56	€ 1.151.539.220,65	€ 1.357.224.744,61	€ 1.378.056.391,37	€ 1.424.667.139,82	€ 1.496.497.531,32	€ 1.738.314.366,94	€ 1.884.262.975,24
B5	€ 111.250.620,67	€ 114.727.141,77	€ 118.609.387,05	€ 119.786.776,89	€ 123.892.743,89	€ 129.335.700,90	€ 131.900.729,65	€ 134.679.222,51	€ 136.720.109,66	€ 137.764.462,51	€ 139.070.964,64	€ 140.879.427,21	€ 152.208.852,75	€ 162.190.061,39
B6	€ 82.248.311,54	€ 85.042.577,05	€ 87.897.116,22	€ 89.014.017,20	€ 89.904.157,39	€ 89.014.017,20	€ 90.794.297,58	€ 92.610.183,57	€ 93.999.336,26	€ 95.501.187,40	€ 96.284.680,38	€ 97.565.266,63	€ 105.606.986,17	€ 112.634.189,47
B7	€ 150.669.276,26	€ 155.204.272,30	€ 160.413.831,60	€ 161.474.497,43	€ 171.726.196,00	€ 170.025.936,61	€ 173.426.455,33	€ 173.833.335,10	€ 176.440.835,14	€ 154.654.017,87	€ 156.312.684,91	€ 158.391.629,49	€ 174.430.246,26	€ 186.583.108,46
B8	€ 22.731.767,67	€ 23.397.059,79	€ 24.182.405,52	€ 24.342.301,23	€ 24.585.724,19	€ 24.342.301,04	€ 24.830.485,03	€ 25.325.717,85	€ 25.684.827,00	€ 26.134.469,23	€ 26.274.257,65	€ 26.699.224,45	€ 28.899.930,70	€ 28.746.463,19
B9	€ 333.900.249,80	€ 403.227.836,99	€ 437.079.789,27	€ 478.816.381,18	€ 482.478.597,75	€ 508.574.262,72	€ 537.850.780,59	€ 554.807.936,72	€ 637.465.456,60	€ 666.605.563,47	€ 702.505.715,24	€ 1.084.956.491,85	€ 1.755.630.979,77	€ 1.856.487.446,70
C1	€ 24.007.254,58	€ 21.886.088,20	€ 23.344.459,16	€ 22.577.073,32										
C2	€ 83.774.063,49	€ 93.640.411,25	€ 136.704.990,69	€ 138.767.671,44	€ 143.561.192,96	€ 296.853.225,10	€ 150.794.005,50	€ 34.309.878,69	€ 338.306.506,82	€ 109.664.874,90	€ 492.914.589,01	€ 132.911.983,01	€ 823.086.006,28	€ 8.392.318,49
C3	€ -13.275.246,23	€ -13.220.183,96	€ -13.220.183,96	€ -13.274.261,69	€ -13.271.908,97	€ -13.312.823,82	€ -13.158.836,20	€ -13.484.786,23	€ -13.102.239,41	€ -13.144.931,36	€ -12.176.170,11	€ -12.977.409,89	€ -13.027.407,33	€ -13.027.407,33
C4	€ -10.522.785,51	€ -8.461.742,49	€ -5.184.826,21	€ -4.173.106,91	€ -4.518.943,19	€ -3.916.375,12	€ -3.498.733,45	€ -2.247.122,08						
Total/ Totaal *	€ 6.909.714.879,05	€ 7.255.062.418,77	€ 7.601.507.009,66	€ 7.795.247.821,82	€ 8.052.587.151,79	€ 8.244.508.816,18	€ 8.395.550.949,80	€ 8.206.771.295,24	€ 8.839.177.640,49	€ 8.651.655.451,74	€ 9.170.869.558,29	€ 9.631.748.126,60	€ 11.438.465.474,18	€ 11.320.512.015,03

Figure 4 - BMF's subsections evolution at 1st July 2023

For a comprehensive understanding of cost accounting in Belgian hospitals, the study will focus primarily on a detailed analysis of category B, notably sections B1, B2, B4 and B9, given their predominant importance in the total amount of 2023 (*Public Health, numbers and reports 2023*).

1.4.1.1. The common services (B1)

This section covers general costs, such as heating, feeding and maintenance. These costs are funded on a flat-rate basis from the allocation of a national envelope. If an institution manages its budget efficiently and spends less than the allocated amount, it can retain the difference, thereby encouraging each institution to strictly manage costs (*Durant, G., 2022)*.

However, sub-section B1 funding is not directly linked to actual costs. To determine the amount allocated to each establishment, homogeneous and comparable groups of hospitals are formed using

"allocation keys". These keys may include criteria such as the number of beds, the volume of activity or the size of the establishment, in order to ensure a fair and balanced distribution of funds.

Thus, each group must set up common services in accordance with the regulations, while respecting national budgetary limits, to avoid bearing the financial risk themselves.

1.4.1.2. The clinical services, operating rooms, emergencies and central sterilizations (B2)

Subsection B2 of the “Budget des Moyens Financiers” concerns expenses directly related to the clinical activity of hospitals, covering in particular the costs of hospital staff, such as caregivers and nurses, as well as the cost of medical products. This section represents approximately 40% of the total envelope, making it the most significant section (*KCE report, 2014*)

The financing of these expenses is founded on a point system among different hospitals, based on the concepts of justified beds and NRG (Nursing Related Group) (*Directorate-General for Healthcare, under the Federal Public Service (FPS) Health, Food Chain Safety, and Environment of Belgium. Responsible publisher: Auwers, T., 2023*). This point system is designed to ensure that the planned budget limits are not exceeded. Each medical act and care provided is coded and assigned to a specific group in the APR-DRG (All Patients Refined Diagnosis-Related Groups) system. Acts and care are then translated into points, reflecting the complexity, intensity, and cost of the services provided. Each DRG is associated with a certain number of points based on the resources required to treat the patients included in that group, considering various factors such as the severity of the illness, comorbidities, procedures performed, and length of stay (*Santé publique, 2016*).

The amount allocated to each hospital is distributed based on the total number of points accumulated. The more points an establishment accumulates (i.e., it treats more complex or numerous cases), the more funding it receives. The total provision available for section B2 is fixed in advance, and each hospital receives a share of this budget proportional to the number of points it has accumulated relative to the total points of all hospitals together (*Durant, G., 2022*).

However, the fact that this budget is closed poses a problem. One might think that higher costs would be compensated, but in reality, it is often just a transfer between establishments. If the points increase due to a higher level of activity, this results in a decrease in the budget allocated per point, encouraging hospitals to maintain lengths of stay below the national average to avoid additional costs not covered by the BMF.

1.4.1.3. The medical records

To understand how the financing of clinical activity works, it is essential to understand the notion of justified activity as well as the concept of Nursing Related Group (NRG). In fact, the funding of hospitals is not based on their structure, but on their actual activity, defined through these two complementary concepts.

Firstly, the concept of Nursing Related Group (NRG) is based on groups of similar care episodes, each lasting a maximum of 24 hours (SPF, Auwers, T., 2019). A hospital stay can therefore include several NRGs, allowing a daily evaluation of care progress. For each sequence, a summary of the care provided is recorded in the DI-RHM (Nursing Data of the Minimum Hospital Summary), among the 78 nursing items defined by the SPF Public Health guidelines (*SPF, 2017).*

Secondly, to calculate the amount allocated to each institution, the notion of justified activity is also considered. Let us imagine we have 30 physical beds per care unit. The difference with justified beds

lies in the fact that the latter represent financed beds, meaning those not just available, but actually used and financially covered (*Durant, G., 2022*).

In this context, the completion of medical records becomes crucial. Each general hospital is required to record the minimum clinical summary for each of its patients, which must be submitted twice a year to the Federal Health Public Service (FPS) to establish the budget allocated to its activities. Accurate documentation of these records is therefore essential, under penalty of financial sanctions.

Medical records contain a significant amount of information, including medical diagnoses and procedures performed during hospital stay. To simplify language and analysis, this information is transcribed into codes by specially trained employees, using the Belgian coding manual, the "ICD-10-BE" (*SPF, D'havé, M., 2014*). Once encoded, these data are converted into Diagnosis Related Groups (DRGs), thus simplifying information on hospital activity and allowing for more effective comparison between institutions to optimize their funding.

The GDR classification aims to create homogeneous groups of patients based on the disease and resources consumed during hospitalization. In Belgium, a refined version called "APR-DRG" (All Patients Refined DRG) is used. This version considers additional factors such as age and the presence of comorbidities to determine the clinical severity of cases. Unlike the previous version considered too subjective, the APR-DRG subdivides patients into four levels of severity, where higher severity leads to higher costs and hence higher income for the institution (*Averill, R. F., Goldfield, N., Hughes, J. S., Bonazelli, J., McCullough, E. C., Steinbeck, B. A., Mullin, R., Tang, A. M., Muldoon, J., & Turner, L., 2003).*

Before the adoption of APR-DRGs, AP-DRGs were used, but they were not considered objective, leading to hypotheses being made to increase funding. The current version, integrating the notion of severity, mortality risks, and the intensity of resources used during hospital treatment, includes 355 base APR-DRGs after modifying the initial version (*Durant, G., 2022*).

To assess the severity of a pathology and determine the duration of hospitalization required, reference is made to a national average based on the most recent past activity data, usually over a period of 2 to 3 years, given Belgium's modest size *(OCDE, 2017).* This average does not necessarily reflect the time a patient might actually need. It is crucial for hospitals not to exceed this average. For example, in the context of childbirth, the duration of hospitalization has been reduced compared to previous practices. This reduction is partly due to the need to stay in line with the national average in order to avoid unreimbursable costs. If hospitalization times are shortened, the national average is also decreasing, which could encourage the creation of a cycle of continuous improvement and increased efficiency.

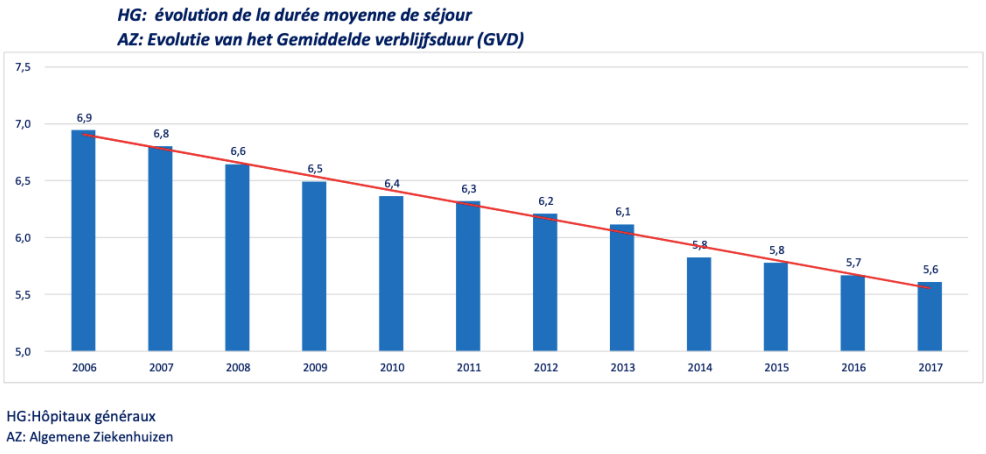

Figure 5 - Evolution of the average hospitalization duration

However, this reduction in hospitalization times presents several significant disadvantages. Excessive shortening of hospital stays can compromise the quality of care, especially for patients requiring prolonged follow-up. Premature discharges increase the risk of readmissions, which raises overall healthcare costs and affects hospital performance indicators. Furthermore, the pressure to reduce stay durations imposes an increased workload on hospital staff, heightening the risk of burnout. Hospitals that fail to maintain stay durations below the national average may face financial disadvantages, limiting their ability to invest in improvements (*Durant, G., 2022*).

1.4.1.4. The flat rate amounts (B4)

This section of the BMF covers a variety of specific costs, funded on a flat-rate basis. This section, representing approximately 17% of the total budget, covers various legitimate obligations, specific functions established by hospitals, and coverage of expenditure not included in other sub-parts. It is also because of this variation of costs that sub-section B4 is sometimes referred to as a "catch-all" (*Durant, G., 2022*).

Additionally, some flat-rate funding in this section of the BMF includes a specified number of FTEs (full-time equivalents) required. This means that the funding accounts for the salary costs associated with the personnel needed to fulfill certain functions or obligations. For example, if a chief physician position requires an FTE, the funding will include the salary for that full-time position. An FTE represents a full-time position, but this funding can also cover part-time positions that, together, equate to a full-time position.

1.4.1.5. Federal social agreements since 2005 (B9)

Section B9 covers all costs related to the various social agreements. It includes a series of flat-rate funding, allocated to cover various specific charges (*Compagnie, V., slides 2022-2023*). These include:

- **End-of-career options:**
  For staff over 45 years of age, there are opportunities to reduce working hours by two hours a week or to obtain a 5.26% bonus. The replacement costs associated with these reductions in working hours are financed by the BMF on the basis of a theoretical flat rate according to the type of personnel concerned.
- **Attractiveness bonus:**
  This bonus, derived from the social agreement of 26 April 2005, is intended to make positions in hospitals more attractive, especially in sectors where recruitment is difficult.
- **Vacation allowance:**
  The vacation allowance is an additional payment made to employees on top of their regular salary, usually to compensate for vacation costs. This benefit is part of workers' social rights.
- **Additional operating room night shifts staff:**
  Sub-section B9 also covers the costs of hiring additional staff in critical areas such as operating rooms and night teams. These additions are essential to ensuring adequate coverage and optimal 24-hour hospital services.
- **Additional costs due to changes in IFIC standards:**
  The costs associated with changes in staff classification and remuneration standards, established by the Institute for Training and Information on Classifications (IFIC), are also included in this subsection. These adjustments have been implemented progressively, with a first phase in 2017 and a second in 2021, aimed at modernizing and harmonizing classifications and salaries in the hospital sector.
- **Social agreements on working conditions:**
  Recent social agreements, including those of 2021 on working conditions, are also funded under sub-section B9. These agreements aim to improve the working conditions of hospital

employees, including measures for well-being, safety at work, and financial incentives for demanding positions.

1.4.1.6. Criticism on the BMF

The “Budget des Moyens Financiers” (BMF) for hospitals offers several notable advantages. Firstly, it provides healthcare institutions with a certain degree of financial stability. Indeed, each hospital receives a fixed monthly amount calculated based on a previous reference period, shielding them from immediate disruptions in their organization. This stability is crucial, especially during crises such as COVID-19, where the BMF served as a buffer against financial losses caused by extra costs and revenue drops. Moreover, the BMF covers the fixed costs of hospitals, such as infrastructure, equipment, and staff, thus ensuring the viability of institutions and their ability to offer high-quality care, accessible both geographically and financially. This flat-rate financing method also aims to ensure equity among hospitals by relying on objective parameters. Each establishment has an annual budget envelope that flat-rate covers the costs related to stays in shared rooms and the provision of care to patients, including those in day hospitalization.

Additionally, the BMF grants hospital managers the responsibility to allocate resources within their institution according to their specific needs. This approach encourages rigorous and efficient resource management. Based on justified activity criteria, the system motivates hospitals to optimize their efficiency, justify their expenses, and improve the quality of care without wasting resources.

However, this funding method in Belgium has drawn several criticisms. Firstly, the BMF is criticized for its lack of transparency (*Poncé, A., 2023*). Although all calculation elements are provided to hospitals, such as budget details by type related to the royal decree of April 25, 2002, the complexity of the information often makes it difficult to correlate costs, activated resources, and funding. Moreover, the current system, although modified in 2002, still retains remnants of the old system. Some amounts have not been revised for over 20 years, which can lead to inefficiencies and injustices in resource allocation, sometimes resulting in underfunding situations.

As mentioned previously, hospital financing is done within the limits of a closed national envelope. This means that any budget increase for one hospital must be compensated by a reduction for another. Consequently, this budget rigidity limits hospitals' ability to adapt to unforeseen or growing needs.

The BMF is also criticized for not sufficiently considering the actual needs for nursing and caregiving staff. Indeed, hospital activity financing is based on justified activity criteria, without direct links to actual costs or specific personnel needs. Additionally, the ex-post budget revision system leads to discrepancies between real financial needs and the received funding, as it depends on the available human resources to perform this task, which can cause significant delays in budget adjustments.

1.4.2. The medical fees

Medical fees play a crucial role in the financing of hospitals, mainly covering the remuneration of doctors for their clinical activities as well as the operating costs associated with these services (*Compagnie, V., slides 2022-2023*). The setting of rates and fees is governed by an agreement between the various actors in the health sector, including health professionals, mutual insurance companies, and public authorities. This convention, called the medico-mutualistic convention, establishes standardized fees amounts for each medical act.

A new medical-mutualist agreement has been concluded for the years 2024 and 2025 (*RIZIV, 2023*), guaranteeing price stability for patients. The agreement provides for a budget of 11.79 billion euros, allowing for the revaluation of services provided by general practitioners and specialists without

increasing the burden on patients. However, doctors may choose not to adhere to this convention, which allows them to set their rates freely, often higher than the agreed ones, thereby incurring additional costs for patients (*Durant, G., 2022*).

The gross fees include not only the income from their clinical activities, but also the costs associated with the operation of these activities. This includes expenses related to the use of hospital infrastructure, the purchase of medical equipment, and the administrative costs required to manage health services. To cover these costs, a portion of the fees collected by independent doctors is retained by the hospital, which can amount up to 6% of these latest. This deduction enables hospitals to finance the resources and infrastructure used by doctors to provide their care.

It is important to distinguish between independent doctors and salaried ones, as their modes of remuneration differ. Independent physicians may pay a percentage of their fees to cover the costs of their activity or pay the direct and indirect costs of their activities, which varies according to the medical discipline and services rendered. In contrast, salaried physicians receive a fixed salary, and the hospital covers additional social security contributions, which reduces net income for the hospital. However, this disadvantage is partially offset by section B7 of the BMF, which specifically concerns university hospitals, where the presence of salaried doctors is crucial to ensure an adequate training and research environment (*Durant, G., 2022*).

Nowadays, funding for medical fees is evolving towards flat-rate pay models, although fee-for-service financing remains predominant. For hospitalized and outpatient patients, 75% of clinical biology fees are covered by DRG-based flat rates, while the remaining 25% are paid at the act (*Compagnie, V., slides 2022-2023*). Clinical biology, for information, is a medical discipline dedicated to laboratory analyses of biological samples such as blood, urine, tissues and other body fluids.

Regarding medical imaging, 30% of the fees are funded by DRG-based flat rates as well, and 25% are paid at the act. Stays in intensive care and emergency services have a flat fee per admission for medical on-call duty, regardless of DRGs, to ensure continuous availability of critical services.

Finally, the so-called “low variability” stays, i.e. patients with relatively stable and predictable medical conditions according to the APR-DRGs, are assigned a global flat fee.

1.4.2.1. Criticism on the medical fees

The medical fee system in Belgium has notable advantages. It offers doctors the flexibility to choose between independent or salaried status, allowing them to adapt to the specific needs of their patients and their practice (*Durant, G., 2022*). This adaptability promotes a more personalized response to patient demands. Additionally, fee-for-service remuneration encourages to provide high-quality care, as their compensation depends directly on the number and complexity of interventions performed. This incentive fosters greater diligence and attention in medical practice, thereby improving clinical outcomes for patients.

Despite its importance and the few advantages mentioned above, it is not without criticism. One of the main problems lies in the incentive to increase the number of medical acts, which can lead to overconsumption of care. Doctors paid on a fee-for-service basis may be tempted to multiply interventions to increase their income, even if this is not always medically justified (*Compagnie, V., slides 2022-2023*). This phenomenon, often referred to as "fee-for-service," can incur additional costs for the healthcare system without necessarily improving the quality of care.

Moreover, the lack of transparency and clarity in the distribution of fees and the management of supplements is frequently criticized. This opacity makes it difficult to assess the fair remuneration of

medical services and complicates negotiations between healthcare professionals and hospital institutions (*Poncé, A., 2023*). Furthermore, the freedom of pricing granted to non-contracted doctors can create significant disparities in access to care. Patients, particularly those who are financially vulnerable, may find themselves penalized by high costs, limiting their access to necessary medical services and exacerbating social inequalities in health.

The ongoing negotiation process to update the nomenclature of medical acts and billing rates is another major criticism (*Compagnie, V., slides 2022-2023*). Constant adjustments necessary to align rates with economic and medical realities can generate tensions and delays in the implementation of new measures, thus impacting the overall efficiency of the healthcare system. Additionally, the negotiations sometimes allow healthcare professionals to partially decide on hospital management, which can lead to conflicts of interest and harm the governance of health establishments.

To address these shortcomings, various reforms are regularly proposed. Among the measures considered are the revision of the nomenclature of medical acts to ensure fair and equitable remuneration, as well as strict regulation of fee supplements to prevent excessive charges and guarantee equitable access to care for all patients, regardless of their financial situation. For example, the National Joint Commission for Doctors-Hospitals (CPNMH) had decided to freeze the maximum rates of fee supplements in hospitals. Initially planned until April 30, 2023, this freeze has been extended until December 31, 2023 (*press-conference Frank Vandenbrouck, 2023*)

1.4.3. The pharmaceutical products

The financing of hospitals through pharmaceutical products relies on a complex and structured system, integrating various reimbursement and invoicing mechanisms. These mechanisms vary depending on the type of care administered, whether outpatient or inpatient, as well as the nature of the medicinal products used (*Durant, G., 2022*).

The operating costs of hospital pharmacies, covering salaries, materials, equipment, and supplies, are covered by sub-part B5 of the “Budget des Moyens Financiers”. In contrast, medicines and medical devices are subject to separate billing. This billing can be partially reimbursed, with the remaining balance borne by the hospital or the patient.

Overall, pharmaceutical services can represent up to one-fifth of the hospital's revenue, a significant share especially in outpatient care. These expenses have seen a dramatic increase in recent years, highlighting the growing importance of medications in the hospital budget.

For medications administered to hospitalized patients, the basic principle of reimbursement is based on varying reimbursement rates according to the therapeutic and social utility of the medication. The patient must pay a fixed co-payment of €0.62 per day of hospitalization. However, billing by the unit delivered covers only 25% of the costs, with the remainder being subject to partial pricing, determined annually according to the patient's Diagnosis-Related Groups (DRGs). This partial pricing involves a flat fee per admission billable to the insurance organization, with some notable exceptions, such as expensive and innovative medicines (*Durant, G., 2022*).

In outpatient care, there is no flat-rate pricing for medications. Prices are the same as those applied to hospitalized patients, but personal interventions are similar to those practiced in public pharmacies.

Medical devices, whether implantable or not, invasive or non-invasive, active or nonactive, are subject to a flat-rate refund (i.e. independent of the beneficiary patient) based on lists published by the National Institute of Health-Invalidity Insurance (INAMI). These lists set the amounts of reimbursement, the possible discounts applied and the patient's personal contributions.

All medications administered to patients must be dispensed by a hospital pharmacist. If the medications are not reimbursable, they are entirely borne by the patient, with the hospital able to apply a margin of up to 31% of the sale price excluding VAT (*Compagnie, V., slides 2022-2023*). For reimbursable medications, the financing differs depending on whether the patient is hospitalized or taken care of in an ambulance, with flat-rate amounts determined since 2006 according to the patient's DRG. Exceptions exist for items such as dietary foods, diagnostic means, and radioisotopes.

1.4.3.1. Criticism on pharmaceutical products

Although the increase in pharmaceutical expenses may seem positive due to their weight in hospital revenue and maintaining cutting-edge medical advances, it is crucial to recognize the challenges associated with accounting and financing these products in the Belgian hospital system. Indeed, it is important to note that not all pharmacy products always generate revenue (*Compagnie, V., slides 2022-2023)*. Many products used in outpatient consultations, as well as certain medical devices, do not benefit from distinct funding and are billed under section B2 of the BMF or through fees. This means that these costs are not always visible in the specific accounts for pharmaceutical products, which may give the impression that they are financially underrepresented.

1.4.4. INAMI flat rates and agreements

INAMI flat rates and agreements, accounting for approximately 4% of turnover, are the last source of income and play an essential role in the financing of hospital activities (*Durant, G., 2022*).

1.4.4.1. The flat rates

In the context of flat rates, hospital establishments must meet some basic criteria in order to qualify for them (*Compagnie, V., slides 2022-2023)*, namely:

- Hospitalization must not take place in a waiting room or in a polyclinic consultation room. This means that the patient must be taken care of in a dedicated and suitable unit for day hospitalization.
- Day hospitalization must not be followed immediately by another scheduled stay in the same hospital. This implies that daytime hospitalization should be distinct and autonomous, and not be part of a longer treatment process requiring continuous hospitalization.

The INAMI rates are fixed amounts paid for certain healthcare services. These ones aim to simplify the financing and reimbursement of hospital care by establishing a single tariff for a category of care, regardless of the actual costs incurred by the hospital. There are a whole series of them, such as:

- **The maxi-rate:** Applicable when the patient has undergone general anesthesia during their stay. This amount is defined separately within each institution.
- **The basic oncological care rate:** Oncology is a medical specialty that deals with cancerous tumors.
- **The pediatric monotherapy rate:** Pediatrics is a medical specialty focused on children's health and diseases.
- **The cast room usage rate:** Applicable for the use of a specialized room in orthopedic care, in particular for laying and removing plasters.

1.4.4.2. The agreements

INAMI agreements are contracts established between the National Institute for Health and Disability Insurance (INAMI) and various healthcare professionals, such as doctors, nurses, or physiotherapists.

These agreements determine the fees for services and the reimbursement conditions for specific medical activities with a paramedical nature, such as those provided by physiotherapists or psychologists. There are three classes of agreements:

- **Standard agreements:** for specific treatments such as self-management of diabetes mellitus or insulin therapy with pump at home.
- **Semi-standard agreements:** for programs with standardized content but with varying activity volumes and modalities depending on the hospital. This applies, for example, to cardiac rehabilitation or physical therapy.
- **Other more specific agreement:** as in the youth therapeutic center in Brussels, funded specifically because of its unique needs.

1.4.4.3. Criticism on the INAMI flat rates and agreements

In summary, INAMI agreements and flat rates offer benefits in terms of simplification and financial predictability while ensuring a certain uniformity of care. However, these mechanisms are not without faults. Flat-rate amounts, by setting standardized fees, may sometimes not reflect the actual costs of care, particularly for more complex or expensive cases. This financial rigidity can lead to deficits for some hospitals, which might be discouraged from providing costly care if reimbursements are insufficient. Moreover, the multiplicity of agreements and flat rates adds a layer of complexity to the system, making administrative management more challenging for hospital managers who must navigate different rules and specific requirements for each agreement.

Another major concern lies in the resource inequalities between regions. Some regions or hospitals, better equipped or more capable of meeting the criteria of the agreements, may receive more funding, while others may struggle to obtain the necessary resources (*Durant, G., 2022*).

1.5. The impact of COVID-19 on financing

The COVID-19 health crisis has significantly affected hospitals in Belgium, including financially. From the appearance of the first cases in February 2020, the pandemic led to an overload of hospitals, sometimes forcing difficult choices regarding which patients to treat. Additionally, non-essential care was repeatedly postponed, resulting in reduced revenue for establishments as well as a reduction in fees for some providers (*Ramaekers, D., 2023*).

According to the MAHA study conducted by Belfius in 2020, the financial situation of hospitals before the pandemic was already concerning, with a current result of only 31 million euros, representing 0.2% of revenue. About a third of hospitals were in deficit (32%), and 20% of establishments generated insufficient cash flow to repay their debts.

The year 2020 recorded an unprecedented public deficit, estimated at nearly 50 billion euros, or 10.7% of GDP, with a debt ratio reaching 116.5% of GDP. Hospitals experienced a significant reduction in their revenue, with a decrease of 8.1% for general hospitals. Non-COVID-19 related activities also decreased, with admissions and days achieved representing only 59% and 73% of 2019 levels, respectively. In fact, 2019 data is often used as a reference point in MAHA studies because it represents the last year of normal hospital operations before the pandemic. This provides a stable point of comparison to assess the impact of the pandemic and adjust budgets accordingly.

Consequently, operating results became deficit for a third of hospitals, and solvency remained at 23.6%, influencing access to the capital market. The high debt ratio required the generation of significant cash flow to ensure future investments. Personnel costs and other expenses increased

despite the decline in activities, creating additional financial pressures. For example, there was an increase in expenses through the rise in overtime hours, testing centers, and protective equipment, as well as a decrease in revenue, particularly in fees and pharmaceutical products, but also in non-hospital activities such as parking lots and cafeterias.

To help general and psychiatric hospitals cope with this situation, the Belgian federal government released two billion euros in the form of several advances in 2020 (*Ramaekers, D., 2023*). The final funding for each hospital was determined in 2023 by SPF SPSCAE and INAMI based on the actual impacts of the health crisis it experienced in 2020. This is therefore a flexible budget that can exceed the initial advance amounts. A bonus of 985 euros gross was also granted to nursing staff in direct contact with patients who worked during the period from September 1 to November 30, 2020, an intense period of the health crisis. Additionally, the federal government revised the healthcare standard upwards and integrated the "white coats" funds into the budget.

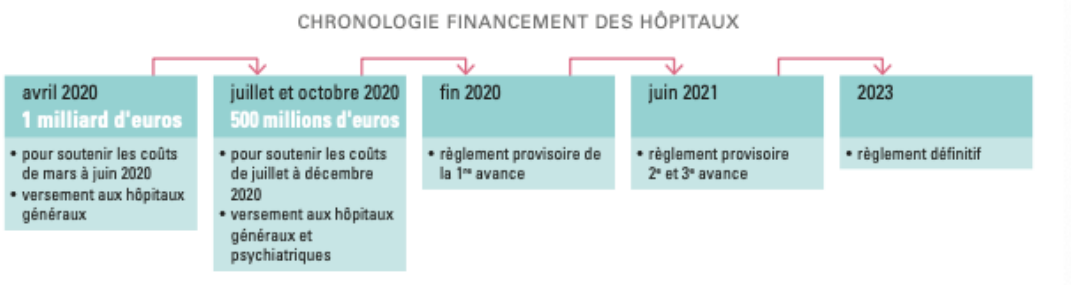

Figure 6 - Chronology of the financing of hospitals regarding COVID

In summary, the COVID-19 pandemic has highlighted the need for hospitals to have greater financial flexibility in order to effectively respond to unforeseen crises. Rigid financing systems, such as the BMF, can hinder the ability of hospitals to quickly and efficiently adapt to new demands. This fragility is still evident today with the end of specific financial aids for the pandemic and the final reimbursement in 2023. Given the low profitability in this sector, these regulations become particularly difficult.

1.6. Perspectives for 2023

In 2022, the Belgian hospital sector went through an extremely difficult financial period. For the first time across the entire territory, all general hospitals recorded a loss on their main activities, with an ordinary operating result amounting to -181 million euros (*MAHA analysis, Belfius, 2022*). This situation is explained by an 8% increase in costs, faster than the 6.6% increase in revenues, mainly due to wage indexation, currently set at 10%, and the surge in energy prices, reaching up to 77% in 2023 (Belfius press-conference, 2023). As a result, hospital equity and available cash flow have contracted, compromising the sector's solvency and limiting necessary investment capacities. Human resources policy also remains a major challenge, with an absenteeism rate due to illness exceeding 11.4% in 2022 and vacant positions difficult to fill, despite efforts to improve the attractiveness of healthcare professions.

The number of traditional hospitalizations has still not returned to its 2019 level, remaining 6.4% lower than that year. In contrast, day hospitalizations now account for 57.4% of total hospitalizations, a trend accelerating in 2023 with an estimated 22% increase for surgical services. Additionally, the average length of hospital stays continues to decrease, currently reaching 5 days.

Prospects for 2023 show a slight improvement compared to 2022, with an ordinary operating result expected at -0.73% of revenue, compared to -0.96% in 2022. However, the sector remains under pressure with continued increases in energy costs and personnel expenses. To meet these challenges,

the Belgian hospital sector must strengthen its solvency by increasing equity and available cash flow, improve the attractiveness of healthcare professions to fill the 2,800 vacant positions in 2022, and maintain investments in infrastructure and medical equipment to ensure quality care.

2. Empirical research

2.1. The methodology

The methodology adopted for this study combines a financial analysis of the annual accounts of participating hospitals with qualitative interviews with hospital officials qualified in the field of finance. This mixed-method approach is pertinent as it leverages the advantages of both quantitative and qualitative methods. The financial analyses will highlight how hospitals managed both routine financial challenges and the significant pressures brought on by the COVID-19 pandemic. In parallel, the interviews offer human and contextual perspectives, allowing for an understanding of the perceptions, challenges, and strategies of hospital officials in response to these accounting practices.

Initially, a financial analysis of the annual accounts will be conducted to understand the financial health, resilience, and ability to sustain operations and asses the financial performance of Belgian hospitals. Data will be sourced from publicly available annual accounts on official databases, such as the National Bank of Belgium's website (*https://consult.cbso.nbb.be*), spanning the past five years (2019-2023). The focus on the period from 2019 until 2023 allows for the observation of trends and impacts over time, particularly those related to the effects of the COVID-19 health crisis. To analyze the impact of the health crisis on the financial figures, a ratio analysis has been conducted both with and without the financial advances provided by the government. This approach was taken to gain insight into how the hospitals might have fared during the crisis in the absence of such assistance. The research focused on audit reports to determine the amounts allocated, detailing what should be considered as revenue (account 70), exceptional revenue (account 701), and/or long-term debt (account 17).

However, for one of the participating hospitals, the annual financial statements for 2023 have not yet been published to date. Additionally, another participating entity was established following the merger of three hospitals in 2021. Consequently, we only have financial data available for the initial period beginning in October 2021 until the end of 2022. In the same manner, two audit reports were not made available for this study, which means that only assumptions can be made regarding the impact of COVID-19 on the financial figures of those hospitals. The conclusions drawn from the overall financial analyses of the participants will take these limitations into account, ensuring that the final assessment reflects the incomplete data and considers its potential impact on the findings. To gain a more precise understanding of the internal dynamics within each of the hospitals involved in this study, the non-consolidated financial analyses are provided in the appendix.

Following this, interviews with hospital officials will be conducted to supplement the quantitative analysis with qualitative insights. The targeted participants include financial directors, management controllers, and other financial officers from Belgian hospitals who have consented to participate in the study. Considering Belgium's division into three regions, it was crucial to have a sample covering the entire territory to also highlight cultural impacts and differences in attitudes toward the subject. A sample of 7 officials will be selected using a judgment sampling method, focusing on those with direct and significant experience with regulated cost accounting. Furthermore, the type of hospital was considered during sampling, with a focus on general and university hospitals, as reflected in our literature review.

The interviews will be semi-structured to facilitate an in-depth exploration of the topics while maintaining flexibility. The questions will address themes such as the perceived impact of regulated cost accounting on financial management, the challenges encountered during the implementation of these practices, the advantages and disadvantages of current practices, and suggestions for improvement. All interviews will be fully transcribed and included in the appendices of this thesis. By the way, there are several methods for transcribing interviews, each suited to different purposes. Verbatim transcription captures every word and non-verbal cue exactly as spoken, which is useful in legal contexts or detailed qualitative research. There is also the intelligent verbatim transcription, which refines this approach by omitting unnecessary fillers and stutters, making it more readable while still preserving the speaker's intent, often used in business or medical settings. Edited transcription further polishes the text for clarity and readability, making it suitable for publications or official reports (*Leano, M. 2023*). Finally, the summarized transcription focuses on key points and themes, ideal for creating concise executive summaries. In the context of this research thesis, the interviews have been conducted in the native languages of the participants. The edited transcription method was employed, using a software called “Gladia” (https://www.gladia.io), followed by a personal translation of the content into English, with careful attention to maintaining the structure consistent with the original transcription.

2.2. The financial analyses

2.2.1. The theoretical approach

2.2.1.1. The role of financial analysis

Financial analysis plays a crucial role in understanding and evaluating the performance and financial health of a company. The primary objective of such an analysis is to provide a clear, objective view of a company's financial condition at a specific point in time and over a period of time (*Torsin, W., slides 2020-2021*). By examining the balance sheet and income statement, analysts can assess the profitability, liquidity, and solvency of the business. Additionally, financial analysis is essential for making informed decisions regarding investments, mergers, acquisitions, and other strategic moves. It also helps in comparing the financial performance of the company against its peers (*Barnes, P., 1987*), which is particularly important in understanding the competitive landscape. Given the unprecedented impact of the COVID-19 pandemic, financial analysis becomes even more critical. It allows businesses to assess how government aid, such as financial advances, influenced their financial statements, and to estimate what the situation might have looked like without such support. This dual perspective helps in understanding both the immediate and long-term implications of the pandemic on financial performance.

2.2.1.2. The annual accounts

An annual account is a comprehensive financial report that offers a detailed overview of a company's financial performance and position over a specific period, typically a year. The annual account for Belgian companies comprises three essential components: the balance sheet, the income statement, and the accompanying notes (*Torsin, W., slides 2020-2021*).

First, the balance sheet presents the company's financial position at a specific point in time, detailing its assets, liabilities, and equity. It provides insight into what the company owns through its assets, and owes through its liabilities, as well as the equity invested by shareholders. Afterwards, the income statement, also known as the profit and loss statement, offers a summary of the company's financial performance over the reporting period. It details the revenues earned, expenses incurred, and the resulting profit or loss, giving stakeholders a clear view of how well the company is generating income

relative to its costs. Finally, the notes to the financial statements provide additional detail and context to the figures presented in the balance sheet and income statement. These notes often include explanations of accounting policies, breakdowns of complex items, and any other information necessary to give a full understanding of the company's financial situation.

Together, these documents form a comprehensive picture of the company's financial health and are crucial for stakeholders such as investors, creditors, and regulators to assess the company's performance and make informed decisions. The importance of annual accounts lies not only in compliance with legal requirements but also in their role as a vital tool for financial transparency and accountability.

2.2.1.3. The horizontal analysis approach

Horizontal analysis, also known as trend analysis, is a method used to evaluate financial statements over multiple periods (*Torsin, W., slides 2020-2021*). This approach allows analysts to observe how specific financial metrics have evolved over time, revealing trends in a company's financial performance. This type of analysis is particularly valuable because it helps in identifying consistent trends, whether positive or negative, in a company's operations. Unlike vertical analysis, which examines the relative size of financial statement components within a single period, horizontal analysis focuses on changes over time, making it an essential tool for understanding the long-term trajectory of a company. Furthermore, horizontal analysis can aid in benchmarking a company's performance against industry standards or competitors (*Tuovila, A., updated 2024*). By identifying trends and patterns, stakeholders can make more informed decisions regarding the future strategies of the business. This method also provides a clearer understanding of the effects of external factors, such as economic conditions like the COVID pandemic or industry-specific challenges, on the company's financial health.

2.2.1.4. The financial ratios

During the Bachelor's studies at HEC Liège, a comprehensive exploration of various financial ratios was undertaken through the Financial Statement Analysis course led by Professor Torsin. For this research on Belgian hospitals, I have focused on the most relevant ratios regarding the specificities of the healthcare sector. This approach ensures that the analysis is both contextually appropriate and aligned with the unique financial dynamics of hospitals, providing a more accurate and insightful understanding of their financial health and performance.

A. <u>The working capital, the working capital requirement and the net cash position</u>

The working capital is a crucial financial metric that evaluates the liquidity and short-term financial health of a company. This value can be calculated using two different methods:

- Based on the top of the balance sheet:

Permanent capital - Fixed assets = Working capital

In this formula, permanent capital refers to the long-term financial resources available to the company, such as equity and long-term debt. Fixed assets are the long-term assets that a company uses to produce goods or services, such as machinery, buildings, and equipment.

- Based on the bottom of the balance sheet:

Current assets - Short-term liabilities = Working capital

In this approach, current assets include all assets that are expected to be converted into cash within a year, such as inventory, accounts receivable, and cash itself. Short-term liabilities are the obligations the company must pay within the same period, such as accounts payable and short-term debt.

In essence, working capital measures the resources available to a company to meet its short-term obligations, ensuring smooth operations without financial strain. A positive working capital indicates that the company has enough assets to cover its debts, which suggests good liquidity. On the other hand, negative working capital can signal potential liquidity issues, where the company may struggle to meet its short-term liabilities, thus posing a risk to its operational stability. However, while a positive working capital is generally favorable, having an excessively high one might suggest that the company is not utilizing its resources effectively. For example, it might be holding too much cash or other liquid assets that could otherwise be invested in growth opportunities.

Further, the working capital requirement is a key financial metric that represents the amount of capital needed to finance the day-to-day operations of a company. The formula for calculating the working capital requirement is:

$$WCR = (Inventory + Short\text{-}term\ Receivables + Accruals) - (Short\ term\ Liabilities + Accounts\ Payable + Fiscal, Social, and\ Salary\ Liabilities + Advances\ Received + Other\ accounts\ payable + Accruals)$$

In that way, the WCR indicates whether a company needs additional funds to finance its activities. A positive value means that the company needs to invest more capital into its operations than it generates, while a negative one indicates that the company's operational cycle is self-financing, and it might not need additional funds. Furthermore, the relationship between the working capital requirement and the working capital is critical: the WC should ideally be sufficient to cover the WCR. If WC > WCR, it means the company has a financial cushion and can easily cover its operational needs. Conversely, if the WC < WCR, the company may face liquidity issues and struggle to finance its daily operations. Finally, this brings us to the final concept of net cash position, which represents this difference between the working capital and the working capital requirement explained just before:

$$Net\ Cash = WC - WCR$$

B. <u>The Cash-flow</u>

The Cash-flow of a company represents the net amount of cash and cash equivalents being transferred into and out of a company. It essentially measures the financial health of a business by indicating whether it generates sufficient cash to meet its obligations, such as paying debts, operating expenses, and financing future investments. The formula to calculate the cash-flow can be expressed as:

$$Cash\ Flow\ (CF) = Net\ Income + Non\text{-}Cash\ Expenses - Non\text{-}Cash\ Revenues$$

In this formula, non-cash expenses refer to charges like depreciation and provisions that do not result in actual cash outflows, while non-cash revenues refer to revenues recognized in the books but not yet received as cash. If the cash flow is positive, it suggests that a company is generating more cash than it is spending, which is favorable as it indicates that the business can finance its operations, pay dividends, and invest in growth opportunities. Conversely, a negative cash flow implies that a company is spending more cash than it is bringing in, which may lead to liquidity issues.

C. Return on Equity and Return on Assets

The ratio of return on equity (ROE) is a key financial metric used to evaluate the profitability and efficiency of a company in generating profits from its shareholders' equity. ROE is expressed as a percentage and is calculated based on the following formula:

$$ROE = \left(\frac{Net\ income\ after\ taxes}{Equity}\right) * 100$$

ROE helps investors understand how effectively their invested capital is being used. A higher ROE indicates that the company is more efficient in generating profits from every unit of shareholders' equity, making it an attractive option for investors. However, it is essential to compare ROE against other companies in the same industry and against historical performance to determine if the company is truly performing well but if the ratio is negative, it is clear that it indicates that the company has experienced losses.

Secondly, in the ratios of profitability, the return on assets (ROA) can also be measured. This metric measures a company's profitability relative to its total assets and is calculated as follow:

$$ROA = \left(\frac{Net\ income}{Total\ assets}\right) * 100$$

In fact, this ratio provides insight into how much profit a company generates with each euro of assets it controls. A higher ROA indicates more efficient use of assets, while a lower ROA suggests less efficient use. This ratio is particularly useful when comparing the profitability of companies within the same industry, as it offers a standardized measure of performance.

D. Current and Acid liquidity ratios

Liquidity ratios are key indicators of a company's ability to meet its short-term obligations using its current assets. Two of the most important liquidity ratios are the current ratio and the acid ratio, which offer insights into a company's financial health.

- Current Ratio:

The current ratio measures a company's ability to cover its short-term liabilities with its short-term assets. It is calculated using the formula:

$$Current\ ratio = \left(\frac{Current\ \ assets}{Current\ liabilities}\right)$$

This ratio provides a broad view of liquidity, as it includes all current assets, such as cash, receivables, and inventory. A current ratio greater than 1 suggests that the company has more current assets than current liabilities, indicating a good liquidity position. However, if the ratio is too high, it may imply that the company is not using its assets efficiently, potentially holding too much cash or inventory.

- Acid Ratio:

The acid ratio, also known as the quick ratio, is a more stringent measure of liquidity. It excludes inventory from current assets, focusing on assets that can be quickly converted into cash. The formula is:

$$Acid\ ratio = \left(\frac{Cash\ equivalents + short{-}term\ receivables}{Current\ liabilities}\right)$$

By not considering inventory, the acid ratio offers a more conservative view of a company's ability to meet short-term obligations. A ratio of 1 or higher is typically considered satisfactory, as it indicates that the company can meet its short-term debts without relying on the sale of inventory.

E. Solvency ratio

Solvency ratios are crucial indicators of a company's financial health, particularly its ability to meet long-term obligations. In other words, it means that solvency measures the ability of a business to cover its long-term liabilities, which typically includes debts that are due in more than one year. A company with high solvency is generally seen as financially stable, as it is capable of repaying its long-term debts. However, excessive reliance on debt, especially long-term debt, can be risky because of the obligation to pay interest, which can increase financial strain, particularly during downturns.

In this sense, one key solvency ratio, the one used in this research work, is the debt to equity ratio, which compares a company's total long-term debt to its shareholders' equity. The formula used in this case is:

$$Solvency = \left(\frac{Long-term\ debts}{Equity}\right)*100$$

This ratio indicates how much debt a company is using to finance its assets relative to the value of shareholders' equity. A high ratio means that a company is heavily leveraged, which could indicate potential financial instability, while a lower ratio suggests that the company is using less debt and may be in a better position to weather economic downturns.

F. Degree of long-term financial independence

The long-term financial independence ratio, also known as the self-financing ratio, is a solvency ratio that evaluates a company's level of financial autonomy by measuring the proportion of total capital that is financed by the company's equity. The formula for this ratio is:

$$Self\text{-}financing\ ratio = \left(\frac{Equity}{Total\ liabilities}\right)*100$$

A higher financial independence ratio suggests that a company has a substantial portion of its capital derived from equity rather than debt, which generally indicates lower financial risk and enhanced stability. Companies with a robust financial independence ratio are typically better equipped to handle economic downturns and are less susceptible to the negative impacts of interest rate fluctuations due to their reduced dependence on borrowed funds. Ideally, maintaining a financial independence ratio between 25% and 40% is advisable. Falling below this range indicates an excessive reliance on debt, which could increase financial vulnerability.

2.2.2. The analyses of participating entities

2.2.2.1. List of the participating hospitals

While the sample of hospitals participating in this study will be explored in greater depth during the practical section of the interviews later in this thesis, it is essential to provide a preliminary overview to clarify the institutions involved in this research and to understand who we are talking about in the further analysis.

Name	*Region*	*Type*
Hospital A	Wallonia	University hospital
Hospital B	Wallonia	University hospital
Hospital C	Wallonia	General hospital
Hospital D	Brussels	University hospital
Hospital E	Brussels	University hospital
Hospital F	Flanders	General hospital
Hospital G	Flanders	General hospital

2.2.2.2. Results of the analyses

In conducting a financial analysis, it is crucial to recognize that the impact of COVID-19 on hospital finances varies widely. Each hospital has implemented its own strategies and faced unique challenges. To fully understand these differences, detailed explanations are provided in the annexes of the financial reports. These annexes offer insights into the specific circumstances and decisions that have shaped each hospital's financial response to the pandemic, highlighting the diverse approaches taken to manage this unprecedented situation.

A. The working capital (WC)

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	177 574,13	179 344,72	1,00%	179 782,42	0,24%	166 693,46	-7,28%	N/A	N/A	
Hospital B	70 326 636,00	120 405 468,00	71,21%	127 784 799,00	6,13%	111 538 743,00	-12,71%	79 349 499,00	-28,86%	
Hospital C	165 798 319,93	92 751 900,01	-44,06%	76 976 291,00	-17,01%	51 999 532,00	-32,45%	42 895 079,00	-17,51%	
Hospital D	52 727 766,00	69 577 099,00	31,96%	62 567 914,00	-10,07%	57 488 955,00	-8,12%	58 766 978,00	2,22%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(2 155 244,00)
Hospital F	99 838 249,00	100 553 184,00	0,72%	83 224 486,00	-17,23%	76 247 497,00	-8,38%	64 119 491,00	-15,91%	
Hospital G	6 716 469,50	14 813 547,68	120,56%	11 393 073,97	-23,09%	14 365 892,96	26,09%	6 383 503,75	-55,56%	
Average	65 930 835,76	66 380 090,57	**1%**	60 354 391,07	**-9%**	51 967 885,57	**-14%**	50 302 910,15	**-3%**	

Figure 7 - Working capital evolution

Through the comparison table of the working capital values of the participating hospitals, a general decline is evident across most hospitals post-2020, suggesting the significant impact of the COVID-19 pandemic. For instance, Hospital B experienced a notable decrease in financial performance, with a 12.71% decline in 2022 followed by a further 28.86% drop in 2023. Similarly, Hospital C saw a steep and continuous decline, particularly between 2021 and 2023, with a 32.45% decrease in 2022 and a 17.51% decline in 2023, underscoring ongoing financial challenges. While some hospitals displayed recovery in certain years, this trend was not consistent across the board. Hospital G, for example, showed a significant recovery in 2022 with a 26.09% increase, but this was followed by a substantial 55.56% decline in 2023, indicating probably that the effects of the post-COVID situation had an impact on the numbers later for this entity.

The average trends for all hospitals reflect a slight 1% increase in 2020 followed by a steady decline, reaching a -14% change in 2022, indicating that on average, the hospitals are struggling to recover or maintain growth in the post-pandemic period, especially because they cannot rely anymore on the financial support of the government, and that most of them have to reimbursed a part of these amounts. Overall, the data indicates that while 2020 was a relatively stable year for some hospitals, the subsequent years have shown a widespread decline, likely exacerbated by the pandemic's effects. The average trends underscore the sector's difficulties, with most hospitals failing to regain their 2019 financial health.

B. The working capital requirement (WCR)

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	54 237,06	6 168,18	-88,63%	36 601,22	493,39%	60 777,15	66,05%	N/A	N/A	
Hospital B	42 398 842,00	30 265 921,00	-28,62%	20 978 633,00	-30,69%	30 050 043,00	43,24%	20 511 891,00	-31,74%	
Hospital C	28 493 583,04	14 319 414,02	-49,75%	9 903 568,00	-30,84%	(9 797 572,00)	-198,93%	(12 218 613,00)	24,71%	
Hospital D	60 665 668,00	37 823 526,00	-37,65%	54 425 095,00	43,89%	75 653 270,00	39,00%	109 781 538,00	45,11%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(2 553 947,00)
Hospital F	(246 223,00)	4 627 188,00	1779,27%	2 485 178,00	-46,29%	4 826 428,00	94,21%	5 183 091,00	7,39%	
Hospital G	6 171 137,27	6 644 516,59	7,67%	7 159 660,60	7,75%	8 245 060,46	15,16%	6 191 768,67	-24,90%	
Average	22 922 874,06	15 614 455,63	**-31,88%**	15 831 455,97	**1,39%**	18 173 001,10	**14,79%**	25 889 935,13	**42,46%**	

Figure 8 - Working capital requirement evolution

In 2020, the average evolution percentage shows a steep decline of -31.88%, which is a significant drop likely attributed to the onset of the COVID-19 pandemic and its immediate impact on hospital operations and finances. Normally, this crisis situation should have shown a higher working capital requirement because of the increased operational costs, such as higher expenses for personal protective equipment and medical supplies for example but thanks to the advances received to help hospitals, the different entities saw their financial situation going better than expected. However, there appears to be a downturn in the following years, with a modest increase of 1.39% in 2021, followed by a more substantial 14.79% growth in 2022. Among individual hospitals, Hospital A experienced a severe decline of -88.63% in 2020 but saw a dramatic increase in 2021 with a 493.39% increase, suggesting significant variability in its financial performance. On the other hand, Hospital C had one of the steepest declines in 2020 with a -49.75% drop and continued to see the need in working capital going down in the subsequent years, showing a huge improvement in 2022 with a -198.93%. it is the only hospital in 2022 with a negative WCR, meaning that they are self-financing and do not require additional funds during the financial period. Hospital F presents an interesting case with an extraordinarily high positive evolution of 1779.27% in 2020, likely reflecting that, even with the advances received from the authorities, the requirement in working capital turned positive.

Overall, the analysis suggests that while some hospitals have managed to reduce their WCR and stabilize their operations, others continue to face challenges. However, these numbers don't necessarily mean that the financial situation is not good. Indeed, it is during the comparison between the working capital and the need for it that the good or bad situation will be highlighted, and this can be shown through the next value, called the net cash position.

C. The net cash position

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	123 337,07	173 176,54	40,41%	143 181,20	-17,32%	105 916,31	-26,03%	N/A	N/A	
Hospital B	27 927 794,00	90 139 547,00	222,76%	106 806 166,00	18,49%	81 488 700,00	-23,70%	58 837 608,00	-27,80%	
Hospital C	137 304 736,89	78 432 485,99	-42,88%	67 072 723,00	-14,48%	61 797 104,00	-7,87%	55 113 692,00	-10,82%	
Hospital D	(7 937 902,00)	31 753 573,00	300,02%	8 142 819,00	-74,36%	(18 164 315,00)	123,07%	(51 014 560,00)	180,85%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	398 703,00
Hospital F	100 084 472,00	95 925 996,00	-4,15%	80 739 308,00	-15,83%	71 421 069,00	-11,54%	58 936 400,00	-17,48%	
Hospital G	545 332,23	8 169 031,09	1397,99%	4 233 413,37	-48,18%	6 120 832,50	44,58%	191 735,08	-96,87%	
Average	43 007 961,70	50 765 634,94	**18,04%**	44 522 935,10	**-12,30%**	33 794 884,47	**-24,10%**	24 412 975,02	**-27,76%**	

Figure 9 - Net cash position evolution

The average trend across all hospitals reveals initial growth in 2020, with an 18.04% increase, likely driven by specific factors such as COVID-related financial interventions. However, this is followed by a negative trend in 2021 and a more pronounced decline in 2022 and 2023, with average reductions of 24.10% and 27.76%, respectively. This suggests that while hospitals may have initially benefited from certain circumstances, they generally struggled to maintain financial stability in the subsequent years, especially because of the absence of the financial support and some amount to even reimburse.

Hospital B shows substantial growth in 2020 with a 222.76% increase but faces a steady decline thereafter, culminating in a 27.80% decrease by 2023. Hospital C, on the other hand, encountered a

sharp decline in 2020, losing 42.88%, and continued to see further reductions, even with the financial support received to help during the pandemic period. In contrast, Hospital D demonstrates significant volatility, with a drastic negative value in 2019, followed by an extreme positive change of 300.02% in 2020. However, this positive shift was short-lived, as the hospital faced a dramatic drop in 2021 and a significant negative value in 2022, reflecting severe financial instability. Lastly, Hospital G experiences a huge growth in 2020, with a nearly 1400% increase, but this is followed by a substantial drop in 2021.

Overall, the presence of negative values, particularly in Hospital D, highlights the financial difficulties faced by some institutions, and these are not only related to the COVID pandemic. The hospital sector is particularly fragile in terms of its net cash position, especially because they heavily rely on public funding, which is subject to fluctuations based on government policies and annual budgets. Any reduction or delay in funding can quickly impact the cash flow of hospitals. Additionally, hospitals face high fixed costs, including staff salaries, expensive medical equipment, and infrastructure maintenance. These costs remain constant even during periods of low activity, putting pressure on cash reserves if revenues decrease.

D. The cash – flow

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	31 796,13	39 619,22	24,60%	50 254,41	26,84%	21 147,08	-57,92%	N/A	N/A	
Hospital B	33 793 955,00	32 085 978,00	-5,05%	33 433 579,00	4,20%	12 347 338,00	-63,07%	28 393 164,00	129,95%	
Hospital C	26 241 388,01	42 739 727,97	62,87%	37 124 927,00	-13,14%	29 511 350,00	-20,51%	65 433 539,00	121,72%	
Hospital D	23 231 892,00	36 975 321,00	59,16%	37 809 168,00	2,26%	29 568 934,00	-21,79%	23 810 101,00	-19,48%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(2 155 243,00)
Hospital F	10 472 348,00	13 539 115,00	29,28%	13 155 121,00	-2,84%	10 977 247,00	-16,56%	7 792 803,00	-29,01%	
Hospital G	6 142 114,32	6 423 289,51	4,58%	7 718 200,27	20,16%	7 392 178,13	-4,22%	3 301 070,63	-55,34%	
Average	16 652 248,91	21 967 175,12	**31,92%**	21 548 541,61	**-1,91%**	14 969 699,04	**-30,53%**	25 746 135,53	**71,99%**	

Starting in 2019, the average value across the hospitals was 16,658,294.91. This increased significantly in 2020 to 21,697,775.21, representing a 31.48% growth on average. This surge likely reflects the importance of the financial support due to the pandemic, which might have driven up revenues or other financial metrics. However, in 2021, the average value slightly decreased by 1.91% and the trend continued downward more sharply in 2022, with a notable 30.23% decline, suggesting significant reductions in hospital activity or financial stress as the immediate impacts of the pandemic began to subside. Interestingly, by 2023, the average performance showed a strong recovery, with a 71.99% increase. Despite this rebound, the values were negatively increasing for most of the participating hospitals.

Looking at individual hospitals, there were varied performances. Hospital A saw significant fluctuations, with a strong increase in 2021 followed by a steep decline in 2022. Hospital B experienced a steady decline each year, with a particularly severe drop in 2022, though it showed substantial recovery in 2023. Hospital C had a mixed performance, with an initial increase in 2020, followed by a major decline in 2022, and then a robust recovery in 2023. Hospitals F and G, however, exhibited consistent downward trends throughout the period, with Hospital G facing particularly significant declines by 2023.

Overall, the data reflects the broader volatility and challenges faced by the healthcare industry during this period, driven largely by the effects of the pandemic and the subsequent recovery phases. The large percentage changes, especially in 2022 and 2023, highlight the uncertainty and fluctuating conditions under which these hospitals operated, with some managing to recover while others continued to struggle.

E. The Return on Equity ratio (ROE)

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	2,89	2,80	-2,92%	3,21	14,49%	(1,92)	-159,70%	N/A	N/A	
Hospital B	4,47	4,05	-9,42%	2,75	-32,05%	(11,73)	-526,53%	(1,28)	-89,13%	
Hospital C	0,56	0,62	11,45%	0,16	-73,49%	3,86	2250,24%	28,62	642,40%	
Hospital D	1,33	5,62	322,52%	2,43	-56,83%	(0,74)	-130,63%	4,72	-734,58%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100,00
Hospital F	0,21	1,40	582,46%	0,41	-70,65%	0,49	18,03%	0,41	-15,23%	
Hospital G	1,78	2,41	35,23%	4,04	67,42%	3,36	-16,77%	(14,78)	-539,75%	
Average	1,87	2,82	**50,54%**	2,17	**-23,10%**	(1,11)	**-151,43%**	3,54	**217,55%**	

Figure 10 - ROE evolution

On average, the ROE across the hospitals showed significant fluctuations over the years, with a notable increase of 50.54% in 2020 compared to 2019. This suggests a strong financial performance during this period, possibly due to initial responses to the COVID-19 pandemic with advances granted to these entities. However, the subsequent years, particularly 2022, marked a sharp decline, with the average ROE dropping to a negative value of 1.11, indicating a significant deterioration in financial returns on equity.

Examining individual hospital performances, there is a clear variability. For instance, Hospitals A and B exhibited relatively stable ROE values initially, but both experienced sharp declines in later years, particularly in 2022 and 2023. Hospital C, on the other hand, showed extreme volatility, with an enormous increase of 2250.24% in ROE during 2022, followed by a sharp decrease in 2023. This confirms the conclusion drawn with the other values calculated before, that the hospital C is showing post-pandemic effect in 2023, a year later than the general trend. Similarly, Hospital D demonstrated a significant rise in ROE in 2020, with a 322.52% increase, but this was followed by a steep decline in 2022. Hospital F displayed an even more dramatic pattern, with an extraordinary increase in 2020 (582.46%), which was not sustained, as seen by the subsequent declines. Hospital G also reflected a similar trend, with a significant increase in 2020 and a steady decrease in the following years, particularly a drop in 2023.

Overall, the analysis of ROE values across these hospitals suggests a pattern of initial strong performance during the early COVID-19 period, followed by a significant decline in subsequent years. The fluctuating ROE values highlight the instability in financial performance within the healthcare sector.

F. The Return on Assets (ROA)

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	0,02	0,02	-10,42%	0,02	15,70%	(0,01)	-132,71%	N/A	N/A	
Hospital B	0,03	0,03	-10,35%	0,02	-20,70%	(0,02)	-192,34%	0,01	-146,52%	
Hospital C	0,01	0,01	-14,26%	0,01	-24,55%	0,02	121,75%	0,12	540,71%	
Hospital D	0,01	0,02	163,29%	0,01	-45,30%	0,00	-85,78%	0,02	987,09%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(0,10)
Hospital F	0,01	0,02	48,90%	0,01	-30,35%	0,01	-0,09%	0,01	-7,08%	
Hospital G	0,01	0,01	-2,51%	0,02	40,61%	0,02	-12,98%	(0,03)	-259,50%	
Average	0,02	0,02	**14,68%**	0,01	**-15,23%**	0,00	**-74,93%**	0,03	**599,09%**	

Figure 11 - ROA evolution

In 2019, the average ROA across all hospitals was at 0.02, which remained relatively stable into 2020 with a slight increase of 14.68%. This indicates that hospitals were able to maintain a consistent return on their assets despite the challenges posed by the early stages of the pandemic. However, the following years saw considerable volatility. By 2021, there was a slight decrease in the average ROA, dropping to 0.01. This trend continued into 2022, where the average ROA fell to 0.00, representing a drastic reduction of 74.93%. This sharp decline could be indicative of the financial pressures faced by hospitals during this period, as they struggled with increased operational costs and reduced income due to the pandemic's impact.

Notably, several hospitals experienced extreme fluctuations in their ROA. Hospital D, for instance, showed an enormous increase in 2023, with a 987.09% rise, reflecting a significant recovery or financial adjustment after a substantial decline in 2022. On the other hand, Hospital C displayed a substantial positive swing in 2022, with a 121.75% increase, followed by a more modest but still significant rise in 2023. Conversely, Hospital B exhibited a severe downturn, with ROA declining by 192.34% in 2022 and a further 146.52% in 2023, signaling substantial financial challenges. Hospital G also faced difficulties, with a negative ROA in 2022 and a continued decline in 2023, emphasizing ongoing financial instability.

Overall, the average ROA trends across these hospitals indicate a sector under significant strain, particularly in the aftermath of the pandemic. While some hospitals managed to stabilize or even improve their ROA in the later years, others continued to face considerable financial difficulties.

G. Current liquidity ratio

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	1,89	1,74	-7,96%	1,73	-0,48%	1,68	-3,03%	N/A	N/A	
Hospital B	1,53	1,94	26,52%	1,87	-3,36%	1,73	-7,37%	1,45	-16,30%	
Hospital C	1,55	1,65	6,36%	1,42	-14,06%	1,25	-11,92%	1,21	-3,18%	
Hospital D	1,26	1,37	8,87%	1,30	-5,10%	1,26	-3,25%	1,23	-1,74%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,91
Hospital F	3,72	4,01	8,02%	3,36	-16,27%	3,09	-7,95%	2,70	-12,89%	
Hospital G	1,20	1,50	25,10%	1,35	-9,50%	1,43	5,19%	1,16	-18,70%	
Average	1,86	2,03	**9,55%**	1,84	**-9,59%**	1,74	**-5,42%**	1,55	**-10,91%**	

Figure 12 - Current liquidity ratio evolution

The analysis of the current liquidity ratio across the participating hospitals indicates a concerning downward trend over the years, which suggests potential issues in managing short-term liabilities effectively. Starting from an average of 1.86 in 2019, the ratio increased slightly to 2.03 in 2020, , which could be attributed to the financial support received during the early stages of the COVID-19 pandemic. However, this upward trend did not persist, as the average current ratio began to decline from 2021 onward. By 2023, the ratio had decreased to 1.55, representing a cumulative -10.91% decline since 2021. This continuous drop indicates that hospitals are increasingly struggling to maintain enough liquid assets to cover their short-term liabilities.

Looking at individual hospitals, Hospital A started at 1.89 in 2019 but saw a consistent decline to 1.68 by 2022, being the only one facing this negative scenario. However, when looking at the evolution percentages since 2021, only hospital G face a positive trend of 5.19% in 2022. Overall, the declining current liquidity ratios across the hospitals suggest growing financial challenges in maintaining sufficient liquid assets to meet short-term obligations. This trend could lead to increased financial stress, particularly if external pressures, such as the ongoing impacts of the pandemic or other economic factors, continue to affect the healthcare sector.

H. Acid liquidity ratio

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	1,82	1,69	-7,11%	1,74	3,01%	1,61	-7,67%	N/A	N/A	
Hospital B	1,30	1,76	35,49%	1,69	-4,19%	1,51	-10,50%	1,24	-17,97%	
Hospital C	1,35	1,52	12,76%	1,34	-11,77%	1,14	-14,78%	1,08	-5,20%	
Hospital D	1,15	1,25	8,13%	1,17	-5,76%	1,13	-3,69%	1,10	-2,41%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,91
Hospital F	2,60	2,81	7,94%	2,26	-19,37%	2,09	-7,50%	1,80	-14,05%	
Hospital G	1,10	1,39	25,48%	1,22	-11,91%	1,24	1,75%	1,00	-19,14%	
Average	1,55	1,74	**11,65%**	1,57	**-9,43%**	1,45	**-7,43%**	1,25	**-14,34%**	

Figure 13 - Acid liquidity ratio evolution

The analysis of the acid liquidity ratios across the hospitals shows several critical trends that reflect the hospitals' ability to meet short-term liabilities without relying on inventory. Overall, the data indicates a declining trend in the average acid liquidity ratio from 1.74 in 2020 to 1.25 by 2023, going in the same way with the same conclusions as for the current ratio.

The most notable decline occurred between 2021 and 2022, where the average ratio fell from 1.57 to 1.45, representing a -7.43% decrease. This drop suggests that hospitals faced increasing challenges in maintaining sufficient liquid assets, excluding inventory, to cover their immediate obligations during this period. This trend could be indicative of financial strains possibly exacerbated by the prolonged effects of the COVID-19 pandemic and the lack of financial support. The year 2020 stands out as an anomaly, with an average increase in the acid ratio by 11.65%. This rise likely reflects a response to the initial shock of the pandemic, where hospitals might have temporarily improved their liquidity positions. However, the subsequent years show a reversal of this trend, with liquidity ratios steadily declining, implying that these initial measures were not sustainable. By 2023, the average acid ratio had dropped to 1.25, with all hospitals experiencing significant negative changes, indicating worsening financial health.

I. LT debt/Equity ratio

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	28,00	33,12	18,29%	26,41	-20,26%	53,80	103,72%	N/A	N/A	
Hospital B	135,02	143,78	6,48%	135,03	-6,08%	154,32	14,28%	150,54	-2,44%	
Hospital C	98,98	96,43	-2,58%	80,84	-16,17%	68,99	-14,66%	42,94	-37,75%	
Hospital D	66,26	72,04	8,72%	58,80	-18,38%	58,69	-0,19%	59,49	1,36%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-
Hospital F	72,17	72,60	0,61%	73,99	1,91%	73,23	-1,02%	72,01	-1,68%	
Hospital G	111,04	163,10	46,89%	137,11	-15,93%	136,83	-0,21%	136,04	-0,58%	
Average	85,24	96,85	**13,61%**	85,36	**-11,86%**	90,98	**6,57%**	92,20	**1,35%**	

Figure 14 - LT debt/ equity ratio evolution

The average LT Debt to Equity ratio shows a slight increase over time, starting from 85.24 in 2019 and rising to 90.98 in 2022, before slightly improving to 92.20 in 2023. This trend suggests a gradual increase in the proportion of long-term debt relative to equity across the hospitals, indicating a growing reliance on debt financing. The most significant increase occurred between 2019 and 2020, with an average growth of 13.61%, possibly due to the impact of the COVID-19 pandemic, where hospitals have taken on additional long-term debt, especially the advances received that are considered in this category.

Looking at individual hospital performance, Hospital A exhibited significant fluctuations, with a sharp increase in 2022 of 103.72% after a decline in 2021 of 20.26%, suggesting varying financial pressures, potentially related to the financial supports. Furthermore, Hospital C experienced a steady decline in its ratio, particularly from 2021 onwards, with a 37.75% decrease in 2023. Meanwhile, Hospital G displayed a substantial increase from 111.04 in 2019 to 136.83 in 2022, followed by a minor dip in 2023, suggesting a reliance on long-term debt, which could pose risks if not carefully managed.

The average ratio's rise in 2022 after the decline in 2021 could indicate a sector-wide trend of re-leveraging post-pandemic. Overall, the LT Debt to Equity ratio analysis underscores the delicate balance hospitals must maintain between debt and equity financing. The overall trend suggests an increased reliance on long-term debt, particularly during and after the pandemic, raising concerns about financial vulnerability in the face of future uncertainties. However, the slight improvements in recent years indicate that hospitals are taking steps to manage their financial structures more prudently.

J. The degree of long-term financial independence

Name	2019	2020	Evolution (%)	2021	Evolution (%)	2022	Evolution (%)	2023	Evolution (%)	10/2021-12/2022
Hospital A	47,30	44,16	-6,63%	46,44	5,17%	40,42	-12,97%	N/A	N/A	
Hospital B	28,92	29,13	0,71%	28,81	-1,10%	25,97	-9,84%	25,50	-1,80%	
Hospital C	32,26	30,16	-6,53%	28,62	-5,10%	28,26	-1,24%	38,09	34,76%	
Hospital D	32,32	33,69	4,22%	34,13	1,31%	34,00	-0,39%	32,94	-3,12%	
Hospital E (Merger)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(9,89)
Hospital F	43,05	43,25	0,47%	41,85	-3,24%	41,73	-0,28%	41,76	0,07%	
Hospital G	28,75	25,62	-10,87%	26,33	2,78%	26,00	-1,27%	23,26	-10,55%	
Average	35,43	34,33	**-3,10%**	34,36	**0,09%**	32,73	**-4,75%**	32,31	**-1,28%**	

Figure 15 - Degree of LT financial independence evolution

The analysis of the degree of LT financial independence ratio across the hospitals reveals a general downward trend, reflecting a slight decline in the proportion of total capital that comes from equity over time. The average ratio starts at 35.43 in 2019 and gradually decreases to 32.73 in 2022, with a minor recovery to 32.31 in 2023. This trend indicates that hospitals are becoming slightly less reliant on their equity base and more dependent on other forms of financing, such as debt.

Specifically, Hospital A shows a significant drop from 47.30 in 2019 to 40.42 in 2022, with a sharp decrease of 12.97% in that final year, suggesting increasing financial pressure, probably coming from the post-pandemic situation. Hospital C, although starting at a lower base, shows a steady decline from 32.26 in 2019 to 28.26 in 2022, followed by a surprising increase to 38.09 in 2023, which may indicate a significant injection of equity or reduction in debt. Hospital G, which starts at 28.75 in 2019, also experiences a gradual decline, dropping to 23.26 in 2023, with consistent decreases, indicating a gradual erosion of equity as a proportion of total financing.

The overall trend across the hospitals suggests a sector-wide reduction in financial independence, with a slight recovery in 2023. This pattern may reflect broader economic challenges, particularly the financial strains imposed by the COVID-19 pandemic, leading hospitals to rely more on debt to finance their operations.

2.3. The interviews

2.3.1. The sample choice

During a qualitative study, selecting an appropriate sample size is crucial in order to gather a wide range of divergent information and to add depth and nuance to the research question. Given the complexity and variability in how hospitals across different regions may experience and implement cost accounting regulations, it was crucial to ensure that the sample included a diverse range of perspectives.

To achieve this, participants were selected from hospitals located in the three main regions of Belgium: Flanders, Wallonia, and the Brussels-Capital Region. This approach was intended to capture potential cultural, administrative, and regulatory differences that could influence how cost accounting impacts financial management across the country.

A total of 7 participants were recruited for in-depth interviews. The sample size, while relatively small, is consistent with the objectives of qualitative research, which prioritizes depth of understanding over breadth. The sample was considered sufficient based on the concept of data saturation, where additional data collection is unlikely to yield new insights. Indeed, some researchers (*Baker et al., 2012; Guest et al., 2006*) concluded that theoretical saturation is frequently reached after conducting approximately twelve interviews. In this context, the initial objective was to secure a sample of 10 participants, but several challenges were encountered. Although I was fortunate to have contacts within hospitals in the Liège region, many hospitals were unavailable to conduct interviews before

June. Subsequently, once the deadline was extended to August, language barriers became a significant obstacle. Specifically, most hospitals in the Flemish region were unwilling to participate in the study in English. To avoid potential issues with transcription accuracy, additional requests were made. Given the numerous refusals, and leveraging my linguistic skills, I conducted two interviews in Dutch to ensure that conclusions could still be drawn across the entire Belgian territory.

Furthermore, participants were selected based on their roles within the hospital's financial management teams and their familiarity with cost accounting practices. The selection criteria ensured that the participants had direct experience with the regulatory frameworks governing cost accounting in Belgian hospitals, as well as the practical challenges and opportunities these frameworks present.

Finally, to establish contact with my participants, I utilized a combination of personal connections and more formal outreach methods. Initially, I was able to connect with two individuals through my mother, who works in a hospital. These individuals were willing to participate in the study and subsequently reached out to some of their colleagues in other hospitals, one of whom also agreed to participate. To broaden my participant pool, I accessed the list of all Belgian hospitals by region available on the SPF Santé Publique website (*https://www.health.belgium.be/fr/sante/organisation-des-soins-de-sante/partage-de-donnees-de-sante/institutions-de-soins*). I then sent numerous emails to these hospitals, and while many did not result in participation, a few responses were positive and contributed to the final sample.

2.3.2. Presentation of the different participants

A total of 9 interviews were conducted: 4 from the Wallonia region, including 2 from the same hospital, 2 from the Brussels region, 2 from the Flemish region, and one specifically related to explaining the PACHA study. Due to time constraints and the inability to travel, all these interviews were conducted via the Teams platform.

To ensure confidentiality, the identities of the participants and the hospitals have been anonymized in this thesis. This decision was made because the thesis will be publicly accessible, and some participants expressed concerns about having their institutions cited, especially given the specific figures and data discussed during the interviews.

Hospital	***Region***	***Person***	***Profession***	***Language***
Hospital A	Wallonia	Mr. X, Mrs. X	Head of claim and recovery department and BMF analyzer, ISM department	French
Hospital B	Wallonia	Mrs. Y	Director	French
Hospital C	Wallonia	Mr. Y	General manager	French
Hospital D	Brussels	Mr. Z	Financial director	French
Hospital E	Brussels	Mr. W	Financial director	French
Hospital F	Flanders	Mr. V	Financial administrative director	Dutch
Hospital G	Flanders	Mrs. Z	Financial controller	Dutch
ULB	Brussels	Pol Leclercq	Founder of PACHA project	French

Figure 16 - List of participating hospitals

2.3.3. Analysis of the discourses

A. The objective of regulated cost accounting in hospitals

Historically, one of the objectives of regulated cost accounting was to make hospitals comparable in terms of financing. This was intended to ensure a level playing field where hospitals could be assessed and funded based on consistent and comparable financial data. The foundation of regulated cost accounting in Belgium is based on an old decree from 1987, which set the groundwork for the current practices. However, over the years, this objective has diminished in prominence and effectiveness, largely due to changes in the regulatory environment and the evolving complexities of hospital financing.

Regulated cost accounting serves several crucial objectives, and one of these is to align resources with costs, particularly as hospitals increasingly operate under lump-sum payment structures. By accurately matching costs with resources, hospitals can ensure that they are financially sustainable and capable of delivering quality care within the constraints of their budgets.

Furthermore, by using this regulated cost accounting methods, hospitals can make better decisions at the managerial level. For example, if a hospital operates on multiple sites and identifies that a particular department is underperforming at one location, the hospital management can make informed decisions to consolidate activities at the most efficient place. This strategic allocation of resources not only optimizes operations but also enhances overall hospital efficiency. In the same way, as hospitals are using public resources, regulated cost accounting plays a vital role in ensuring that these latest are used wisely. By making intelligent, data-driven decisions, hospitals can avoid waste of the available funds.
Transparency and accountability are also key objectives of regulated cost accounting. By maintaining detailed and accurate accounts, hospitals can be accountable to all stakeholders, including doctors, general directors, and the broader community. This transparency fosters trust and ensures that all parties are informed and involved in the hospital's financial status and decision-making processes.

Finally, the last objective is that regulated cost accounting enables hospitals to estimate financial outcomes in advance, providing a clearer financial roadmap rather than leaving them to navigate blindly. This proactive financial management approach is essential for maintaining stability and planning for future expenditures.

B. The advantages of hospital's financial system

Financial management in Belgian hospitals offers several advantages. First of all, a major benefit of this system is the predictability that comes from the use of fixed amounts in budgeting and reimbursement processes. This predictability allows hospitals to plan their financial operations with greater accuracy, reducing the uncertainty that can come from variable income.

Another significant advantage is the reduced manipulability of the financial system. Because the amounts are fixed and standardized, there is less opportunity for discrepancies or manipulations in the reporting. This fosters a more transparent and equitable financial environment within the healthcare sector because before, in the 90s, the amounts received were not fixed, leading to a lack of efficiency and inequalities between the hospitals.

Additionally, a key aspect of this system that has been highlighted in many interviews is the implementation of lump-sums for low variability care, which standardize payments for basic medical procedures across all hospitals. For instance, a basic childbirth classified as severity 1 is reimbursed at the same rate in every hospital, regardless of the specific details, such as the involvement of multiple pediatricians, the use of anesthesia, or the performance of additional exams. This standardization simplifies the financial management process and ensures that hospitals are reimbursed fairly.

C. The disadvantages of hospital's financial system

The financial management system in Belgian hospitals, while providing several advantages, also presents significant challenges and disadvantages. One of the most pressing issues is the limitation imposed by fixed budgets. Even if it is very useful to predict the amounts of income received, these budgets do not always evolve in line with the actual costs incurred by hospitals, leading to a potential mismatch between available resources and the real financial needs of healthcare institutions.

The complexity of the system is another critical concern that every participant has emphasized during the interviews. The financial management process involves numerous rules and regulations, such as the coding requirements related to the ICD-10 guidelines for the B2 part of the BMF. These rules influence the amount of funding a hospital receives, and as a result, the financial system requires input from multiple stakeholders, far beyond just the financial director and the accounting department.

Moreover, the sheer volume of rules has led to a situation where many of them are no longer clear, due to the multitude of changes and updates that have been applied over time. This lack of clarity, combined with the intricacy of the system, means that very few people have a comprehensive understanding of all the details involved, which can lead to inefficiencies and errors in financial management.

Another significant drawback is the disparity in funding among hospitals, even for the same pathologies and care. The efficiency of a hospital's RCM (Minimum Clinical Summary) service, which is responsible for coding stays in terms of pathology, can result in one hospital being better financed than another, regardless of the actual care provided. This situation essentially rewards administrative efficiency rather than reflecting the real activity and quality of care.

Additionally, the duality between the BMF and independent doctor fees creates complex discussions and decisions in the sense of some participants. Indeed, when the BMF is insufficient, hospitals must navigate difficult choices, which can further complicate financial discussions with doctors because when the BMF is underfinancing, most of the time hospitals will reduce the part given to the independent doctors. The system is also criticized for its perversity, as it sometimes seems to reward poor quality care with additional resources. For example, if a patient develops a serious condition, the hospital may receive additional funding for treating that condition, despite the fact that it resulted from substandard care in the first place.

Lastly, there is a significant time lag between the implementation of financial measures or decisions and their impact. Decisions made today may not yield results for another two years, which makes it challenging to address current financial pressures effectively and to plan for future needs. Furthermore, the system's structure involves multiple levels of authorities, each with their own rules, which can lead to delays in implementing necessary corrections. Authorities often take too long to address issues, causing prolonged inefficiencies that eventually require retroactive measures, adding another layer of complexity to the system.

D. The advantages of regulated cost accounting

One of the primary benefits is that regulated cost accounting provides a clear guideline for financial management. These guidelines help hospitals navigate the complexities of cost allocation and budgeting, ensuring that financial decisions are made consistently and in accordance with established standards. Since all hospitals apply the same set of rules coming from a common guideline, it ensures that resources are allocated fairly and uniformly across different institutions, making it easier for concerned authorities to compare financial performance and ensure equity in funding.

Additionally, regulated cost accounting serves as a significant driver of efficiency within hospitals. Even if all these rules can seem very complex, by adhering to standardized accounting practices, hospitals can better identify areas where resources may be used more effectively, leading to improved operational efficiency and cost management.

Finally, regulated cost accounting acts as an essential communication tool with stakeholders. The reality faced by doctors and other medical staff often differs from the perspectives of cost management. Simply presenting overall financial figures may not resonate with them. However, by breaking down analytics by service or department, the data becomes more accessible and understandable at their level, facilitating clearer communication and better alignment of objectives.

E. The disadvantages of regulated cost accounting

Regulated cost accounting also presents a list of several disadvantages that can complicate financial management and decision-making. One of the biggest inconveniences is the lack of flexibility that hospitals face in applying regulated cost accounting methods. Hospitals are bound by allocation keys for each cost center, which limits their ability to tailor cost accounting practices to their specific needs or circumstances. In this way, unlike companies that can adjust their prices or make savings when facing the rising costs of inflation, hospitals do not have the same flexibility. This constraint means that hospitals must absorb increased costs without the ability to pass them on or adjust their budgeting practices accordingly.

Another issue is that regulated cost accounting does not always reflect the reality on the ground. The accounting rules and allocation keys in use may be outdated, leading to discrepancies between reported financial data and the actual costs incurred by the hospital. This issue is compounded by the fact that the rules are not always clear, resulting in inconsistent interpretations among hospitals. Different institutions may allocate costs based on their own understanding, which can lead to variations that do not accurately represent the true financial situation.

The accounting framework itself is also criticized for being out of date, as it does not evolve regularly to keep pace with changes in the healthcare environment. Furthermore, while a minimum accounting plan is prescribed, it is quite detailed for what is supposed to be a basic plan, yet not all hospitals adhere strictly to it. This lack of adherence at the primary imputation level introduces subjectivity and variability, further distancing the reported data from reality.

Lastly, another major drawback is the mechanical nature of the system, which is rarely verified or questioned. If we take the example of pharmacy revenues, the system includes all revenues from human corporeal material, such as those harvested from cadavers or living donors and then processed for resale. However, these items do not appear as expenses under pharmaceutical products, leading to imbalances when calculating revenue minus expenses. Similarly, blood products are part of pharmacy revenue but are not reflected in the pharmaceutical expenses, resulting in financial data that does not add up correctly.

F. The impact of regulated cost accounting on financial decisions, budgeting procedures:

The impact of regulated cost accounting on budgeting and financial decision-making in hospitals has evolved significantly over the years. One of its current roles, not only for this sector, is helping in making targeted decisions, allowing hospital administrators to focus on areas that require immediate attention. However, the influence of cost accounting on hospital financing has diminished over time. Approximately 20-30 years ago, accounting played a substantial role, with a 60-70% impact on hospital

financing. Today, its influence has reduced significantly, now accounting for only about 10-15% of the impact on hospital finances. This shift reflects the increasing complexity of healthcare financing and the reduced direct reliance on traditional accounting practices for financial planning and decision-making.

G. The impact of regulated cost accounting on hospital's global activity:

The impact of cost accounting on the overall activity of hospitals is multifaceted, influencing both patient care and cost management. One of the key challenges is finding a balance between these two aspects. For example, investments in advanced technologies, such as surgical robots, require careful consideration of both their cost and their potential benefits for patient outcomes. Cost accounting helps hospitals evaluate these factors, ensuring that patient care remains a priority while also managing expenses effectively.

Indirectly, cost accounting also plays a role in shaping the activities of medical staff. By analyzing the efficiency of different services and sharing these insights with doctors, hospitals can encourage adjustments in practices that may lead to improved efficiency and better use of resources. This feedback loop allows medical professionals to adapt their levels of activity to address inefficiencies, ultimately benefiting both patient care and hospital operations. Moreover, the system of RHM and data coding involves all hospital personnel in the financial management process. This means that the quality of the information recorded by staff directly impacts the hospital's financing. As a result, cost accounting has a direct influence on the accuracy and completeness of the data that underpins financial decisions and resource allocation.

However, despite these influences, there is a growing concern that cost accounting currently has too little impact on hospital activity. While it provides valuable insights and guidelines, its ability to drive significant changes in hospital operations and overall activity appears limited in the current system, especially because of the lack of comprehension highlighted just above.

H. Regulated cost accounting and the relation with underfinancing:

While some will say it is not directly tied to cost accounting, regulated cost accounting can have indirect impact on the financial situation of a hospital, often accentuated by the complexity of the healthcare financing system. One key issue arises from the way depreciation is handled in hospital finances. Indeed, because depreciation time is fixed for the hospitals, it does not always reflect the true financial reality. As an example, hospital infrastructures are typically depreciated over 33 years, yet the regional envelopes that fund these infrastructures are calculated over 25 years. This discrepancy can lead to financial shortfalls, as the funding does not align with the actual depreciation schedule, leaving hospitals underfunded for the maintenance and renewal of their facilities.

Another problem discussed during the interviews is the existence of salary scales for each type of personnel. These scales are fixed and do not allow for much social progress, leading to a general feeling of underfunding among hospital staff. Furthermore, the complexity of the healthcare financing system further exacerbates the issue of underfunding, particularly for smaller hospitals. These institutions often lack the resources to employ experts who can ensure that all financial data is accurately compiled and verified before submission to the authorities. Without such expertise, smaller hospitals are more prone to errors or omissions in their financial reporting, which can result in reduced funding and an inability to fully meet their operational needs.

I. Potential challenges face by hospitals with the current financial system and cost accounting structure:

Hospitals face several significant challenges within the current system, which complicate their operations and financial management. Outside all the disadvantages mentioned before, hospitals are increasingly finding themselves in competition with one another, which further exacerbates the complexity of the system. The competitive environment discourages collaboration and openness, making it difficult for hospitals to work together effectively. By the way, one of the challenges mentioned in an interview is related to working within networks, as hospitals are often hesitant to share information that could impact their financial standing. This reluctance stems from a fear of losing competitive advantages, as the financial details that support hospital funding are seen as critical assets that, if shared, could potentially weaken a hospital's financial position within the network.

Another major challenge is the issue of aligning certain types of revenues and expenses that is becoming more pronounced with the expansion of flat-rate financing. Flat-rate systems simplify budgeting by providing fixed amounts for specific services or procedures, but they can also create mismatches between the revenue a hospital receives and the actual costs incurred. As flat-rate financing becomes more widespread, these mismatches could intensify, leading to financial strains for hospitals that find it difficult to cover all their expenses under the fixed rates provided.

Finally, the existence of all these disadvantages, complexities and challenges is mainly due to the resistance to change within the healthcare environment. Hospitals often operate within systems that are deeply entrenched and slow to adapt. This resistance makes it challenging to implement necessary changes, whether they are related to financial management, operational procedures, or broader organizational reforms.

J. The impact of COVID pandemic:

The COVID-19 pandemic had a profound impact on the financial management of hospitals, revealing both vulnerabilities and opportunities within the system. Despite rising costs during the pandemic, hospital budgets were not revised accordingly, which may explain why many participating hospitals reported negative financial outcomes in their 2022 analyses, particularly after the cessation of financial support that was provided during the pandemic period.

During this period, hospitals experienced also significant disruptions, including closures and a downturn in activity levels, with revenues essentially frozen at 2019 levels. However, the fixed portion of the BMF and the financial support from the government provided a financial cushion, helping to mitigate some of the immediate financial impacts.

In fact, during the height of the pandemic, hospitals received financing, even though their operating costs were lower due to the reduced levels of activity. This situation led to a temporary financial surplus for some hospitals, but as normal operations came back, the absence of ongoing pandemic-related financial support left hospitals facing the compounded financial challenges of the post-COVID period.

Additionally, the pandemic also exposed the limitations of the fee-for-service system, particularly for doctors. Academic hospitals faced a unique disadvantage during this time. Doctors in these institutions were often at a standstill, yet the hospitals continued to pay their salaries, unlike the rest of the non-academic institutions, where doctors were compensated based on the services they billed. This discrepancy highlighted the financial strain placed on academic hospitals, which had to bear the cost of salaries without corresponding revenue from medical services.

However, one of the positive outcomes of the pandemic was that it prompted hospitals to ask more pertinent financial questions and to conduct more thorough analyses before making decisions or investments. The crisis underscored the importance of careful financial planning and highlighted areas where improvements could be made.

K. Improvements to consider for the future:

To improve the future of hospital financial management and cost accounting, several key areas should be considered regarding the participants. First, although the current detailed accounting system is logical in its design, there is a clear need to reduce their complexity. Simplifying the system, however, presents a significant challenge, as the healthcare sector itself is inherently complex. Any efforts to streamline accounting must carefully balance simplicity with the need to capture the full scope of financial and operational realities in hospitals.

Further, harmonization across hospitals is necessary, as the high level of autonomy currently enjoyed by hospitals can lead to inconsistencies in financial management and reporting. For example, the amortization periods should be adjusted to align more closely with regional financing mechanisms, ensuring that funding schedules accurately reflect the lifespan of hospital infrastructure and equipment.

In the near future, special attention must be paid to the situation of doctors, particularly salaried doctors in academic hospitals. The financing provided under the B9 section is often judged as insufficient by the concerned institutions to cover the actual costs. This issue requires urgent attention to ensure that these professionals are adequately compensated and that the hospitals can continue to support their vital roles. In terms of doctors' fees, there should be a reassessment of how they are awarded, with an examination of changes that have occurred since the inception of the current payment methods. This review could help ensure that compensation is fair and reflective of the current healthcare environment, ultimately benefiting both doctors and hospitals.

Looking ahead, there is a growing consensus that the current financial system may need to be restructured or even replaced. The existing framework has potentially reached its limits, as evidenced by the increasing underfunding of many hospitals. Aligning the Belgian system more closely with those of other European countries may provide a more sustainable and equitable solution. However, before thinking this big change, some solutions can be putted in place to make it easier for hospitals financially speaking. In this sense, enhancing feedback mechanisms should already be a great step forward, providing hospitals with more insights into the data they are recording. By understanding what is being tracked and why, hospitals can better focus on meaningful improvements and avoid unnecessary administrative burdens. In addition, creating more federal-level working groups of experts could facilitate the discussion of these challenges and the development of effective solutions. Such collaboration could lead to more unified and efficient practices across the sector.

Because of the quantity, complexity and time it takes for the financial department to meet all the legal requirements, maybe there is a need for improved IT tools that minimize the need for manual adjustments by accountants and accounting teams. These tools would reduce the administrative burden and increase accuracy in financial reporting.

There should also be greater encouragement to create networks of hospitals. Collaboration among hospitals could lead to more efficient use of resources and better overall care, but this requires overcoming the existing reluctance to share financial data due to competitive pressures.

Finally, one of the most interesting solution would be to further develop the cost-per-pathology model coming from the PACHA study. This study has been created around the 2000s, and currently, 17 hospitals in Wallonia and the Brussels region are participating. In Flanders, the project is less developed, although one of the Flemish participants mentioned a 'Möbius' project that has just been launched and seems to have the same objective.

So, the idea, in short, is to split the financing of today's nomenclature into two sectors. For instance, one sector should only finance the doctors because, today, when an act is financed in a hospital, the entire act is actually financed, including both the medical part (the doctor) and the operational costs. To achieve this goal, a classic system is used, which is a cost calculation system, and from these costs, prices are determined. The first step is, therefore, to calculate the costs of a hospital, and there are two possible methods: One approach starts from the global cost of the hospital and tries to divide it into costs per DRG (Diagnosis-Related Group), or a more basic approach that tries to look at what each patient consumes and calculate the cost per patient based on the cost of each resource consumed by each type of patient. In the cost calculation system by pathology, the first proposed system is used. However, the first difficulty in this system is determining which hospital costs are related to hospitalized patients, as only hospitalized patients can be linked to a DRG. Next comes the step of the case mix, where one starts from a global cost, and the case mix represents the different DRGs. Based on a cost weight scale, it will be possible to multiply each DRG with the corresponding weight, and the sum will correspond to the cost units of the entire hospital.

The goal is to allow a hospital to compare the management of a pathology in its facility with others and understand whether the funding system based on lump sums is sufficient or not. However, a major difficulty comes from the data source, namely cost accounting. Indeed, the latter is much too detailed and generally poorly managed. To have a cost system by pathology, one would need to start with good analytical accounting of cost centers, and today, this is not the case in Belgian hospitals. This is therefore a significant criticism that can be made of cost calculation by pathology, as it relies on a series of data that are probably debatable, and the scientific sample lacks precision due to the fact that the Dutch-speaking region is not participating in this study, or at least very little.

2.4. Discussion

Before the COVID-19 pandemic, the financial situation of Belgian hospitals was generally stable, yet significant underlying pressures exposed vulnerabilities within the system. Healthcare expenditure in Belgium accounted for approximately 10% of the national GDP, which was in line with the European Union average (*MAHA analysis, Belfius, 2019*). However, despite this substantial investment in healthcare, hospitals were operating with considerable financial constraints. These constraints were primarily due to low operating margins and rising costs, which were exacerbated by stringent regulations on healthcare spending between 2014 and 2018. While these regulations were necessary to control costs, they also restricted the financial flexibility of hospitals, forcing them to operate within tight budgetary limits and leaving little room for financial maneuvering. Consequently, hospitals faced a scenario where even minor financial missteps could have significant impacts, revealing the fragility of their financial stability. Indeed, these trends can be highlighted through the financial ratios calculated just before. For instance, in 2019 the average ROE of the participating hospitals was at 1,87, suggesting that sector is generating very little profit relative to its equity.

The quantitative conclusions drawn for 2019 were strongly validated during the interviews, who highlighted several disadvantages that align with the data. For instance, the complexity of the financial management system was frequently cited as a major challenge, contributing to inefficiencies and errors that exacerbated financial instability. Additionally, the rigid budgetary constraints imposed by the system often left hospitals with limited flexibility to adapt to changing financial conditions, making

it difficult to address immediate financial pressures. Moreover, he regulated cost accounting framework in place before the pandemic played a crucial role in exacerbating the financial vulnerabilities of Belgian hospitals. As for the financing system, the rigid cost structures and limited financial flexibility prevent hospitals to make adjustments regarding the financial challenges they are facing. The system's inability to adapt to changing financial conditions meant that hospitals were often operating at the edge of financial viability, with very little margin for error.

Subsequently, the quantitative analysis of participating hospitals revealed a significant decline in key financial metrics, particularly in the years following the onset of the COVID-19 pandemic. The 2020 MAHA study of Belfius demonstrated a sharp 8.1% drop in revenue, primarily due to the reduction in non-COVID-related activities and a general decrease in hospital admissions. Concurrently, hospitals faced escalating costs associated with the pandemic, including expenditures on personal protective equipment, infrastructure modifications, and additional staffing requirements. Given these challenges, the financial support provided by the government proved to be crucial. The importance of this support is underscored in the individual financial analyses presented in the annexes, where it is evident that many hospitals in the sample exhibited very low or even negative profitability ratios. These ratios were already fragile before the pandemic, highlighting the critical role that government assistance played in helping hospitals navigate this period of financial strain.

The next year, the financial situation of Belgian hospitals was precarious, heavily influenced by the ongoing effects of the COVID-19 pandemic. While government interventions provided temporary relief, the underlying financial vulnerabilities persisted, highlighting the urgent need for structural reforms to ensure the long-term sustainability and resilience of the healthcare system in Belgium. Moreover, the increased reliance on debt during this period further weakened the solvency of hospitals, making them more vulnerable to future financial challenges (*MAHA analysis, Belfius, 2021*). This trend has also been supported by the financial analyses made for this study. In fact, even if the financial support helped to maintain a reasonable level in 2020, all the ratios and values went down during 2021, showing significant risk for the long-term viability and financial sustainability of hospitals.

During the interviews, hospital administrators highlighted that the pandemic revealed significant flaws in the financial management system, particularly the rigidity of hospital budgets. While the fixed portion of the BMF and government financial support provided some temporary relief, the lack of flexibility within the budgetary system became a major issue once these support measures were withdrawn. The rising costs associated with the pandemic were not adequately reflected in the hospital budgets, leading to negative financial outcomes. Additionally, the outdated nature of the regulated cost accounting system compounded these difficulties. Because the system does not regularly evolve to keep pace with changes in the healthcare environment, it often fails to accurately represent the true financial needs of hospitals, especially during crises like the pandemic. This disconnection between the prescribed accounting practices and the actual financial realities forced hospitals to operate under an inflexible and outdated framework, further straining their financial stability.

However, the interviews also revealed some positive outcomes from this challenging period. Before the pandemic, many hospitals were overly confident, relying on their previous positive financial performance. When COVID-19 hit and some hospitals faced financial difficulties, it prompted a necessary reevaluation of financial planning practices. This led hospitals to adopt a more analytical and strategic approach to financial decision-making, better preparing them to navigate future crises.

According to the MAHA 2022 and 2023 financial analyses, the situation of Belgian hospitals remains fraught with challenges, reflecting the ongoing effects of the COVID-19 pandemic and broader macroeconomic difficulties. In 2022, hospitals experienced a 6.6% increase in revenue compared to the previous year, driven by the gradual return of non-COVID-related medical procedures. However,

this revenue growth was overshadowed by an 8.0% rise in operating costs. According to Belfius, the sector is struggling with the post-pandemic effects, compounded by rising costs due to inflation and energy price surges. The gap between rising costs and slower revenue growth resulted in a current operating deficit of €181 million, signaling a concerning financial deterioration. All this data closely aligns with the observation of the financial analyses made on the sample of hospitals used for this study. Indeed, the average cash flow in our findings was at its lowest level in 2022. Moreover, a negative ROE and a zero ROA further confirm the depth of the financial challenges. The MAHA study's report of rising operating costs and the consequent operating deficit provide a clear context for these negative profitability metrics. Additionally, the lowest liquidity ratios since 2019 has been identified in the analysis. Once again, if these numbers need to be related to what has been highlighted during the interviews, the problem come from this rigidity. While hospitals are still facing COVID issues, another "crisis" arrives and even if the costs of energy increase exponentially all over the country, the budgets as not been reviewed in consequences.

Finally, the Belfius MAHA study projects that 2023 will continue to be a challenging year for Belgian hospitals, with several key financial pressures likely to persist or even worsen. The study anticipates that hospitals will rely heavily on short-term debt to manage their cash flow needs in 2023. This growing reliance on debt could exacerbate the financial instability of hospitals, particularly if interest rates increase or if government financial support diminishes. They also highlighted that profitability is expected to remain under pressure in 2023. Given the sustained high operating costs and the potential for slower revenue growth, hospitals may struggle to achieve positive financial outcomes, with some institutions possibly facing deficits similar to those recorded in 2022.

However, insights from the interviews reveal that these financial challenges are somewhat mitigated by the fact that, in 2023, hospital financing remains based on 2019 results, providing a level of predictability that may help stabilize the situation post-crisis. This stability has likely contributed to the modest improvement in some financial metrics for certain hospitals. As one interviewee aptly put it, hospitals have had to "try to be better with less," meaning that despite the system's financial constraints, hospitals have been compelled to make the most of what they have. Remarkably, some hospitals have managed to improve their performance, though the situation remains far from perfect and is not without risks.

These conclusions are strongly supported by the financial ratios calculated for the participating hospitals. Although the average cash-flow has increased, liquidity ratios continued to decline throughout 2023. On a more positive note, profitability indicators improved during this period, with the return on equity turning positive again.

2.5. Assumptions for 2024

In 2024, the funding allocation for Belgian hospitals will revert to the "normal" calculation methods, relying on financial results from 2022. This return to standard procedures, while providing some predictability, presents challenges given the financial pressures hospitals faced in 2022, including the lingering impacts of the pandemic and rising operational costs.

As it has been noted in numerous sources and demonstrated by the data, the financial results have not returned to the levels seen in 2019, and in many cases, they have even reached their lowest points since that year. Given this context, it is understandable why many believe that the funding for 2024 could be disastrous, especially when it was already not so glorious in 2019 without crisis. As a consequence, the expectation is that, with financial performance still significantly lagging behind pre-pandemic levels, the allocated budgets will likely be insufficient to meet the ongoing and increasing demands faced by hospitals, further exacerbating the already challenging financial situation.

However, the Belgian government has recently implemented significant measures to address hospital finances for 2024. On the recommendation of Frank Vandenbroucke, the Council of Ministers approved a global operating budget for hospitals, setting it at €11.639 billion for the year. Additionally, the government extended the freeze on medical fee supplements until December 31, 2024, preventing any increase in tariffs beyond the current ceilings (*Press-conference Frank Vandenbroucke, 2024*). Nevertheless, hospitals where the fee supplement percentage is below 150% are permitted to adjust this rate, provided that the additional funds are exclusively allocated to medical services, as agreed upon between hospital management and the medical council.

Adding to the complexity of the financial situation, hospitals are also facing severe staffing shortages, a problem that has been worsened by the pandemic and ongoing financial pressures. As noted by Frank Vandenbroucke, these staffing challenges, alongside financial difficulties, highlight the urgent need for healthcare reform in Belgium. The strain on hospital staff and the challenges in filling vacant positions not only hinder the delivery of healthcare services but also threaten the financial viability of hospitals. The government acknowledges the necessity for systemic changes to ensure that hospitals can continue to provide high-quality care while effectively managing their financial responsibilities.

3. Conclusion

The objective of this study was to assess the potential impact of regulated cost accounting on the financial management of Belgian hospitals. A deductive methodology was employed, starting with a literature review to establish a foundation of existing knowledge in the field. This approach aimed to provide an overview of the current state of research while also deepening the understanding of the financial framework within hospitals. This was particularly important for those unfamiliar with the sector, as it is not extensively covered in our master's degree program.

To find an answer to the main question, the research collected specific data, including quantitative financial metrics and qualitative insights from interviews with professionals in the field. First, a financial analysis of each participating hospital was conducted to draw overall conclusions and gain insight into their financial health. This initial analysis allowed the discussion section of this thesis to determine whether the results aligned with those found in studies by Belfius. Subsequently, to gain qualitative insights into the financial situation and further explore the issue, 9 professionals from the hospital finance sector were interviewed. These interviews aimed to understand the practical realities on the ground and to link the findings with the insights gathered from scientific literature as well as the quantitative data.

The findings of the study revealed that while regulated cost accounting provides a necessary framework for standardization and consistency in financial management, it also imposes significant constraints. The lack of flexibility within the system has made it difficult for hospitals to adapt to changing financial conditions, particularly during periods of crisis, such as the COVID-19 pandemic. This rigidity has led to inefficiencies and a disconnection between reported financial data and the actual costs incurred by hospitals, resulting in financial strain and decreased stability.

Another significant finding of this study is that the financial system in Belgian hospitals has become overly complex, to the point where it is no longer fully comprehensible, even for some professionals within the sector. This complexity introduces a higher likelihood of errors in financial reporting and data management, which can, in turn, negatively impact the accuracy of the financial information available. These inaccuracies and misunderstandings within the financial system can lead to

misallocation or underestimation of funding, ultimately resulting in hospitals receiving less financial support than they may actually need.

During the pursuit of an answer to the main research question, a significant matter emerged that proved to be particularly relevant in highlighting areas for improvement within this sector. The question is: "Is a hospital a business like any other?" This inquiry opens a critical discussion about the unique financial and operational challenges that hospitals face compared to typical businesses, emphasizing the need for tailored approaches to financial management and regulation within the healthcare sector. Even though a hospital receives government support and is a social service, it should not be assumed that it is immune to bankruptcy. It is crucial to maintain this perspective in mind, not only for the sustainability of the hospital but also for the health of the population, which remains at the core of this sector's objectives.

This thesis contributes to academic literature by offering an in-depth analysis of the impact of regulated cost accounting on the financial management of hospitals, specifically within the Belgian context. It explores the nuances of cost accounting in a decentralized healthcare system, adding to the body of knowledge on how regulatory frameworks influence financial decision-making in public health institutions. Furthermore, it bridges the gap between theoretical concepts of cost accounting and their practical applications in the complex and highly regulated hospital environment. By integrating qualitative and quantitative research methods, the thesis also enriches the methodological approaches to studying financial management in healthcare.

In practice, this thesis provides valuable insights for hospital administrators, financial managers, and policymakers by highlighting the strengths and weaknesses of current cost accounting practices. It offers practical recommendations for improving financial management efficiency, transparency, and accountability in hospitals. Moreover, the findings can inform policy revisions and the development of better regulatory frameworks that align with the realities of hospital operations, ultimately contributing to more sustainable financial practices and better healthcare outcomes.

In conclusion, while regulated cost accounting plays a critical role in hospital financial management, it faces significant challenges in addressing the complexities of contemporary healthcare systems. The current model, while ensuring a degree of consistency and transparency, may lack the flexibility needed to adapt to the rapidly changing demands of the healthcare environment. This thesis highlights the need for reforms that introduce more adaptable mechanisms within the regulatory framework, possibly drawing inspiration from initiatives like the PACHA study. Such reforms would help ensure that hospitals can achieve financial stability while continuing to deliver high-quality care, even in the face of unforeseen challenges.

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ANNEXES

ANNEXE I: Financial analysis of hospital A

Working capital

	2019	2020	2021	2022
Current Assets	367 508,42	403 104,33	385 567,25	384 825,59
Current Liabilities	189 934,29	223 759,61	205 784,83	218 132,13
Working Capital	**177 574,13**	**179 344,72**	**179 782,42**	**166 693,46**

The analysis of the working capital figures of this hospital reveals a relatively stable management of current assets and liabilities between 2019 and 2021, signifying that they have no issues in covering their short-term debts despite the disruptions caused by the COVID-19 pandemic. However, the significant decrease in 2022 suggests increased financial pressures and liquidity challenges.

Working capital requirement

	2019	2020	2021	2022
Inventory	11 085,37	13 186,49	14 452,46	15 034,26
Short-term Receivables	232 222,98	219 286,77	237 749,36	261 382,42
Accruals (assets)	5 329,10	5 353,35	7 044,24	13 513,21
TOTAL for assets	248 637,45	237 826,61	259 246,06	289 929,89
Debts over 1 year due within the year	2 859,28	2 895,34	2 862,15	22 168,14
Trade Payables	79 687,49	74 937,12	83 998,42	79 683,44
Taks, Social and Salary Liabilities	67 824,34	108 810,60	77 924,78	75 175,99
Advances Received	286,22	212,36	137,71	103,83
Other Short-term Liabilities	39 276,96	36 904,18	40 861,77	41 001,20
Accruals (Liabilities)	4 466,10	7 898,83	16 860,01	11 020,14
TOTAL for liabilities	194 400,39	231 658,43	222 644,84	229 152,74
Working Capital Requirement	**54 237,06**	**6 168,18**	**36 601,22**	**60 777,15**

In 2019, the working capital requirement was of a total amount of 54,237.06, indicating a moderate need for financing to cover operational activities. In 2020, the amount drastically decreased to 6,168.18 and this could be attributed to advances granted by the government related to the pandemic situation. In 2022, in link with the decrease in working capital seen before, the WCR rose sharply, reaching its highest level over the analyzed period.

Net cash position

	2019	2020	2021	2022
Working Capital	177 574,13	179 344,72	179 782,42	166 693,46
Working Capital Requirement	54 237,06	6 168,18	36 601,22	60 777,15
Net Cash	**123 337,07**	**173 176,54**	**143 181,20**	**105 916,31**

This positive net cash situation indicate that the available cash was sufficient to cover short-term debts, suggesting that the hospital's activities were well-financed during the four years analyzed. In 2020, the reduction in WC, combined with the high WCR and resulting in a high net cash position, could be once again related to the additional pandemic funding granted, which allowed the hospital to comfortably meet its short-term obligations. By the way, in 2022, we can highlight a notable drop in net treasury to 105,916.31. Although the WC was still greater than the WCR, the shrinking margin signaled increased financial pressure and a tighter cash situation for the hospital.

Cash-flow

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances
Profit for the year	**9 236,04**	**9 291,01**	**(23 494,53)**	**11 037,20**	**(4 646,16)**	**(6 387,29)**	**(13 141,41)**
Depreciation Allowances	23 908,74	30 106,70	30 106,70	38 358,13	38 358,13	29 819,33	29 819,33
Value adjustment Allowances	(1 365,74)	47,81	47,81	1 032,78	1 032,78	(2 302,37)	(2 302,37)
Provisions for Risks and Charges	-	-	-	-	-	-	-
Value Adjustments on Other Current Assets	-	-	-	-	-	-	-
Non-recurring Depreciation and Value Adjustments	17,09	-	-	-	-	-	-
Value Adjustments on Financial Assets	-	173,70	173,70	-	-	-	-
Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-	-
Losses on Disposal of Fixed Assets	-	-	-	-	-	17,41	17,41
TOTAL NON-CASH EXPENSES	**22 560,09**	**30 328,21**	**30 328,21**	**39 390,91**	**39 390,91**	**27 534,37**	**27 534,37**
Capital Grants Allocated to Retained Earnings	-	-	-	-	-	-	-
Reversal of Depreciation and Value Adjustments on Tangible and Inta	-	-	-	-	-	-	-
Reversal of Value Adjustments on Financial Assets	-	-	-	173,70	173,70	-	-
Reversal of Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-	-
TOTAL NON-CASH INCOME	**-**	**-**	**-**	**173,70**	**173,70**	**-**	**-**
CASH-FLOW	**31 796,13**	**39 619,22**	**6 833,68**	**50 254,41**	**34 571,06**	**21 147,08**	**14 392,96**

In 2019, the cash flow stood at 31,796.13, reflecting a stable financial situation before the impact of the pandemic. In 2020, with the introduction of COVID advances, the cash flow increased to 39,619.22. However, without these advances, the cash flow would have plummeted to an amount of 6,833.68. The year 2021 shows the same phenomena but with less disparity between the two values. With the advances, the cash flow surged to 50,254.41, reflecting a substantial improvement from the previous year but without, the value, although better than in 2020 without advances, was still significantly lower at 34,571.06. By 2022, the situation begins to show signs of strain, even with the COVID advances that this hospital still uses at that period. Indeed, the hospital received an advance of 55 million euros that they decided to use in 2020 for 32 million, in 2021 for 15 million and in 2022 for 6 million. By the way, the cash flow dropped to 21,147.08, a significant decrease from the previous year, indicating that the effects of the pandemic and the cessation of financial support were beginning to take a toll. Without the advances that they decided to kept for this period, the cash flow would have been alarmingly low, at 14,392.96.

Return on equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances
Net Income after Taxes	9 236,04	9 291,01	(23 494,53)	11 037,20	(4 646,16)	(6 387,29)	(13 141,41)
Equity	320 013,83	331 595,15	331 595,15	344 054,55	344 054,55	333 516,43	333 516,43
ROE	**2,89**	**2,80**	**(7,09)**	**3,21**	**(1,35)**	**(1,92)**	**(3,94)**

In 2019, the ROE was of 2.89%, indicating that the company was generating a modest return on the equity invested by its shareholders. In 2020, with the financial support provided through COVID advances, the ROE remained relatively stable at 2.80%. This suggests that the advances helped the company maintain its profitability at a level close to the pre-pandemic period, despite the economic challenges posed by the pandemic. However, the situation could have been drastically different without the advances, with a ROE pluming to (7.09) %. Moving to 2021, the ROE improved to 3.21%, reflecting an increase in profitability compared to both 2019 and 2020. The financial support continued to play a crucial role in enhancing the company's return on equity because without the advances, the ROE would have been slightly negative, at (1.13) %. In 2022, the ROE figures reveal a more concerning trend. Even with the remaining advances, the ROE dropped to (1.90) %, a significant decline from the previous year, suggesting that the company's profitability was adversely affected even with continued support. Without the advances, the ROE further would have decreased to (3.84) %.

Return on assets

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances
Operating Income	9 236,04	9 291,01	(23 494,53)	11 037,20	(4 646,16)	(6 387,29)	(13 141,41)
Debt charges	2 277,28	2 155,78	2 155,78	2 028,63	2 028,63	1 620,35	1 620,35
Total Assets	676 603,98	750 900,59	750 900,59	740 797,24	740 797,24	826 156,90	826 156,90
ROA	**0,02**	**0,02**	**(0,03)**	**0,02**	**(0,00)**	**(0,01)**	**(0,01)**

In 2019, the ROA was 0.02%, indicating that the company had a marginal ability to generate returns from its assets. Despite the challenging economic environment, in 2020, the ROA

remained stable at 0.02% thanks to the COVID advances. Without them, the ROA would have dropped to (0.03) %. In 2021, the ratio remained at 0.02%, showing continuity in the company's ability to generate returns when supported by financial assistance. However, without the advances, the ROA would have been equal to zero, highlighting that the company was barely breaking even in terms of asset utilization without external support. By 2022, the ROA, with the advances or without, turned negative at (0.01) % because the authorities stopped to support financially the hospitals at that period.

Current and acid liquidity ratio

	2019	2020	2021	2022
Current Assets	367 508,42	403 104,33	385 567,25	384 825,59
Debts due within 1 year	189 934,29	223 759,61	205 784,83	218 132,13
Accruals (Liabilities)	4 466,10	7 898,83	16 860,01	11 020,14
CURRENT RATIO	**1,89**	**1,74**	**1,73**	**1,68**

	2019	2020	2021	2022
Receivables due within 1 year	232 222,98	219 286,77	237 749,36	261 382,42
Cash Investments	69 666,04	61 443,99	51 383,80	58 388,88
Availables Funds	43 666,77	97 401,18	69 091,24	30 824,31
Debts due within 1 year	189 934,29	223 759,61	205 784,83	218 132,13
ACID RATIO	**1,82**	**1,69**	**1,74**	**1,61**

The current and acid ratios of this hospital 2022 shows a declining trend from 2019 to 2022, indicating a gradual reduction in liquidity over the years. While the ratio remains above 1, suggesting the hospital can cover its short-term liabilities, the decreasing trend points to growing financial pressures.

Solvency ratio: LT debt/ Equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances
Debts over 1 year	89 590,35	109 811,94	77 026,40	90 856,68	75 173,33	179 420,75	172 666,63
Equity	320 013,83	331 595,15	331 595,15	344 054,55	344 054,55	333 516,43	333 516,43
LT debts/ Equity ratio	**28,00**	**33,12**	**23,23**	**26,41**	**21,85**	**53,80**	**51,77**

In 2019, the LT Debt/Equity Ratio was of 28, suggesting that the company was using debt to finance its operations, but not excessively, maintaining a balanced capital structure. During 2020, the ratio increased to 31.13 with the COVID advances. Without these financial supports, considered as LT debts, the ratio would have been less low, of 23,23. By 2021, the LT Debt/Equity Ratio lowered to 26.14 with advances and to 21.85 without. This suggests that the company's debt level was slightly more manageable with financial support, especially because they also used less from the total amount of advances. However, in 2022, the ratio showed a significant increase to 53.80 with advances and to 51.77 without advances, the highest in the period analyzed. During that period, the ratio is signaling that the company was heavily reliant on debt financing, potentially due to the reduced impact of COVID advances and other increasing financial pressures.

Degree of long-term financial independence

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances
Equity	320 013,83	331 595,15	331 595,15	344 054,55	344 054,55	333 516,43	333 516,43
Total Liabilities	676 603,98	750 900,59	718 115,05	740 797,24	725 113,89	825 156,90	818 402,78
Degree of Long-Term Financial Independence	**47,30**	**44,16**	**46,18**	**46,44**	**47,45**	**40,42**	**40,75**

In 2019, the Degree of Long-Term Financial Independence was of 47.30%, meaning that nearly half of the company's total liabilities were covered by equity. This suggests a strong financial foundation, with significant reliance on equity rather than debt. This goes in line with the LT

debt/equity ratio seen just before. During 2020, this degree dropped to 44.16%, due to the financial independence on the advances received, considered as a LT debt. Without these advances, the degree improved slightly to 46.18%. In 2021, the Degree of Long-Term Financial Independence was of 46.44% with advances and 47.45% without advances. However, in 2022, the degree dropped significantly to 40.42% with advances and to 40.75% without advances, the lowest levels in the period analyzed. This decline indicates a higher reliance on liabilities, because of the reduced impact of COVID advances.

ANNEXE II: Financial analysis of hospital B

Working capital

	2019	2020	2021	2022	2023
Current Assets	200 578 436	233 690 875	250 372 718	241 726 329	228 112 657
Current Liabilities	130 251 800	113 285 407	122 587 919	130 187 586	148 763 158
Working Capital	**70 326 636**	**120 405 468**	**127 784 799**	**111 538 743**	**79 349 499**

Over the five-year period from 2019 to 2023, the hospital's working capital exhibited notable fluctuations. In 2019, the hospital had a working capital of approximately 70.3 million euros, indicating a stable liquidity position. In 2020, the hospital's working capital increased significantly to around 120.4 million euros, resulting probably from measures taken during the COVID pandemic to ensure adequate liquidity amidst uncertain conditions. This trend continued into 2021, with the figure rising to 127.8 million. However, in 2022, the hospital's WC decreased slightly to 111.5 million and to 79.3 million for 2023. Although the hospital still maintained a positive working capital, the downward trend over the last two years suggested that its liquidity was tightening.

Working capital requirement

	2019	2020	2021	2022	2023
Inventory	13 551 894	17 973 301	17 357 054	17 267 409	17 887 581
Short-term Receivables	139 984 914	130 095 389	133 376 243	146 602 530	154 134 333
Accruals (assets)	2 337 201	2 892 542	4 054 396	5 642 641	5 719 467
TOTAL for assets	155 874 009	150 961 232	154 787 693	169 512 580	177 741 381
Debts over 1 year due within the year	14 091 020	13 485 126	12 666 224	13 481 335	13 834 326
Trade Payables	57 377 429	55 799 115	63 247 175	60 724 580	70 362 561
Taks, Social and Salary Liabilities	33 038 177	38 359 495	39 720 436	48 609 262	49 942 116
Advances Received	152 026	186 431	203 981	186 182	227 582
Other Short-term Liabilities	8 003 149	5 455 241	6 750 104	7 186 227	14 396 573
Accruals (Liabilities)	813 366	7 409 903	11 221 140	9 274 951	8 466 332
TOTAL for liabilities	113 475 167	120 695 311	133 809 060	139 462 537	157 229 490
Working Capital Requirement	**42 398 842**	**30 265 921**	**20 978 633**	**30 050 043**	**20 511 891**

In 2019, the hospital had a WCR of approximately 42.4 million euros, suggesting that the hospital required a considerable amount of funds to finance its routine activities. In 2020, the WCR dropped to around 30.3 million and this trend continued into 2021, with the requirement dropping further to approximately 21.0 million euros. However, in 2022, the WCR increased slightly to a value of 30.1 million. Despite this increase, the WCR remained manageable, indicating that the hospital maintained overall control over its working capital needs. By 2023, the WCR had decreased again, reaching 20.5 million euros, the lowest level in the five-year period.

Net cash position

	2 019	2 020	2 021	2022	2023
Working Capital	70 326 636	120 405 468	127 784 799	111 538 743	79 349 499
Working Capital Requirement	42 398 842	30 265 921	20 978 633	30 050 043	20 511 891
Net Cash	**27 927 794**	**90 139 547**	**106 806 166**	**81 488 700**	**58 837 608**

In 2019, the hospital maintained a Net Cash position of approximately 27.9 million euros, indicating a comfortable liquidity cushion. During 2020, the hospital's Net Cash increased dramatically to 90.1 million, reflecting a significant improvement in liquidity, especially thanks to the financial help received by the hospitals at that period of COVID. The net cash continued to raise in 2021, with the position growing to a value of 106.8 million. However, in 2022 and 2023, the net cash position decreased. Although the value remained positive, the downward trend over the last

two years indicated that the hospital might need to closely monitor its cash flow and liquidity to avoid potential financial challenges.

Cash-flow

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 wihout advances	2023 with advances	2023 without advances
Profit for the year	**6 452 387**	**6 181 425**	**(22 845 619)**	**4 264 842**	**(5 204 864)**	**(16 103 679)**	**(18 756 227)**	**(1 710 794)**	**(4 178 178)**
Depreciation Allowances	25 736 807	24 951 186	24 951 186	25 838 262	25 838 262	26 564 184	26 564 184	26 550 397	26 550 397
Value adjustment Allowances	1 345 398	(856 789)	(856 789)	230 285	230 285	274 908	274 908	142 608	142 608
Provisions for Risks and Charges	(1 535 794)	1 810 156	1 810 156	3 100 190	3 100 190	1 611 925	1 611 925	3 410 953	3 410 953
Value Adjustments on Other Current Assets	-	-	-	-	-	-	-	-	-
Non-recurring Depreciation and Value Adjustments	72 910	-	-	-	-	-	-	-	-
Value Adjustments on Financial Assets	-	-	-	-	-	-	-	-	-
Provisions for Non-recurring Risks and Charges	1 800 000	-	-	-	-	-	-	-	-
Losses on Disposal of Fixed Assets	6 456	-	-	-	-	-	-	-	-
TOTAL NON-CASH EXPENSES	**27 425 777**	**25 904 553**	**25 904 553**	**29 168 737**	**29 168 737**	**28 451 017**	**28 451 017**	**30 103 958**	**30 103 958**
Capital Grants Allocated to Retained Earnings	-	-	-	-	-	-	-	-	-
Reversal of Depreciation and Value Adjustments on Tangible an	-	-	-	-	-	-	-	-	-
Reversal of Value Adjustments on Financial Assets	-	-	-	-	-	-	-	-	-
Reversal of Provisions for Non-recurring Risks and Charges	84 209	-	-	-	-	-	-	-	-
TOTAL NON-CASH INCOME	**84 209**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
CASH-FLOW	**33 793 955**	**32 085 978**	**3 058 934**	**33 433 579**	**23 963 873**	**12 347 338**	**9 694 790**	**28 393 164**	**25 925 780**

In 2019, the hospital reported a cash flow of 33.8 million euros. This strong cash flow underscored the hospital's ability to generate liquidity well beyond its reported profits, highlighting the importance of non-cash items in sustaining its operations. During 2020, with the inclusion of advances received from the government, the hospital's cash flow remained robust at approximately 32.1 million. However, without the advances, the hospital would have faced a significant loss of about (22.8) million euros and the cash flow would have been less high, with a value of 3.1 million. The pattern continued in 2021, where the hospital, with advances, reported a a strong cash flow of around 33.4 million. Without the advances, the hospital would have reported a loss of about (5.2) million and a lower cash flow value. In 2022, the hospital faced more significant financial challenges. With advances, it reported a loss of (16.1) million euros, and the cash flow decreased to 12.3 million. If the advances were not there, the cash flow would have been reduced to 9.7 million. By 2023, the hospital reported a small loss of (1.7) million with an exceptional profit coming from a rectification concerning the advances received, resulting in a strong cash flow of 28.4 million euros. Without advances, the loss would have been of (4.2) million, but the cash flow would have stayed substantial at 25.9 million.

Return on equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances	2023 with advances	2023 without advances
Net Income after Taxes	6 452 387	6 181 425	(22 845 619)	4 264 842	(5 204 864)	(16 103 679)	(18 756 227)	(1 710 794)	(4 178 178)
Equity	144 384 564	152 713 871	152 713 871	155 072 015	155 072 015	137 280 861	137 280 861	134 159 230	134 159 230
ROE	**4,47**	**4,05**	**(14,96)**	**2,75**	**(3,36)**	**(11,73)**	**(13,66)**	**(1,28)**	**(3,11)**

In 2019, the hospital maintained a modest but positive ROE of 4.47%, indicating reasonable profitability relative to its equity. However, when entering in 2020, the hospital's ROE slightly decreased to 4.05%, still positive but reflecting the growing financial strain. Without the advances, the hospital would have reported a significant loss, leading to a negative ROE of (14.96) %. The ratio continued in this sense into 2021, where the hospital's ROE with advances further declined to 2.75%. Without advances, the hospital's financial situation would have worsened, with a negative ROE of (3.36) %. In 2022, the hospital's financial performance deteriorated further because even with advances, the ROE turned sharply negative at (11.73) %. By 2023, there was a slight improvement in the hospital's financial performance. With advances, the ROE was less negative at (1.28) %, indicating some recovery. Without these advances, the value would have been of (3.11).

Return on assets

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022 with advances	2022 without advances	2023 with advances	2023 without advances
Operating Income	6 452 387	6 181 425	(22 845 619)	4 264 842	(5 204 864)	(16 103 679)	(18 756 227)	(1 710 794)	(4 178 178)
Debt charges	7 699 798	7 143 249	7 143 249	6 583 824	6 583 824	6 266 626	6 266 626	6 264 615	6 264 615
Total Assets	499 196 013	524 294 214	524 294 214	538 306 437	538 306 437	528 575 369	528 575 369	526 035 408	526 035 408
ROA	**0,03**	**0,03**	**(0,03)**	**0,02**	**0,00**	**(0,02)**	**(0,02)**	**0,01**	**0,00**

In 2019, the hospital achieved a modest ROA of 0.03%, indicating a need for improved asset management. In 2020, despite the disruptions caused by the COVID-19 pandemic, the hospital's ROA with the advances granted remained at 0.03%, consistent with the previous year. However, without the financial support, the hospital would have experienced a significant loss, resulting in a negative ROA of (0.03) %. The situation slightly deteriorated in 2021, with a ROA of 0.02% with the advances because without, the ROA would have dropped to 0.00%, indicating that the hospital's operations were not generating sufficient income to cover the value of its assets. In 2022, the financial strain became more apparent. The hospital recorded a negative ROA of (0.02) % with advances, due to substantial losses that year but by 2023, the hospital showed a slight improvement in its ROA. When considering the advances, the ratio reaches 0.01%. However, without these advances, the ROA would have been at 0.00%, like in 2021.

Current and acid liquidity ratio

	2019	2020	2021	2022	2023
Current Assets	200 578 436	233 690 875	250 372 718	241 726 329	228 112 657
Debts due within 1 year	130 251 800	113 285 407	122 587 919	130 187 586	148 763 158
Accruals (Liabilities)	813 366	7 409 903	11 221 140	9 274 951	8 466 332
CURRENT RATIO	**1,53**	**1,94**	**1,87**	**1,73**	**1,45**

	2019	2020	2021	2022	2023
Receivables due within 1 year	139 984 914	130 095 389	133 376 243	146 602 530	154 134 333
Cash Investments	11 535 623	11 727 284	21 296 769	19 183 965	21 678 599
Availables Funds	18 117 399	58 083 782	52 592 923	31 224 014	8 845 333
Debts due within 1 year	130 251 800	113 285 407	122 587 919	130 187 586	148 763 158
ACID RATIO	**1,30**	**1,76**	**1,69**	**1,51**	**1,24**

For 2019, the hospital maintained a solid current ratio of 1.53 and this positive liquidity position improved significantly in 2020, with a value of 1.94, suggesting that the financial support granted to the hospital were helpful to handle the financial uncertainties brought on by the onset of the COVID-19 pandemic. However, beginning in 2021, the hospital's current ratio started to decline, and this downward trend continued into 2022 and 2023, where the ratio fell to 1.73 and 1.45, respectively. The consistent decrease over these years indicates that the hospital's liquidity was tightening. The acid ratio followed a similar pattern. In 2019, the ratio was at 1.30 and improved to 1.76 in 2020, reflecting the hospital's strong liquidity position during the early phase of the pandemic. However, like the first ratio, the acid one began to decline in subsequent years, falling to 1.69 in 2021, then to 1.51 in 2022, and further to 1.24 in 2023.

Solvency ratio: LT debt/Equity

	2019	2020	2021	2022	2023
Debts over 1 year	194 952 684	219 570 693	209 398 412	211 847 552	201 968 617
Equity	144 384 564	152 713 871	155 072 015	137 280 861	134 159 230
LT debts/ Equity ratio	**135,02**	**143,78**	**135,03**	**154,32**	**150,54**

In 2019, the LT debt on equity ratio was at 135.02%, indicating that the hospital had long-term debts that were significantly higher than its equity. This high ratio suggested that the hospital relied heavily on debt financing, which could pose risks to its financial stability, especially if it faced challenges in servicing its debt. In 2020, the ratio increased to 143.78%, signaling an even greater reliance on debt, especially with the advances granted by the authorities. The ratio remained relatively stable in 2021 but during 2022, the ratio rose sharply to 154.32%, indicating that the hospital's long-term debts were now more than 1.5 times its equity. By 2023, the value had slightly decreased to 150.54%, still indicating a high level of financial leverage. It is important to note that there were no changes in the LT debt to equity ratio when considering the advances granted to the hospital because the hospital did not record the

amount to be reimbursed in the long-term debt account but instead accounted for it in account 701, which is associated with uncertain profits.

Degree of long-term financial independence

	2019	2020	2021	2022	2023
Equity	144 384 564	152 713 871	155 072 015	137 280 861	134 159 230
Total Liabilities	499 196 013	524 294 214	538 306 437	528 575 369	526 035 408
Degree of Long-Term Financial Independence	**28,92**	**29,13**	**28,81**	**25,97**	**25,50**

In 2019, the degree of financial independence was of 28.92%, meaning that approximately 29% of the hospital's financial structure was funded by equity. In 2020, the value slightly increased to 29.13%. By 2021, the ratio had slightly decreased to 28.81%, indicating a minor reduction in financial independence. For 2022 and 2023, the level of LT financial independence decreased further to 25.97%, and 25.50% respectively, indicating a more noticeable shift towards debt financing. This trend reflects a continued dependence from the hospital on debt to finance its operations and obligations.

ANNEXE III: Financial analysis of hospital C

Working capital

	2019	2020	2021	2022	2023
Current Assets	177 315 144,07	214 967 740,00	221 225 063,00	229 270 324,00	218 937 659,00
Current Liabilities	11 516 824,14	122 215 839,99	144 248 772,00	177 270 792,00	176 042 580,00
Working Capital	**165 798 319,93**	**92 751 900,01**	**76 976 291,00**	**51 999 532,00**	**42 895 079,00**

Over the five-year period, the company's working capital has been on a declining trend, which might suggest increasing financial pressure or more efficient use of resources. The company started with a strong working capital in 2019, but by 2023, the working capital has significantly decreased, indicating reduced liquidity. By 2023, the working capital had decreased to around 42.9 million, marking the lowest level in the five-year period. This suggests that the company was facing significant liquidity challenges but it also raises concerns about its ability to maintain financial stability in the short term.

Working capital requirement

	2019	2020	2021	2022	2023
Inventory	10 720 496,48	13 473 502,16	13 108 458,00	12 750 591,00	13 575 298,00
Short-term Receivables	126 919 006,11	125 567 528,75	134 285 316,00	155 561 434,00	150 023 814,00
Accruals (assets)	3 376 344,44	3 793 979,90	3 665 288,00	3 871 110,00	4 983 746,00
TOTAL for assets	141 015 847,03	142 835 010,81	151 059 062,00	172 183 135,00	168 582 858,00
Debts over 1 year due within the year	12 998 086,65	14 888 979,46	12 938 636,00	12 188 108,00	8 171 751,00
Trade Payables	70 830 412,31	78 979 289,26	100 258 864,00	121 438 080,00	118 471 252,00
Taks, Social and Salary Liabilities	12 923 744,18	14 789 672,61	1 447 926,00	24 777 957,00	26 724 558,00
Advances Received	8 369,09	10 367,48	26 251,00	42 141,00	53 199,00
Other Short-term Liabilities	12 979 317,41	11 783 778,33	14 734 086,00	17 260 279,00	21 093 903,00
Accruals (Liabilities)	2 782 334,35	8 063 509,65	11 749 731,00	6 274 142,00	6 286 808,00
TOTAL for liabilities	112 522 263,99	128 515 596,79	141 155 494,00	181 980 707,00	180 801 471,00
Working Capital Requirement	**28 493 583,04**	**14 319 414,02**	**9 903 568,00**	**(9 797 572,00)**	**(12 218 613,00)**

Given the trends in the company's WCR from 2019 to 2023, where it shifted from a positive to a negative WCR, the company appears to have transitioned from requiring external financing to support its operational cycle to a situation where its operations are increasingly self-financing.

Net cash position

	2019	2020	2021	2022	2023
Working Capital	165 798 319,93	92 751 900,01	76 976 291,00	51 999 532,00	42 895 079,00
Working Capital Requirement	28 493 583,04	14 319 414,02	9 903 568,00	(9 797 572,00)	(12 218 613,00)
Net Cash	**137 304 736,89**	**78 432 485,99**	**67 072 723,00**	**61 797 104,00**	**55 113 692,00**

Over the five-year period from 2019 to 2023, the hospital's Net Cash position has undergone a noticeable decline. In 2019, the hospital was in a robust financial position with a Net Cash of approximately 137.3 million, suggesting that the hospital had enough resources to meet its short-term obligations. However, the onset of the COVID-19 pandemic in 2020 brought significant financial strain. The Net Cash position dropped to around 78.4 million, reflecting the increased operational demands and costs associated with responding to the crisis. While still positive, this decrease indicated that the hospital's liquidity was under pressure. Same situation can be seen for 2021 but by 2022, and also for 2023, as the immediate impact of the pandemic began to subside, the hospital's financial situation showed signs of stabilization. Despite a further reduction in Working Capital, the Net Cash position improved slightly to around 61.8 million, due to the negative WCR.

Cash-flow

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Profit for the year	**707 895,58**	**821 005,46**	**(32 215 575,45)**	**216 090,00**	**(23 278 638,47)**	**5 276 813,00**	**52 379 327,00**
Depreciation Allowances	22 103 076,07	20 241 719,04	20 241 719,04	20 080 404,00	20 080 404,00	21 376 115,00	20 650 244,00
Value adjustment Allowances	96 514,84	(206 030,46)	(206 030,46)	(187 156,00)	(187 156,00)	(474 527,00)	(620 295,00)
Provisions for Risks and Charges	3 333 901,52	21 883 033,93	21 883 033,93	17 015 589,00	17 015 589,00	3 332 949,00	(6 975 737,00)
Value Adjustments on Other Current Assets	-	-	-	-	-	-	-
Non-recurring Depreciation and Value Adjustments	-	-	-	-	-	-	-
Value Adjustments on Financial Assets	-	-	-	-	-	-	-
Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-	-
Losses on Disposal of Fixed Assets	-	-	-	-	-	-	-
TOTAL NON-CASH EXPENSES	**25 533 492,43**	**41 918 722,51**	**41 918 722,51**	**36 908 837,00**	**36 908 837,00**	**24 234 537,00**	**13 054 212,00**
Capital Grants Allocated to Retained Earnings	-	-	-	-	-	-	-
Reversal of Depreciation and Value Adjustments on Tangible and Inta	-	-	-	-	-	-	-
Reversal of Value Adjustments on Financial Assets	-	-	-	-	-	-	-
Reversal of Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-	-
TOTAL NON-CASH INCOME	**-**	**-**	**-**	**-**	**-**	**-**	**-**
CASH-FLOW	**26 241 388,01**	**42 739 727,97**	**9 703 147,06**	**37 124 927,00**	**13 630 198,53**	**29 511 350,00**	**65 433 539,00**

In 2019, the hospital generated a healthy cash flow of around 26.2 million euros. This indicates that the hospital had a solid operational capacity to generate cash, ensuring liquidity and financial stability. The year 2020 marked the beginning of the COVID-19 pandemic, which significantly strained the hospital's finances. With the inclusion of advances from the government, the hospital maintained a modest profit and a strong cash flow of approximately 42.7 million euros. However, without these advances, the hospital would have reported a loss of (32.2) million euros, resulting in a much lower cash flow of about 9.7 million. In 2021, the hospital's financial situation remained heavily dependent on these advances. With the latest, the hospital reported a small profit and generated a cash flow of 37.1 million euros. However, without this amount, the hospital would have experienced a significant loss, resulting in a lower cash flow of about 13.6 million. By 2022, the hospital's profit increased to 5.3 million euros, and the cash flow improved to 29.5 million. This improvement suggests that the hospital was beginning to recover from the immediate effects of the pandemic, generating more cash from its operations. In this same way, in 2023, the hospital experienced a substantial increase in profit, reaching approximately 52.4 million euros, accompanied by a significant rise in cash flow to around 65.4 million. This marked a strong recovery, suggesting that the hospital had not only overcome the financial challenges posed by the pandemic but had also significantly improved its operational efficiency.

Return on equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Net Income after Taxes	707 895,58	821 005,46	(32 215 575,45)	216 090,00	(23 278 638,47)	5 276 813,00	52 379 327,00
Equity	127 517 094,11	132 696 645,67	132 696 645,67	131 736 527,00	131 736 527,00	136 876 903,00	183 011 898,00
ROE	**0,56**	**0,62**	**(24,28)**	**0,16**	**(17,67)**	**3,86**	**28,62**

In 2019, the hospital achieved a modest ROE of 0.56%, indicating that for every euro of equity, it generated just over half a cent in profit. The onset of the COVID-19 pandemic in 2020 brought considerable financial strain. With the inclusion of advances, the hospital maintained a slightly improved ROE of 0.62%. However, without these advances, the hospital would have reported a significant negative ROE of (24.28) %. In 2021, the hospital's financial challenges persisted, with the ROE further declining to 0.16% even with the advances. Without this support, the ROE would have been again negative at (17.67) %. By 2022, the hospital began to show signs of recovery, with the ROE improving to 3.86%. This improvement signaled a return to better profitability and more effective utilization of equity, as the hospital started to emerge from the financial constraints imposed by the pandemic. The recovery continued in 2023, when the hospital reached an impressive ROE of 28.62%. The sharp rise in ROE suggested that the hospital had not only recovered from the financial challenges of the pandemic but had also

achieved a strong and robust financial position, driven by increased profits and effective equity management.

Return on assets

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Operating Income	707 895,58	821 005,46	(32 215 575,45)	216 090,00	(23 278 638,47)	5 276 813,00	52 379 327,00
Debt charges	4 260 823,18	3 921 949,56	3 921 949,56	3 527 467,00	3 527 467,00	3 456 651,00	3 138 097,00
Total Assets	395 246 917,66	440 034 028,94	440 034 028,94	460 339 571,00	460 339 571,00	484 294 995,00	480 495 321,00
ROA	**0,01**	**0,01**	**(0,06)**	**0,01**	**(0,04)**	**0,02**	**0,12**

In 2019, the hospital's ROA was a modest 0.01%, indicating minimal efficiency in using its assets to generate operating income. By the start of the COVID in 2020 and thanks to the inclusion of advances, the hospital managed to maintain the same low ROA of 0.01%. However, without these financial supports, the hospital's ROA would have turned negative, reaching (0.06) %. In 2021, the situation remained the same. However, by 2022, the hospital began to show signs of recovery. The ROA improved slightly to 0.02%, suggesting that the hospital was starting to use its assets more effectively to generate operating income as it emerged from the pandemic's immediate effects. The most significant change occurred in 2023, when the hospital's ROA increased substantially to 0.12%, going in the same way as the other ratios of this hospital.

Current and acid liquidity ratio

	2019	2020	2021	2022	2023
Current Assets	177 315 144,07	214 967 740,00	221 225 063,00	229 270 324,00	218 937 659,00
Debts due within 1 year	111 516 824,14	122 215 839,99	144 248 772,00	177 270 792,00	176 042 580,00
Accruals (Liabilities)	2 782 334,35	8 063 509,65	11 749 731,00	6 274 142,00	4 983 746,00
CURRENT RATIO	**1,55**	**1,65**	**1,42**	**1,25**	**1,21**

	2019	2020	2021	2022	2023
Receivables due within 1 year	126 919 006,11	125 567 528,75	134 285 316,00	155 561 434,00	150 023 814,00
Cash Investments	448 596,75	448 596,75	448 597,00	448 597,00	9 502 774,00
Availables Funds	22 745 426,80	59 489 242,26	58 438 934,00	46 290 904,00	30 921 121,00
Debts due within 1 year	111 516 824,14	122 215 839,99	144 248 772,00	177 270 792,00	176 042 580,00
ACID RATIO	**1,35**	**1,52**	**1,34**	**1,14**	**1,08**

The Current Ratio was of 1.55 in 2019, indicating a solid liquidity position for this hospital. This ratio improved slightly in 2020 to 1.65 but starting in 2021, the ratio began to decline, dropping to 1.42, then further to 1.25 in 2022, and finally to 1.21 in 2023. The decline suggests that the hospital faced increasing challenges in maintaining sufficient liquidity, possibly due to rising liabilities or difficulties in generating enough current assets. Similarly, the Acid Ratio was of 1.35 in 2019, indicating that the hospital could comfortably cover its short-term liabilities with its most liquid assets. This ratio improved to 1.52 in 2020 but also began to decline in 2021, dropping to 1.34, then to 1.14 in 2022, and reaching 1.08 in 2023.The close proximity of the ratio to 1 in 2023 indicates that the hospital was nearing a point where its liquid assets barely covered its short-term liabilities.

Solvency ratio: LT debt/Equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Debts over 1 year	126 217 172,70	127 961 507,34	111 328 193,24	106 492 425,00	97 963 364,94	94 428 093,00	78 593 763,00
Equity	127 517 094,11	132 696 645,67	132 696 645,67	131 736 527,00	131 736 527,00	136 876 903,00	183 011 898,00
LT debts/ Equity ratio	**98,98**	**96,43**	**83,90**	**80,84**	**74,36**	**68,99**	**42,94**

In 2019, the hospital's Long-Term Debt to Equity ratio stood at 98.98%, indicating that the hospital had almost as much long-term debt as equity. This high ratio suggested a heavy reliance on debt financing, which posed risks to financial stability, especially if the hospital encountered challenges in meeting its debt obligations. In 2020, the hospital's financial

situation showed slight improvement, even with the inclusion of advances that are considered as LT debts. By 2021, the ratio continued to improve, dropping to 80.84% with advances and to 74.36% without them. This trend indicated that the hospital was actively managing and decreasing its long-term debt, which contributed to enhanced financial stability. The most significant progress occurred in 2022 and 2023. By 2022, the LT debt/Equity ratio decreased to 68.99%, marking a notable improvement in financial leverage and the trend continued in 2023, where the ratio dropped dramatically to 42.94%. This significant decrease indicated that the hospital had substantially reduced its long-term debt while simultaneously increasing its equity base.

Degree of long-term financial independence

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Equity	127 517 094,11	132 696 645,67	132 696 645,67	131 736 527,00	131 736 527,00	136 876 903,00	183 011 898,00
Total Liabilities	395 246 917,66	440 034 028,94	423 400 714,84	460 339 571,00	451 810 510,94	484 294 995,00	480 495 321,00
Degree of Long-Term Financial Independence	**32,26**	**30,16**	**31,34**	**28,62**	**29,16**	**28,26**	**38,09**

In 2019, the hospital's degree of LT financial independence stood at 32.26%, indicating that about 32% of its financial structure was funded by equity, with the remaining 68% funded by liabilities. During 2020, the situation shifted slightly. With the inclusion of advances, the value decreased to 30.16%, indicating a growing reliance on debt as the hospital faced the challenges brought on by the COVID-19 pandemic. Without these advances, the ratio would have been of 31.34%. By 2021, the hospital's degree of LT financial independence continued to decline, dropping to 28.62% with advances and 29.16% without them. In 2022, the ratio remained relatively stable at 28.26% but the most notable change occurred in 2023, when the value raised to 38.09%. The improved ratio indicated a stronger financial position, with a larger proportion of the hospital's operations being financed through equity rather than debt.

ANNEXE IV: Financial analysis of hospital D

Working capital

	2019	2020	2021	2022	2023
Current Assets	256 702 511	258 245 503	271 958 281	281 524 698	307 160 263
Current Liabilities	203 974 745	188 668 404	209 390 367	224 035 743	248 393 285
Working Capital	**52 727 766**	**69 577 099**	**62 567 914**	**57 488 955**	**58 766 978**

For the whole period analyzed, the working capital values are indicating a positive liquidity status. By the way, the fluctuations, especially related to the pandemic period and the decrease after that, highlight significant challenges and adjustments in liquidity management for the establishment.

Working capital requirement

	2019	2020	2021	2022	2023
Inventory	14 255 423	16 026 265	19 649 631	23 423 490	22 346 492
Short-term Receivables	228 288 399	197 939 249	228 834 786	251 889 050	272 140 253
Accruals (assets)	7 320 349	7 045 549	4 335 321	4 626 472	4 903 272
TOTAL for assets	249 864 171	221 011 063	252 819 738	279 939 012	299 390 017
Debts over 1 year due within the year	8 089 303	8 109 529	13 530 167	8 592 519	12 970 087
Trade Payables	95 187 576	79 153 160	90 478 816	97 387 119	85 883 481
Taks, Social and Salary Liabilities	84 591 586	94 408 601	93 707 564	91 011 618	84 885 021
Advances Received	1 106 051	765 444	672 940	7 294 256	5 504 466
Other Short-term Liabilities	230	731 671	880	230	230
Accruals (Liabilities)	223 757	19 132	4 276	-	365 194
TOTAL for liabilities	189 198 503	183 187 537	198 394 643	204 285 742	189 608 479
Working Capital Requirement	**60 665 668**	**37 823 526**	**54 425 095**	**75 653 270**	**109 781 538**

The results from 2019 to 2020 indicates a significant reduction in working capital requirements, suggesting improved efficiency in asset management or a reduction in the need for external financing. However, the increase in WCR from 2020 to 2022 may indicate rising operational needs or investments requiring additional short-term financing, especially due to the COVID-19.

Net cash position

	2019	2020	2021	2022	2023
Working Capital	52 727 766,00	69 577 099	62 567 914	57 488 955	58 766 978
Working Capital Requirement	60 665 668,00	37 823 526	54 425 095	75 653 270	109 781 538
Net Cash	**(7 937 902,00)**	**31 753 573**	**8 142 819**	**(18 164 315)**	**(51 014 560)**

In 2019, the net cash position was negative for a value of (7,937,902), indicating a shortfall in cash relative to the working capital requirement. By 2020, the net cash position improved significantly to 31,753,573, as the working capital far exceeded the working capital requirement. In 2022, the net cash position turned negative again at (18,164,315) and the situation worsened in 2023, with the net cash position plummeting to (51,014,560) due to a significant increase in the working capital requirement. Several factors could have contributed to the substantial increase in the WCR from 2020 to 2022, especially related to all the COVID-19 situation. The hospital expanded its services or increased its capacity, requiring more resources such as medical supplies, equipment, and personnel, thereby raising the WCR.

Cash-flow

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Profit for the year	**2 343 209**	**10 627 824**	**(19 372 176)**	**4 672 643**	**(14 327 357)**	**(1 496 156)**	**9 184 333**
Depreciation Allowances	23 920 480	27 010 882	27 010 882	32 209 194	32 209 194	31 607 929	31 266 962
Value adjustment Allowances	(2 189 769)	(67 496)	(67 496)	(826 267)	(826 267)	(117 578)	115 697
Provisions for Risks and Charges	(842 028)	(595 889)	(595 889)	1 753 598	1 753 598	(425 261)	(16 756 891)
Value Adjustments on Other Current Assets	-	-	-	-	-	-	-
Non-recurring Depreciation and Value Adjustments	-	-	-	-	-	-	-
Value Adjustments on Financial Assets	-	-	-	-	-	-	-
Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-	-
Losses on Disposal of Fixed Assets	-	-	-	-	-	-	-
TOTAL NON-CASH EXPENSES	**20 888 683**	**26 347 497**	**26 347 497**	**33 136 525**	**33 136 525**	**31 065 090**	**14 625 768**
Capital Grants Allocated to Retained Earnings	-	-	-	-	-	-	-
Reversal of Depreciation and Value Adjustments on Tangible and Intangible Assets	-	-	-	-	-	-	-
Reversal of Value Adjustments on Financial Assets	-	-	-	-	-	-	-
Reversal of Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-	-
TOTAL NON-CASH INCOME	**-**	**-**	**-**	**-**	**-**	**-**	**-**
CASH-FLOW	**23 231 892**	**36 975 321**	**6 975 321**	**37 809 168**	**18 809 168**	**29 568 934**	**23 810 101**

In 2019, the hospital had a solid cash flow of 23,231,892, indicating a stable financial position. However, in 2020, the situation changed drastically with the introduction of COVID-19 advances accorded from the government, which increased the cash flow to 36,975,321. Without the advances, the cash flow would have been only of 6,975,321, showing the importance of these external financial supports to manage operations. In 2021, the cash flow with COVID advances was slightly higher, suggesting continued support. Without the advances, the cash flow would have been of 18,809,168, which, although better than 2020 without advances, still underscores the hospital's dependency on these funds during the pandemic. By 2022, the cash flow decreased to 29,568,934, reflecting the end of the extraordinary support received during the previous years but still indicating a more stabilized financial situation compared to the pre-pandemic era. In 2023, the cash flow was closely aligning back with the 2019 levels, suggesting that the hospital's operations were normalizing, and the reliance on COVID-related advances had diminished.

Return on equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Net Income after Taxes	2 343 209	10 627 824	(19 372 176)	4 672 643	(14 327 357)	(1 496 156)	9 184 333
Equity	176 104 481	189 042 971	189 042 971	192 518 978	192 518 978	201 240 729	194 671 636
ROE	**1,33**	**5,62**	**(10,25)**	**2,43**	**(7,44)**	**(0,74)**	**4,72**

In 2019, the hospital had an ROE of 1.33%. This figure reflects a modest return on the equity invested, indicating stable but not exceptionally high profitability. For 2020, with the COVID advances, the ROE increased dramatically to 5.62%, driven by a net income after taxes of 10,627,824. This significant rise in ROE demonstrates how the external financial support from COVID advances substantially improved the hospital's profitability because when these are removed, the situation changes drastically. Without these advances, the hospital would have reported a net loss of (19,372,176), resulting in a negative ROE of (10.25) %. The next period shows a ROE of 2.43%. Without the advances, the hospital would have faced a negative ROE of (7.44) %. Although this is an improvement compared to 2020 without advances, it still indicates ongoing financial difficulties when external support is not factored in. By 2022, the hospital's financial performance is worse, recording a negative ROE of (0.74) %, especially because hospitals are financially not supported anymore. By the way, in 2023, the ROE improved to 4.72%.

Return on assets

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Operating Income	2 343 209	10 627 824	(19 372 176)	4 672 643	(14 327 357)	(1 496 156)	9 184 333
Debt charges	2 736 321	3 146 764	3 146 764	2 902 392	2 902 392	2 626 418	3 083 759
Total Assets	544 802 267	561 134 911	561 134 911	564 088 121	564 088 121	591 934 824	591 024 538
ROA	**0,01**	**0,02**	**(0,03)**	**0,01**	**(0,02)**	**0,00**	**0,02**

In 2019, the hospital's ROA was 0.01%, showing that the hospital generated minimal income relative to its total assets of 544,802,267. For the next year, with the COVID advances granted, the ROA increased to 0.02%, reflecting the hospital's limited ability to generate higher returns even with substantial external financial support. However, without the financial support, the hospital would have experienced a negative ROA of (0.03) %. Same situation can be highlighted for 2021, where we see a ROA of 0.01% with the advances and a negative ratio of (0.02) % without. By 2022, when no advances are granted anymore, the ROA dropped to 0.00%, indicating that the hospital was generating any return on its assets. The growing asset base, combined with the reduced operating income, contributed to this near-zero ROA, reflecting a challenging financial year even as the impact of the pandemic began to wane. In 2023, the hospital's ROA improved again to 0.02%.

Current and acid liquidity ratio

	2019	2020	2021	2022	2023
Current Assets	256 702 511	258 245 503	271 958 281	281 524 698	307 160 263
Debts due within 1 year	203 974 745	188 668 404	209 390 367	224 035 743	248 393 285
Accruals (Liabilities)	223 757	19 132	4 276	-	365 194
CURRENT RATIO	**1,26**	**1,37**	**1,30**	**1,26**	**1,23**

	2019	2020	2021	2022	2023
Receivables due within 1 year	228 288 399	197 939 249	228 834 786	251 889 050	272 140 253
Cash Investments	-	-	-	-	-
Availables Funds	6 838 340	37 234 440	17 138 543	1 585 686	2 133 613
Debts due within 1 year	203 974 745	188 668 404	209 390 367	224 035 743	248 393 285
ACID RATIO	**1,15**	**1,25**	**1,17**	**1,13**	**1,10**

In 2019, the current ratio was 1.26 and the acid ratio was 1.15, indicating a reasonably healthy liquidity position. The situation improved in 2020, with the current ratio rising to 1.37 and the acid ratio to 1.25. However, starting in 2021, both ratios began to decline. The current ratio fell to 1.30 in 2021 and further to 1.23 by 2023, while the acid ratio dropped from 1.17 in 2021 to 1.10 in 2023. This downward trend highlights increasing short-term liabilities and tightening liquidity, as the hospital's ability to cover immediate obligations with its most liquid assets became more constrained. Even if the hospital was not so bad situated during the pandemic period, it faced growing liquidity challenges in the subsequent years, making it more difficult to maintain its financial stability.

Solvency ratio: LT debt/Equity

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Debts over 1 year	116 687 937	136 188 946	116 188 946	113 205 444	132 205 444	118 114 558	115 807 519
Equity	176 104 481	189 042 971	189 042 971	192 518 978	192 518 978	201 240 729	194 671 636
LT debts/ Equity ratio	**66,26**	**72,04**	**61,46**	**58,80**	**68,67**	**58,69**	**59,49**

For 2019, the LT debts/Equity ratio was indicating that the hospital's long-term debts were about 2/3 of its equity. This suggests a moderate level of financial leverage. In 2020, for year of COVID and the financial supports granted for it, the ratio increased to 72.04%, indicating that the hospital took on more long-term debt relative to its equity, especially because these advances are meant to be repaid in the following years. By the way, without the advances, the ratio would have been lower, as long-term debts would not have increased of an amount equal to these advances. In the year 2021, the ratio improved to 58.80%, suggesting better financial management and a reduction in long-term debt. Without advances, the ratio would have been higher, for the same reasons as for 2020. By 2022, the ratio slightly increased to 58.69% and for 2023, the ratio is at 59.49%.

Degree of long-term financial independence

	2019	2020 with advances	2020 without advances	2021 with advances	2021 without advances	2022	2023
Equity	176 104 481	189 042 971	189 042 971	192 518 978	192 518 978	201 240 729	194 671 636
Total Liabilities	544 802 267	561 134 911	541 134 911	564 088 121	583 088 121	591 934 824	591 024 538
Degree of Long-Term Financial Independence	**32,32**	**33,69**	**34,93**	**34,13**	**33,02**	**34,00**	**32,94**

This solvency ratio for the hospital from 2019 to 2023 reflects a relatively stable financial position, with some fluctuations influenced by the pandemic but these are not so extreme. In 2019, the ratio was 32.32%, indicating that about 1/3 of the hospital's total liabilities were covered by equity, demonstrating a moderate level of financial independence. In 2020, the ratio increased to 33.69% with the inclusion of COVID advances. Without advances, the ratio would have been higher. By 2021, the ratio slightly decreased to 34.13%, indicating a marginal reduction in financial independence as total liabilities increased to 564,088,121. Without advances, the ratio would have been lower. In 2022, the ratio stabilized at 34.00%. However, in 2023, the ratio slightly decreased again to 32.94%, matching again to the situation before COVID.

ANNEXE V: Financial analysis of hospital E

Working capital

	10/2021 - 12/2022
Current Assets	21 783 213
Current Liabilities	23 938 457
Working Capital	**(2 155 244)**

The table indicates that for the period from October 2021 to December 2022, the hospital recorded a negative working capital of (2,155,244). This result can be explained by the fact that the entity has been created in 2021 trough the merge of 3 hospitals in that region. Indeed, when hospitals or any organizations undergo a merger, especially of this scale, there are typically numerous financial and operational challenges that can arise and these can affect the liquidity and financial stability of the newly formed organization. This merge is also the reason why we only have one period for the financial analysis, regarding the only public document provided by the hospital on the National Bank of Belgium's website.

Working capital requirement

	10/2021 - 12/2022
Inventory	-
Short-term Receivables	21 374 381
Accruals (assets)	10 129
TOTAL for assets	21 384 510
Debts over 1 year due within the year	-
Trade Payables	152 983
Taks, Social and Salary Liabilities	185 474
Advances Received	-
Other Short-term Liabilities	23 600 000
Accruals (Liabilities)	-
TOTAL for liabilities	23 938 457
Working Capital Requirement	**(2 553 947)**

The working capital requirement for this hospital for the period from October 2021 to December 2022, was at a value of (2,553,947). This negative WCR indicates that the hospital's current liabilities exceed its current assets, suggesting that the hospital does not need additional financing to support its operating cycle because it can cover its operational needs internally. While the negative WCR suggests that the hospital currently does not need external financing to support its operations, the specifics of the liabilities indicate that this may be a temporary situation linked to the post-merger period. Moving forward, it will be essential for the hospital to continue managing its receivables and liabilities effectively to ensure long-term financial stability, especially as it continues to integrate the operations of the previously independent hospitals.

Net cash position

	10/2021 - 12/2022
Working Capital	(2 155 244)
Working Capital Requirement	(2 553 947)
Net Cash	**398 703**

During its first operational period following the merger, the entity went through a complex financial situation. While it has a negative working capital, indicating potential short-term liquidity concerns, the negative working capital requirement implies that the hospital is not in immediate need of additional external financing to sustain its operations. The positive net cash

position further reinforces this, showing that the hospital has managed to maintain some liquidity despite the challenges. A negative working capital is not always bad for an entity, but for the future, careful management of cash flow and liabilities will be crucial to ensure continued financial stability.

Cash-flow

	10/2021 - 12/2022
Profit for the year	**(2 155 243,00)**
Depreciation Allowances	-
Value adjustment Allowances	-
Provisions for Risks and Charges	-
Value Adjustments on Other Current Assets	-
Non-recurring Depreciation and Value Adjustments	-
Value Adjustments on Financial Assets	-
Provisions for Non-recurring Risks and Charges	-
Losses on Disposal of Fixed Assets	-
TOTAL NON-CASH EXPENSES	**-**
Capital Grants Allocated to Retained Earnings	-
Reversal of Depreciation and Value Adjustments on Tangible and	-
Reversal of Value Adjustments on Financial Assets	-
Reversal of Provisions for Non-recurring Risks and Charges	-
TOTAL NON-CASH INCOME	**-**
CASH-FLOW	**(2 155 243,00)**

The financial performance of the hospital for the period analyzed reveals significant challenges. During this period, the hospital reported a loss of (2,155,243), probably the result of the costs associated with the merger of the three hospitals and potential operational inefficiencies that followed the consolidation. The table also shows that there were no significant non-cash expenses or income adjustments recorded. As a result, the hospital's cash flow for this period was negative because it is exactly matching the reported loss. This negative cash flow indicates that the hospital was not generating enough cash from its operations to cover its expenses, raising concerns for the future about its ability to sustain operations without tapping into reserves or seeking external financing.

Return on equity

	10/2021 - 12/2022
Net Income after Taxes	(2 155 243)
Equity	(2 155 243)
ROE	**100,00**

The return on equity value of 100% in this context is somewhat misleading and does not reflect a typical measure of profitability. Instead, it highlights the unusual financial situation of the hospital, where both the net income and equity are negative. This situation is a result of the significant challenges faced during the hospital's first year of operation following the merger of three hospitals. The ROE figure, while technically correct in its calculation, should be interpreted with caution, recognizing the broader context of the hospital's financial difficulties.

Return on assets

	10/2021 - 12/2022
Operating Income	(2 155 243)
Debt charges	136
Total Assets	21 783 213
ROA	**(0,10)**

The return on assets of a negative value of (0.10) for this entity during the period from October 2021 to December 2022 highlights significant financial challenges. This negative ratio indicates that the hospital was unable to generate a return from its assets, underscoring the difficulties it faced in managing its operations efficiently following the merger. In the future, improving operational efficiency and finding ways to better utilize its assets will be crucial for the hospital to achieve financial stability and positive returns.

Current and acid liquidity ratio

	10/2021 - 12/2022
Current Assets	21 783 213,00
Debts due within 1 year	23 938 457,00
Accruals (Liabilities)	-
CURRENT RATIO	**0,91**

	10/2021 - 12/2022
Receivables due within 1 year	21 374 381,00
Cash Investments	-
Availables Funds	398 704,00
Debts due within 1 year	23 938 457,00
ACID RATIO	**0,91**

The liquidity ratios indicate potential financial stress. Both the current and acid liquidity ratios are at 0.91, meaning that the hospital's current assets and most liquid assets are insufficient to cover its short-term liabilities. This situation suggests that the hospital may face difficulties in meeting its immediate financial obligations, which could lead to cash flow problems if not addressed. These ratios are going in the same way as the others, showing the financial challenges the hospital is experiencing in its first year following the merger, highlighting the need for improved liquidity management in the following periods.

Solvency ratio: LT debt/Equity

	10/2021 - 12/2022
Debts over 1 year	-
Equity	(2 155 243,00)
LT debts/ Equity ratio	**-**

The LT debt to equity ratio is not applicable for this hospital because it had no long-term debts during this period. This situation during the first year after the merge possibly reflects a strategic decision by the hospital's management to focus on integrating the merged entities, managing short-term liabilities, and stabilizing the financial situation before committing to long-term obligations.

Degree of long-term financial independence

	10/2021 - 12/2022
Equity	(2 155 243,00)
Total Liabilities	21 783 213,00
Degree of Long-Term Financial Independence	**(9,89)**

The degree of LT financial independence for this hospital is at (9.89%), indicating that the hospital's liabilities far exceed its equity, meaning the hospital is not financially independent and is heavily reliant on debt. While the negative equity and low degree of financial independence are concerning, they are not entirely unexpected in the first year following a major merger like that. The hospital must continue to stabilize and realize the anticipated benefits of the merger in the following period to maybe improve its position.

ANNEXE VI: Financial analysis of hospital F

Working capital

	2019	2020	2021	2022	2023
Current Assets	132 272 506	131 585 164	116 829 656	111 798 179	101 481 394
Current Liabilities	32 434 257	31 031 980	33 605 170	35 550 682	37 361 903
Working Capital	**99 838 249**	**100 553 184**	**83 224 486**	**76 247 497**	**64 119 491**

In 2019, the hospital had a WC value of 99.8 million, indicating a strong liquidity position. During the first year of COVID, this value increased slightly, probably thanks to the financial support of authorities. However, by 2021, the hospital's working capital began to decline, dropping to approximately 83.2 million and the trend continued into 2022 and 2023. The shrinking working capital margin indicated that the hospital was becoming less flexible in managing its short-term financial commitments.

Working capital requirement

	2019	2020	2021	2022	2023
Inventory	1 967 386	2 056 811	1 883 786	2 019 710	2 433 699
Short-term Receivables	33 376 655	35 348 286	35 360 302	38 942 067	40 404 782
Accruals (assets)	-	-	-	-	-
TOTAL for assets	35 344 041	37 405 097	37 244 088	40 961 777	42 838 481
Debts over 1 year due within the year	6 762 424	7 871 570	6 780 770	5 355 375	5 358 560
Trade Payables	17 644 529	14 791 652	17 989 681	18 916 420	20 891 657
Taks, Social and Salary Liabilities	7 953 431	8 301 233	8 756 021	10 771 066	11 047 527
Advances Received	65 269	58 810	66 967	496 027	52 350
Other Short-term Liabilities	8 606	8 716	11 729	11 794	11 808
Accruals (Liabilities)	3 156 005	1 745 928	1 153 742	584 667	293 488
TOTAL for liabilities	35 590 264	32 777 909	34 758 910	36 135 349	37 655 390
Working Capital Requirement	**(246 223)**	**4 627 188**	**2 485 178**	**4 826 428**	**5 183 091**

In 2019, the hospital recorded a negative WCR of (€246,223), indicating it could finance its operations internally without the need for additional capital. However, in 2020, the WCR shifted to a positive value of 4.6 million. This shift from a negative to a positive WCR suggested a decline in operational efficiency or the impact of external factors, such as the financial strain caused by the COVID-19 pandemic. In 2021, the hospital managed to reduce its WCR to a value of approximately 2.5 million, signaling an improvement compared to the previous year. However, this improvement was not for a long duration, as the value increased again in 2022 and 2023 to 5.2 million, probably because the advances received for the pandemic stopped in 2022 and hospitals may reimburse some amounts.

Net cash position

	2 019	2 020	2 021	2022	2023
Working Capital	99 838 249	100 553 184	83 224 486	76 247 497	64 119 491
Working Capital Requirement	(246 223)	4 627 188	2 485 178	4 826 428	5 183 091
Net Cash	**100 084 472**	**95 925 996**	**80 739 308**	**71 421 069**	**58 936 400**

The hospital started with a very strong liquidity position in 2019, but over the subsequent years, the combined effects of declining WC and rising WCR led to a steady decrease in net cash. In 2019, the hospital had a net cash position of approximately €100.1 million but by 2020, the value started to decline slightly to around €95.9 million. While still robust, this decrease indicated a small reduction in the hospital's liquidity cushion, possibly due to the positive WCR, which required the hospital to use more of its working capital to finance its operations. Same

conclusion can be highlighted until 2023, where the net cash position was at its lowest level, with a value of 58.9 million.

Cash-flow

	2019	2020 with advances	2020 without advances	2021	2022	2023
Profit for the year	**291 500**	**1 953 144**	**(1 645 359)**	**532 122**	**608 969**	**508 396**
Depreciation Allowances	12 323 619	12 437 272	12 437 272	12 274 988	12 440 890	8 625 746
Value adjustment Allowances	137 672	5 241	5 241	(19 555)	47 669	143 054
Provisions for Risks and Charges	(2 280 443)	(856 542)	(856 542)	367 566	(2 138 873)	(1 484 393)
Value Adjustments on Other Current Assets	-	-	-	-	-	-
Non-recurring Depreciation and Value Adjustments	-	-	-	-	-	-
Value Adjustments on Financial Assets	-	-	-	-	-	-
Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-
Losses on Disposal of Fixed Assets	-	-	-	-	18 592	-
TOTAL NON-CASH EXPENSES	**10 180 848**	**11 585 971**	**11 585 971**	**12 622 999**	**10 368 278**	**7 284 407**
Capital Grants Allocated to Retained Earnings	-	-	-	-	-	-
Reversal of Depreciation and Value Adjustments on Tangible a	-	-	-	-	-	-
Reversal of Value Adjustments on Financial Assets	-	-	-	-	-	-
Reversal of Provisions for Non-recurring Risks and Charges	-	-	-	-	-	-
TOTAL NON-CASH INCOME	**-**	**-**	**-**	**-**	**-**	**-**
CASH-FLOW	**10 472 348**	**13 539 115**	**9 940 612**	**13 155 121**	**10 977 247**	**7 792 803**

In 2019, the hospital reported a modest profit of 291,500, which, after accounting for non-cash expenses resulted in a cash flow of approximately 10.5 million. This strong cash flow relative to the profit indicates that the hospital was effectively generating liquidity through non-cash adjustments, despite a relatively low reported profit. In 2020, thanks to the advances received for the COVID period, the hospital reported a profit of 1.95 million, leading to a cash flow of about 13.5 million. However, without these advances, the hospital would have recorded a loss of 1.65 million, with a reduced cash flow of around 9.9 million. It is also important to notice that the effects of the COVID advances were accounted for in 2020, and no further corrections were registered in the following years. This decision to consolidate the impact of these advances into a single year likely contributed to the relatively stable cash flows observed in subsequent years, as there were no additional adjustments related to these advances. This is why in 2021 the hospital's cash flow was at 13.2 million, with a reported profit of 532,122. By 2022, the hospital's profit had increased slightly but cash flow decreased to 10.4 million, despite an increase in profit and no COVID advances registered. In 2023, the hospital's profit further decreased with a cash flow dropping to around 7.8 million, marking the lowest level in the five-year period.

Return on equity

	2019	2020 with advances	2020 without advances	2021	2022	2023
Net Income after Taxes	291 500	1 953 144	(1 645 359)	532 122	608 969	508 396
Equity	141 759 224	139 178 425	139 178 425	129 176 605	125 251 633	123 350 751
ROE	**0,21**	**1,40**	**(1,18)**	**0,41**	**0,49**	**0,41**

In 2019, the hospital recorded a ROE of 0.21%, indicating that the hospital was generating very modest returns on its equity. During 2020, the impact of COVID-19 advances significantly altered the hospital's financial landscape because with these amounts, the hospital's net income increased to 1,953,144, leading to a much-improved ROE of 1.40%. If the hospital would have had no financial support, the ROE would have been negative with a value of (1.18) %. In 2021, the hospital's net income decreased to 532,122, especially because no advances are recorded, and the ROE dropped to 0.41%. However, in 2022, the hospital reported a slightly higher return of 0.49% but by 2023, the ratio felled back to 0.41%, like in 2021.

Return on assets

	2019	2020 with advances	2020 without advances	2021	2022	2023
Operating Income	291 500	1 953 144	(1 645 359)	532 122	608 969	508 396
Debt charges	3 043 724	2 899 678	2 899 678	2 709 995	2 540 569	2 371 486
Total Assets	329 291 984	321 788 310	321 788 310	308 663 095	300 124 121	295 353 351
ROA	**0,01**	**0,02**	**0,00**	**0,01**	**0,01**	**0,01**

In 2019, the hospital reported a ROA of 0.01%, suggesting limited efficiency in using its assets to produce income. In 2020, with the advances received, the ratio increased slightly to 0.02%. Without these advances, the hospital would have reported a loss resulting in a ROA of 0.00%. This indicated that without the external support from the advances, the hospital's operations were not generating any positive returns on its assets. During 2021, the return on assets came back to a value of 0.01% and will stay the same until 2023. This consistency in ROA over the last few years suggests that the hospital's operational efficiency in generating income from its assets has been relatively unchanged, with only modest returns being realized.

Current and acid liquidity ratio

	2019	2020	2021	2022	2023
Current Assets	132 272 506	131 585 164	116 829 656	111 798 179	101 481 394
Debts due within 1 year	32 434 257	31 031 980	33 605 170	35 550 682	37 361 903
Accruals (Liabilities)	3 156 005	1 745 928	1 153 742	584 667	293 488
CURRENT RATIO	**3,72**	**4,01**	**3,36**	**3,09**	**2,70**

	2019	2020	2021	2022	2023
Receivables due within 1 year	33 376 655	35 348 286	35 360 302	38 942 067	40 404 782
Cash Investments	704 265	704 265	304 265	304 265	10 002 405
Availables Funds	50 252 111	51 040 028	40 381 843	35 168 992	16 813 678
Debts due within 1 year	32 434 257	31 031 980	33 605 170	35 550 682	37 361 903
ACID RATIO	**2,60**	**2,81**	**2,26**	**2,09**	**1,80**

In 2019, the hospital enjoyed a robust liquidity position, with a current ratio of 3.72 and an acid ratio of 2.60. These ratios indicated that the hospital had more than three times the current assets needed to cover its current liabilities, and it had a substantial cushion of liquid assets, excluding inventory, to meet its immediate obligations. In 2020, despite the onset of the COVID-19 pandemic, the hospital's liquidity position improved slightly, reflecting the hospital’s ability to maintain its liquidity during a challenging period, with the financial help of the government. However, starting in 2021, the hospital’s liquidity began to decline and this trend will continue until 2023. By 2023, the hospital's liquidity ratios had reached their lowest points in the five-year period. The current ratio had decreased to 2.70, and the acid ratio had dropped to 1.80. These levels suggested that the hospital's ability to comfortably meet its short-term obligations was becoming increasingly constrained.

Solvency ratio: LT debt/Equity

	2019	2020 with advances	2020 without advances	2021	2022	2023
Debts over 1 year	102 303 069	101 049 090	96 153 665	95 577 126	91 725 560	88 820 022
Equity	141 759 224	139 178 425	139 178 425	129 176 605	125 251 633	123 350 751
LT debts/ Equity ratio	**72,17**	**72,60**	**69,09**	**73,99**	**73,23**	**72,01**

In 2019, the hospital's LT Debt to Equity ratio was at 72.17%, meaning that the hospital's long-term debts were approximately 72% of its equity. In 2020, with the inclusion of COVID-19 advances, the ratio slightly increased to 72.60%, reflecting a minimal rise in long-term debt relative to equity. Without the advances, the ratio would have been of 69.09%, because these amounts are considered as LT debts. By 2021, the ratio adjusted to 73.99% and stayed quiet at the same level in 2022 and 2022, with a slight decrease until a value of 72.01% returning close to the 2019 level.

Degree of long-term financial independence

	2019	2020 with advances	2020 without advances	2021	2022	2023
Equity	141 759 224	139 178 425	139 178 425	129 176 605	125 251 633	123 350 751
Total Liabilities	329 291 984	321 788 310	316 892 885	308 663 095	300 124 121	295 353 351
Degree of Long-Term Financial Independence	**43,05**	**43,25**	**43,92**	**41,85**	**41,73**	**41,76**

In 2019, the degree of LT financial independence was at 43.05%, meaning that approximately 43% of the hospital's financial structure was funded by equity, while the remaining 57% was financed through liabilities. During 2020, the value stayed around 43%, with and without considering the advances received for COVID. By 2021, the degree of LT financial independence started to decrease until 2023, to values around 41.85%, indicating a slight reduction in financial independence. From 2019 to 2023, the hospital's degree of financial independence remained relatively stable, with only minor fluctuations. This stability suggests that the hospital maintained a reasonable level of financial independence, ensuring long-term sustainability without becoming excessively reliant on debt financing.

ANNEXE VII: Financial analysis of hospital G

Working capital

	2019	2020	2021	2022	2023
Current Assets	39 462 916,86	43 717 040,91	42 187 984,09	46 347 887,09	46 444 745,30
Current Liabilities	32 746 447,36	28 903 493,23	30 794 910,12	31 981 994,13	40 061 241,55
Working Capital	**6 716 469,50**	**14 813 547,68**	**11 393 073,97**	**14 365 892,96**	**6 383 503,75**

In 2019, the hospital had a working capital of 6,716,469.50 euros. This figure increased significantly in 2020 to 14,813,547.68, suggesting that the hospital's liquidity and short-term financial position were stronger in 2020, probably thanks to the advances received for the pandemic situation but as the auditor's report were not made available to me, only suppositions can be made for this entity. However, in 2021, the WC decreased to a value of 11,393,073.97. While the hospital still maintained a positive value, the reduction indicated a slight weakening of its liquidity. The following year, 2022, saw a recovery in working capital, which rose to an amount similar as in 2020. During 2023, the hospital's working capital dropped again significantly to 6,383,503.75 euros, the lowest level since 2019. This sharp decrease suggests that the hospital may be facing increased difficulties in managing its short-term obligations, indicating potential challenges in maintaining liquidity.

Working capital requirement

	2019	2020	2021	2022	2023
Inventory	2 086 234,37	2 585 252,63	3 290 321,95	3 031 039,03	3 101 440,62
Short-term Receivables	31 602 702,27	32 189 959,85	32 609 139,92	34 967 661,57	38 358 274,80
Accruals (assets)	1 202 253,29	1 073 572,20	1 302 561,32	1 493 349,24	1 270 410,76
TOTAL for assets	34 891 189,93	35 848 784,68	37 202 023,19	39 492 049,84	42 730 126,18
Debts over 1 year due within the year	5 059 124,61	4 944 303,70	5 767 654,79	5 236 939,20	4 862 830,73
Trade Payables	16 566 299,96	15 855 507,55	17 192 666,21	14 812 180,87	21 325 208,35
Taks, Social and Salary Liabilities	6 784 352,20	7 929 953,93	6 557 523,98	10 475 338,71	10 191 651,82
Advances Received	11 008,86	9 597,36	13 062,76	17 029,09	30 059,37
Other Short-term Liabilities	65 661,73	164 130,69	164 002,38	162 885,13	125 568,05
Accruals (Liabilities)	233 605,30	300 774,86	347 452,47	542 616,38	3 039,19
TOTAL for liabilities	28 720 052,66	29 204 268,09	30 042 362,59	31 246 989,38	36 538 357,51
Working Capital Requirement	**6 171 137,27**	**6 644 516,59**	**7 159 660,60**	**8 245 060,46**	**6 191 768,67**

Over the analyzed period, the WCR has shown a general upward trend, rising from 6,171,137.27 in 2019 to a peak of 8,245,060.46 in 2022, before decreasing to 6,191,768.67 in 2023. Between 2019 and 2022, the consistent increase in WCR indicates that the hospital required more capital to finance its operations. This rise could be attributed to growing operational demands, possibly influenced by the COVID-19 pandemic during which hospitals faced increased operational costs due to heightened patient volumes, the need for additional medical supplies, and the implementation of new health and safety protocols. However, in 2023, the WCR decreased to a value of 6,191,768.67, a notable drop from the previous year. This reduction might suggest that the hospital managed to improve its operational efficiency, perhaps by better managing receivables, payables, or inventory as the immediate pressures of the pandemic began to disappear.

Net cash position

	2019	2020	2021	2022	2023
Working Capital	6 716 469,50	14 813 547,68	11 393 073,97	14 365 892,96	6 383 503,75
Working Capital Requirement	6 171 137,27	6 644 516,59	7 159 660,60	8 245 060,46	6 191 768,67
Net Cash	**545 332,23**	**8 169 031,09**	**4 233 413,37**	**6 120 832,50**	**191 735,08**

In 2019, the hospital had a modest net cash position of 545,332.23, indicating just enough liquidity to cover its WCR, with a small cash buffer. However, in 2020, there was a dramatic

increase in net cash to 8,169,031.09, suggesting that the hospital was in a strong liquidity position during this year, possibly benefiting from increased funding received in response to the early stages of the pandemic. In 2021, the value decreased again to an amount of 4,233,413.37 as the WC declined while the WCR continued to rise. The following year saw an improvement to 6,120,832.50, suggesting that the hospital managed to optimize its operations and generate better liquidity despite the continued challenges posed by the pandemic. However, the situation changed drastically by 2023 with a net cash position of 191,735.08, the lowest level since 2019. This sharp drop suggests that the hospital faced increased financial pressure in 2023, possibly because the entity is not benefiting anymore of financial support from the competent authorities.

Cash-flow

	2019	2020	2021	2022	2023
Profit for the year	**466 906,81**	**632 341,88**	**1 071 234,16**	**894 642,33**	**(3 469 873,48)**
Depreciation Allowances	5 666 193,47	5 779 032,38	6 097 346,69	6 473 444,91	6 744 117,23
Value adjustment Allowances	9 014,04	11 915,25	11 078,57	24 090,89	26 826,88
Provisions for Risks and Charges	-	-	-	-	-
Value Adjustments on Other Current Assets	-	-	-	-	-
Non-recurring Depreciation and Value Adjustments	-	-	298 540,85	-	-
Value Adjustments on Financial Assets	-	-	-	-	-
Provisions for Non-recurring Risks and Charges	-	-	240 000,00	-	-
Losses on Disposal of Fixed Assets	-	-	-	-	-
TOTAL NON-CASH EXPENSES	**5 675 207,51**	**5 790 947,63**	**6 646 966,11**	**6 497 535,80**	**6 770 944,11**
Capital Grants Allocated to Retained Earnings	-	-	-	-	-
Reversal of Depreciation and Value Adjustments on Tangible and Intangible Assets	-	-	-	-	-
Reversal of Value Adjustments on Financial Assets	-	-	-	-	-
Reversal of Provisions for Non-recurring Risks and Charges	-	-	-	-	-
TOTAL NON-CASH INCOME	**-**	**-**	**-**	**-**	**-**
CASH-FLOW	**6 142 114,32**	**6 423 289,51**	**7 718 200,27**	**7 392 178,13**	**3 301 070,63**

In 2019, the hospital reported a profit of 466,906.81, resulting in a cash flow for the year of 6,142,114.32, indicating that the hospital generated a solid amount of cash from its operations. During the year 2020, despite a slightly higher profit of 632,341.88, the cash flow only marginally increased to 6,423,289.51. This increase can be attributed to a rise in non-cash expenses, particularly depreciation allowances, which suggests ongoing capital investments or replacement of assets. By 2021, the hospital saw a significant increase in profit to 1,071,234.16, probably thanks to the COVID advances received that are generally recorded in the account 70, leading to an improved cash flow of 7,718,200.27. However, in 2022, despite a solid profit, the value of cash-flow slightly decreased to 7,392,178.13, but the year 2023 marked a significant downturn, with the hospital reporting a loss of (3,469,873.48). This loss, combined with non-cash expenses amounting to 6,770,944.11, led to a substantial decrease in cash flow to a value of 3,301,070.63. The negative profit and reduced cash flow in 2023 indicate that the hospital faced severe financial challenges, potentially due to the absence of financial support after the pandemic period.

Return on equity

	2019	2020	2021	2022	2023
Net Income after Taxes	466 906,81	632 341,88	1 071 234,16	894 642,33	(3 469 873,48)
Equity	26 176 106,33	26 214 453,59	26 525 300,98	26 615 061,98	23 474 043,26
ROE	**1,78**	**2,41**	**4,04**	**3,36**	**(14,78)**

In 2019, the hospital achieved a ROE of 1.78%, suggesting that while the hospital was profitable, its returns on equity were limited. In 2020, the ROE improved to 2.41%, as net income after taxes increased and equity remaining stable. It is during the year 2021 that the

hospital saw a significant rise in ROE to 4.04%, driven by a substantial increase in net income after taxes to 1,071,234.16. This higher ratio reflects a period of strong financial performance, where the hospital was able to leverage its equity effectively to generate higher profits, probably thanks to the financial support for the COVID situation. In 2022, the return slightly declined to 3.36%, but it is in 2023 that the hospital experienced a dramatic downturn, with a negative ROE of (14.78%). This was due to a significant loss of (3,469,873.48) and a reduction in equity to 23,474,043.26. The negative ROE indicates that the hospital not only failed to generate a return on its equity but also suffered substantial losses, eroding its equity base. This severe decline highlights significant financial distress, likely driven by a combination of factors such as increased costs, reduced revenues, or other financial challenges that the hospital could not overcome after the pandemic period.

Return on assets

	2019	2020	2021	2022	2023
Operating Income	466 906,81	632 341,88	1 071 234,16	894 642,33	(3 469 873,48)
Debt charges	761 547,00	713 338,53	791 588,72	752 784,71	878 958,31
Total Assets	91 055 073,11	102 309 483,94	100 723 418,73	102 367 445,17	100 935 723,65
ROA	**0,01**	**0,01**	**0,02**	**0,02**	**(0,03)**

In 2019, the hospital's ROA was at 0.01%, suggesting that the hospital's ability to generate income from its assets was limited. Same conclusion can be drawn in 2020, even though the pandemic period started. During the year 2021, the ratio increased to 0.02%, meaning that the hospital was beginning to use its assets more effectively to generate income, likely due to a higher income level with the advances received as financial support for COVID. In 2022, the return remained steady at 0.02% but by 2023, the ratio turned negative, falling to (0.03%) as the hospital reported a significant operating loss of (€3,469,873.48) and total assets increased to 109,535,725.65. The negative ROA is probably due to various factors, including increased operational costs, inefficiencies, or other financial pressures that the hospital could not mitigate after the pandemic.

Current and acid liquidity ratio

	2019	2020	2021	2022	2023
Current Assets	39 462 916,86	43 717 040,91	42 187 984,09	46 347 887,09	46 444 745,30
Debts due within 1 year	32 746 447,36	28 903 493,23	30 794 910,12	31 981 994,13	40 061 241,55
Accruals (Liabilities)	233 605,30	300 774,86	347 452,47	542 616,38	30 039,19
CURRENT RATIO	**1,20**	**1,50**	**1,35**	**1,43**	**1,16**

	2019	2020	2021	2022	2023
Receivables due within 1 year	31 602 702,27	32 189 959,85	32 609 139,92	34 967 661,57	38 358 274,80
Cash Investments	-	-	-	-	-
Availables Funds	4 560 752,44	7 861 819,27	4 982 662,62	4 757 511,04	1 878 583,79
Debts due within 1 year	32 746 447,36	28 903 493,23	30 794 910,12	31 981 994,13	40 061 241,55
ACID RATIO	**1,10**	**1,39**	**1,22**	**1,24**	**1,00**

For the year 2019, the hospital had a current ratio of 1.20, indicating that it had just enough current assets to cover its short-term liabilities, but with a relatively thin margin. The acid ratio, was at 1.12, suggesting that the hospital's highly liquid assets were just sufficient to meet its immediate obligations. In 2020, both ratios improved significantly to 1.50 and 1.39 respectively, suggesting that the hospital was in a stronger liquidity position, likely due to an influx of funds related to the pandemic situation. However, by 2021, the current ratio had decreased slightly to 1.35, and the acid one to 1.22, reflecting a tightening of the hospital's liquidity. Although the ratios still indicated a reasonable level of liquidity, the decrease

suggested that the hospital's ability to cover its short-term obligations had begun to weaken. Even if in 2022 both ratios showed a minor improvement, by 2023 the financial situation had deteriorated, with the current ratio dropping significantly to 1.16 and the acid ratio falling to 1.00. This sharp decline suggests that the hospital was under increased financial pressure, with a reduced ability to meet its short-term obligations. By the way, the acid ratio value of 1.00 indicates that the hospital had just enough liquid assets to cover its immediate liabilities, leaving no margin for error. Any further reduction in liquid assets or increase in liabilities could lead to serious difficulties in meeting financial obligations.

Solvency ratio: LT debt/Equity

	2019	2020	2021	2022	2023
Debts over 1 year	29 064 827,19	42 755 578,30	36 369 673,79	36 416 588,50	31 933 862,27
Equity	26 176 106,33	26 214 453,59	26 525 300,98	26 615 061,98	23 474 043,26
LT debts/ Equity ratio	**111,04**	**163,10**	**137,11**	**136,83**	**136,04**

In 2019, the LT debt to equity ratio was at 111.04%, indicating a moderately leveraged position where the hospital relied on debt almost as much as its equity to finance its long-term operations. By 2020, the ratio increased significantly to 163.10%, as long-term debts surged to 42,725,579.63 while equity remained relatively stable at 26,214,453.59. This sharp rise in the ratio indicates that the hospital became more dependent on debt, especially because of the advances received for the pandemic period considered as LT debt. In the year 2021, the ratio had decreased to 137.11% and remained quiet stable during 2022 and 2023. This stability indicates that while the hospital maintained its leverage at a high level, it was not significantly increasing its debt load relative to equity, suggesting a cautious approach to managing its financial structure during the ongoing challenges of the pandemic.

Degree of long-term financial independence

	2019	2020	2021	2022	2023
Equity	26 176 106,33	26 214 453,59	26 525 300,98	26 615 061,98	23 474 043,26
Total Liabilities	91 055 073,11	102 309 483,94	100 723 418,73	102 367 445,17	100 935 723,65
Degree of Long-Term Financial Independence	**28,75**	**25,62**	**26,33**	**26,00**	**23,26**

In 2019, the hospital's degree of LT financial independence stood at 28.75%, indicating that approximately 28.75% of the hospital’s liabilities were covered by its equity, suggesting a moderate dependence on debt at the time. During the year 2020, the ratio decreased to 25.64%, as the hospital's equity remained relatively stable, while total liabilities increased significantly to 102,309,489.34. This decline reflects an increased reliance on debt, likely as a response to the financial pressures brought on by the COVID pandemic and the advances received considered as LT debts. By 2021, the value of independence saw a slight improvement, rising to 26.33% and remained relatively stable at 26.00% the next year, with equity increasing to 26,615,051.98 and total liabilities rising slightly to 102,367,445.17. However, in 2023, the degree of LT financial independence declined to 23.26%, the lowest value of the period analyzed. This decline indicates that the hospital’s financial independence weakened considerably, likely due to the significant losses reported in that year. The simultaneous increase in total liabilities further exacerbated this decline, suggesting that the hospital’s financial health was under considerable pressure after the pandemic period.

ANNEXE VIII: Transcription interview 1

Interview 1- Hospital A
Place: Online teams meeting – Date: 24.07.2024
Duration: 45.18 minutes
University hospital in Wallonia

Sarah:
Hello, I hope you're doing well since our last call. To give you some context regarding my literature review on my topic, the first thing I highlighted was cost accounting with cost centers. I also talked about the standardized minimum accounting plan for hospitals, and as explained during our previous interview, I also detailed the financing system with the four main sources of funding, where I highlighted how the BMF relates to medical fees and all that. Because the question was obviously about the impact of regulated cost accounting on the financial management of hospitals and trying to understand what the impact would be.

So first of all, could you introduce yourself, explain your role within your hospital, and how it relates to accounting and hospital financing?

Mr. X:
I work at the hospital A; I am the head of department. I manage the claims and recovery department, but I've also always been involved in the financial analysis of the BMF. There's another department that deals with the analysis of medical activity, the justified activity. I oversee the data to optimize encoding, etc. We have another department called CIMEI. I handle all the analysis and revisions of the BMF; I do them and then ask other departments to provide what needs to be done. So that has always been my responsibility—the BMF. I'm also in charge of filling out and submitting all the tables to Finhosta, which are also used as a basis for some funding.

Sarah:
Perfect, thank you. So, let's start with some general questions. How would you characterize the regulated cost accounting of hospitals in Belgium? What is the objective of this system?

Mr. X:
The objective, in my opinion, is primarily to correlate the hospital's flows with the sources of funding. So, we have the cost centers, etc. Now, many companies have cost accounting. In fact, it's about defining a cost price, in a manner of speaking, because it's a bit of a narrative that isn't... we're in a hospital world, but that's what it is. It's still a cost price, but it's about caring for people. And like everything else, it's about aligning the costs we have with the resources because we know that more and more we're going to have flat-rate funding. We'll see that it's important in accounting. We have limited resources because we're still in a system where we depend on social security, etc. So, a hospital can't just say, "Hey, I don't have enough room rates; I'll increase my daily rate by 10 euros." The hospital has a fixed budget.

And so, I find that the important characteristic is to break down the sources of funding to see if there's a problem in terms of fee production, for example. Anyway, BMF funding is still more or less in deficit because it's often lump-sum. The goal is to try to minimize this loss, to have a more accurate view of costs. More and more, we're moving towards a notion of lump-sum. You have to manage with what you have. The lump-sum doesn't follow the evolution of actual costs. Even if it's indexed, part B doesn't always hold up. For example, salary costs—we have flat-rate funding for salaries, it's a lump-sum, but we pay according to the terms of the agreements we have. Personally, when I arrived here, I thought it was good because we didn't just have general accounting—I have nothing against general

accounting—but we had general accounting plus analytical accounting. It's always interesting to see that because there's the definition of work units, etc.

Now, the characteristic of hospitals is that it's very locked down. In private companies, you create your analytical accounting according to what you want. You start from where you want. There are no rules, whereas in our case, there are defined cost centers, etc. So, the allocation keys are often fixed. It seems logical, but it's still fixed. It makes sense because it's meant to allow the federal government to collect information and have funding distributed across all hospitals. If we had a cost price calculated one way for the hospital A and a completely different way for another hospital, it becomes complicated to do macro analyses.

Sarah:
Perfect, thank you. So why do you think it is necessary to have extensive and detailed cost accounting?

Mr. X:
It's because our revenues are limited due to the fact that we have the BMF, which is a fixed envelope, so at some point, other than trying to optimize the indicators, there's not much we can do with it. We can't say, "I would have liked to have 20% more BMF." Before, that was possible, but I'm talking about the 90s, etc. We had the standard daily rate. That is to say, we could say that the price given to hospitals, that the costs are higher than what we're given, so the managers had a price increase. Now that's over. We have to manage with envelopes, and more and more, these envelopes are lump sums. So, I find that it implies rigor in terms of costs. It's virtuous.

The medical staff, for example, when we talk about fees, their goal is to care for patients. So, they might want the super high-tech machine, I mean, that will really care for the patients. It's normal—their goal is to care for patients. And so, do we, I mean, we're a hospital. But the management aspect also allows us to say, "Be careful, we have to do this to finance it, etc." So, there's a bit of a balance between the patient care aspect and the cost management aspect, which is more administrative, I mean. It's the balance between the two that determines that we're not a company that wants to make a profit for the sake of profit—we want to care well, but within the budget, because we're also part of social security.

It's increasingly important, especially with the crisis we had, with rising energy prices and the budget not keeping up. We had some aid, we must acknowledge that we did get some federal aid for certain things, but it doesn't keep up with price increases. The base budget needs to increase, but they also have constraints at the federal level, I mean, so everything has to be balanced, and so we've taken a bit of a hit with the rise in energy prices, that's true. So, it has now required us to make efforts, I mean, to think a bit differently, to try to do better with less, I mean, fewer expenses. It forces us to question ourselves each time too. It's not bad in the idea because it would be too easy if we could just get more money, etc. But I'm talking about operating costs, and then there's also personnel costs. Personnel costs in a hospital are the most expensive thing, but they are also its main resource. Without personnel, you can't do anything. But we had slipped in some areas.

So, it's this dual situation—the crisis environment we have, which required more optimal cost management. And then the big thing is to say that more and more, we have limited revenues with costs that need to be controlled. If we want to hold on, we have to control costs.

Sarah:
Yes, I had already done a little financial analysis of the figures from the annual accounts to also see how things were going at your institution, and it's true that I also highlighted the fact that there was an impact of inflation but also the COVID period, which I had to highlight, of course. So, that answered my question well. I'll come back to COVID a bit later. But then, there was also a question about what

the main advantages and disadvantages of regulated cost accounting are for hospitals and their funding, in your opinion?

Mr. X:
The advantage is that we are still guided to some extent. We don't have to think of everything—it's not a model we have to create from scratch. It's a model that allows us to compare. It also allows for the MAHA analysis. There, the tables are normally more or less comparable, even if we don't apply the same thing in the same way anyway, but it still provides a starting point. It's like having a basic common language.

The disadvantage is that it's not always a true reflection of the hospital's specificity. Sometimes the hospital will want to have its distribution to the ministry for everything related to funding and comparison. It might develop another analytical model that allows it to, for example, say, "These costs, I'd like to distribute them differently," etc. So, at that point, if we want to have another model, the standard guides you and allows you to compare, but sometimes, in certain cases, it doesn't always reflect the reality we would like for the points we want to measure.

Sarah:
So, what is the impact of this regulated cost accounting on budgeting procedures and financial decision-making in general? In your position, what would the impact be?

Mr. X:
We have a specificity because we have salaried doctors, but in many hospitals, the doctors are independent. So, analytical accounting also allows defining medical activity centers, allowing revenue distribution, for example, to say that such and such a service is functioning more or less well, etc. It tempers demands, I mean. It allows going further. For example, if we have to finance a new medical project that's outside our core medical activity because our core activity is caring for people, a financial plan can be made for the activity as such. For example, it might be necessary for such an activity to improve something that should be brought by this medical equipment.

In decision-making, it's important because it allows for a more precise view of where efforts need to be made, where negotiations are needed, etc. And it's often in our case what we call administrative services and the medical services of doctors. Because, as I said, the doctor might want to exclusively focus on the patient, and the manager will say, "Okay, that's fine, but it has to be sustainable. We might need to dilute an investment, perhaps postpone such an investment in certain things, etc." So, it's important in decision-making because it allows the manager to highlight where attention is needed. The costs covered by the BMF, we must be careful because it's a lump sum. For example, for medical activity, there's always a certain part, even if it's being challenged gradually, that's fee-for-service, so we can still say that we can finance a certain activity by considering that the investment will lead to an increase in activity. So, to finance in the long term, it allows the stakeholders to address what interests them, even if everything is related to the hospital's viability.

The reality of doctors is not the same as the management of optimizing cost management for a pharmacy or an administrative service. I find that's the impact on things. Afterward, it requires complexity. We sometimes ask ourselves when hiring someone, "Are we going to assign them to this cost center? Are they shared between two things?" Well, that's like any analytical accounting too.

Sarah:
And do you have a concrete example where cost accounting had an impact on a financial decision you had to make? More of a general example.

Mr. X:
Personally, I don't make decisions, but for example, we built a new building of about 30,000 m², I think, and that changed because previously, in the BMF, since it was purely an outpatient activity, we didn't have any funding at all. So, there were revenue forecasts. With the auditor, we made revenue forecasts but with growth norms because it was an investment over years, with growth norms service by service. And then, based on that, we said we could finance part of it through loans, part through equity. But then the equity also depended on the activity that the doctors committed to doing. And so, we had services evolve that were included in this new building. We had calculated precise norms. For the rest of the hospital, we had calculated general growth norms, and based on that, we had estimated more or less the sustainability of the project in the result. At some point, when we started the amortization, it was a big hit, but for the project, it was about the project's viability. It allowed us to decide whether to build the building or not.

And then, the other impact we could mention is at the revenue level, for example. So, when I have revisions based on an FTE or something like that that I can place somewhere or not, I have the funding or I don't have the funding. Or I have the funding at a certain percentage. That's quite concrete. We try to reflect reality because we could optimize everything and put everything in the hospital cost centers to say that everything is covered, but then the inspector comes and says, "Are you kidding me?" We can optimize, but we have to stay honest. Now, when we have the choice and it's justifiable, we can place it in a cost center where we know we have 50% funding, and the other has 100%—we put it at 100% if it's correct.

That's a real impact of analytical accounting, but it still has to reflect some reality. At some point, we have to accept that some people are not covered by funding, and we have to place them in cost centers that aren't covered.

Sarah:
Yes, of course. I also had a question about what challenges and limitations are associated with the current financial system in hospitals and regulated cost accounting?

Mr. X:
The main challenge is trying to do better with less, as explained earlier, with fewer expenses because there's pressure on the results. Another challenge we also see is working in a network. It's a culture to adopt, I would say. At some point, it's about working together to create a network. We have the Ellipse network, for example, but we must also accept putting things in common. At first, in the network, everyone is a bit afraid of putting what brought them funding into the network and then only keeping the activities that don't bring in money. So, it's also a challenge to see how not to think only at the hospital level but at the network level for certain things. Those are the main challenges in financial management in general.

If we focus more on accounting, there's nothing we can do—we're moving more and more towards a flat-rate system. It's also easier to manage at the federal level with envelopes. If we have an envelope that depends on production, the INAMI budget can vary depending on the actual production of hospitals. Whereas if it's flat-rate, you can predict much better. It's annoying for us, but I understand for them that it's much more predictable that way. The risk is that at some point, you lump-sum everything, and at first, it's okay, and then the next year, you say, "We have a little less money; we'll reduce all the lump sums by 5 or 10%." And then you're in trouble because that's always the fear we have. There's still a purpose behind it that might be justifiable, but the evolution is, in any case, to move towards more efficiency, more patient services with resources that are increasingly lump-sum and, I think, limited.

Sarah:
And in your opinion, what is the influence of regulated cost accounting on the overall activity of the hospital? We had talked, for example, about using the best machines to provide higher quality care, but that still involves a financial cost. I don't know if there's another example?

Mr. X:
It's also a tool for dialogue with stakeholders. We still have something that allows us to say, not at my level, but perhaps for the head of the finance department and even more so the CEO, that it's a basis for discussion. Let's imagine we need to make efforts because we have a somewhat deteriorated financial situation—you tell someone that, and they'll say, "Yes, okay," but it's quite abstract. Whereas if we say that we've broken down the activity within the framework of the service, we clearly see the evolutions, the products, the revenues, but of your service rather than having a general thing, it speaks more to people. If we were discussing with a medical director, we could show the fees, for example, or if we're discussing with a diabetology service, we can break down the activity and the figures to give them the diabetology figures. And that is useful, especially since at hospital A, the budgeting process is initiated by the services. So, each department head actually has a mini-income statement that actually includes analytics for their service, and it allows them to see how their service is evolving and thus to get involved in the management of the hospital A. Also, at the budget level, it tempers budget requests because if at some point, someone asks for double the staff, but we see that revenues are decreasing, we might say, "That's perhaps a bit much." It's perhaps a good thing at hospital A and probably in other hospitals too, but I'm talking about what I know—that all the indicators we send to the heads of medical services, pharmacists, etc., are broken down according to the analytics. They have an overall view of the hospital, but it's very abstract, whereas when we show them their cost centers, it speaks to them much more.

Sarah:
Okay. So, I wanted to come back to the COVID period because it's something I had to highlight given its importance in the history of hospitals. Just a general question to start with—what were the financial effects of this period on the hospital?

Mr. X:
The financial effect is that we had to close the hospital. There were cancellations because people were very afraid to come because of the lockdowns, things like that, but there were also many patients who were afraid to come to the hospital. Additionally, almost everyone was teleworking during the lockdown—we were forced to, especially the support and administrative services.

So, we had activity that dropped dramatically due to the lockdown, because we could no longer perform certain procedures, and also because people were very afraid to come. All this greatly slowed down activity, so we reached activity levels that were, moreover, frozen. It's only now that we've received the BMF with an adaptation of the justified activity; otherwise, our activity was frozen at 2019 levels for years to account for that.

However, we did have some aid on the other side. We lost funding, lost fees, but there were still cushions because we still had the fixed part of the BMF that continued to be paid regardless of activity. That was a cushion. Well, it wasn't enough, but it was a cushion. And we had additional revenues to cover the loss of activity.

In short, the main consequence was a drastic drop in activity in hospitals. That was the financial side, but on the other hand, it also created teleworking. I mean, in terms of the consequences for hospitals, it's not necessarily monstrous costs, but it initiated the whole teleworking project, and it became widespread in hospitals. It was an accelerator, even if some might have already been doing it.

Sarah:
So, didn't this period also highlight perhaps some strengths or weaknesses in the current financial system and the cost accounting that was implemented? If so, which ones?

Mr. X:
It set up a reflection for us on validating the people who came to the hospital. There are always two schools of thought when it comes to admissions: either you want the shortest possible waiting line so that people don't has to wait to register, or you want to take the time to properly verify the data, etc., to later bill the right person and ensure quality demographic information. And then COVID meant that sometimes we had people with billing that wasn't quite right. We were already reflecting on this, but it intensified the reflection on the need to further verify the demographic quality of the people who come. It was already in the air because we had the project for mandatory identity card verification that came a bit later, but it highlighted the fact that the competent services needed to speed up on this quality demographic check to verify identities, people, etc.

Sarah:
Okay, perfect, thank you. And I had another little question: where there any particular moments in your career where you saw that the use of current techniques led to underfunding? It could be during the COVID period or even outside of it, but were there times when it was said that it was underfunded because of this rather regulated cost accounting?

Mr. X:
It's not especially related to accounting or the model. It's the same thing again, for example, with everything related to end-of-career funding we have in B9. It's something that's quite important for hospitals. And it's true that we replace the person, so one could say that it's cost-neutral except that there are salary scales. There are scales for nurses, scales for paramedics, and scales for caregivers, and these scales are fixed for all hospitals. So, it doesn't represent the actual salary reality—we don't base ourselves on that. And so, we have funding, of course, but in the life of a hospital or any company, we'll say there are movements—people who want to have social progress, which is normal. There's always a demand for progress, for increasing benefits, etc., and behind it, we have lump-sum funding. I think that's the main constraint we have.

For example, in administration, we are spread across FTEs. Now, does that really reflect the workload we have for the hospital, for the BMF cost centers, or the doctors' cost centers? These are defined allocation keys. In an ideal world, if you wanted to have the exact distribution of heating, you'd put meters everywhere in every room, and you'd have exactly the amount, but it's not possible. The investment would be far too heavy, and it wouldn't even make sense. Or for the people who come to maintain the offices, we'd have precise timings, etc. We can't do that—it's just not viable, even for the people, it wouldn't be possible.

It's like depreciation when we have depreciation of equipment—they are defined, we can't depreciate as we want. It's another constraint we have in hospital ownership—it's that we have linear depreciation, so we don't choose the depreciation period. We have five years for medical equipment, 33 years for buildings, but does it really reflect the actual wear and tear of the asset? In other companies, you can have declining balance depreciation or rules based on usage, etc., but does it really represent the actual cost for the hospital? It's the whole mechanism of accounting—we try to make something faithful but as faithful as possible to all things.

The constraints of underfunding, I think that's mainly it. In any case, for everything that is fee-for-service funding, we know that we have quantities and prices, we can value them based on costs. I think that's clear—we can work based on that. The problem in other things is that we have lump sums in the BMF. We have salary indexation, for example. Salaries are indexed based on the envelopes. But

that doesn't necessarily represent the indexation that the hospital has to bear for this staff. We can't have an ideal world either, but I think the constraints are mainly that—it's wondering if a cost price is really representative of the actual cost, etc. Now, hospitals are free to develop a second analytical accounting system, but it's complicated because it's not valued in the funding.

Sarah:
So, regarding all that, are there any adjustments or improvements that you think you could suggest to improve the current system for Belgian hospitals?

Mr. X:
I think the future is still about having this notion of a network, etc. It's about seeing how we can have a consolidation structure for the various hospitals in a group because there's a political will to create networks, for example, but behind it, we should still have financial mechanisms to encourage people to really establish this network. Otherwise, I still find that the accounting plan is relatively well detailed. I think it has a certain logic, like with staff members according to categories, statuses—I find that it's already not so bad. What's also good is that we have fixed positions in the cost centers. We have the first three positions, but we can go beyond that if we want, as long as we bring everything together in the ministry into three centers, we can also go into a subcategory that interests us. For example, the cost centers 210, which are surgery beds, well, we can do 210-001, 210-002, etc. The constraint is difficult to optimize, I would say, but sometimes it's nebulous for everyone to see the connection. As I say, the mechanism of calculation and funding has a purpose because it's precise enough to allow comparison. Now, on the other hand, it may seem like a complex system, I mean, when you see all these things like that.

I think the challenge is always to simplify the mechanism. We always want to simplify, but we always end up with something a bit more complicated. The goal is laudable because we try to simplify while ensuring equivalent funding for hospitals of the same type. There's a purpose behind it. I always say it may seem complicated at the federal level, but behind it, it's still to say that they try, without defending everyone, to say that we'll give more or less the same amount of money to hospitals that are more or less comparable, and therefore maybe make more efforts to account for the fact that a slightly smaller hospital has fewer needs than a large hospital complex.

But just one point of caution, I find, for example, that distribution systems like we have with low-variability care, things like that, I find that having a lump sum and then decomposing it analytically, given that part of it concerns the doctors, part concerns this and that—I find that's quite nebulous. That's perhaps the problem I would see in the more or less medium term—it's that when we lump-sum everything, there's still a logic of doctors who want to be paid. We'll still have to extract from that lump sum a portion for medical activities. So, it will be a revolution in doctor remuneration, but each doctor also needs to have their share, especially in hospitals where they are independent. It's perhaps a point of caution, maybe not an improvement, but a point of caution that I would be a bit concerned about—it's about having a system where we will have to create very complex systems to try to find revenues to put back. I think we'll have to maintain that level of detail, have a breakdown of revenues by specialty, even if we move to a lump-sum system. Maybe I'm wrong, but I have some concerns about that.

Sarah:
I think I've covered all my questions, but if you have any additional perspectives you'd like to bring to the topic, or if there's a subject I haven't covered that you think is interesting, I'm all ears.

Mr. X:
I think accounting is a cost management tool. Analytical accounting is a cost control tool, but it's also a way to give everyone perspective so that they feel involved in the activity. So, the fact of breaking

down the activity into medical sectors, etc., allows involving doctors in something that isn't their core business. Their core business is to care for people. As we said with justified activity, for example, we ask them to have RHM richness because, based on that, we can have longer stays and therefore more funding, but it helps if we show it with figures, with impacts, etc., and the impact at the hospital level by breaking it down a bit is more visible. So it's a tool, I think, for dialogue with the different stakeholders. That's still good too.

Moreover, in some hospitals, we talked about it, there's really a system of remuneration pools where the doctors are independent, but then the pools also require analytics. And that also allows the doctors to have solidarity among themselves. Sometimes certain specialties are well coded, others not well coded, so they make pools, and then they share the revenues to be a bit more egalitarian. It's an ideal world, obviously—it's not always like that, but it happens. But that's not possible with general accounting. If you have analytical accounting, it also addresses the issue of control, but it's also a management tool.

Sarah:
Perfect, I think I've covered everything. Thank you very much for your help and the interesting answers. It was a pleasure. Goodbye, have a nice day.

ANNEXE IX: Transcription interview 2

Interview 2- Hospital A
Place: Online teams meeting – Date: 08.08.2024
Duration: 44.20 minutes
University hospital in Wallonia

Sarah:
Hello. I think I don't need to reintroduce myself with my studies and everything for this interview since you already know me. Just to put things in context, the main topic was the impact that regulated cost accounting could have on the financial management of hospitals in Belgium. For that, in my literature review, I had already explained last time we met that I explained the four main sources of funding, with the BMF that I really explained in detail, the medical fees, pharmaceutical products, and all that. I also explained the basic concepts of cost accounting with cost centers by service. I was also fortunate enough to work on the PACHA study, of which I believe hospital A is a part, if I remember correctly.

So that's a bit of context about what I've briefly explained. So, I'll just start by asking if you could introduce yourself, especially for the readers of my thesis, so they know in what context we're meeting—introduce yourself, your job, and the link with hospital funding.

Mrs. X:
So, I'm Mrs. X, I work at the hospital A in the Information System Management department. In the ISM, we have the SIME service (Medical-Economic Information Service), and I'm responsible for the coding and nomenclature sector for hospital A. What do I do? I handle the recording of medical, nursing, and psychiatric data globally. These are data that are involved in the funding of the Budget of Financial Means in the sub-part B2, which is the activity of care units. Primarily, the recording of medical data in ICD-10 and nursing data in ITEM-DIRHM allows for calculating the hospital's justified activity, which is the activity funded through the BMF, representing our on-the-ground activity.

So, the idea is that the data is as representative as possible of the actual activity on the ground, considering several parameters—it's not about recording what we want, how we want; there's a structure to follow, and there are coding rules to respect because we don't encode as we bill. We bill something a bit more binary. I have this type of operation; I placed a prosthesis, I'm going to bill for the prosthesis. Then I'll bill for the care afterward. We are not in something binary. We are more in content analysis, and in this content analysis, we have a whole series of rules to follow. For example, in nursing, let's say I'm monitoring urine output—the nurse will record information in the file, and I can record urine monitoring if I find the volume, the quantity, and an evaluation of this monitoring. It's not enough to find "200 ml urine"—I'm making this up, of course. There may also need to be an evaluation behind it. In any case, the rules are strict in how the data is recorded, and it's not something binary—we really have to analyze the content of the file to extract the elements and code them based on either nursing rules (DI-RHM) or ICD-10 nomenclature rules for the medical part.

Then, once these data are recorded, they are sent through a particular structure to the Ministry of Health, and we have to send our data every six months, with submission deadlines, and we are funded based on a complete year but actually funded two years later. So here in July 2024, we received the BMF for 2024, and we are funded based on the activity of 2022. And then, regarding the BMF, something that's very important for hospitals is that in July, they receive their daily rate. So, this is parallel to the justified activity—we are more on a billing concept, but it has a big impact on the hospital because, through this Budget des moyens financiers, they calculate what the hospital can bill once the patient remains hospitalized because this amount is not the same depending on the hospitals.

All of this is calculated by the Ministry in collaboration with INAMI. That has nothing to do with me, but I wanted to tie it back to the BMF part.

Sarah:
Okay, perfect, thank you. So here, these will be more general questions, of course, from your point of view, your perceptions, etc., on the subject. I don't know if cost accounting speaks to you much?

Mrs. X:
I don't work with it daily, but I'm somewhat familiar with it.

Sarah:
If you can answer, great. If not, no worries. There are also questions more related to funding as well. But, for example, the first question is: how would you characterize cost accounting within hospitals in Belgium? And especially, what is its objective, how is it structured in hospitals?

Mrs. X:
Listen, I see it from an outsider's perspective—it's part of our daily routine. It helps establish a structure at the accounting level and, above all, thanks to this structure, to know ultimately what costs what and how in hospitals. There are two aspects. There's a legal aspect that is mandatory in these accounting structures, and then there's the analytical accounting structure, from what I've studied. So, it seems to me to be an approach that is certainly improvable, but it seems to be an interesting approach to have a detailed view of costs and, above all, to know what costs what and how.

Sarah:
So, since we often say that hospital cost accounting is very detailed, why do you think it's necessary to have such an extensive and detailed accounting system in hospitals? Even if we've just answered that question a bit.

Mrs. X:
Yes, well, I don't really have an opinion on whether it's too detailed or not detailed enough. It might indeed be detailed, but I don't have a subjective opinion to tell you whether it's too much or not enough—I don't know. Now, I think it necessarily has to be detailed given that hospitals are all different and have complex structures. So, from an external point of view, it seems to me that it necessarily has to be sufficiently detailed to represent the reality on the ground.

Being detailed is not a problem for me in the daily management of things. Where it's more complicated and problematic in the management of hospital funding is that there are many obscure rules. Let me be clearer. There are many different rules and many obscure and complex rules that are modified, and for me, that's the problem. In the end, there are so many different financing rules that they can no longer be managed by one or two people. Necessarily within a hospital, especially in a hospital like hospital A, you might think that the financial director knows everything inside out, knows the entire process thoroughly. Well, in fact, no. You have someone who is a bit more specialized in the BMF, someone else more specialized in accounting, and someone more specialized in everything fiscal. The hospital, especially a large one like hospital A with over 1,000 beds, necessarily implies specificities, and that's what's complex. Because even for a smaller hospital like Verviers or Malmedy, which are small hospitals, it's still complex for them. For example, the nursing data I handle—a small hospital like that doesn't have the means to verify the funding linked to nursing data because the structure has become too complex, and the financing system was also designed to be non-manipulable. Otherwise, it would be too easy. I just input what's needed to get money, and there needs to be something that can't be manipulated by hospitals so we can distinguish them. Indeed, it's non-manipulable, but it also creates great complexity in the financing system. So, from an internal and external perspective, I think that the fact that analytical accounting is detailed doesn't bother me. On the contrary, the more

detailed it is, the better it seems to me. Now, maybe it brings complexity, and it's the general complexity that makes things difficult and gives the impression of an overly complex financing system. That's what's being said now, when you hear politicians say, "The financing system needs to be reviewed." It's true, but it needs to be reviewed for two reasons. The first reason is to make it more reflective of reality on the ground, and the second reason is to make it more understandable. You enter something a bit obscure, and when there's money involved, during a crisis, people don't like that. So, I think we're heading more in that direction, in my opinion.

Sarah:
Okay. And if I go back to the financing system with the different sources, what do you think are the main advantages and disadvantages of these sources of funding for hospitals?

Mrs. X:
Among the sources of funding, you have the first one, which is fees. That's normal. When I go to the store and buy bread, I have money; I want to be very simple like that and say you pay for the medical service, you pay the doctors. You also have the pharmacy, which is a source of funding that's always somewhat similar. You have a product. Here it's not a service; it's a product—it's prostheses, etc. They are sold through a service. You get money back. That seems logical to me. The fourth is the miscellaneous, where you find, among other things, INAMI conventions, that sort of thing. Which also seems logical because we're more in the management of chronic diseases at a much more governmental level. So, you have diabetes conventions, HIV conventions, sleep conventions, etc. So, there we are more in the care of the population at a national level, so the hospital is also funded through that, but the patient benefits as well. And then there's the BMF, and this one, once again, as I mentioned earlier, is often perceived as something very obscure, very complex, very heavy, and only a few brave souls like me dig into it. Finally, like me with justified activity or in a hospital like hospital A.

For example, Mr. X, my colleague whom you've also met, is someone who masters the BMF quite well, so at hospital A, he's the one who breaks it down. However, you should know that it's super heavy, that it was created based on a royal decree, and you have to master it. Once you receive the BMF, it's really a whole financing system that he breaks down each year. But then, for example, he breaks it down with a financial vision that's very useful at the hospital A level, but at the justified activity level, he can't really say why it goes up or down, what the reasons are. Then it requires a much more specific analysis of the data, and at my level, I have to say, "Yes, for example, if it has decreased, it's for such and such reasons." So, we're more on that type of analysis, but all that to say that just look at the BMF level—you have Mr. X who breaks it down, and within this BMF, there are elements that he himself does not master. The IRHM (nursing) data is then re-analyzed by one of my colleagues, but that's because we're lucky to have someone who did a doctorate on these data. And he is capable of analyzing through the files we received from the ministry whether the funding we receive is correct or not and, if it's correct, to check where our data stands, what number of points it allows us to have through the BMF, whether we are increasing or decreasing, and if we are increasing or decreasing, why? Can we have an analysis by service and then analyze more specifically which service is underperforming, which service is positive, you see?

That's still quite rare. You don't always have, in small hospitals for example, and that's what's not right—you don't always have the workforce that a hospital A can have for data analysis. So, there are hospitals that receive the BMF and then analyze what they can analyze. That's what's wrong—that's what needs to be changed on the somewhat obscure side, I think, at the level of the Budget des moyens financiers. It was a succession of Belgian-style arrangements, roughly speaking, and over time, it was a succession of new developments and new regulations that made it something quite complex. That's what we're trying not to unravel, but that's what leads us to statements like "We need to try to make this less obscure" or we've talked a lot, I'd say, in the last ten years about administrative simplification.

Not just for hospitals, but we're talking about administrative simplification. For example, in hospitals, we sometimes asked for the same data twice. So, we would ask for information through INAMI, for example, and then through something else, we would ask for more or less the same information. The hospital sometimes felt like they were doing the same work twice, whether for funding or not, in data management. So administrative simplification came in behind all that, saying, "No, it's starting to become too heavy for hospitals; it's demanding too much administrative work, and we need to focus on what's truly essential." And that's how we arrived at principles of administrative simplification.

Sarah:
Great, thank you. So, in my literature review, I also had to talk, of course, about the pandemic, given its significant impact. And I have a general question first about what the effects were, especially financial ones, but if there were other very important ones, I'm all ears. But what were the financial effects of the pandemic on hospitals in Belgium?

Mrs. X:
So, the biggest impact is that hospitals had to close. They had to cancel all scheduled hospitalizations, beds had to be closed, and that had a huge financial impact. I'm not always in the strict data, but I'll tell you what I know and what I've heard, which might not be complete. The government funded that gap. The financial problem at the hospital level wasn't in 2020. There was first a big shock—everything stopped, everyone was confined, hospitals had to close except for emergencies, etc., and then protective measures were implemented. The pandemic started in March, and I think it was around September-November that the government decided to help. So, they helped financially, and then they helped again in 2021 because they forced hospitals to close again. From memory, it all lasted until early 2022 because I think in early 2022, we still had a small wave. So maybe they didn't close hospitals in 2022, but there were still mandatory confinement measures. I remember because we weren't all back at the beginning of January 2022—there was still mandatory teleworking and social distancing. I think we had a tense situation in January-February, and then everything returned to normal, I would say, by the end of February or early March 2022. Impact on hospitals at the justified activity level—the data from 2020 and 2021 weren't used for justified activity, even though the hospitals were still working. Financially, there was an impact because we didn't have the income, so the government helped a bit.

Later on, the government also helped with the energy cost problems. 2022 became a somewhat normal year again, but there was a big impact because hospital activity didn't return to 2019 levels. People are still very reluctant to go to hospitals, but slowly but surely, activity is picking up. Another huge impact is the resignations, illnesses, and absenteeism among healthcare workers. And then the obligation, already in 2022, to close beds not because of the pandemic but because of absenteeism and a lack of medical personnel. We now have a real social problem that doesn't only concern hospital A or Belgium but the whole world.

Sarah:
Thank you. And didn't this period also highlight the strengths and weaknesses of the hospital financing system? Did you not think at that time that there was a problem with how we're funded? Or not at all?

Mrs. X:
The COVID period clearly highlighted that we are funded based on activity and that if there's no activity, we're done—we have no money, actually. That's the first thing, but COVID highlighted it, although we knew it. We knew it because over the years, if your activity goes up and down, you no longer have billing, and you no longer have justified activity. By the way, the financing system is designed that way, even before COVID. If your activity is insufficient and you can't financially justify it, you have to realize something—even before COVID—because now it's politically incorrect to talk

about it, but before COVID, Maggie De Block wanted to close 5,000 or 6,000 beds. They say there are too many beds in Belgium, you see? And then COVID happened, and there was the whole problem with hospitals, etc. Now, politically speaking, we don't talk about closing beds anymore, but in reality, they were closed due to a lack of staff.

So, it highlighted two things for me. Yes, it reinforced the fact that we are funded based on activity, which isn't the case in other countries like France. I say they pay hospitals much more, even though they also have difficulties. And the other thing that might be very positive now—we'll see how long it lasts—is that hospitals overall have been helped by the government. Hospitals remain a public service, and we know there's politics behind it. Now, it also shows the fragility of the system. A hospital can go bankrupt too—don't think a hospital is infallible. We know there are hospitals that have been financially struggling for many years, and we wonder if they should close or not.

It also highlighted the importance of hospital networks, of working together. Belgium is a small country, but the fact of networking, of not doing everything everywhere, might be accepted by some, but others take it much more negatively. Because if you live in Arlon and want to give birth there, and you're told that Arlon's maternity ward handles six births a week, you wonder, "Is it really worth it? Am I even safe in a unit that handles six patients a week?" And from a financial perspective, even from a governmental perspective, do we keep a maternity ward open for six births a week, for example? All this highlights the performance of care, the difficulty of providing care, the ungrateful job of nursing, which is why they also asked for better recognition. So, it sheds light on all this, I want to say.

Sarah:
Perfect, thank you. So, I'll return to more general questions. Obviously, there are things about cost accounting that are quite detailed, so I've had enough people who answered that well, but do you think there could be an influence of how the financing system has been implemented on the overall activity of the hospital, whether it's a direct or indirect influence?

Mrs. X:
Yes, there is clearly a direct impact. Take the case of justified activity, for example. There's clearly an impact because the funding is organized based on the content of the medical file but also the management of the length of stay, and there's clearly an impact on managing the length of stay. So, before this justified activity system, and before everyone started chasing after their money, the length of stay wasn't an issue. Now, with the evolution over 30—we're over 40 years now because data recording started in the 80s—especially since 2002 when this justified activity system was set up, I wasn't yet at hospital A at that time, but it's certain that the system is such that now hospitals chase after their length of stay, and a patient, financially speaking, shouldn't stay a day too long. If they stay longer, they can, but the system has to justify it through documentation. So yes, it has an impact—it really puts pressure on the system because it also puts pressure on activity and creates competition between hospitals. If you take the province where we are, right now, the big winner is hospital x with its new hospital. It overshadows the others. Hospitals are financially competing—there's no way around it. You wouldn't have believed it 10-20 years ago because we thought hospitals were publicly funded and all that, but no. And then, a big philosophical question that you might want to put in your thesis because it always looks good—because it was the subject of a congress we organized in 2014—is, "Is a hospital a business like any other?"

Sarah:
It's true that it's a relevant question—should we treat hospitals like a business as we commonly know them?

Mrs. X:
There you go. Is a hospital a business like any other? Well, it's a business like any other in terms of profitability management, clearly, don't think we're safe, but it's not a business like any other because we serve people's health, and people's health isn't a can of peas. That's the beauty and difficulty of the job—it's a very societal and evocative object, you see—caring for people is still about life, but on the other hand, there are notions of financing, profitability. So, it generally quite crisply defines values because in a hospital, you find corporate values but also social values and big social principles that don't always go together. You take an ASBL (non-profit organization) that manages kids' homework—it's great, it's wonderful, you help the kids, and everyone agrees that you should do it voluntarily, everyone thinks it's great, it's super. But if you start adding money, oh no, the parents have to pay, you see, it starts to crystallize this thing, and well, at a hospital level, I find we're a bit in the same system, meaning it's a business like any other for some aspects, but it's not a business like any other because we're not selling peas, in fact, basically, and then we work with staff, especially in a university hospital, but even in a general hospital, you work with highly qualified staff. I'm talking about doctors, and there you're not working with production workers. Our production workers are the doctors, and in that way, it's very particular. I had a professor you might have had at HEC—his name was François Pichault. Does that ring a bell?

Sarah:
Yes, he was my Human Resources Management professor during my bachelor's.

Mrs. X:
Well, François Pichault in my time taught a course called "Introduction to Organization Theory," and it was very interesting because he gives you the social structures of organizations. And then he explains that a production company, for example—I make cars with staff who are qualified for that, but they're not qualified for anything else. In reality, in organizing your work, the autonomy you can give to people, the way you pay them, etc., all that is a very complex system, and then it's often difficult to have a large company like a hospital with highly qualified staff, but highly qualified staff who are still constrained. So, it's difficult, for example, to tell a doctor what to do. In their highly qualified capacity, they are normally the master of how they manage their work. It's complicated to take them by the hand and say, "Listen, you're not doing this right because, financially speaking, it doesn't match, even though the quality of care is there." That's the whole difficulty of the hospital financing system in connection with highly qualified staff, I think.

Sarah:
Perfect. And so, I just have a little concluding question that I always ask everyone. When you look at the current system as it is, do you have any adjustments or improvements to suggest for the future?

Mrs. X:
For me, the proposed improvements for the near future are, if possible, a clarification of the financing system, trying to move towards administrative simplification, and trying to remove a bit of the superfluous. For example, we record psychiatric data—it's great. We are slightly funded to do it, but never enough to really cover what it costs. Until recently, we had very little feedback on this data, so sometimes you wonder, "Why am I recording this or that?" I think they're aware of this, and they're trying to clean up, simplify, make things a little cleaner. At the improvement level, I'm preaching to the choir. Justified activity was an interesting transitional funding system because before, if you will, the patient stayed in their bed, and the government paid. In the 80s, they realized this would create a huge hole in the social security budget, which is why they integrated this activity-based financing system, etc., which allowed for much more profitability.

I think, from my point of view, I only really know hospital A, I think there are still internal savings to be made because we have to realize that a hospital is mostly public money. There are private hospitals,

but mainly speaking, through the BMF, we finance the hospital's operations because after that, the patient pays for their care, their bill through the mutual insurance. It's still the patient who pays, and the population pays, but at the operational level, there's still government intervention, so I think justified activity can slowly reach its limits because we can't reduce the length of stay indefinitely either.

Then a big pitfall—that's what I was saying to speak for my own cause—is that there's a big difference between a hospital where the doctor is independent and where the doctor is salaried. For example, at hospital A, the doctors are salaried, and it's mandatory like that; they are mostly salaried with a training objective. The justified activity principle raises questions because when they say that the patient must be discharged as quickly as possible, it's certain that besides a financial profitability objective of the hospital, we also have a training objective. So, we also need time in managing a patient's stay to train doctors—these are assistant doctors, young assistants who take care of patients under the supervision of a supervisor. That's how they learn, so it necessarily takes more time. At the BMF level, you have the application of B7, which helps a bit to cover this training cap, which ultimately helps pay for, finance, this university concept. But the academic hospitals in Belgium have been arguing for years that it's not enough. Honestly, it's not enough. It takes much more resources than what is funded. I also think one rather good thing that has been done at the funding level is the principle of low-variability care and lump-sum billing. So, I find that rather good because it also forces hospitals to align in terms of billing because it wasn't normal that from one hospital to another, your appendectomy was billed differently. So, I find that's good, and they want to continue in that direction, and I think studies like PACHA help improve things. Magali Pearson is also involved in reviewing the nomenclature of healthcare at INAMI. So that's a bit of what I think the future holds, and it's a good thing—all these improvements. It's a system that resembles a big dinosaur that needs to be moved.

Sarah:
It's true. Perfect.

Mrs. X:
Does that answer your questions?

Sarah:
Yes, honestly, that answers all my questions. Of course, I have more questions about concrete examples of analytical accounting and all that, but I've had people who knew so much about it that they described everything very well. So, yes, I've got answers to all my questions. Everything is good now. If you have other information, I'm always interested, but normally, I have everything I need to answer.

Mrs. X:
Okay, perfect. Thank you very much, Sarah. Good luck with the rest.

Sarah:
Thank you very much for your help. See you soon.

ANNEXE X: Transcription interview 3

Interview 3- Hospital B
Place: Online teams meeting – Date: 26.07.2024
Duration: 28.45 minutes
University hospital in Wallonia

Sarah:
Hello. First of all, thank you for your time this morning. So, in a few words, let me introduce myself. My name is Sarah, and I am in my final year of a master's degree in financial analysis and auditing at HEC Liège. For my thesis, I focused on hospitals and their funding to arrive at the research question: what is the impact of regulated cost accounting on financial management in hospitals in Belgium? To answer this question, I decided to interview competent individuals in hospitals because I found it interesting to have different points of view.

So, could you introduce yourself briefly—your job and its connection with the hospital's financial management?

Mrs. Y:
I joined hospital B and the hospital sector only two months ago, as I had worked for nearly nine years at Deloitte as a financial auditor in the corporate auditing department. So, I also have the background of that job, which I did for almost nine years in Liège as well. I understand a bit the purpose of your thesis at HEC—I know several of my former colleagues who studied there. And so, yes, I decided to join the hospital sector, which interested me a lot, and during my career, I had already audited the hospital sector, mainly psychiatric hospitals. That's the reason I decided to join hospital B. If there are any questions I can't answer or that aren't clear to me, I'll take note and can answer later if that's okay with you.

Sarah:
These are really just general questions, mostly about opinions and perceptions, so they shouldn't go into too much detail. For example, the first question is more about how you would characterize the cost accounting of hospitals in Belgium, and what is its objective?

Mrs. Y:
Just to clarify, cost accounting is about allocating costs to the correct cost centers so that we can have a clear view of costs by service or cost center. Is that correct?

Sarah:
Yes, that's right.

Mrs. Y:
I think the primary objective is first to be able to see performance and conduct financial analyses by service, department, or cost center, in order to see if a cost center is performing well or not, whether there are significant losses, or whether good margins are being generated. So, it's also for the hospital internally to see which services generate profits or at least a positive result and which do not generate a loss. But also, perhaps in terms of funding, I think there's a connection to be made because hospital funding isn't based on actual costs, so cost accounting doesn't influence funding, but I think it's still a good way to say, "Okay, we're underfunded," and to provide tangible elements to various institutions and working groups. So, yes, I think there are two approaches. There's the funding aspect, as I just explained. But for me, the main objective is also to have a good financial analysis of each service. This is a discussion we have quite a bit here at hospital B, precisely to try to disaggregate accounting by

cost center as much as possible to also make investment decisions and to ask, "Okay, is this department sustainable in the medium and long term financially?"

Sarah:
Okay, perfect. And in that sense, why do you think it's necessary to have extensive and detailed cost accounting?

Mrs. Y:
I think it's necessary to make the right decisions regarding investments and staffing. For example, if a service generates a certain margin. After all, we're in the hospital sector, so the goal is to break even, but I think we also need to make decisions as good managers and say, "Okay, I think having good cost accounting by service allows us to make the right decisions." For example, here at hospital B, it groups three hospitals that sometimes have common services across sites. And so, I think it's also an opportunity to say, "For this site, the ophthalmology service is profitable, or it's not," and then decide to transfer the service only to one site. I gave you an example that might not be directly related, but I think it's useful for making decisions about service continuity and activities.

Sarah:
Okay, and in your opinion, what are the main advantages and disadvantages of this regulated cost accounting for hospitals and their funding?

Mrs. Y:
I think the advantage is summed up in everything I mentioned earlier. However, the main disadvantage is the time it can take for the accounting teams to do this. So, first, the time, the fact that we have to work with the teams we have. So, yes, it's a matter of time and a matter of teams—I think we do what we can, and introducing truly exhaustive cost accounting takes time and teams. And then also, sometimes it's not always easy to allocate each cost to each service very precisely. Allocation keys must reflect reality—they need to be updated and reviewed, and sometimes it's not always black and white. For example, we might have an electricity bill that needs to be properly allocated to each service, and it's not always that simple. There isn't always just one hospital—there are also polyclinics, nursing homes, and daycare centers. There are many different structures. I think we need to find a balance, and it's easy to get lost in this cost accounting. And I think we need to find the right balance so that it serves the manager primarily to make decisions. But I think we need to find the right balance between having the right level of detail without going too far and getting lost, and in the end, not serving any purpose with the information. But it's clear that it's a very important element. The goal is to go as far as possible with cost accounting. But I think we need to find the right balance, and it can have its limits at some point. If we don't have the teams and resources, it's not necessarily needed to go so deep into the analysis, especially when some costs cover several services and aren't that easy to calculate through keys, for example. That's the downside I would highlight.

Sarah:
Okay, thank you. And regarding the financing system, I highlighted the main sources of funding with the BMF, medical fees, pharmaceutical products, and so on. So, my question is, what do you think of this system? Is it efficient or not?

Mrs. Y:
I'm still quite new in the role, and hospital funding is a very complex subject, but I think the current system is one that will eventually disappear. When we compare it to other European countries, I think we have a funding system that has reached its limits in the sense that all hospitals are underfunded, so we need to be able to keep our heads above water. Currently, the funding system doesn't favor prevention but rather detection, in the sense that the system will fund a hospital admission well but perhaps won't fund all the preventive measures that could avoid admissions. I know that other

European hospitals focus more on prevention and quality above all, and I think the Belgian system will move in that direction. I'm perhaps not yet an expert in the field, but I believe the hospital financial system will change quite a bit in the coming years. Indeed, there's the BMF, which is still a big part, the fees, the pharmaceutical products, and also, in terms of fees, I think the nomenclatures no longer really reflect reality. Some fees are well compensated because historically, they were due to rather advanced intellectual work, whereas now we're in 2024, and maybe some things are easier to do. And so, sometimes we need to review certain nomenclatures that no longer reflect the realities—nomenclatures that can be complex and aren't well compensated, while others are more or less well compensated. And so, I think that also, at the level of the different services, fees don't necessarily reflect the reality on the ground.

Sarah:
I also had to talk about the COVID period, of course, because it had a significant impact on the sector, so just a quick general question—do you have any idea what the financial effects of the COVID pandemic were on your institution? Were there deficits? Was there underfunding?

Mrs. Y:
Obviously, I wasn't there yet, but from what I understand, 2020 itself was a good year thanks to all the funding that was granted at that time. The bed freeze and everything allowed hospitals to survive the 2020 financial year. There was additional funding provided. However, 2021, 2022, and even part of 2023 were catastrophic years because there was much less activity precisely because of COVID, and so I think it ruined all the financial statements of hospitals, at least for the most part. Afterward, I wasn't there, but from what I understand, indeed, the years 2021-2022 were quite complicated, especially in 2021-2022, precisely because of this decrease in activity, which the funding didn't fully compensate for.

Sarah:
Yes, indeed, that's what I highlighted. Because basically, I also had to do a small financial analysis of each hospital I interview, and it's true that the years 2021-2022 always have the most catastrophic figures. And that's also why I ask the question about COVID, because I suspect it must be related.

Mrs. Y:
Yes, of course.

Sarah:
And so, you weren't there, but do you have any idea if this period might have highlighted strengths or weaknesses in the current financial system or cost accounting?

Mrs. Y:
From what I understand, because I've had the opportunity to talk to other people in other hospitals, some hospitals before COVID were hospitals that generated profits every year. And so, the financial departments and even the doctors didn't question much about cost accounting or the exhaustiveness of billing, for instance, because those were good years. Now that we're entering more financially challenging years and need to implement action plans and measures to reduce costs and increase revenues, I think COVID allowed us to ask the right financial questions. And I know that some hospitals that were profitable in terms of investment would go ahead without asking many questions—they didn't conduct profitability analyses for each investment, asking if it would bring something good or if they would lose more by investing in it. And now, I think hospitals have implemented more advanced financial analyses, more developed budget closures, more developed budgeting processes. I know that some hospitals were nowhere in terms of budgeting, and then the COVID years came with catastrophic financial statements, so they had to implement a budgeting process and more advanced financial analyses. So, I think COVID allowed us to set up action plans to try to regain balance, whatever it takes.

Sarah:
Okay, thank you. We've somewhat answered this, but what is the impact of regulated cost accounting on budgeting processes, funding, and financial decisions?

Mrs. Y:
Yes, that's what I answered because I think that having cost accounting has an extremely important impact on decision-making for an investment. If, for example, we want to invest in medical equipment in a service, like dermatology, it's about asking if this service is prosperous, if we have money to invest in this service because it allows us to at least break even. So, I think without enough cost accounting, we can't say, for example, if the dermatology service is breaking even, is it profitable, or are we losing money? So, I think it's super important to know whether we should invest in this service or not because investing in a service or department without knowing what it will bring us is a bit like making decisions blindly. I think it's crucial for decision-making. In terms of funding, I think it's also important because funding depends on the staff hired in the different services. And so, one goes with the other. I think good cost accounting allows us to make the right investment decisions and also to juggle with staff for funding. We need to ensure that the standards are met to get the maximum funding. And so, I think that to have a good situation, you need cost accounting.

Sarah:
And do you think there's an influence of regulated cost accounting on the overall activity of the hospital?

Mrs. Y:
On the activity itself, I think so, because if we hold doctors accountable by explaining that their service is losing money, which it wasn't in the past for X or Y reasons, I think it's also on the ground that they need to be aware of that and ensure they optimize things, for example, by scheduling more consultations, favoring certain procedures, or ensuring the exhaustiveness of billing. When a doctor does a consultation, they need to enter all the types of procedures and nomenclatures they performed and make sure the list is exhaustive and that they didn't forget any acts. I think it's super important to also hold them accountable and say, "How is it that your service has such a significant loss? What actions can we put in place on the ground to regain profitability?" I think so. Doctors aren't financiers, so it's not always easy to make them understand because their primary focus is on the patient and quality, rightly so. But I think it's essential to continue surviving and investing. Above all, we need to generate money. And if there's no money coming out, we can't invest, and the activity can't continue. So, one thing leads to another—I think the goal is to be able to be factual with a doctor and say, "Here's where your service stands—what action plan can we implement to improve profitability?" So yes, I think it has a significant impact.

Sarah:
Okay. Do you think there are challenges or limits associated with implementing regulated cost accounting as it is currently? And are there also challenges or limits for hospitals at the financial level?

Mrs. Y:
The challenge or limit is the fact that we're structured in such a way that we are funded as non-profits, so we don't have extensive services. I think we lack staff to implement this. And for me, the limit, as I mentioned earlier, is that we shouldn't go too far into the details. We need cost accounting that's adapted, I think, to each hospital and at a good level of understanding and analysis. We could have cost accounting down to the smallest details, but I think it's up to each hospital, based on its structure, to decide where to stop at some point. I think we need to find the right balance with the resources, what it can generate as an advantage, and what we do with that data, because if we have extremely

detailed cost accounting and don't do anything with it afterward, it's useless. I think those are the three main limits related to it.

Sarah:
Okay. And have you noticed any particular moments when the use of current cost accounting techniques might have led to underfunding? And if so, do you have an example?

Mrs. Y:
I can ask internally because I don't have an example, but I know that the allocation of staff in one cost center or another is super important because it indeed impacts funding, so we need to ask ourselves if we place them in one cost center rather than another, are we going to lose funding? Afterward, I don't have a concrete example where we lost funding due to poor cost accounting, but I can inquire internally to see if that's the case.

Sarah:
Okay, perfect. If you can get some internal examples, I'd be interested.

Mrs. Y:
Yes, unfortunately, I don't have everything here, but don't hesitate to let me know, and I'll take note. That way, I can inquire internally and send you the explanations.

Sarah:
Thank you very much. So, I have two small concluding questions. Are there any adjustments or improvements you could suggest for the current cost accounting system in Belgium?

Mrs. Y:
I think there are so many things to put in place. Maybe already trying to harmonize this among hospitals—I think that could be good because we each operate somewhat autonomously. We all have our own way of doing things, and I think setting up working groups to establish this could be effective. Afterward, each hospital has its particularities. For example, hospital B is partly a university hospital, while the other two sites are not, so we have that particularity, but I think implementing general procedures for all hospitals and agreeing on that would already be a good step forward, although it's not an easy task to do internally, let alone in all hospitals, so I think it's complicated. But yes, I think what's difficult is that everyone does things their own way.

Sarah:
Okay, and if I had to ask you the question, what is the impact of regulated cost accounting on the financial management of hospitals? If you could give just two or three short sentences to give your opinion on whether there is an impact or not?

Mrs. Y:
Yes, the impact on decision-making in terms of investment, management decisions, and doctors' decisions on whether to stop or continue a service, on the development of services—should we continue to develop more in one service rather than another? So, I think on the activity itself, cost accounting really has an impact on the hospital's decision-making to ensure financial balance or even generate profit to have the necessary savings for investments. So yes, I think that's really the primary objective.

My answers aren't the most developed because I've only been here for two months, so I know the basics, but as for the details and examples, I'll inquire internally, but I can't answer more. I'm sorry—I hope it was still useful.

Sarah:
Yes, it's always interesting to have diversity in the responses and especially perceptions from different professions. So, I thank you very much for your answers and your time.

Mrs. Y:
Thank you, I hope it helped. If there are other questions later, don't hesitate. I can also inquire. And good luck and all the best.

Sarah:
Thank you very much.

ANNEXE XI: Transcription interview 4

Interview 4- Hospital C
Place: Online teams meeting – Date: 25.07.2024
Duration: 1.18.16 hours
General hospital in Wallonia

Sarah:
Hello, thank you for being here today. First of all, let me introduce myself, I am Sarah Princen, I am in my final year of a master's degree in financial analysis and audit at HEC Liège and I have chosen a subject which concerns the impact of regulated cost accounting on the financing of hospitals in Belgium. To put a little in the context of my literary review, I started by explaining a little about the center of costs in hospitals, how it works with the minimum standardized accounting plan and then detailing how hospitals are financed with the four sources main, where I detailed the BMF, medical fees, pharmaceuticals, etc. So, you know a little bit about what I was talking about.

So, could you introduce yourself in a few words, explain to me what your job is and what the link is with hospital financing?

Mr. Y:
So, I have a background in banking, I worked in Luxembourg and Switzerland. In 2006, I joined the hospital C as financial director. In 2008, I became general manager. In 2009, all the hospitals in our province of Wallonia merged into a structure, in which we today have 4 hospitals, 3 general hospitals and a psychiatric hospital as well as rest homes. In 2012, I became general manager. Hospital C therefore has 4 hospitals, 4 nursing homes, soon to be 6, so it's not far from 3000 FTEs, 500-600 doctors and independent paramedics, and it's one of the biggest employers in our province. I therefore became general manager in 2012 and I was until 2022 when I proposed to the board of directors to take a position of strategic advisor, that is to say to rather guide strategic decisions and always to monitor, under my responsibility, the financial management and audit. Historically, in 2006, when I arrived in the hospital world from banks, where I was also a financier, I invested quite a bit in the BMF. So, in one year, I became a specialist with a certain skill, even recognized. So, I'm still on the Santhea board. Santhea is the Federation of Public Hospitals and there, I have often been consulted as an expert on the BMF. So, I can say that I have a particularly good command of the BMF, therefore the budget of financial resources, and in general, the entire financial structure of hospitals, since today, I supervise this aspect. And so, honestly, I think anything related to the financial aspects, I'm always well-researched on the subject.

Sarah:
Perfect, that’s good for me. So, I'm going to start with just two, three short general questions. First, how will you characterize hospital cost accounting in Belgium and above all, what is its objective?

Mr. Y:
Cost accounting, I would say, is purely regulatory. It has an objective within the framework of Finhosta, regulatory reporting for hospitals, with annual reporting divided into periods for which we have file formats to complete, in particular balance sheets, income statements and also, quite a few information on the HR side, therefore FTEs, payroll and specific areas allowing the annual budget to be established at the annual BMF level. Afterwards I would still say that hospital accounting is quite outdated. It wasn't really adapted. Account plans do not really evolve regularly. I think there is a difference

between regulation and monitoring on the ground. So, we comply with the accounting plan, the reporting, but at the same time, we are also restricted to following the reporting of the National Bank and above all to doing business reporting, that is to say reporting that allows us to track finances on a daily basis. For example, one of the debates which is not making much progress, but which should be seen, is the depreciation of construction in the hospital sector. It is still in 33 years while, for example, the financing of infrastructure, historically was federal, and since the accentuated regionalization, since a decree in 2017, the financing of infrastructure is regional and from July 1, 2019, hospitals receive exclusively regional funding for infrastructure. For this regional financing at the infrastructure level, the envelopes are based on a period of 25 years. This means that potentially, the Walloon region gives us the possibility of rebuilding a hospital every 25 years, in any case carrying out major work every 25 years. On the other hand, your amortization in your accounting is always in 33 years. So, if you build a new hospital, you will amortize it over 33 years and you will have financing over 25 years. Concretely, this will potentially generate a positive result if we suppose that we stop after 25 years or in any case, a positive margin for 25 years, since the financing was, let's say, allocated over 25 years, while the cost was charged over 33 years. So, for me, honestly, hospital accounting is more of a constraint, a standard, which we respect, it obviously allows us to compare apples and apples between hospitals but, honestly, at the level of the SPF, I don't know not what they do with it. Now this can be useful for Belfius MAHA analyses.

Sarah:
If we were to talk more about the financing system, how would you judge the financing of hospitals in Belgium?

Mr. Y:
Let's say it's quite special. There are very few people who master it perfectly because it is complex. There are elements that we can dissociate quite clearly, I would say, with the operating budget, the financing of the operating budget, which is therefore the BMF, which is therefore federal, and the financing of infrastructure, which is regional, so from 2017 knowing that all the history is still funded by the federal government. And it is really from 2017 that what we call the construction calendar makes it possible to finance hospitals.

So, if I first talk about the BMF, the budget of financial resources, honestly, it is very complicated. To master it, you really have to get your hands dirty, reread, ask questions, discuss. Honestly, I've done it, so I think I've mastered it pretty well. So, the first part is subpart A1 which is infrastructure financing, which is now transferred to the regions. However, there is still historic funding because, in principle, when we had funding, it was granted for 33 years and therefore, if funding would have been granted at the federal level in 2015, in 2016, you still left at least until 2050. Part A1 was perhaps a little more reassuring for hospitals, since, when you had, it was a subsidy at the time, a subsidy at the federal level, there was already a quota regional share, but it was mainly the federal government which provided funding via the BMF. Afterwards there were retrocessions between the federal and the regional, but we had it in our BMF and there were therefore subsidies. Initially, it was 60% subsidies, 40% equity and then, in the 2000s, we had 10-90 funding, so 10% subsidies and 90% in the BMF. The advantage is that, once the financing was granted, it was acquired, whatever your activity. And when we talk about financing, we are talking about financing the depreciation, therefore the construction, but also the related interest charges. And when you had interest charges, and you had taken out a loan, the rate which was applied to your loan, the interest charges, in the overall mechanism of considering, they were acquired. That is to say that for a loan over 25 years, or over 30 years, your financial charges were financed, whatever your level of activity. The only difference is that there were business plans that were funded and business plans that were not. That is to say that concretely, the hospital, to summarize briefly, that is to say the hospitalization, therefore the care units, were 100% funded. On the other hand, what was medicotechnical, therefore laboratory, medical imaging or consultations were not financed. So, the federal government only financed the purely hospital part,

that is to say the care units and what went around them. And so, there were quite complex calculations to also take into account everything that was “support”. Work in common services, such as accounting, financial management, HR, technical services, all of that was divided into complex keys.

The mechanics of ultimately calculating what you were entitled to was complex, but the advantage for hospitals was that it was certain. This part is now transferred to the level of the Walloon region, so you now have the Walloon region which decides on your projects, so you have financing authorization for the projects that you carry out. On the other hand, funding is no longer in the form of a subsidy, but in the form of daily accommodation prices. Concretely, what does that mean? This means that you are no longer sure of obtaining your financing. For what? Because between the calculation which is made at a given time, and the liquidation over 25 years of your financing, if your number of hospital days decreases, your financing will decrease. So, at any given time, you have the envelope, you can, what we call, activate your financing. You have it, a priori, over 25 years, as long as your activity remains identical, in any case at least identical to that which was the subject of the calculation of the accommodation price. In general, for the moment, the length of hospitalization continues to decrease, so the number of days is also decreasing and therefore there is a significant risk for hospitals to no longer have what they expected. There is therefore a financial risk. The second thing is that the interests, as much as at the federal level they were fixed on the basis of the loan, as the Walloon region gives you an annual interest rate, which depends on the markets of the previous year. That is, you have interest rate risk. If you borrowed 4%, potentially the first year, we will calculate your interest rate at 4%. If rates fall. the Walloon region will only give you the average bank rate for the year. So, you borrowed at 4% and you potentially receive more than 2%. You have to put in place much more complex interest rate hedging arrangements with banks. In summary, the paradigm shift from federal to regional has increased the risk on hospitals, whereas before it was limited, whatever the level of activity.

Subpart A2 is cash flow financing, nothing special here. Part B1 is the financing of everything that is a support function, i.e. catering, technical management, HR, etc. There are again specific keys, which are what we call work units, hospital days for catering, number of FTEs, etc. It's quite complex and historical. The budget is indexed, but it fluctuates since it depends on your activity, therefore on your number of days. In itself, once you understand it, it is manageable.

B2, therefore, is the most important part, financing of hospital activity. So, in summary, there is the financing of the nurses that you hire for example. There, the mechanics are quite complex. So, this is the justified activity. The justified activity, if we take a patient who stays 5 days in your hospital, so you have five days of hospitalization. You can therefore invoice, as I said, what is called the daily price, which is therefore your overall financial resources budget for the entire hospital, divided by the number of days, in general, the year N-2. So, for example, on July 1, 2024, the BMF that was notified is divided by the number of days in 2022. So, concretely, you calculate a day price, and it is this day price that is granted to you. However, the justified activity and therefore the financing of nurses who work in care units, or in intensive care, in other departments, is linked to what is called justified activity. And what is justified activity? This does not correspond to the day’s patients are present in our beds. This corresponds to the duration, we call it justified, which is in fact the national average duration. So concretely, if a patient stays 5 days in a bed in hospital C, in surgery or cardiology. If a patient stays 5 days, the national average duration for the pathology for which they were operated on is 3 days, we will only be funded for 3 days. This means that we will support 2 days on our own funds. Conversely, if the national average duration is 7 days, we will be financed for 7 days even though the patient only stayed 5 days. So, it is a system that calls for performance, that is to say that the objective of a hospital is to have a structure in terms of beds, how to calculate correctly, which allows have turnover with high occupancy rates. The objective of the hospital, apart of course from the quality of care, is to rotate patients in beds, therefore getting them out quickly once they are fit to leave, so that the duration of Hospitalization corresponds at least to the national average duration per pathology. If you do that, and

you obviously have a significant activity, that is, when a patient is discharged, you have a new patient. If so, you are performing well. You have funding that is at least, or even higher, than the actual occupancy of your beds. And so, if you take the case of cardiology, assuming that it is always 5 days, but that we are funded for 7 days, because the national average duration is 7 days. After 5 days, a new patient comes in, he occupies the bed again for 5 days but you received 7 days of funding for the first patient so this allows you to free up a financial margin to finance the nurses who are recruited outside the norm. So, this is a particular system which leads to performance in terms of length of stay, which explains that for 15 to 20 years, the system has existed at least since 2002, so around twenty years, which explains that Today, we have a very significant reduction in the average length of stay.

Before 2002, we had funding per hospital day. Before, hospitals had an interest in keeping patients in beds since they were funded by the day. So, when a patient returned, the hospital did everything to keep them there as long as possible. There is therefore this call for performance in terms of length of stay, and therefore ultimately, to reduce the number of beds we need. On the other hand, in the Walloon region, we are financed by the day. So here, it is, in fact, the synthesis of the two financings, financing for construction and financing for nursing staff. It is a question of identifying the adequate number of beds so that on the one hand, we are financed at staff level, and on the other hand, we do not have excess capacity because at the level of the Walloon region, the financing of the Walloon region, not only is it risky for hospitals since it ultimately depends on the activity, but also it provides a corrective. That is to say, you are only funded if you comply, you are only 100% funded. only if you respect the normative occupancy rates. So, the Walloon region calculates funding for you, but you only receive it if the occupancy rates of your hospitals correspond to the rates set by the region. For example, in geriatrics, it is 90%. B2 financing in 2002 was truly a revolution. Then you also have specific funding for intensive care, for emergencies and you have what we call complementary points which make it possible to complete the funding. This B2 mechanic is really quite complex, but it is super important. So, this is the most important part because this is where you can sometimes, depending on your activity or your performance, have substantial resources and it is a race for performance since being below the national average duration, this is not a given. You are better for a certain time, you are part of the top 5 or top 10 hospitals but the others adapt since they are also looking for performance. It is therefore a systematic race for performance in terms of average length of stay, which can generate major impacts in financing.

Part B3 is the similar part for financing personnel and medical-technical equipment. B4 is diverse and varied I would say. It is also important because it represents a significant amount of financing but B4, in itself, is not very complicated. There are some special measures. This is specific funding, such as for example funding for cybercrime or even the company auditor. The minister decides to finance certain specific sections. For example, the Prime Minister of Health has developed specific funding for the cancer plan. So, for 10-15 years, we have had specific funding for the cancer plan. And so, there is a whole mechanism for calculating this financing. There is also, for public hospitals, the partial financing of pension contributions for civil servants. You have at least 30 sections, if not more in B4. It's not difficult, it's either the financing of a specific project, or sometimes, additional FTEs, mobile palliative functions, etc. You really have a bunch of specific measures. You also have quality which is financed with also a particular calculation mechanism.

B5 is pharmacies, financing pharmacy staff. B6 is historic funding for additional personnel, but which moves us more and which dates back at least 20 years. The B7 is for university hospitals. B8 is for hospitals that welcome patients with precarious status. We can consider that indeed, in Charleroi or Liège, the social status of patients is still more problematic than in the province of Luxembourg or in Walloon Brabant. And so, patients find it more difficult to repay their hospital bills and there, often the social status of these patients, we will look in the mutual insurance files, those who have many patients who are protected at the mutual insurance level, receive additional financing.

B9 is essentially complementary funding in terms of FTEs, therefore for staff. There are two recent important points on the B9, there are several points, but there is also the financing of certain bonuses for nurses. So, nurses, depending on their age, they have work exemptions and therefore we have additional funding to recruit or they have bonuses. So, at 45, a nurse is entitled to one day of leave per month or we provide funding, she can choose a bonus. At 50, she is two days old, and at 55, she is three days old. Therefore, additional financing allowing staff to be recruited up to the number of days taken or to finance the bonus that the nurse has chosen. There is the Blouses Blanches fund, which is an offshoot of 2018, which made it possible to recruit many additional FTEs in hospitals. For example, for hospital C, we have had a budget of around 5 million euros since 2019 in addition which allows us to recruit 90 additional FTEs. The problem is that we have fallen into a COVID period and a period of nurse shortage in Belgium, so it is very difficult for hospitals to use, to justify the complete base. But it is significant funding and the objective of the Blouses Blanches fund is basically to add one nurse per care unit. In care units, there are standards and depending on the type of unit, you are entitled to 15 FTE, so FTE is full time, per unit. And the Blouses Blanches fund, the objective was to detach the head of department so that she no longer works for the care unit and to strengthen the unit with an additional nurse. This is not yet very much achieved, but otherwise, we have recruited logistical help which allows us to take charge of a certain amount of administrative cash for nurses so that they can devote themselves more to patients. The second point, an envelope which is just as important, which can vary depending on the size of the hospitals, for us it is of the order of 8-9 million euros, it is the transition to a single scale in the private and public hospitals, called IFIC. The IFIC is a categorization of functions, and for each function, there is flat-rate funding. So, for a nurse position in the emergency room, the hospital receives a flat rate. The package made it possible to upgrade the nursing staff and therefore the IFIC scale was more advantageous than the scales applied by private or public hospitals, these scales being different initially. And so now, all hospitals apply the same scale. The fact of moving from a fixed scale to the IFIC scale, for certain functions, cost more and therefore the flat rate per function makes it possible to theoretically compensate for the cost of moving from one scale to another. All hospitals therefore have the same scale and that is something good. This does not mean that certain hospitals do not use complementary elements compared to the IFIC, in order to be able to recruit. So, the Blouses Blanches fund was a parliamentary initiative, notably from the PTB and the IFIC, it is a historic initiative, first in private hospitals and then deployed in public hospitals.

And part C2 is all the catch-ups, the corrections either because they made a mistake, or because funding is granted retroactively, so we grant it to you via sub-part C2. Either, the other point is that hospital financing is never more than an advance. This is what is special, is that for some of the BMF sections, this financing is subject to review. That is to say, we must proceed with part of the BMF. This means that in fact, we receive an advance and all these sections which are subject to revision are specified in the law on hospitals. And so, the problem is that it comes 5-6 years later. There is an inspector, therefore from the FPS, who, 4-5 years later, reviews your financing based on real statistics. For example, financing which depends on the number of FTEs, you have financing which is an advance which is based on the last revision approved and which is revised. For example, at the last review in a specific funding that depends on the number of FTEs, let's say you had 10 FTEs for this funding and you had 70,000 euros per FTE, then you had 70,000 euros. And if the measure is revisable, in the year of the current financial year, we always finance you for 10 FTEs. Except that this year, you may have 8 justified FTEs or 12 FTEs. And so, during the review, they take your statistics from the exercise they are reviewing and they compare it to what you received as an advance. If there is a difference of 2 FTEs, positive or negative, they make a correction for you and they do that for a whole series of sections.

Not all sections are reviewable, but all sections that are reviewable are subject to review. And therefore, via C2, when the revision is done, once the FPS has ruled on the remarks and it is final, it is liquidated. Liquidated how? The plus or minus is granted to you via C2. And you receive, 6, 7, 8 years later, the corrective, positive or negative, regarding the revision. For example, now, the last effective

revision is 2017. The BMF as of July 1, 2024, for all sections that are revisable, uses this data from 2017. So, they are now doing 2018 and 2019. So, they only do 2023 or 2024, only in 3, 4, 5 years.

And so, that somewhat closes the overall overview of the BMF but there is an essential point when you are in hospitals, which is a complex, difficult, but very important exercise, that is what we call catching up. What is catch-up? This is the exercise that the inspector will do five years later. It is to say, for all the revisable sections, how do I stand in relation to what I have been granted? Compared to the 10 FTE that I was granted, can I justify 12? Can I justify 8? And so, at the end of the year, or within the framework of the budget, a team, under my responsibility, and I have been doing this since I arrived in the hospitals, we do this catch-up exercise using a methodology that the SPF has documented, and then we looked deeper based on what the inspector does in the revision, since she gives us her files. So, we calculate five years before the inspector what she should calculate for us as a catch-up and we do what we call a positive or negative catch-up at the end of the year. We correct our BMF to add what we think we should receive or remove what we think we should return and we do it by institution, and by type of BMF. So, this exercise is important. Of course, when you are funded, you are careful. In general, we adopt a cautious attitude. When we have a doubt, we don't do any catching up. So, in general, these reviews are positive. But that is a fundamental exercise because we can sometimes find ourselves with differences of a few million euros. Obviously, this plays a role in hospital accounts.

A little aside, when I was talking to you about the sub-sections, in fact hospitals are divided into acute hospitals, that's the classic hospital that you know, the hospitals that we call SP, that's for specialties. So acute hospitals are general hospitals and SPs are hospitals that have a specialization. For example, we have specializations in revalidation and there are specific sub-sections. For what? Because financing is not, as in acute hospitals, linked to justified activity, it is historical. Historically, we have transformed the funding of acute hospitals towards specialties, therefore revalidation, and we have funding that does not change, it is indexed. And so, in revalidation, we have specific beds which are historically financed. And there, unlike the acute ones, you can find in specialty when you compare hospitals, financing which by number of beds is fundamentally different because they come from different historical bed transformations. And then, you have what we also call the specialties, SP pal, for example, the specialties of the palliative function, that is really specific to the palliative function, therefore the support of the dying, or there, you have some units, for example, in the hospital C, we have 12 beds. So, these are specific functions which also benefit from specific funding. In this case, in the BMF, there is no catch-up, or simply for constructions.

This financing is therefore specific, particular, complex and requires close collaboration with the inspector. You have an inspector attached to your hospital, with whom you work during reviews. When she prepares the budget at the end of July, she questions you because we have to provide quite a few files, she questions you because there is regular contact with the inspector so that she can finalize the budget. So, it's still important. And of course, you better master the BMF, because sometimes you detect errors. And therefore, in a BMF which is notified on July 1, you have the possibility, when the royal decree is published, to communicate your comments within 30 days. It's important but they often have time, because we have just communicated the remarks for 2022 and 2023, a month ago, so yes, they waited before communicating. As an anecdote, when I arrived in hospital C, and immersed myself in the BMF, and took over responsibility for the BMF of the three general hospitals, I noticed that in hospital C, in a specific funding line for the pensions of residents, statutory, there was no funding in a line at hospital C, while there was some in the two other hospitals. I inquired, there is the Federation, because there are specialists from the Federation who help us and we realized that in fact, in hospital C, they had not completed the file and that it was too late... But thanks to lobbying, the federation and contact with the director at the time, we were able to obtain funding. At the time, it was 300,000 euros, which has become 450,000 euros today. So, since 2007, we have recovered between 300 and 450 thousand euros annually for one branch. That's why I always said that my salary was paid until the end of my life. And so, you see, when we make remarks, sometimes we have remarks that are accepted

because we realize that there are erroneous calculations. If you don't master it, you don't see it, so it's one of the signs when we make comments or for example, for cybercrime, they calculated funding for us only for acute hospitals. They didn't calculate it for our SP and palliative beds. An omission. And so, we really need to master the BMF to be able, on the one hand, to make our comments, but also to be able to optimize the BMF and obviously, we also need to raise awareness among doctors.

So, in summary, I like it. I like it because I'm a bit of a specialist and since there are very few specialists, you have a particular skill that is always interesting. And so, twice a year, since the BMF is notified on July 1st and January 1st, but fundamentally, it changes on July 1st. On January 1, it's never just a question of indexing, just from time to time we'll take a little extra measure. What we do on January 1st and July 1st is we publish them, we examine what changes, we explain what changes, and then we make a comparison with the budget since in September, we make an annual budget, and there, we are obliged to estimate the BMF. When we are going to make the 2025 budget, we will take the BMF from July 1, 2024 until June 30, 2025, but we will not take the BMF from July 1, 2025 until December 31, 2025. So, we must estimate, in particular the justified activity that I spoke to you about So, there is also a whole work of estimation to make our own budget, and then we explain the differences. Honestly, it's an exciting, complex, but exciting job.

Sarah:
Listen, thank you very much for all the details. I understood BMF a little more, because it's true that it's quite complicated when you get into this subject. And if I have to come back to cost accounting, why do you think it would be important to have extensive and in-depth cost accounting, especially for financing?

Mr. Y:
This is what we have internally. We cannot change our prices. A company, when it suffers the costs of inflation, either it makes savings or it adapts its prices. Hospitals cannot. The fees are set by the federal government, the indexation is set by the federal government. Hospitals are legal and it can sometimes be deregulated, but it is only marginally. The BMF is set at the federal level. So, we, as hospital managers, have no room for maneuver in terms of our products. But we can be efficient and work on our costs. So, ultimately, cost monitoring is obviously fundamental. For example, the last two years, we had a major energy crisis and we also had additional financing, but the price of energy in hospitals was multiplied by 4 or 5. The price of electricity for cooking, catering, medical imaging, these are sectors which consume a lot of electricity. And so, we were greatly impacted. Cost control, cost monitoring, obviously, is fundamental. And so, a fine account plan is obviously important, what we do, eh. And so, now, if we also want to have objective analyzes at the federal or regional level, between hospitals, to know which are the most efficient in terms of operating costs in relation to their activity, their turnover, by number of FTEs, for a certain number of ratios, well the more you have a detailed chart of accounts used by the world, the better off we are. The problem also with the plan of accounts is that it exists but it is not certain that all hospitals respect it at the primary imputation level and therefore sometimes it is subject to interpretation and obviously, if the hospitals do not complete the plan of accounts Likewise, the comparisons are a little biased.

Sarah:
And so, in your opinion, what would be the advantages and disadvantages of this regulated accounting for hospitals and their financing?

Mr. Y:
The advantage for the hospital, I would say, is none. All hospitals today are managed, unlike 20-25 years ago, are managed like businesses, apart from the fact in any case in the public sector, our objective is not to make a profit. If we do it, it is to reinvest in patients and staff. But our objective is to be balanced, because behind us we have partners. So, the objective is to have good control of your

budget. So, the more detailed you are in a chart of accounts, the more detailed you are in budget monitoring, the better you can control and also the better you can compare yourself. The ideal would be, this is what Belfius does a little but it does it in a macroeconomic way, it would be to always have targeted benchmarks for a certain number of sections to be able to identify the evolution of these sections between hospitals and to detect why certain hospitals are more efficient than others. I don't know if you've heard about the nomenclature reform?

Sarah:
Yes, I have vaguely heard of it.

Mr. Y:
Yes, so there is a reform underway, we will see with the government if it will continue. So, in progress, today, there is an overhaul of financing via fees since the fees today belong to the doctors, but the doctors who work in the hospital transfer a good part of them to the managers to be able to operate the hospital. So, in general, everything that is hospital activity or consultation, the doctor keeps 70 to 75% and everything that is medicotechnical, therefore, medical imaging, laboratory, the doctor keeps 20 to 25%. And so, it is a distribution with retrocession rates which are negotiated between the manager and the medical council, the doctors. The objective of the reform of the nomenclature is to dissociate when you take an examination, so today, concretely, an MRI, a consultation, a hospitalization, according to the rates which are negotiated with the medical council, a part goes to the managers, a part is kept by the doctor. Tomorrow, the minister wants to split what we call the intellectual fee, which goes to the doctor, from the rest which covers operating costs. It would therefore no longer be a local negotiation, but it would basically be financing which would be the fee, which would be split between the intellectual fee for the doctor and the fee to cover the costs.

Hence the importance of having a good understanding of costs. Hence the importance of the PACHA study. What they do is they study all the hospital costs and they homogenize them. The PACHA project aims to identify costs in a very detailed plan of accounts, but in a standardized manner between hospitals, to actually calculate the cost by pathology and ultimately allow, in the nomenclature, to distinguish the intellectual fee from the cost, of what should cover the cost. And so PACHA also received, at the end of the day it's the ULB, received the mission of Minister Vandenbroucke, to study the entire cost part of hospitals and to identify a cost per pathology. Obviously, this goes a long way. I will give you an example why this cost tracking is important. In medical imaging, a scanner. How much does a CT scan cost for the hospital? When you charge 150-200 euros for a scanner, how much revenue should go to the doctor and how much to the hospital? How to identify the cost of the scanner? There are things that are easy, the acquisition price, the depreciation charges, possibly the number of FTEs it takes to operate the scanner, the consumables, but the electricity. How are you going to estimate electricity? The only way is to have a medical imaging counter. If you don't have a meter, you don't know how to do it. Most hospitals do not have a medical imaging counter. So, the way in which electricity charges are distributed, how hospitals distribute electricity charges, is diverse and varied. Logically, consumption per unit would be required. However, we do not have the consumption of medical imaging scanners. And so, today, the costs, the way they are distributed by unit, by cost center, is biased. And therefore, PACHA's vocation is to redo all these calculations with keys whose reality they were able to test. They know how much electricity a scanner consumes per year. they thus recalculate the allocation of electricity costs within a hospital. And so, monitoring operating costs is important, and even beyond finesse, it is the way to allocate electricity costs. You can say that you put them in the electricity account, of course, but how do you distribute it by cost center? And there, you need a specific key, and most hospitals don't have one. And so, this exercise that PACHA is doing, as part of the reform of the nomenclature, is to identify at the national level what is the cost of a scanner, an examination, or an operation, or no matter what.

To now answer your question, budget monitoring, hospitals manage without having any regulatory constraint. On the other hand, the reform of the nomenclature, and therefore identifying the cost by pathology, is fundamentally useful so that hospitals have an identical chart of accounts and above all identical imputation methods and even more, methods of allocation by center of identical costs with identical tools. And there, I can tell you that there is a long road. And so, PACHA involves a lot of studies to be able, basically, to have comparable data. And that is what is the fundamental issue in hospitals. But this is also valid for the honorary part. It is also necessary to be able to clearly identify what is a medicotechnical procedure. So that's analytical accounting in the broad sense and it's fundamental, but it's fundamental in the context of a benchmark comparison. We often realize at the MAHA level, at the moment I also participated in discussions with Belfius, where when we compare certain elements with the MAHA studies, we realize that there are significant disparities. For what? Because Belfius takes back what we give it and, basically, it is not fed in the same way. Hence the importance, basically, of having a data warehouse, an identical imputation mechanism, hence the PACHA project.

Sarah:
Ok. To also come back to the COVID period, because obviously, it is still something quite important which had a strong impact on hospitals. I first have a rather general question: what were the financial effects of this period on hospitals?

Mr. Y:
Regarding Belgium, I don't know but I think that many hospitals are like us. Paradoxically, it was the jackpot. We might have thought that the COVID period would generate significant deficits in the institutions but, it must be said, the federal government has taken its responsibilities and therefore created very significant resources. Moreover, in the BMF as of July 1, 2024, we have the official notification of the entire period covered by the federal government, therefore from January 1, 2020 to March 31, 2022. Well, the federal government, and in a decreasing manner, financed the losses that the hospitals suffered, in particular because at a certain point they ceased activity and we had a lot of sick staff. And so, concretely, for example, in 2020, the federal government granted additional compensation in terms of fees based on 2019. So, for hospitals, not for doctors. Doctors had an interest in being well insured. For hospitals, the federal government guaranteed the same level of fees as in 2019, excluding fees, obviously, in 2020, had fallen drastically. The BMF, same thing, so the BMF was assured. In 2021, same thing, in terms of fees. BMF, the variable part, was no longer guaranteed. But, overall, the federal government intervened massively and therefore the hospitals, in any case hospital C, but I think that many hospitals as well, and indeed certain hospitals, took reserves of results to keep a financial cushion. So here, it must be said that the federal government really took its responsibilities and therefore the COVID period, contrary to what one might have thought, was a favorable financial period for hospitals. It was a period where not only were we guaranteed, but it was also a period where we had fewer staff and therefore we also had a lower salary cost. And so yes, we had full financing, but our costs were lower. We must not forget that, when we were in the COVID period, in certain periods, the hospital was almost closed, apart from emergencies and COVID. Activity was reduced, especially in 2020 and again partly in 2021, and that means that operating costs were lower, since we operated less. And so, we had our financing guaranteed 100% and we had our operating costs which were lower. It was a double jackpot. For us, the COVID period has really produced important results.

Sarah:
OK and wouldn't this period have highlighted the strengths or weaknesses of the current financial system and accounting in hospitals?

Mr. Y:
Yes, of course, since it is linked to the activity. And when you are affected by COVID, your activity really drops drastically. Yes, in that sense, but on the other hand, whether in Belgium or elsewhere, the federal government has taken its responsibilities. But I think that the COVID crisis is an exceptional

crisis that we will not experience again, at least not so quickly. So, at the financial level, yes, the financing has gaps at this level but on the other hand, if you gave a guarantee to hospitals outside of COVID periods, the hospitals would rely on their achievements. The financing mechanism encourages performance. For me it is good but the federal government must take its responsibilities in times of crisis. At the chart of accounts level, there is no link between COVID and the chart of accounts. The funding that was granted was exceptional, it was located in specific accounts at the request of the federal government, the supporting documents that we had to provide were specific, etc. So, there we had very clear information. Honestly, the federal government has taken its responsibilities in this matter.

Sarah:
Okay, that's okay. Now I have some closing questions. In your opinion, what influence does regulated cost accounting have on the overall activity of the hospital, if any, of course?

Mr. Y:
I think there isn't one. For us, regulatory hospital accounting is regulation. Finhosta, these are things that we report, we follow accounting regulations and there, indeed, indirectly have consequences on the results that we display, but not on the performance of the hospital. That is to say, effectively, the fact of amortizing over 33 years is obsolete today, I think it would be better to amortize like the periodicity on which the financing is calculated. But to say that the range of accounts or the requirements in terms of hospital accounting would have an influence on hospital management, no, we simply comply. We comply with it, but there is no impact on the way we manage the hospital, there is no impact on the financial consequences of managing the hospital, honestly, I don't think so.

Sarah:
It's true that there are divergent opinions on this question, but it's always interesting to have everyone's point of view. And so, weren't there times during your career when the use of cost accounting techniques resulted in underfunding?

Mr. Y:
I don't see a direct link between underfinancing and the account plan. That there is structural underfunding of hospitals is certain. The hospital federations have highlighted that there is structural underfunding of hospitals. Now, a direct link... because ultimately, the only constraints that have an impact on the result are the way of amortization. For the rest, I don't really see any and the financing is not really linked to the way we count. Yes, of course, the infrastructure receives funding over 33 years since the depreciation is over 33 years. So yes, and in that sense, as this financing was a little too long, yes, it made it possible to have an impact on cash flow. We received funding over a period of 33 years, whereas perhaps potentially we could have received it over 25 years. Honestly, I do not see a direct link between the chart of accounts or the accounting methods and underfinancing.

Sarah:
Okay, that's okay. So, I just had one last little question, which is, would you perhaps have any adjustments or improvements to suggest for the current system in Belgium? or is it good as it is for hospital accounting and financing?

Mr. Y:
Yes, yes, I told you at the beginning, the amortization period, I think it would have to be consistent with the regional financing mechanism, which is therefore still theoretical financing over 25 years, even if it can be extend, even if it can be extended vitam aeternam, that is to say that what is particular about the new financing is that logically, it is a period of 25 years and beyond 25 years, you can rebuild a new hospital. But if, for example, you don't rebuild for 10 years, you continue to receive the financing.

So, it's a bit unusual, but a newly built hospital that lasted 40 years, the hospital will still benefit from funding for 40 years.

So, for me, harmonizing the depreciation rules, and even in more depth, working on the depreciation mechanics, but even going into more detail on medical equipment. Is it 5 years systematically? Today is 5 years. Sometimes there are exceptions, we say it's 7 years. Ultimately, it would be necessary to verify that the depreciation rules are still adequate in relation to the period of use of the equipment. So, there is food for thought there. The best way to reform this is to create a working group of experts at the federal level.

So, at the same time, there are indeed certain improvements, certain refinements that should be made in the plan of accounts but for me, the best way is always to put a few experts around the table, to sweep the account plan and work on it. For example, in the Walloon region, for the financing aspect, there is a working group of experts and every three months, we have a video conference and we address a certain number of themes. And so, I'm part of it and there, it's interesting because there, we compare the perceptions of different hospitals, and we try to change things. Honestly, the federal government is missing that. There are many commissions at the BMF level for financing but here it is a hospital federation which occupies the position. And on the plan of accounts, perhaps there is a commission, but there should be a reflection carried out by the FPS, with some hospital experts to lead to work on the plan of accounts. Now, at the federal level, they have still lost a lot of skills, there are still fewer people who master this concept.

Sarah:
Well listen, we went over all the questions I had. If there is an additional perspective that you may find interesting to share, I am free to listen.

Mr. Y:
What exactly is your study again?

Sarah:
Basically, I have to study if there is an impact of regulated cost accounting on the financial management and financing of hospitals in Belgium.

Mr. Y:
Honestly, I don't think there's a direct impact because I think what you also have to show is that the hospitals themselves developed a monitoring tool that allows them to have very detailed budgetary monitoring. I don't have the impression, in any case I haven't experienced it like this since 2006, that regulatory reporting is a handicap to hospital management. For what? Because the internal account plan is much finer and we can zoom in as much as we want, both in terms of products and in terms of expenses. But have we ever talked to you about bed sheets?

Sarah:
No, that doesn't mean anything to me. What does it consist of?

Mr. Y:
I don't know if you limit yourself in your approach to the part of the accounting plan, because there is also in the reporting that we do to the SPF, there is therefore the analytical account plan part, therefore by centers of costs. As I told you, this part is much more important, because there, really, there is a mechanism of what we call the bed sheet. I don't know who invented it, but what is it? This is in analytical accounting, allocating to the center primary costs, or in any case hospital costs, direct and indirect costs. So, in concrete terms, you have 60-70 cost centers in the hospital. So, you have the hospital staff, the care units, the specific functions like the operating room, then you have the support

functions like accounting, HR, etc., and the medical-technical functions like radiology, laboratories, and then you have the consultations. The objective is to charge the business cost center, therefore hospital and medical technical costs, for the costs of support functions. And so, this mechanism of imputation, direct and indirect costs, is called bed sheeting. It is a table with a series of keys which allows you to empty the support cost centers, for example, the cost of the financial department, it is empty to be transferred to the business cost center. This bed sheet therefore ultimately allows for a cost of hospital services. And that is, obviously, obsolete because the keys have not been seen for years. On the other hand, as I said earlier, in the broader sense than the account plan in the purely accounting sense, the analytical account plan and the calculation of a hospital service or a pathology, that is important. It is fundamental to know, for example, in a hospital the cost of a scanner. For some it's 50 euros and others it's 80 euros. Or the cost of a pathology, a surgical intervention on the appendix for example, would cost 30 euros in some hospitals and 50 euros in others. That's fundamental. For a Minister of Health to aim to improve the efficiency of hospitals, for a hospital to consider that it has a problem because its cost per pathology is higher than the national average, that is fundamental. As much as the regulatory account plan, I see very little impact on hospital management, as well, having a fine analytical account plan with a mechanism for allocating costs to the cost centers by pathology, so that's it. is the PACHA study that I was talking to you about, that for me is fundamental.

We are part of the PACHA project voluntarily. We pay 30,000 euros per hospital to respond to problems, but studying that, that is to say the cost per pathology, and being able to say to ourselves “here I am not efficient, why I am not and how I can adapt? ", that's fundamental. So, PACHA is an initiative of a few hospitals which pay the ULB. Now, the federal minister, to distribute the fees, is attacking the cost per pathology. That's fundamental. And to have a cost per pathology at the national level and to say to ourselves, on the basis of a harmonized methodology, this is what the work of the ULB has done and to say to ourselves that we are less good or that 'we are better. That, honestly, is fundamental.

For me, for hospital management, this is really a quality but it goes well beyond an account plan. Of course, this is the basis but it goes well beyond a regulatory account plan. Which is, obviously, to put the same things in the right accounts, this is the basis but above all it is after distributing the operating costs of a hospital, by cost center with identical keys, but above all calculated in the same way, and therefore for which it is necessary to seek information that most hospitals do not have. That, for me, if there was something to be said at this level, it is rather at this level that there would be a positive conclusion. But really, the cost per pathology and the comparison in the benchmark at the hospital level, and which perhaps the public sector or the private sector, all sectors combined, Flemish, Brussels, or Walloon region, on the one hand, and on the other hand, the cost per pathology makes sense because it encourages hospitals to move towards efficiency by using identical allocation mechanisms. But for that, we need the database and therefore, we need someone at the national level, like the ULB mission, to produce this tool and allow hospitals to have a cost per pathology with methodologies that are centralized. If you let hospitals do the work... Hospitals have a problem is they don't have the resources to do this work. So, failing that, we would need to have a national platform which allows calculations with an identical methodology, with identical, centralized keys, therefore with experts who collect the information. There is a fundamental issue which would make it possible to achieve somewhere, quote, a benchmark, a ranking of hospitals, and to raise awareness of hospitals which are less good. So, there is perhaps also a public utility in having this information at that time.

Sarah:
Ok, it's true that I will perhaps look a little at what you said with the PACHA project because it could be interesting to develop that. So, there you have it. Listen, thank you very much in any case for your answers, for your help. It was very useful. Have a good end of the day.

ANNEXE XII: Transcription interview 5

Interview 5- Hospital D
Place: Online teams meeting – Date: 19.07.2024
Duration: 25.36 minutes
University hospital in Brussels

Sarah:
First of all, hello, my name is Sarah, and I am currently a final-year master's student in financial analysis and auditing at HEC Liège. As part of my thesis, I have focused on the financial management of hospitals in Belgium, particularly on what impact regulated cost accounting would have on this financial management. To this end, I first explored the basic concepts, namely how analytical accounting operates within hospitals with cost centers as well as the main sources of funding.

So, could I ask you to introduce yourself, explain your role within your institution, and how it relates to the financial management of the latter?

Mr. X:
In my job, I have a small connection—I've been the financial director of hospital D for 16 years now. Before that, I had a career in "traditional" companies. Actually, I have quite a significant connection because I also teach hospital finance at hospital D, so I have a good grasp of the subject.

Sarah:
Perfect, well, thank you again for your time today. I'll start right away with a small question, which is: How would you characterize the regulated cost accounting of hospitals in Belgium today? What is the main objective?

Mr. X:
That's a rather complex question. The primary objective is a historical one, and it still remains today, which is to finance hospitals. Historically, budget negotiations for financial means were conducted hospital by hospital, between the management of each establishment and the responsible persons within the FPS Public Health. Then we moved to a more fixed structure of the BMF with increasingly lump-sum amounts that apply to all hospitals. But we have remained in this historical structure that is very rigid, with the goal of making hospital accounting comparable. We talk about a minimum accounting plan, but when you look at the minimum accounting plan, it is quite detailed for a minimum plan. I worked at Unilever where we had an accounting plan for all companies worldwide, designed to make the income statements of all companies globally comparable and then consolidate them at the group level. Here, we are not quite at that point—it's not the same accounting plan in all hospitals—but we do go into quite some detail.

However, there's often a caveat: what isn't used as a figure isn't necessarily well controlled. So when you look in detail at what each hospital places in this or that section of the hospital's minimum accounting plan, you realize that everyone has their own interpretation. When you get into the details, some things are clear, of course. When it comes to social charges on doctors' salaries, it's clear; it's unambiguous and well-defined. But when we talk about administrative costs or things like that—are these IT costs, service costs, or administrative costs? Everyone starts to have their own interpretation, and so this goal of making things comparable was perhaps valid in the 1980s, but today, 50 years later, it's no longer effective. As soon as you use hospital accounting to benchmark hospitals, you immediately run into the problem of asking, "Where did you put that?" and "How did you classify that?" etc. So, this objective isn't really achieved.

One objective that is still somewhat achieved is that the goal of hospital accounting, at least when we talk by nature, is to be able to regularly recalculate the B1 part of the budget of financial means, where we take a certain number of costs and observe the evolution of costs in certain areas. Then, depending on the evolution of costs in the areas, we look at the evolution of units of work and remix the B1 budget. It's still one envelope that remains at the same level, but we remix it differently depending on how costs have evolved. However, it's still too underutilized—it's too mechanical, it's never verified, so I have serious doubts about the cleanliness of the figures in different hospitals.

The last point is that one might imagine that the fact that there is this minimum accounting would allow the FPS Public Health to publish something every year since all hospitals submit their figures. So, one might imagine that the FPS Public Health has some sort of database where they aggregate the figures or have the figures of all hospitals by region or by type of hospital, etc. But in fact, nothing is produced from these figures. To my knowledge, they aren't consultable—I suppose they are aggregated at the FPS level, but it's not something that is disseminated. So, the only clear use of these figures is Belfius, which produces its MAHA report based on the Finhosta tables that hospitals send to Belfius.

In summary, we have something historical that goes quite deep into the nature of costs and the definition of cost centers but is underutilized. The quality of the data within it isn't top-notch, and it certainly isn't used for studies, publications, and other analyses. Yet there is a potentially superb tool there for monitoring the evolution of costs at the hospital sector level—a potentially very fine tool.

Sarah:
Okay, perfect. So, why do you think it is necessary to have extensive and detailed cost accounting?

Mr. X:
In absolute terms, I think it could make sense. Let me explain; if at the FPS level, there were an aggregation of all these costs, it would allow monitoring costs within hospitals, seeing why certain hospitals are at a major loss, what is happening within hospitals, etc. To say that we no longer do it at all would actually expose the FPS Public Health to not having any vision of the health of the hospital system. Today, I think they don't use the tool enough, but saying we should completely get rid of the tool—I'm not sure that would be a good move because we would be moving towards deregulation and a funding system that is disconnected from the reality on the ground. It is already quite disconnected today, and I think it would only make things worse. So, I would rather advocate for better use of what we have. In my opinion, with someone doing financial analyses on the subject for the entire FPS, it would be more than sufficient to already distinguish a certain number of things.

Sarah:
In your opinion, what are the main advantages and disadvantages of regulated cost accounting for hospitals and their funding in Belgium?

Mr. X:
For me, the advantage, I think I've described it—the knowledge and harmonization, and that if everyone did it their own way, things would be incomparable, and we would have to pay large sums to companies like Deloitte, PWC, EY to do this kind of study. So that's the advantage.

The disadvantage, I think I'll cite an example related to the recording of pharmaceutical costs. When I look at the hospital pharmacy, at our hospital, the pharmacy accounts for about one-third of the hospital's revenue. A bit less—it's 30% of the hospital's revenue, which is huge. But when we look at the pharmacy, it has been structured in terms of costs as it was when drug costs were 10% of the hospital's structure, and we only paid for drugs. Today, the costs of implants have become enormous.

So, if we only use the sections provided by the minimum accounting plan, it's impossible to control pharmacy costs.

To give another example, in pharmacy revenues, we include the revenues from everything we produce as human corporeal material. Yes, it's logical to include it in revenues. However, when we look at the expenses, human corporeal material actually has no expenses because it's harvested from cadavers or living donors and then processed and resold as human corporeal material. Another example is all the blood products that are part of pharmacy revenue. But in terms of expenses, they aren't included in pharmaceutical product expenses, so when I do revenue minus expenses, I have something that doesn't add up.

We also have in the purchases of pharmaceutical products all the purchases of small equipment, which are funded by the financial means budget. So again, when I look at pharmacy revenue and expenses, I have much more in the latter because there are items funded by other elements of my income statement. In other words, and I give this example deliberately, we have an accounting system designed to meet the goal of comparing hospitals, to meet the original goal of negotiating the financial means budget with hospitals, but not really for good management control as we would do today in the 21st century.

There is, therefore, a real need to evolve, and honestly, when we talk about evolution in the hospital sector, we are in a sector where no one wants to move. Now, I don't know if you're aware, but the CFEH is working on a revision of the minimum accounting plan, which should be published in the coming weeks or months. It took three years just to evolve the minimum accounting plan to what is now the standard for non-profit organizations, and just that took three years, so let's not even talk about modifying cost centers or fundamentally changing the accounting natures that are used. But there, I think we have a real problem because there are very old inconsistencies that make it difficult to do good management control.

I have seen only one hospital so far with a complete pharmacy income statement. We must also recognize that we are in an extremely complex funding system. If you take, for example, the Convention for glucose monitoring for diabetic patients, we receive an amount from the Convention that funds both the staff who follow these patients and the materials we provide to these patients. I don't know if you have friends who are diabetic or if you know any, but they have, for example, patches, and they regularly pass a detector over the patch to check their glucose levels. All that material—it's pharmacy expenses. These are, by definition, medical devices, so they fall under pharmacy expenses, but the revenue is found in the conventions. So, we're really in a system that is frozen because it is mandatory, but at the same time, it is frozen at a stage that doesn't allow for good management control over amounts that are considerable.

Sarah:
Now, I have more detailed questions about your hospital's specific case. For example, what is the impact of regulated cost accounting on budgeting procedures and the financial decisions you have to make?

Mr. X:
To be clear, we have built around the mandatory hospital accounting an additional analytical accounting system that allows us to meet our needs. It doesn't yet fully meet our needs; we're starting to get there, but it's complex. I know quite a few hospitals that only adhere to hospital accounting, but then they find themselves, for certain types of expenses—this is why I cited the pharmacy as an example—facing black holes with no way to analyze them. So, the only way to really go in-depth in these areas is to create an additional analytical accounting system that allows digging into those

subjects. So yes, the fact that it's regulated complicates things for us. I don't want to say it's a cost—it's more of a hidden cost, but we can't say it amounts to 1 FTE or 100,000 euros; I can't say that.

Sarah:
Could you describe the challenges and limitations associated with the current financial system and regulated cost accounting in hospitals?

Mr. X:
First, since it's a requirement for hospitals and historically all hospitals have had it, it's not complicated to implement and adhere to this system. However, the challenge is a bit of what I mentioned earlier—how do we manage to control costs in this area? Yes, I think I've already answered the question in my first point. The challenge is getting things to change in an environment that is extremely resistant to change, also because everyone is aware that changing things could mean changing system settings, etc., so yes, it has costs, it's not easy, but I think there is a real need to evolve. And by the way, I might add a small point—the issue of matching certain types of revenues and expenses will be further intensified with the extension of flat-rate financing. So, you know that, for example, fees have now been flat-rated for certain areas. The idea will be to then flat-rate the implants and medications related to that hospitalization and then even add a portion for the financial means budget. Once we have a bundle for that, the legislator might say, "Okay, in this 3,000-euro bundle, I allocated 1,000 for the BMF, 500 for fees, 1,500 for materials." In reality, if we want to truly treat it as a whole, there is flexibility for hospitals to say, "Yes, but it's a bit less in fees, a bit more in BMF, so staff, and a bit less in materials because I managed to save." So, we are in an old accounting system that is not compatible with the new systems.

Sarah:
Okay. Have you noticed any situations where the use of this accounting system has led to underfunding for the hospital, and if so, which ones? You have already cited many examples, but specifically, concrete cases of underfunding?

Mr. X:
No, not really cases of underfunding. What you might have, I think, is if certain expenses are misrecorded or misreported to the FPS, you could find yourself in a situation where in the following BMFs, you have underfunding—you don't receive what you are entitled to. But the FPS, we must acknowledge, is relatively coherent with its own accounting, so if you use it correctly and normally, there is no risk of underfunding to my knowledge.

Sarah:
Okay, perfect. In your opinion, what influence does regulate cost accounting have on the overall activity of the hospital, if any?

Mr. X:
I think it doesn't really have an influence. I think if we had better-structured regulated accounting, it would undoubtedly be easier to implement activity-based costing analyses. You may have heard of the ULB program called PACHA, where the idea is to take hospital accounting, add to it a number of parameters like the RCM and other elements, and based on hospital accounting—cost centers and accounting nature—carry out activity-based costing. They manage relatively well, but if we asked them, I think they would change a lot of things in hospital accounting to orient it more towards activity. And I think that's one of the routes we need to follow to understand to what extent a patient is profitable or not for the hospital, why an activity is profitable or not for the hospital, etc. Today, I think the answer is that it has too little impact on hospital activity.

Sarah:
Okay, thank you. So, I had to talk about the pandemic period given its ongoing importance in the sector, and in relation to that, did this period highlight weaknesses or strengths in this accounting system, and what were the financial impacts related to all this?

Mr. X:
To be precise, I think it didn't highlight strengths or weaknesses of the accounting system. In fact, it highlighted strengths and weaknesses in the way we fund the healthcare system in Belgium today, with some strengths such as a large part of the financial means budget being stable for the hospital. So even if there is a dramatic drop in activity, the hospital remains largely funded, which is good because we keep the staff, etc. It also showed the limit of the fee-for-service system for doctors. Although some quickly forgot that because after a period where they earned nothing, they rushed to work a lot to make up for what they hadn't earned. So COVID highlighted the strengths and weaknesses of the system more than the tool itself. After all, accounting is just a tool.

Sarah:
So, my concluding question, even though I think you've already answered it somewhat with your opinion on regulated accounting, are there any adjustments or improvements you could suggest for the current system? I think you've also already given a lot of examples, so if you have any other perspectives to share, please feel free to do so.

Mr. X:
The first is, of course, the alignment of accounting natures with the accounting plan of non-profits. I think that's a major flaw. I came from the world of multinational companies, where we had all the IFRS IAS standards in place, and I arrived in a world of hospitals with accounting that corresponded to what I studied in the early 1980s. We still have a huge delay compared to international standards, yet hospitals aren't small businesses. A hospital like hospital D has 80 million euros in revenue—it's as much as some large multinational companies in Belgium. So, saying we're sticking with outdated accounting and not evolving with the standards given—that's a real problem.

Sarah:
Well, I think you've answered all the questions. If there are any topics I haven't covered that are interesting, feel free to mention them.

Mr. X:
Well, we could ask the question, if you look at hospital accounting, and still in the recording of expenses, we still have the notion of a suffix. Now, it's the first company I've seen in 35 years of career where we use this notion of a suffix, dating back to when accounting was done on paper in large ledgers. But we must ask ourselves today if there are different analytical objects that should meet the same kind of objective. There are fundamental things to be questioned, but to be clear, it doesn't interest anyone… But, I mean, everyone lives with it—it's a given. It's a lot of work to try to change, so if reforms are to be made, they will first reform funding rather than accounting. Okay, so you have my conclusion as well.

Sarah:
Perfect, well, I think that's it. Thank you very much for all your answers and your help.

ANNEXE XIII: Transcription interview 6

Interview 6- Hospital E
Place: Online teams meeting – Date: 05.08.2024
Duration: 46.27 minutes
University hospital in Brussels

Sarah:
Hello. First of all, thank you very much for the time you are giving me today. I will briefly introduce myself. My name is Sarah, and I am a final-year master's student in financial analysis and auditing at HEC Liège. For my thesis, I directed my research towards the financing of hospitals, focusing particularly on the impact that regulated cost accounting might have on the financial management of hospitals in Belgium. I wanted to see if there could be a link between the two. To set the context, in my literature review, I first developed all the basic notions about cost accounting within hospitals, describing the minimum accounting plan, cost centers, and so on. Then I explained financial management with the four main sources of funding: the BMF, medical fees, pharmaceutical products, etc. This gives you an idea of what I've already discussed. Now, I am conducting interviews across Belgium to ask general questions about perceptions and viewpoints on the subject.

So, first, if you could perhaps introduce yourself, explain your profession, and how it relates to the financial management of hospitals?

Mr. Z:
My name is Z. I work at hospital E, which consists of three hospitals within a group: hospital A, the hospital 2, and hospital 3. Additionally, there are a few smaller sites that complete this group, including the CER, a rehabilitation center, and a small geriatric center with about 100 beds in Woluwe called CRG. Altogether, we have about 1,150 beds, or maybe even more; I think we're closer to 1,300 beds. My job mainly involves accounting, budgeting, billing, and other financial matters within hospitals.

Sarah:
Thank you very much for that introduction. I'll start with some general questions to get your perspective on the subject. First, how would you characterize hospital cost accounting in Belgium, and what is its objective?

Mr. Z:
In reality, it's based on an old decree from 1987. At that time, there was a minister named Jean-Luc Dehaene who created a royal decree that defined what we call the principle of analytical accounting for hospitals. The general principle was to arrive at a cost price per service. I think it probably existed before, but this made it more official, introducing what we call the "bed sheet," which is an analytical cascade of cost prices where you have both direct and indirect costs. The indirect costs are based on allocation keys that are not freely chosen by hospitals; most of these keys are defined in a brochure called the Finhosta brochure, which has been around since 1997/1998.

Hospital accounting in Belgium theoretically allows us to define a cost price with some common sense in the major sectors, which we call the definitive sectors. These include the hospitalization sector, the medical-technical sectors like the lab and imaging, and then the consultation sector and another sector related to pharmacy revenues that you mentioned earlier. At the end of this "bed sheet," we have cost centers, as the analytical costs are organized by cost center, including what we call non-hospital activities like a nursery, a nursing home, a cafeteria, etc. Have you heard or read about this information?

Sarah:

Yes, it’s not unfamiliar to me. So why do you think it is necessary to have extensive and detailed cost accounting?

Mr. Z:
There have been quite a few studies already conducted, notably at the School of Public Health at ULB, with Magali Pirson and Pol Leclercq. They have their methods, which I would describe as ABCD recalculations, rather than the traditional cost price used in hospitals. But in one way or another, the goal is to determine whether an activity is profitable and to include all the induced revenues or costs it generates within the hospital. For example, if I take radiology or the laboratory, these are the two major revenue sources in terms of fees within a hospital, what we call "cash cows," with still reasonable margins that allow us to compensate for services where there is no positive margin, because there are such services. And these two services, in fact, are not self-prescribing; they are services that provide technical advice or examinations based on requests from prescribers who are not part of these services, who are the other doctors in the medical community. So, when we look at just a siloed accounting, just what happens in a cost center, we might overlook important elements that are generated.

If you want, I can give you a fairly simple example: geriatrics. A patient who is hospitalized in geriatrics for a stay, let's say, a fairly routine, classic stay, might generate around 1,000 euros in revenue from the stay, of which 300 euros come from the geriatricians, the geriatric surveillance, and other consultations. And in fact, all the rest comes from other services, but which were induced by the geriatricians. That is to say, when there is a rather complete assessment, they perform cardiology, gastroenterology, pulmonology, rehabilitation at the level of physiotherapy, which we call physiotherapy on a broader scale, and other consultations might be requested to carry out a complete assessment of the person and initiate either a discharge if nothing serious is found, or a rehabilitation or a patient care pathway outside the hospital. So, if I focus only on siloed analytical accounting, that is, what happens in geriatrics, I miss the main point, which is what activities this induces elsewhere, and it gives a more general concept of hospitals, which is that everything is interconnected. Therefore, when calculating a cost price, it is a first indication of whether a service is fundamentally unprofitable or profitable. On the other hand, if we look at a deficit, and if that's the case, we need to ask whether it can be redeployed, made more efficient. But if we were to reduce the activity because it is fundamentally unprofitable and does not form an integral part of the hospital's service offering, we still need to see if it triggers other activities elsewhere, which could lead to a wrong choice. For example, in plastic surgery, one might think that cosmetic surgery could be discontinued, leaving it to private clinics, which are very effective and offer patients a high level of luxury and comfort. However, we cannot do without plastic surgeons, because beyond the cosmetic aspect, they perform skin flaps or other complex procedures that hospitals need. So even if we said that cosmetic surgery is stopped, we would still need plastic surgeons in hospitals. This is just one example among others, but everything is well interconnected, and ethical continuity or continuity within hospitals must be maintained. What is interesting, therefore, is to go well beyond a siloed vision, which is the vision of cost centers s. It is interesting to associate this with what we call induced costs or induced revenues, whether upstream or downstream, and to see the whole picture.

If I take another example to illustrate this, in the current hospital funding model, it’s worth what it’s worth, but the biggest revenue for hospitals comes from the classic hospitalization sector, from the envelope we call the BMF. The finances, the hospital, the infrastructure, the emergency services, all these very heavy and expensive services. And so, if we reduce the activity of a hospitalization service, there are still a lot of fixed costs, or at least costs that don’t vary much, which will remain, so we will generate less revenue but remain with the same level of cost. So, we need to ensure that when, again, we are in an approach where we reduce the activity of a service, we see what its impact is on the coverage of hospitalization costs, and if I take an example, dermatology has very little hospitalization activity. 30 to 40 years ago, it was more, but now, there are very few beds occupied by dermatology.

Everything is done on an outpatient basis. This means that if we took an extreme measure, which we do not support, but which could be considered, we could stop dermatology, except for a new minimum service for follow-up and assistance in care units for dermatological advice, obviously. We would limit ourselves to that. This would have little impact on the coverage of hospitalization activity, with fewer admissions. So, here is another focus: we have a vision of hospitalization and an outpatient vision, and we make sure that the BMF is optimized, meaning that we lose as few stays as possible, and therefore fewer medical activities that lead to hospitalizations. Hence the importance for hospitals of having emergency services, of welcoming many cases. It is always a debate between specialized emergency services that only take critical cases, which lead to many hospitalizations but do not have a so-called dispensary or local proximity care for the population. On the other hand, we know that a certain volume leads to hospitalizations. And so, if out of 100 emergency visits, there are 10 hospitalizations, reducing this could be very detrimental because, again, in the current hospital funding model, it is the hospitalization sector that generates the most revenue. If you take the MAHA studies for the entire sector, if you take the hospitalization sector, that is to say, the BMF, the pharmacy, it's almost three-quarters of hospitalization. You exclude half of the fees, because in terms of splitting medical fees, half is hospitalization, half is outpatient, so consultations. And in fact, you end up with more than 70% of hospital revenue coming from classic and day hospitalization. This is a point of attention for us. It goes beyond the analytical accounting vision, but analytical accounting allows us to target a sector that we could withdraw from, reduce, or reinforce, depending on a focus that is how to best cover the charge or fixed costs of a hospital, which are, for example, the sterilization service, intensive care. It remains a very costly sector in terms of personnel, but it is essential to offer quality services, to offer surgical activities, etc. There are sectors like that that can be costly, and there we can take human resources, we can take IT, we can take accounting, and it’s not because we have 100 fewer admissions that I will have fewer accountants in the department. On the other hand, if I have more admissions, I have more revenue, so I cover my fixed costs better for what we call indirect costs. It is really a whole, and there lies this difficulty in hospitals, we cannot say that we close, as in companies or industries, this site and move all activity because for hospitals that have already tried this trick, when they eliminate a significant care offer for the population, the population does not follow to the other end of the city. In fact, they will look if there is a nearby hospital offering the same care and they will go there. So, we are not in a production idea, we are really in a care offer in contact with patients, and we just need to make sure that when we reinforce or reduce an activity, we do not lose revenue or coverage of our costs. So, this is rather the challenge for hospitals. Hospitals, apart from a few exceptional cases where academics, except for hospital 1, but most academics are fairly profitable hospitals, most hospitals have what we call a margin compared to the turnover of about 1% maximum. Even if we have a turnover of 500 million, but we only make 1 million in profit at the end of the year, it means that as soon as we have a difficulty, in fact, we plunge into the red, despite the size. So, hospitals generate very little margin revenue for those that are profitable because more than a third are in deficit, and those that are profitable must ensure that if they had to make cost-cutting measures on certain medical services, it does not impact their revenue that covers the costs, they would plunge very quickly. It would be a first economy in the short term, but in the long term, they would lose revenue, lose attractiveness, lose patients, and so it might not be so winning after all.

This is really the whole point of these mixes of analytical accounting. We make a first profit and loss account based on service codes and see if a service is profitable or not. Then we try to identify the causes for improvement or explanation. But then, we really need to look at the impact and see the hospital really as a whole, as large sets on the hospitalization sector, outpatient sector for consultations mainly, and the pharmacy, which is still strongly attached to the hospitalization part, day hospitalization, among others, the medical day hospital for chemotherapy or other similar medications.

Sarah:

Okay, perfect. Following these explanations, if you were to cite the main advantages and disadvantages of analytical accounting for hospitals and their financing, what would they be?

Mr. Z:
In fact, for hospitals, I don't see any disadvantages. It's a bit like asking an artisan if they think their craft makes sense, so it's not very objective. However, I do think that having been in hospitals for a long time, the advantage of analytical accounting and Finhosta, which is the statistical tool that we submit to the SPF with codifications, whether in terms of accounting nature, allocation keys for cost cascading, or cost centers and many other things. The advantage is that it makes hospital accounting comparable across the board, and it allows for a certain equity; it allows information to be coded in the same way in all hospitals and makes it comparable. In fact, it's the same coding method used by Belfius for their study. It's the same principle. So, this is the strength of accounting, of certain accounting regulations that exist in public health. It makes the data comparable, it allows for some coherence in the data presented. You can't just put things wherever you want. This analytical and codification vision goes far beyond, and I encourage you to download the FINHOSTA brochure; there are several, but if you find what is called "the annual block," it's the largest one, you'll see it goes very far in the details provided. It really allows you to compare hospital data equivalently. That's a point in favor of hospital accounting.

Now, regarding the current financing model, there's plenty of paper on this in the press. There was even an article in late July—I can't remember where from, but I wonder if it wasn't from a ministerial cabinet member—clearly stating that the technicality and opacity of the tools used for financing are enormous. You almost need to be an engineer, an economist, and somewhat medically inclined to understand all the information provided that impacts financing. And so, if I were to project without defending my specific hospitals, I would say that, in fact, hospitals should be paid the same way based on the number of patients they treat. It's a bit like the principle that Minister Van den Broek put in place, but that Maggie De Block had initiated before him, which is what we call base variability packages. It's a first approach, meaning that a basic childbirth that goes normally, what we call severity 1, is paid the same way in all hospitals, regardless of whether three pediatricians were involved, whether there was anesthesia, an epidural, an exam or not—it's the same price. It's up to the hospitals to organize childbirth care efficiently and provide the best possible service, balancing their budgets accordingly. So that's one approach—the financing is really very complex, and the BMF, to cite it, is very interesting because not many people understand the BMF well. I've been in hospitals for 30 years, and it has allowed me to gradually learn the complexities of the BMF and understand what I call the workings, how the pieces fit together, the elements we provide to the SPF for activity or income surveys, or others, and see what impact that has on hospital financing.

Currently, when we provide figures, our creative rights are limited, but nevertheless, it's still the same approach as when making a tax declaration. When making tax declarations, we try to report the actual figures, of course, but we also try to place them in the best possible categories to get the best tax return. It's somewhat the same with the BMF, ultimately. Everyone tries to put the right figures in the best possible categories to get the best financing, and everyone does this. Ultimately, it's a bit like the peloton in the Tour de France, where everyone is doped, so in the end, there's no difference—they're all doped. It's only when one person is doped more than the others that there's a difference. It's a bit like that here—it's become so complex that I'm not sure it still makes much sense to have such a model. It would be so much simpler, perhaps a bit unfair, or at least there would be corrections to make, but it would be much better to have a model where, depending on the population size, the number of hospitals serving a healthcare plateau, a healthcare basin—in Liège, for example, you have the Citadel, you have the CHU of Liège, and another one, the CHC. So, there are three. The region or the province looks at how many, well, we'd rather say the region, the district, or the extended basin of Liège looks at how many patients, well, how many inhabitants, and shares equitably according to the number of patients, the pathologies of each, and that's it. We should stop this BMF system and all that. We're

getting there gradually, but it's very slow. For now, if you've looked at hospital financing a bit, there's an important element in the BMF called B2, which is the sub-part that finances healthcare personnel and medical products. The mechanism behind this is what we call the RCM, which is the minimum clinical summary. We get right into the example I'm giving, meaning that for the same pathologies, the same care, one hospital could be better financed than another depending on whether its service responsible for coding stays in terms of pathology—the RCM service—is more efficient than another. So ultimately, it's a bonus for administrative quality, but is it really a reflection of financing based on real activity? I'm not even sure. So, in the end, it all balances out because everyone does this. But a hospital that isn't healthy in terms of its ability to provide the right figures in the right categories, whether it's in the RCM, DRHM for the nursing part, or Finhosta for accounting, might have the same real performance as another hospital with the same costs, the same revenues, but it will be less well financed because it didn't provide its data as well. This is a bit of a perverse effect of part of accounting, but there is a whole other part that comes from elsewhere, from medical and nursing tools.

So, if you will, financing and accounting, when I draw a parallel, 20-30 years ago, accounting had almost a 60-70% impact on hospital financing. Now, it's more like 10-15% impact, with a maximum of 30%, but really at the very maximum. All the rest comes from other tools I mentioned, DRHM, RCM, which together form what we call RHM, the minimum hospitalization summary, base variability packages, and so on. So, ultimately, accounting is losing its relevance, but before, if the accountant communicated poorly what we call the "units of work," there was a real sanction in financing.

Sarah:
Thank you for sharing this perception—it's quite interesting. In my literature review, I also had to highlight the pandemic period due to its financial impact. First, could you talk about the financial effects of the pandemic on your hospitals?

Mr. Z:
It's not my specialty, but I was obviously involved, I was on the front lines. What we've seen, at least in hindsight, is that, for now, many hospitals have not returned to pre-COVID levels of activity. So, if you will, in terms of consultations, that's fine, but in terms of hospitalization indicators, meaning admissions, these indicators rely on admissions, we're still, at least in the hospitals I'm familiar with, we're still at 7-8% of the 2019 activity levels. Last year, it was even at 11%. And honestly, I think if we look at the MAHA studies, we see that between 2019 and 2022 or 2023, hospitals have not returned to previous levels of activity.

So why haven't they returned to previous levels of activity? Perhaps, I haven't studied this in detail, simply because patients have become a bit more afraid to go to hospitals; they are more cautious and only go when necessary. So, there are also delays in care, meaning that cases are more severe but less "minor issues," if you will, but also because of a shortage of healthcare and medical personnel. It's critical, and we hear a lot about this in the press. As a result, hospitals are no longer able to open as many inpatient units as before. Perhaps due to staff burnout, or maybe because healthcare staff gave so much of themselves during the COVID pandemic and may not be willing to make such sacrifices again. So, it was very tough for some; some left the profession, and probably others also moved to fewer demanding sectors. And in fact, we are really struggling to find nurses and caregivers for inpatient units, whereas it's much less complicated for consultations than before. There's still a noticeable pressure on the staff. There was really a significant shock for these healthcare teams, making it harder to recruit staff to open care units. As a result, with shortages, fewer units are opened, and therefore, there is less capacity.

So, this is really an effect of COVID, with probably also an effect from the population that is more hesitant to go to the hospital for more cautious uses and the increased use of outpatient care, which

also allows for shorter stays. I think if you search online, you should be able to find one or two papers on COVID.

Sarah:
Yes, I found quite a few, but it's always interesting to hear different perspectives based on the people I interview. But indeed, it's a widely discussed topic. And did this period highlight any strengths or weaknesses in the hospital financial system in Belgium? Did it reveal any strong or weak points in how things are currently organized?

Mr. Z:
In any case, regarding the quality of accounting and financing, I don't think so, because as I mentioned, it is better to pay hospitals based on the number of patients, regardless of how they are classified. But it's complicated, I admit, though it would be simpler. But no, actually, the aspects of financing and accounting were not highlighted. However, this shortage, this reduction in sectoral usage needs, allowed hospitals to reassess their bed capacity. In their reflection on the reconstruction of new hospitals, we know there are new projects emerging as they have recently started, and there is real reflection on the critical size, the appropriate size for hospital reconstruction. For instance, we also have a 700-bed hospital. Should it rebuild a hospital for 25 or 30 years with 700 beds, or with 600 or 400? Because there's technology, because of this and that, but also maybe because of the COVID pandemics, which might lead to reflections on how to better isolate sections of hospitals to avoid shutting down all activities in all hospitals. So there's that aspect, I think, but in terms of financing, it didn't really have an effect, because the SPF, in its great generosity or foresight, provided cash advances to hospitals in 2020, called IFFE interventions—I can't recall what it stands for—but we recently went over the accounts again, and hospitals sent back 25 kilos of detailed data, showing with evidence that they had indeed incurred costs and dysfunctions related to COVID, and so they were financed. If we do the balance, the period was very tough, but financially, a significant part was covered by the SPF, somewhat on a flat-rate basis, not always equitably based on the number of people, so it's not really based on the cases treated, but they also consider the number of people you had during your period. If some hospitals were more reluctant than others to take on COVID cases, they were not penalized for that. We're not saying we didn't lose money with COVID—that's not true at all—but the SPF still ensured that this part was covered in terms of financing.

Where it was penalizing for hospitals was those with salaried doctors. This is a disadvantage for academic hospitals, for example. There, in fact, the doctors were at a standstill, and the hospitals continued to pay their salaries, whereas in the rest of the country, doctors were paid on a fee-for-service basis, meaning they were paid based on what was billed. So, they found themselves without income, like other companies that were shut down or placed on technical unemployment. So, this highlighted a difference in hospital treatment, meaning that the COVID subsidy we received from public health covered the entire slowdown, the shutdown of activities related to the hospitalization sector and thus the BMF, but it very little covered the fees part. There were interventions, but not as strong, so hospitals had to pay their salaried staff without having the income to match. When we look at analytical accounting, it is quite clear. The entire BMF sector, the average financial budget, covers classical hospitalization and the people working there, mainly nurses, and all the administrative aspects and everything that is hospitality before, but not the fees. The fees, meaning the doctors, are funded by their fees. So, this brought to light the fact that hospitals with fee-for-service doctors or those with contracts paying their doctors on a flat-rate basis, regardless of the income they generated in fees, were a bit at a loss since they no longer had fees and still had to continue paying their payroll. Hospitals with salaried doctors were hit even harder—it was really a double penalty. On the other hand, it sometimes allowed for breaking down barriers in the functioning of hospitals, which is logical, and some of those barriers remained even after COVID was over.

Sarah:
Okay, perfect. Regarding the COVID situation, we've covered a lot. To return to my general questions, going back to cost accounting, what is the impact of cost accounting on budget procedures and financial decisions in hospitals?

Mr. Z:
It's the cost price approach, which is about determining whether a service is fundamentally unprofitable or not. And so, as I explained, it's about deciding whether to reinforce it, improve it, implement improvement procedures, or reduce it—that is, offer fewer services because it's not an essential service to the hospitalization sector or not a strategic activity. That could also be the case. So, in itself, accounting is just the support for establishing a budget, but it's nothing more than that.

Sarah:
And does this cost accounting have an influence on the hospital's overall activity?

Mr. Z:
No, it's just a tool. It's only used when creating a budget or when doing a quarterly report to see where we stand with our accounts, as an intermediate step before closing the accounts. When we create a budget, usually around autumn as always, we take as much data as available from accounting, try to extrapolate it over 12 months to get an idea, then index it, integrate variations in activities, personnel increases, and similar things. Once we have that, we have what we call the final budget line, which tells us how much we have, how many millions we are below zero. Then we take budgetary measures, considering the concerned departments, in a management committee or other meeting sectors, where we come up with corrective measures to either improve efficiency or reduce costs—there's no other solution.

So, accounting in itself just serves as a support to put monetary data behind it and to see if there are occasional deviations. For example, if we look at payroll elements, which is the largest expense, and then after that comes the pharmacy, it's about personnel, to see if there hasn't been a material error in bonuses, if there hasn't suddenly been an uncomfortable or irregular surplus of services because we opened rooms on the weekend when they were half empty. Accounting is already quite removed from that, if you will. Accounting is a kind of funnel that receives all the information, but it only serves to give an estimated result of the hospital for the coming year and to guide decisions based on that. We run simulations to create a budget. We simply try to project trends in activity growth or decline, personnel objectives, and inflation and indexation elements for the coming years. Once we have that, all the discussion takes place far from accounting. Accounting no longer plays a major role in that.

Sarah:
Okay. Despite your clear response that it has little influence, are there moments when using current cost accounting techniques led to underfunding for the hospital?

Mr. Z:
Yes, again, as I said earlier, it's in the way these data are reported in Finhosta or other tools. If a hospital is less efficient than another, it will find itself in difficulty. To give a concrete example, if you buy equipment and this equipment is allocated to a cost center attached to the hospitalization sector or prior to that, meaning common or auxiliary sectors as they are called, you will be financed in one way or another in your BMF. If this equipment is placed in the accounting in a cost center outside the BMF, meaning, for example, consultations or others, there will be no financing. The key is that it reflects reality, of course, but errors can occur in the systems. As I said, accounting is a kind of funnel. So, if your supplier's invoice arrives and the purchase order that was made is not in the correct cost center and you now place it in a cost center not covered by the BMF, you will have a loss of financing. Accounting can have a real effect on this, especially on personnel. In Finhosta, I encourage you to take

a look at what's there; it's pretty complex, but it's not a big deal, it will give you an idea of the elements that the SPF looks at. And so, there's this whole part where cost centers keep coming back. For example, in the bank loans we take out to finance our investments, if we allocate a cost center for the investment that is not a cost center linked to the BMF, there will be no financing. So, it could be a simple error in accounting misallocating this, while it could have been properly allocated. So, accounting can still have effects, but because it's a funnel, the error often originates upstream of accounting—it comes from purchase orders, from how people are allocated to cost centers at the payroll level. When you have 3-4,000 people, obviously, no one is doing this manually. It's on a daily basis, at the payroll level, that the correct people are allocated when they are hired or when they change departments. It's just that at the human resources level, they need to allocate the correct cost centers so that we don't make mistakes and lose financing. So, it's more about the upstream processes than the accounting itself.

In accounting, sometimes you can see that there are misallocations at the cost center level or the title level, and we can correct them, but most of the information in our current digital systems, most of the information that goes into accounting, comes from external applications, whether it's payroll for billing, purchase orders, or the pharmacy tool, which is very important for orders as well. All these elements are important. So, it's no longer really about accounting. For example, in hospital billing, the system that sends invoices to patients and mutual insurance companies, if your billing tool doesn't capture all the information that was done for the patients and all that was used for them, we won't bill everything that was done, so there will be a gap in the hospital's accounts. Accounting will reflect this—that is, I'll see the amounts, the number of millions of euros spent on medications, and the number of millions of euros billed for medications. This is what we call a pharmacy margin, so again, this is what we call analytical accounting. So there, I could indeed see that we have a lower margin than before, and therefore, probably, there are gaps in the upstream processes, in billing or at the pharmacy level. But it's not the accounting—it's just the receptacle that allows me to make calculations. If you will, accounting is a bit like a thermometer that allows me to see, but it doesn't give me anything more. I don't know why the patient has a temperature; I just know there's a temperature. After that, we need to trace back through the processes and identify where the problem lies, whether at the human resources level, when I say overpayment at the personnel level because a mistake was made, or because suddenly, we call on a lot of personnel when it wasn't necessary. We'll see that in the accounting—the source of that could be detrimental weekend recalls. And as I mentioned for the pharmacy, we see the margin deteriorating, but we need to go back to the pharmacy side to see if it's either at the revenue level—we're not billing everything that was consumed—or the consumption prices were exaggerated, or we have a stock problem.

Accounting is an indicator that allows these investigations to be conducted, and again, in the MAHA studies, you'll see margin calculations, profitability calculations of medical services. That's interesting. It's the demonstration of the use of cost centers in accounting. It's to define what we call a retrocession rate or a ratio of the cost of medical personnel to fees; it allows us to know that, in radiology, for example, the ratio is 27 to 30%, meaning that radiologists account for 30% of the revenue, which makes sense because they consume a lot of technologists, so the surplus must finance the technologists. In the lab, it's 10 to 12%, and that makes sense because, on average, there are 10% doctors for 90% technologists. Conversely, a pediatrician often has a ratio of 80 to 90% because generally, they are not well-assisted. And so, to be able to do these calculations, accounting is a good tool. It allows, through cost centers, to make that ratio. It's therefore a matrix vision that we have and that I find good—well, I'm used to it. Horizontally, you have the type of expenses—personnel expenses, pharmacy expenses, heating, electricity—and vertically, you have the cost center. And so, with that, you have your cost price. This has existed since the decree of August 7, 1987, if I remember correctly.

Sarah:
Yes, I had reviewed that as well. You've answered quite a few questions. So, I just might have one last question. When looking at the financing system here in Belgium, in general, are there any adjustments or improvements that you think should be made? Or is it fine as it currently is?

Mr. Z:
No, I would just say that in terms of tools, it would be smarter if all hospitals had the same tools. I think we would save money if we all, and not just in accounting, used the same billing program for all hospitals, the same accounting program for all hospitals, the same purchasing program for all hospitals. This means that when there is a legislative change, it applies to everyone, and we don't have to pay each time, each of our suppliers individually, to adjust. And the benefit of this is that public authorities could then connect to our systems independently and access the data they need without us having to spend the summer providing new tables every year to the SPF. Every year in the summer, after we've closed our accounts, we have to send these Finhosta reports, and it can take a lot of time, so standardizing things once again would be beneficial. That's the first step, but I think the next step is not to ask hospitals to fill out these various tables of information useful to everyone, but that this data should already be in the same format everywhere. For that, I think the same tool would be welcome. We would also save money because it would be the Belgian state negotiating with the supplier on the software price and not each of us individually. That's a big point for me: simplifying this would allow us to have perhaps more efficient tools for capturing information and being able to produce more recent reports. I don't know the opinion of other hospitals in Wallonia or Flanders, but in general, we do quarterly financial reports. And right now, since COVID, and at least in 2024, it's the case, I've been asked at the hospital E to do monthly reports, which is extremely complicated because, in fact, we don't do stock estimates every month, obviously. We don't do cut-offs, so accounting cut-offs, every month. We do quarterly cut-offs, meaning if you have an elevator invoice for the year, you spread it across the four quarters, so you don't have the expense in January for the entire year, and when you close the first three months, you don't have an explosion of expenses because these are expenses that need to be seasonally adjusted. So, if we want to go further in seasonalizing expenses and be able to track monthly financial results of the hospital, we need more dynamic tools that require less human intervention.

So, the improvement for me is to have IT tools that require the least possible manipulation or adjustment by accountants or accounting teams at each account closing, whether it's quarterly, annually, or monthly for those who do it monthly.

Sarah:
Thank you, that was quite detailed with many examples. If there's any information or perspectives I haven't covered that you think are interesting, I'm happy to listen.

Mr. Z:
I think we've covered the essentials for your topic, but if you have any other questions during the writing process, feel free to reach out to me.

Sarah:
Perfect, I will certainly do that. Thank you very much for all your answers and your help. Goodbye.

ANNEXE XIV: Transcription interview 7

Interview 7- Hospital F
Place: Online teams meeting – Date: 01.08.2024
Duration: 1.16.19 hours
General hospital in Flanders

Sarah:
Good afternoon

Mr. V:
Good afternoon. Voilà, we are ready. Sarah, I haven't prepared anything. I'm just going to listen to what you ask me. If possible, I would prefer to do it in Dutch. I'll try to speak slowly. If it is not clear, I would be happy to elaborate in English or French. I don't care, just report it. If you can't follow it, I will resume in another language. I will listen to your questions and I will try to do my best to help you as best as possible.

Sarah:
Okay, perfect. Well, first of all, thank you for your help and the time you spared for me today. I'm just going to present myself a bit. My name is Sarah. I am a student in my final year of a master's degree in Financial Analysis & Audit at HEC in Liège. I have decided to base my thesis on the financing of hospitals in Belgium, and more specifically the possible impact that regulated cost price calculation can have on the financial fortunes of these institutions. To put some context, in my literature study I first explained the various basic concepts, from cost price calculation to cost centers and so on. I then also detailed the four major sources of funding, such as medical fees. and so forth. So, this is a bit of context. Sorry in advance for my level of Dutch.

Mr. V:
It's very good by the way, no problem.

Sarah:
My father is from Flanders, so normally it's okay, but it's more the financial vocabulary that I can do without. My first question is simply if you can present yourself, what is your job and the link with hospital financing?

Mr. V:
My name is Mr. V, I have been Financial Administrative Director at hospital F since 2019. I started there as director in 2019, I was previously involved at another hospital of the province. It is a large hospital, in the heart of West Flanders actually. I was always involved in hospital financing there, but more in a kind of expert role, while now I have more final responsibility and manage a team. At hospital F I am responsible for everything that concerns financial administration, ranging from the reception of people, admission, central registration and so on, to everything that has to do with pricing and invoicing for our patients. Accounting is also part of it and that undoubtedly contributes to the story of cost price calculation. Policy information is also in my department and, in this context, I am thinking in particular of everything we do, for example via our website, of informing our patients about the cost price, because I had expanded on cost price calculation there. These are the search initiatives that we do and we do that through our policy information colleagues. What do I still have in my department? The HR department is slightly below this, but slightly outside of this. So, I have pricing, billing, everything that involves doctor's fees, basically everything that involves hospital financing, patient accounting, supplier accounting. Purchasing service, which is also not unimportant, is still included.

Hospital F is a medium-sized hospital, a regional hospital with campuses in city X and city Y. hospital in city X is our acute hospital campus. We have an emergency in city Y. We have all medical specialties, we do consultations there, we also have a day hospital, both surgical and non-surgical. Everything related to rehabilitation is in city Z. Voila. Hospital in city Z is our acute campus and we also have a polyclinic in city W. So, we have three campuses, so two hospital sites and one polyclinic site. And actually, these regions are a bit like the east coast of Belgium. That's kind of the region we cover.

Do I need to tell you anything more? In total there are about 70-80 people who work in my department. A total of 1,000 employees work in the hospital, we have 140 doctors and we have approximately 10,000 classic hospitalization admissions, we have approximately 25,000-day hospitalizations, approximately 150,000 consultations on an annual basis, and we have a turnover of 130 million euros.

In addition to that, and this may not be unimportant in light of your thesis, I also teach hospital financing in Kortrijk. But that is very limited, I have an appointment there as a lecturer for 10%, but it may also be pertinent in this context, because I obviously also discuss hospital financing there more often.

Sarah:
Okay perfect, that's very good for me. Here, it's more general questions I want to ask. For example, like the first one, how would you characterize the cost price calculation of hospitals in Belgium and what is the goal?

Mr. V:
Yes, I understand that cost price calculation mainly concerns cost centers and cost categories. That's what I understood.

Sarah:
Yes, that's it.

Mr. V:
In addition to the story of preparing annual accounts and interim results, specifically as far as hospital F is concerned, we produce an interim result at 9 months. So that means in concrete terms that sometime in October, we go to our directors, in debriefing of the interaction committee, we go to our directors and we present the figures for 9 months. 6 months seems too early to us, because at that time we still have far too little information, because at that time, as far as hospitals are concerned, or at least as far as our context is concerned, it still deviates far too far from reality. We have far too little contact with the material at that moment. So, we present a first interim result sometime in October, a result based on the period January to September. And as far as we are concerned, that is also the start of a budget cycle, which then starts and ends in a budget for the following year. I think that's my first important point.

A second important point is that we do cost placement and cost category analyzes to a certain extent. These are relatively limited or although we obviously have a lot of data within our accounting system, they are relatively limited. This was limited to large cost centers in the hospital. We are curious about our operating theatre, our pharmacies and others. We also have a fairly large kitchen that prepares 300,000 meals a year and that is not just for our patients in the hospital. But hospital F is part of a larger care group, where we have about ten residential care centers. We have 600 residential care beds in our portfolio. We have about ten childcare initiatives and within that whole there are also a number of initiatives that provide care for children with disabilities, which can be situated more in the sphere of school care. And we from the hospital, because we are well organized logistically, we have a central kitchen that actually prepares all the meals, allows the scale effects to play a part, prepares all the meals for all the initiatives that I zoom in on. And in this way, we manage to price our meals that

we offer to colleagues at cost price 25 to 30% cheaper than market prices because we can work on that scale, because we work with our own people and in that way, we are in profit, both for the hospital and for our colleagues. That is a first example of it, but that is why we of course have the kitchen for our important cost center to do analyzes on. Pharmacy and operating room are different. So, we regularly analyze this. We are now doing a very well-founded analysis of our kitchen. We do some kind of financial auditing and that's specifically part of it.

A second is cost center, cost category analyzes based on the investments we make. Let me give a concrete example. About three years ago we purchased a robot, a robot for urology. This includes urology, but is also used for gynecology and general surgery, and can also be approached with the robot. In a Belgian healthcare system, our Belgian financing, the financing of fees, undoubtedly one of your financing sources, is particularly focused on classical medicine, less on robot-assisted interventions. And not only that it is shown within the literature that robot-assisted procedures are often less invasive, less bloody, lead to a faster recovery, but are associated with a much greater cost for which we do not receive any compensation. Our financing system is not equipped for this. To give a concrete example, every time our urologist uses our robot for, for example, a prostatectomy on a man due to prostate cancer, it costs us as a hospital 1,700 euros out of our own pocket. And these are analyses hat we make of "such a robot costs between 1.2 and 1.8 million euros, are we going to make a cost center analysis? In order to prepare the decision to purchase that possible robot, we try to properly map out, look, what are the returns? What are the expected costs? What is the end result, positive or negative?" We then go to the directors and ask whether or not they can make the investment. In the context of our robot, this is really a request for financial resources that we have built up based on our good performance in the past, but we can use them because we really believe in robot-assisted interventions. From a point of view towards our patients, knowing that financially, we are tearing our pants. Are our directors prepared to follow us in this regard? It of course gives us an advantage in that sense, because by focusing on innovation, you create a kind of reputation, a good reputation, and in this way, you can try to gain market shares, for example in other areas, which is also not unimportant because that is an important side effect. For example, today we are preparing files on augmented reality applications, to make interventions with the Google glasses of this world in order to make more precise incisions that will result in faster recovery and the like. Today we are also preparing a file regarding a new robot site. We already have a robot specifically for knees and hips but we want to have a second one. So that is a second important item, where we work on cost center, cost category analyses.

A third topic is in the light of medical policy plans. So, our doctors, we have 20 medical services, we have 140 doctors in the hospital, 20 medical services, who are supposed to make medical policy plans in which they set out their ambitions for the next 3 to 5 years. There will undoubtedly be a lot of ambitions in the sense that euros are linked to and we will try to materialize them. So that we can also say that good, we will go along with that a bit, that is the contribution that the hospital can make and that is what we expect from the doctors in terms of financial contribution, in order to get a good outcome from this.

And then perhaps the very last one where we work on cost price calculation, that is at the level of our nursing departments. Although this may have a smaller impact, but it does raise awareness, it is important that at some point we will periodically run analyzes on consumption of services. I'll just give a classic example. It's a penance. Every time school starts in September, you throw it in your warehouse, for example the markers and ballpoint pens and tip-ex. We have very honest employees, which is clear, because we have had similar experiences in my previous workplace. You can be sure that consumption will suddenly start to increase. can sometimes help by developing insights across services, without wanting to be a message point, because you don't want to be that either, but in this way, you still raise some awareness that that is actually not the intention. It's the same with the cookies and milks of this world, they have really honest people. I am convinced that this is the case in all

organizations, but by publishing such data you can sometimes raise awareness among men. It is strange that in department A versus department B you have a consumption that is perhaps five to six times higher and without wanting to point fingers you correct that very often. So, for the fixed route, these are already a number of analyzes that we do anyway.

I might just want to finish the story of our budget cycle. So, I said, we will start a budget cycle sometime in September that will allow us to, so soon, we will now soon be September 24, and we will be looking towards 25. So that means that in September a question will be sent out to all managers and all doctors from our organization with the request to list their investment needs. That is on the basis of a certain document, not only do we have to sign and indicate “these are our needs”. We should also try to make an estimate, “we think this will cost so much”. They also indicate what any possible impacts could be. So, in that sense they are triggered to think. There may be certain training needs associated with this. Perhaps there are conditions that, if you use such a condition, you need certain disposables, consumables, materials that you can only use once and that you then have to throw away. Our robot urology is a very good example of this. That costs a lot of money, especially in terms of consumables. Material is then used to control those arms, which you can only acquire once, or can acquire a limited number of times and have to throw away. That costs an awful lot of money. So, we will start this in September with the intention that they will indicate an investment need sometime in mid-October, at the latest at the end of October, and that will allow us to determine investment budgets and also determine priorities because of course, here too, we have the middle years, we are there with certain elements in mind, we will make choices there.

I said, so our figure of 9 months, we will bring it to our board of directors in October and that figure of 9 months allows us to also try to make a budget for 2025 at the level of our operating budget. We are going to release assumptions on that. Let me just say that by 2024 our medical framework will have grown significantly at the level of a number of services. We note that this is accompanied by an increase in the number of patients. We are going to make assumptions, we can expect, can we extend that to 12 months or are we going to make further progress and we then try to translate that into that export budget and therefore into your euros. As part of this budget cycle, we also draw up a personnel budget. This means that sometime from September or October we will meet with all managers, based on the staffing that is present, the first 9 months of 2024, we will use that as a benchmark and then we will talk to the hospital managers and ask their needs. And there too, of course, economics means choices are made. Of course, just because something is asked does not mean that we can by definition go along with it, we will make certain choices again. And if you put all that together and everything that I'm telling you now, that process ends sometime around December. Somewhere in early December, the second or third week of December, we will go back to our board of directors and project the budget there, with a personnel budget, an investment budget and its repercussions on the operating budget. And then I think we've pretty much had the cycle that is present here. Other than that, maybe because I also hear you saying funding sources, we recently had our budget funding. Budget financial resources is also one of those important sources of financing. That is meant twice a year, once a year actually calculated by the government. It goes without saying, because especially for the hospital, the operating resources of the hospital represent approximately 40% of our turnover. That is a very important one and every time that comes in, I mean in July the new BFM came in, we of course also do a soil analysis and try to determine what that means in concrete terms. I will give a concrete example, our BFM that recently came in, in large order, is 60 million euros. Last year it was 51 million euros, so you could say “wow, that's plus 9 million euros, that's plus 20%”. But if you do the analysis in depth, it is also important that you look at it in a more nuanced way, and it turns out that this is not so positive. And that is why you undermine that analysis. There is a danger that people will start to think, “wow, up to 10 million euros have been added”. Yes, that's how fast it's going. That's pretty much the big picture we're working on.

Sarah:

Okay, perfect. And why do you think it is necessary to have an extensive and thorough cost price calculation?

Mr. V:
To be able to estimate in advance. Well, especially not to sail blind. Not to sail blind, to know exactly where you stand. And the second important point, I think, is very important, is also to be accountable. I have already mentioned our directors, which is logical, because they are the people to whom we as management are accountable, but also to our doctors. If we look at hospitals, hospitals are a very fascinating environment to work in, but sometimes also a very complex environment to work in because on the one hand you have a hospital that is financed by a budget financial resource, but in the meantime, you will also know that the BFM in terms of operating resources is not sufficient to manage the operation of a hospital. From there we have to contact the doctors and end up with the financial arrangement, where we make payments on doctors' fees to actually manage the operation of that hospital. So, when we make decisions regarding the purchase of the robot, we are also concerned with the resources, with the financial, with the euros of those doctors, and then it seems to me that it is also important that we calculate this well and in advance. so that we can also convince our doctors in this sense, because they are a very important stakeholder. We must have their confidence in being able to implement that decision, otherwise we are not actually doing it correctly. So, I think that's a second major point.

And a third important point, also not unimportant, is that we work with social resources. Then I think it is also important that we sufficiently substantiate and support this and not make construction decisions, investment decisions that, if you examine them in advance, would actually have been stupid decisions. I am not saying that all decisions we make are good decisions, but it is important to be proactive, if at all possible, to make a good calculation and I think we are doing that in the meantime at an excellent hospital, that we really prior to a decision, prepare a good file, prepare a good file, discuss this thoroughly with those involved, the doctors in question, by extension, with an executive committee, administrative body. And I think that really matters, yes. For that reason.

Sarah:
What do you think are the most important advantages and disadvantages of this cost price calculation in Belgium for hospitals and their financing?

Mr. V:
An advantage is that you can steer, so you don't have to steer blindly. The disadvantage, wait, if I link it to hospital financing, you will undoubtedly come to the thought that our hospital financing is incredibly complex in Belgium. You have undoubtedly studied it a bit for your thesis, but it is incredibly complex. Even to that extent, we said it recently, we recently received our budget financial resources, our operating resources. I just gave you the example of 51 to 60 million euros. Without a doubt we agree, wow, plus 20%. There is not a single company in Belgium that has seen an increase in its turnover, its operating resources and its profits of that magnitude. But if you look too closely at the grounds, you will find that this is not so positive. We have made progress. We have made progress, especially if we consider the fact that we have made a very good trajectory over the past five years, which is reflected in our figures, but it is too dangerous to simply explain this to our doctors, for example. Because they were going to say, “Hey, you have received an extra 10 million euros from our government. Why are you still knocking on my door? Why are you still touching my fees? Why are you taking another percentage charge on my fees?” So that is why it is important to look at it carefully, explain it well, and be transparent about it, but it is already so complex and that is one of the shortcomings of our system. First of all, it's the fact that it's so complex. Just try to have a financial resources budget explained in a good way. We have a budget financial resource. Today it is 2024. Our financial budget today contains components that relate to a hospital activity that dates back to 2016. That is about 8 years ago. The revision receives a BFM. That is actually a kind of pre-assessment and x

number of years later the government will reconsider this and corrections will be made in plus or minus. So today we are in that situation that our activity of 16.8 years ago is actually has been examined, there are many corrections to be made. And that's one of those reasons, factors why we actually have a positive BFM today. But generally speaking, this is not structural. Those are one shots. That is not structural. If you can't get that explained properly, then explain it because it's not that easy to understand. If you don't take that into account, because people only hear a limited number of messages, then we are pursuing an incorrect policy because then you are really on the road with the thought of, that man has 10 million euros more. And so, there are x number of components in it.

The second disadvantage, of course, is the duality of financing that makes it complex. The fact that BFM is not sufficient means that you have to contact your doctors. I'm going to make it concrete. We have approximately 380 people, full-time equivalent employees, who are involved in healthcare. Nursing and care, truly the choir of our business. If I take our budget finances, only 340 full-time equivalents have been funded. So that means that we deploy 40 full-time equivalent people in healthcare entirely at our own expense. You could say that you are being very inefficient. I note that all hospitals in that large order must make such efforts to provide care. The 40 full-time equivalents do not seem like much, but the 40 full-time equivalents, a nurse, taking everything into account, i.e. considering the employer contribution, costs around 100,000 euros per year per full-time equivalent. That means 4 million euros that we actually put into healthcare here to provide care that is not supported by the BFM. That's what I mean by complexity. That is so difficult to grasp, that is a necessity. That is what I mean by the duality of that financing, the fact that we have to knock on the door, something is not right. And that is one of those negative points that also complicates cost price calculations because you are constantly working with communicating vessels that should not actually be communicating vessels. If we make that decision to have that Euro robot, that robot will cost us 1.8 million euros, that is a decision that the hospital has made. The one that I just explained to you, you cannot change that in the nomenclature. This means that we will simply pay for it out of our own pocket, but again you throw all sources of financing at it. And that doesn't make it so obvious, but I think we still don't do enough, Sarah, with those cost price calculations and those insights around cost centers and cost types, because we don't have enough time for it. It is also important.

I just said kitchen, pharmacy and operating rooms, there were three, but we also did one around the emergency room and around our intensive care units. Emergency and intensive care, these are also classics in hospitals and it is with those insights that you arrive at it. Our emergency costs us approximately 1.3 million euros annually, which we cannot recover in any way. Intensive care is one-size-fits-all. If you do not have those insights, do not make them, do not objectify them, then you have no reason to sit down with your doctors and say, look, this is a basis for us to talk about those financial arrangements and possibly make changes to them. On. But it just shows the complexity and actually the shortcomings of our financing system, the fact that it is really not that transparent, that it is all mixed up. There is also Federal and Flanders. We have so many levels of authority here. If I'm not mistaken, there are 9 ministers of health in Belgium. Well, not all of those 9 ministers of health have a say in fighting, but some of them do, but they are each ingrained in a hospital with their powers and their financing flows. And that makes it immensely complex and that is certainly a shortcoming. And hence the importance of those cost price calculations to simply develop those insights for yourself, but certainly also for your doctors and by extension for society, the community, so that you can justify this. And also, as a preliminary to result determinations, because we can say that. We work with long-term financial plans. We make an annual budget, I just didn't say that. Sometime in August in the spring we made our long-term financial plan until 2030. So, seven years in stock. And then those cost price calculations are also important, because they are the buttons you can turn. Okay, if we do this, it's going to have an impact like this. And you really need those insights. I also find it interesting to do something else. Anyway, otherwise I wouldn't be in the right seat, I think, if I didn't find it fun and interesting. But it is also fascinating to do, to tell a story to those who leave. And to convince people

to do or nothing. Because sometimes things are not done, because, for example, an alarming analysis shows that this would not be a good decision.

Sarah:
Okay, yes, certainly this complexity always comes as a disadvantage for everyone. Certainly, for me, from my view it is very complex.

I also talked a little about the pandemic, the situation during these years, because it is quietly having an effect on hospitals. I have a little question first. What financial impact do you think this pandemic has had on your situation?

Mr. V:
I am going to distinguish a number of phases based on the moment the pandemic occurred. We are talking about March 2020. Of course, this immediately and very quickly had very hard financial repercussions at that time. March 16, 2021 was a Saturday, a date I never want to forget. At that time, we still had Maggie de Blok, who was still in charge and who announced on a Saturday morning at 9 o'clock, at this moment and from now on all planned care in all hospitals must be stopped and everything must be canceled until further notice. Can never forget that date, because we had to go to the hospital immediately, because everything that was planned had to be canceled, canceled and we could not give an end date, but that of course had very major financial repercussions, both for the hospital and for the doctors. And perhaps even more for the doctors than for the hospital because budget financial resources, if you look at it, and then 80% of them are paid out in the form of twelfths, so strictly speaking you always have a certain certainty in your financing, but because of our doctors even more so. And I always thought that was very striking. And you can say, well, your doctors are self-employed, that is the risk involved. But that the doctors have never really, really been considered in that area. What do I mean there? I'll make that more concrete later. The government decided relatively quickly that 2 billion euros would be allocated to shore up the liquidity position of hospitals. A specific example against whom we put him there, in total, I thought we received 8.4 million euros. By which I also want to say, specifically towards hospitals, at that time, we had relatively little impact. A bigger concern was finding the right materials, enough materials. I remember all the hospitals mentioning how I struggled with alcohol, finding face masks, protective clothing and the like. That is three or four months later, that has been resolved because there was enough on the market. I think those were bigger concerns than financial ones, as far as hospitals were concerned, because we actually got our check, which was an advance. We didn't know where we stood. We had 8 million and the government said, it will be recalculated and later you will have to give something back at some point, possibly. But you were not allowed to regard it as being corrupted. I thought this was remarkable for the doctors because from March 16 to about the end of June they actually had a lot of emergencies, because that could continue, but they were no longer allowed to do anything that was planned care, consultations and more. I have always found it very striking that the doctors never reacted against it. You can then say, okay, that's part of the job. That is part of the risk, because you are self-employed. But I think that's special, because ultimately, okay, part of the risk, but they do represent health care. And they accepted that without question. I've always found that remarkable. So financially, as far as the hospitals are concerned, it has now been 3 years and we have recently, only recently, received our settlement. So, I want to give you the message, but we have already received 8.4 million euros. To give you an idea, we have always assumed it, but this is a confidential piece that you have to keep in mind, because it is in context. We have always assumed that we have to give half back because we have been able to prove half of the costs. I note that we are three years after the date. And we receive that we will receive an additional 900,000 euros. And I think that's so crazy. I think that's very strange. Especially since formator De Wever is currently tasked with making savings in healthcare. Then I think, okay. And there is the observation, and that is also a shortcoming, I think, from the point of view of government savings, the government has made major cuts in recent years in employees involved in the VOD. To such an extent that as an outsider you see that there is a relatively negative atmosphere,

with a number of people having simply left. And those people just don't know what they are doing anymore. That budget financial center is the beautiful manifestation of it. They really don't know what they are doing anymore. And then we sometimes look so surprised and frozen. And then we think, we will receive an extra 900,000 euros here. As a result, we will have an exceptional result this year. That's a luxury problem. We are now thinking, how are we going to implement that here, internally? Because, all, under our faces. You have a hospital, you have your doctors, they look there. for their part and rightly with their interests in mind. If we suddenly end up with quite a large million euros surplus, who will understand that we would rather not have that? So that's a luxury problem. That is what we are currently faced with, that we are thinking about how we are going to approach this here. I just want to give it a month, that COVID. I am convinced of it too. There is plenty of money in healthcare, but it is not always well distributed. This in the first place and to residential care centers, that is not what the thesis is about. Or at childcare or the like that have been shared very vaguely. But there is enough money in hospitals, but it is not always distributed correctly. Maybe we should look into that. But to answer your question regarding COVID. In the beginning we had our hands in the hair and we realized relatively quickly that we mainly have to prove a cost here, because that will be reimbursed and you see we are three, four years later and we determine because yes, we receive an extra generous check on top of an amount that we thought we would have to refund. So that's really crazy, but on COVID, one man's death and another man's bread, I think.

Sarah:
That's a different view of the situation...

Mr. V:
I can imagine that if you ask this in other hospitals, but I am very fair, you will hear different views. That other hospitals might start complaining. I sometimes wonder what the truth content is. But I don't have to judge other hospitals, you will get my answer honestly and fairly and I think that is a reality to a certain extent.

Sarah:
Okay, the answer was already very deeply detailed but I had one last question about COVID. Has this pandemic situation exposed strengths and/or weaknesses of the financial system?

Mr. V:
I hear a very strong pending centralization from the point of view, that's going to give us savings and so on. I strongly believe in centralization and scale for diseases that are rarer in nature. It has been sufficiently and convincingly demonstrated. It is a classic example, pancreatic tumors, as a doctor you have to have sufficient control over this, at the risk that you see a doctor who does that perhaps once a year and that you are actually not treated very well, with survival chances of employ. So, I really agree that you should centralize such things. I don't think there is any discussion about it and I think you should even limit it to university centers, Ghent, Leuven, Antwerp, I'm speaking for Flanders now, because I know it less in the Walloon context, but what I really understand from it what I learned from COVID is the importance of redundancy. What do I mean by that? At some point we determined in COVID time, we have 12 intensive care positions here in our hospital, so 12 intensive care beds. At some point, in the heat of the moment, we determined that that was not enough. We had to go against the odds, not so obvious, we had to scale up to 21 family positions. That is an exceptional situation, but you have to know that the bed is staffed by three nurses, that is a lot, it is not only staffed by three nurses, who are staffed by nurses, nurses, we have a specific skill in resuscitation and the like. That has asked a lot of us to be able to do that and we have given up on what I need and fortunately. What I mean by redundancy and COVID has taught us that, are there sufficient healthcare initiatives in Flanders, in Belgium, in Wallonia, which go a bit against that idea of centralization. We have 87 acute hospitals in Belgium, I think, not university ones. There are also 9 university centers. COVID has taught us that we need it more than anything. On the option that we sometimes hear in the media that it

should be centralized, brought closer together. If we had not had those 87 acute hospitals then, we would not have had those 12 face-to-face positions in hospital F. Let alone 21. I would have also reduced the possibility to 21. Then I dare not imagine the catastrophe of the number of deceivers who would have occurred. And that is something that COVID has taught me as a very weak link that we often talk about for efficiency reasons. We need to centralize, we need economies of scale, we need to bring care together, but COVID has shown me, wow, luckily, we didn't do that. I notice that we are barely three years later and people have already forgotten that message because they are back in that logic, in that flow.

I also say that from the idea that if we look at the healthcare systems in the Netherlands and England, I also want to implement it from there. I have noticed that there are very long waiting lists in the Netherlands and the United Kingdom. In the Netherlands in particular, England I know one less rush, I challenge you there. I was 17, when I still worked in Delta, I went to a hospital in Berg-op-Zoom, which is just across the border with the Netherlands, which is just across the border in the Netherlands. It was half past four on a Thursday afternoon and we visited the operating room. And classically, in an operating theater you have a large airport board showing the activities in each of the rooms. I thought that if you go to every hospital in Belgium on a Thursday afternoon at half past three, you should look at those airport signs, which will be bright red. All those rooms will be occupied, there will be a lot of activity. I found that I was in the Netherlands at half past three in the afternoon, which is not an impossible hour, on a Thursday Names Day in the middle of the week. I don't remember how many rooms they had, but the majority of those rooms were empty and that has everything to do with it. And I note, and that is such a sore point that I experience, also for example, I am not making a political statement, but a sore point that I also experience with our minister today, is that he often takes the Netherlands and England as an example, and the Netherlands in particular, wants to move away from performance medicine. Because our doctors, the more they work, the more they perform, the more they earn, has the negative impact that there is sometimes overconsumption. Because every time I can put a number on it, I make something, I make a box. And sometimes, image formation is a good example of this, where I sometimes say, there is too much image formation, it may be true to a certain extent, I sometimes doubt that, but whatever. But the great advantage of performance medicine is that our doctors are willing to work. Our doctors start at 8 a.m. and you can walk onto the consultation platform here tonight in any hospital in Belgium at 6 p.m., 7 p.m., those consultations are still ongoing, but as a result we have very great accessibility to care. If you want a doctor, then a general practitioner, a slightly less general practitioner or today because there are fewer, but a hospital doctor can now be found relatively quickly in a hospital with a hospital doctor. No longer the case in the Netherlands, no longer the case in England, England, a very long waiting list, simply because they have somewhat moved away from that system of performance medicine. It is more often a salaried system, but as a result the doctors still work from 9 to 5. And that is also something that perhaps COVID has taught me less. It does indicate something about the dynamics of our healthcare system and that is why I find it so surprising when I think about COVID, suddenly the plug is pulled, that our doctors did not respond in the first months of 2021 because they are too without income. Okay, there are a number of doctors who have insurance against loss of income, so that must have played a role there to some extent. But I think that one of the great and strong points is that performance medicine means that there is great accessibility to care. And I hope that the government continues to keep that in mind, with the 87 hospitals in Belgium in mind. Okay, in America, now maybe a 300-400-kilometer drive, no one makes a fuss about you being in a hospital, in Belgium that is not the case, just look in your own area perhaps within half an hour, in a radius in 30 minutes you will probably find x number of hospitals. But it contributes so much, especially because of the accessibility of care, and especially, very importantly I think, because of the competition that arises. And that's not a bad thing, that competition between hospitals, that you lift each other to a higher level in this way, one of the major shortcomings. And you know, hospitals have to organize themselves into care networks, hospital networks. One of the major shortcomings is that within those hospital networks, hospitals cluster together. You undermine the competition and you are no longer driven to achieve better performance. So, I hope, if I were a

minister, but I am not, I do not intend to and I am therefore not going to indicate how they can certainly vote for me. But ultimately that is something that our government really needs to get into their heads. I want such luxury with the hospital offering that we have, cherish that, keep that. But at the same time, I believe that there are sufficient resources in healthcare. But there are too many pieces to divide.

Sarah:
Okay, well, for the COVID, I think we've come full circle. Thank you. Coming back to my questions in general about the hospitals. What, in your opinion, is an impact of cost price calculation on the overall activity of the hospital and the financial system? If there is an impact.

Mr. V:
What I started with, the fact that you simply have much more visibility. Cost price calculation is a bit of a master. It allows you to steer your ship as a captain. I think that's a very important message because you just gain insights, make insights and that way you're not adrift. I think that is really crucial from a commitment to the hospital, commitment to your doctors, accountability to your patients in a good, financially healthy way. We do our social entrepreneurship. Social entrepreneurship is not that simple and we are going to see what comes in and make decisions based on it. No, it really isn't, because then we are doing it wrong. Hence the entrepreneurship aspect. But within that social context it means that you are accountable. And that entrepreneurship means, we are provided with those mechanisms. Quite a few of those cost price calculations, those cost benefit analyses, those business cases that we make. The models are known. Use them, use them, use them to your advantage. This way you manage to be much less adrift. And that is really crucial in managing hospitals. I think that's the most important message.

Sarah:
Of course. And have you perhaps had a specific case where cost price calculation, the techniques for cost price calculation, led to underfinancing of the hospital?

Mr. V:
First and foremost, I have shown on the basis of our robot, we make the case of our robot urology with a cost price of 1.8 million euros, fixed linger paints on the number of interventions that we have to do with it from plants, that costs us 1700 euros on a procedure that has saved time. So, there is nothing to rely on. That allows us to chat with our doctors. to also chat with the directors and see, is there a mechanism to reduce the 1700 euros a bit? One of the considerations that you could make, but that is a choice that we have not made, that some hospitals make, but is not so obvious to enforce, is that you say look, we offer our patients the choice On. Suppose, as a patient, I visit a doctor, a urologist, they diagnose a prostate carcinoma or a prostate hypertrophy and the doctor says, look, I think it is important that we remove the prostate. There are two options, there is a classic way. Which is more invasive in nature, much more cutting in nature or we do it via the robot. As for the robot, it costs more. Can you prove that? You have the advantage that you can go home faster, that you have less pain, that it is less invasive, and that the procedure is much more precise. And many more advantages. But that second scenario, I told you, 1700 euros out of your own pocket, it could be, there are hospitals that do that, they say, look, as a patient, that means that you have to pay an amount, I hear of 400 to 600 euros. of panting pocket have to pay. That's a kind of informed consent signed prior to the procedure from look, I'm aware of it. The doctor informed me about the different techniques. I am also convinced that the robotic gastricization technique offers me many more benefits. But that means that I pay 400 to 650 euros entirely at my own expense. And that cannot be recovered anywhere. It is not that you pay twice as much for the patient. These are things that a business case teaches us. We have decided not to do that, because it is really not that easy for a doctor to do that. In a conversation with a patient, look, you first have to pay 400 to 600 euros before I start cutting. These are not obvious conversations. Let alone, you can also speak to mutual health insurance about it. So, we don't do that

in prompts. I know that there are hospitals, but those are the people who carry it out and who allow us to decide, have you learned something from it or not?

Second element, I take the example of emergency, our emergency case, where we demonstrate that look, we have the issue that we have two emergency services. We have city C and city Y, so we have two emergency services. Hospitals are funded for one and only one emergency, but as a result that emergency in city Y is entirely at your own expense. That is an issue for all multiamp hospitals. They struggle with it. I'm from Delta, where we had four emergency departments. You only get funded for one. So that means three are entirely at your own expense. Okay, that is also offset by income to some extent. The triage fees and the fees generated at your emergency allow you to pay your doctors, but that is not enough. I just said, I showed, that today, I think that is 1.2 million euros, which we put into our emergency every year. These insights allow us, with us doctors, to have a relationship with, look... What can we expect from you? I mean our doctors, our treating physicians, not our emergency physicians. Because ultimately an orthopedist, a radiologist, someone from the clinical biology lab, a neurologist, a pediatrician, oncologist and so on, naturally generates income from that emergency. And given the fact that they generate income, you can also ask them to say, suppose that tomorrow we decide to close our emergency room in city Y, then that also has repercussions on your euros. So, you also have to cross the bridge. And that is the advantage of such cases and I hope that it is an answer to your question. Positive and negative decisions bring insights that allow us to enter into the debate in a very objective manner and then make final decisions accordingly. It has equally been the case that such cases bring us insights from men. I don't have one in mind right now, but the fact that we have already made certain cases for which we say that we can never recover in euros, that is too much, that is too expensive, okay, then that also supports the decision not to do. We are not going to focus on that, that is a choice we do not make. Anyway, that is an equally good, equally important insight. That is also a decision, sometimes not deciding, because simply showing figures makes no sense, we are going to tear our pants too much about it, there are all kinds of arguments not to do that. So sometimes the case also allows us to say we won't do it.

Sarah:
Perfect, I have very good detailed answers with good examples. Very important to me. So now, I have more conclusion questions, because I've already had enough examples. What adjustments or improvements would you propose for the current cost price calculation system and the financial system in Belgium for hospitals? If there are adjustments.

Mr. V:
Yes, I would divide it more fairly. I think there is enough money so I would divide it more fairly. I'm going to give a concrete example, that will make it clearer. The difference between the lowest and the highest earning doctor in a hospital is sometimes a factor of 5, factor 6, and that doesn't make sense, but I can't solve that. I mean, from a hospital setting through financial arrangements, but perhaps the government should do something about that. What I always mean is, I think there are enough resources, but it's not always fairly distributed. Then you can say that the doctor who sits on the right, in the sense of earning six times as much as the doctor who sits on the left, is not always the doctor who works more, or who has more complex tasks, or whatever. also. Sometimes you notice that nomenclature and the euros attached to it are very strongly and closely intertwined due to the way in which lobby groups are organized. So that's definitely one I would tackle. easier said than done. Van den Broek is working on it, because that is to his credit, he wants to focus on that, but I don't know how you can achieve that either. That is actually a very difficult question, because it means that you also have to say, look, you have a salary of 100 euros here today, tomorrow you will only receive 60 euros more. These are very difficult messages. Just get that done, get that done.

A second, I would make it simpler, I would make it a little more transparent. I think there is a certain advantage if you remove the duality in hospital financing. You must be able to ensure that budget

financial resources give more of what the hospital is actually entitled to, give the doctors what the doctors are due, but ensure that you no longer have to have that debate about hospitals that do not have access and that have to knock on the doctors' doors. I think that may be something for us to do, but I think that the dynamics of the discourse, the debate that we have with our doctors, because today we work in a context of scarce resources, that we have to start knocking on our doctors' doors, that discourse, that debate that we have, also creates a very good dynamic in hospitals to implement policy together. Because that means that we ask for resources, but it also means that they can also have a say in the choices we make. So maybe I don't think that's that bad after all. It has its advantages and disadvantages, strengths and weaknesses.

Perhaps the third point, 20, 30 years ago, the hospital was at the center of care. Today, and logically and well, it no longer has to be the center of care, now that is where the needs come from the first line, the second line being the hospitals, with the 0th line I mean the home nurses, physiotherapists, people who come to their home, the first line is the general practitioners, the second line is the hospitals, and the third line is possibly the university centers. Today, that hospital is only a link in the complete story. One of the shortcomings today is that I think we could get much more out of good healthcare if we could encourage doctors to collaborate in some way and financially contribute to this. Today there is still far too little available, precisely because of performance medicine, because every time I can get a number, possibly at the expense of a colleague, that number comes to me, then those euros come to me. The euros, the system today, does not encourage cooperation, while that could sometimes be very nice, if general practitioners and a number of hospital specialists come together around diagnostics, you sometimes think you would go a step further. We already see that today in MOCS, multidisciplinary oncological consultations in the treatment of cancer patients, that works well and there are already a few initiatives. In this way, you provide financial incentives that encourage doctors to collaborate across the divisions, but we are still so far away from that. But don't go overboard in the other direction here either, because a concrete example can sometimes also go overboard. We are strongly encouraged, for example, to provide antibiotic therapy in a home setting, for example, to also provide onco-treatment in a home setting. I think sometimes that has gone too far. We have the advantage that we have 87 hospitals in Belgium, so that you can reach your hospital relatively quickly within a radius of half an hour. If you have an oncology patient or need IV antibiotics, then you are a seriously ill patient and I would be inclined to say, come to the hospital because if something happens, you are in the best environment there. If that happens in a home setting, a home nurse comes to the house and gives IV antibiotics and something happens, then you don't have a doctor nearby. Until then, a very important unusual chemo is a very beautiful thing, a chemo must be stored under certain conditions. I don't have to convince you that the conditions in a home stay are not under your control as a hospital. If you look at the quality levels, quality ice that is available to store chemotherapy, refrigerators and the like, temperature monitoring and so on and so on, you don't have that in a home setting. If you don't have it, suppose something goes wrong there, who will take responsibility? And then I think it is much more efficient, let such things continue in the hospital setting, because we often find that it has sometimes gone too far towards the home setting. You no longer get the scale effects or the economic effects. I'm not convinced that you can actually remove it. Sometimes you also have to dare to say that the patient needs to come to hospital.

Sarah:
Okay, perfect. Thank you. And if I now return to the fundamental question of my thesis, that is the impact of cost price calculation on financial desire in Belgian hospitals. What would be your personal answer to this question in word count?

Mr. V:
Well, let's just create a good cockpit to know where we stand in terms of making good policies, good policy decisions. So, it is really crucial to put cost price calculations into function. It's a kind of cockpit that you create. It is a kind of pilot and co-pilot who sit at the front of the plane, who know how the

plane is doing based on checklists, based on values, based on the number of meters in front of them, and in that way safely from point A to point B. This is actually no different here with a cost price calculation. That really means creating a cockpit that allows you to make the right, or try to make the right decisions.

Sarah:
Perfect, thank you. Well, all my questions have been asked. Now if there are any important designs that I missed, or some information, perspectives that you want to share, I'm open, but otherwise I've already asked my questions.

Mr. V:
Yes, I said, I teach occasionally and I made a very good presentation for myself there. I'll see if I still have some things there. Yes, we talked about those sources of financing, about that duality of financing, we talked about that. Perhaps another important insight that I would like to share is that in terms of government financing, and that is another important insight I think, a very changed logic has occurred. If you look at the first initiatives regarding hospital financing, they date from the 1960s. In the 1960s you had a financing system where the government said, look, we'll give you x number of euros, only that was still Belgian francs at the time, and if you don't have time, let us know and we'll give you extra Belgian francs, but the result is that there was no accountability whatsoever from the hospitals because it was impossible. The more costs it incurred, you just had to prove costs and you got money. Today we are about 60 years later and logically, and well, that logic has changed. That financial risk in the 1960s was entirely on the government's side, today we are in a situation, and that is good for the government, that they say, at the start of the year we set a budget, set a budget. We have a BFM budget, so many billions of euros, 11.5 billion euros intended for budget financial resources, so many billion euros intended for risks and fees, so much and so on. And within that envelope, hospitals must demonstrate hospital activity based on what you demonstrate and you get resources. And the more responsibly you work, the more efficient you work, the more resources you get. So that financial risk, which I think is a good one, has completely changed. Today, that financial risk lies entirely with the hospitals and that is okay, it makes us responsible to do our job properly. It is no longer the case that you had to prove costs as it used to be. So, I think that is a very important insight. I am quite, to some extent, a fan of performance medicine here. That is not the case everywhere. As far as I'm concerned, performance medicine is a good guarantee for continued accessibility, so that we can then be prepared to work.

Maybe something else, you still have to see if you like it or not. I just placed a very strong emphasis on efficiency, on making hospitals more accountable. That is the idea of responsible beds, responsible activity, important measure of budget, financial resources. In this way, we are made extremely responsible to treat patients, given their pathology, within a certain time frame. One of the negative points is that we sometimes find that in that situation, we encounter situations of undertreatment, in situations where patients are sent home too quickly, or patients are sent home until the light day quote is not reached, the patient has to go home. We see this very often in geriatric patients. Based on his multiple pathology call, the patient may remain in the hospital for 20 days. When it is 21 days away, the hospital says, sorry, we don't make any more money from it, he has to leave here, but as a result, that very elderly patient ends up on the street, we start looking for a short-term stay, a residential care center, we troll a bit. with, we mess around with those people, because they have to leave here, because we don't get any money for that anymore. Sometimes we even send them to another hospital, so we transplant an old bulb and that is actually not okay. That's not correct. So, in that sense you also have our system that sometimes leads to undertreatment of patients. That is actually also a negative point of our financing system. I think that at some point, and that brings me back to the story of our robot, I don't think it is a dirty word to say that robots, that you have to dare to present a patient with the scenario of, look at classical medicine, that is a possibility, a robot, that will cost you 400, 600 euros. The government is really holding us back in this regard. There is no risk of a two-speed medicine

developing. I understand that to some extent, but I think that at some point we also have to dare to enter into that debate. Especially because it allows us to continue to focus on innovation, because today we are very fragmented. That is also very good to a certain extent, cost-consciously, and so on. But I think at some point we also have to dare to say how much is our health care worth to us? And how much is that solidarity worth? Knowing that you also have to dare to make choices because certain aspects of treatment have a certain cost associated with them. It may not be so accessible to everyone. Got it? I'm talking very crudely and very anti-socialist now, but I think we should think about it. How far should the government go in terms of reimbursements? What is the role of private insurers? Because I think it's related. You are at risk of that socio-economic situation, I don't want to do that, because you always have a good basis that must remain widely accessible, but well. In order to further enhance innovation and ensure that it becomes accessible to everyone in the long term, I think you should ask these questions. I'm always amazed at how little a patient pays in a hospital. By this I mean that if I am in a hospital, I am there for three or four days, I undergo a procedure, I choose a double room, let's take that as an example, it will cost me about 200, max 300 euros. Sarah, I don't know if you have a car, but if you take your car to the garage for minor maintenance, you've only just entered the garage and you've probably already spent 400 to 600 euros. Allee, get it? When I receive my telenet bill at the end of the month, I see an amount of 140 euros. That's very important, isn't it, that telenet, but it's expensive, isn't it? 140 euros. Monthly, eh. While that hospital, I'm lucky that I don't work that often, I work in a hospital, but I'm a very bad consumer. Fortunately, I have never been admitted, I rarely consult doctors, I am not allowed to say that too much internally. But I just want to say, young people, I consider myself still very young, I am still fifty, I am still very young, but our health costs are not too bad. In your last two years of life, that is something different, but for young people, and I think that debate cannot be had. Every time I say sorry, two or three hundred euros, do you think that's a lot? If I opt for a single personal card, I am lucky that I have hospitalization insurance, that will still cost me, but two or three hundred euros will cost even less. Do you think that's a lot? No. But when I tell you that, I often get scolded and cursed, but I think we really need to think about it carefully. I consider myself still very young, I am still fifty, I am still very young, but our health costs are not too bad. In your last two years of life, that is something different, but for young people, and I think that debate cannot be had. Every time I say sorry, two or three hundred euros, do you think that's a lot? If I opt for a single personal card, I am lucky that I have hospitalization insurance, that will still cost me, but two or three hundred euros will cost even less. Do you think that's a lot? No. But when I tell you that, I often get scolded and cursed, but I think we really need to think about it carefully. I consider myself still very young, I am still fifty, I am still very young, but our health costs are not too bad. In your last two years of life, that is something different, but for young people, and I think that debate cannot be had. Every time I say sorry, two or three hundred euros, do you think that's a lot? If I opt for a single personal card, I am lucky that I have hospitalization insurance, that will still cost me, but two or three hundred euros will cost even less. Do you think that's a lot? No. But when I tell you that, I often get scolded and cursed, but I think we really need to think about it carefully.

We are struggling enormously with a shortage of employees. We have very little of that in city X. We have not yet had to close any beds, because there are many hospitals that have to close beds because they have too few employees. If I were a minister, I think that the gate should be opened a little wider there too. The residential care center is starting to get there. When you say, I think that's so crazy, take the reality of a residential care center. If my dad or my mom, who are elderly, are in a garden shed, I can provide medication there. I have no medical background, but if my mom or dad are in a residential care center tomorrow, I won't do that again. I find that very strange. Got it? We really need to think about that function. I think that would teach us a lot too. Also, in terms of efficiency, cost price, I think there is still a lot.

So, I said that there are sufficient resources but not always policies distributed. I think that is another important one and then I also said, financing model, which I don't think has been adjusted. It doesn't encourage collaboration, I think that's an important one. It also does not encourage quality work. That

might be a good closing message. Today our financing system is structured in such a way, I'm going to put it bluntly, that if we provide poor quality, we get more financial resources. I'm going to explain; budget financial resources are based on responsible activity. The more pathology, the more morbidity we demonstrate, the more resources we receive. If a patient comes here today who is well and truly healthy and a gaping pressure ulcer develops due to poor quality of care in the hospital, we will score that gaping pressure ulcer as an MKG in our MKG registration and we will receive additional resources. I find that so perverse. This also needs to be thought about.

Sarah:
I hadn't seen it that way. That's a good point.

Mr. V:
That's about it, I think.

Sarah:
Yes, perfect. Thank you for all the answers. They are very detailed, different visions. Perfect.
Thank you for your help. Have a nice afternoon

ANNEXE XV: Transcription interview 8

Interview 8- Hospital G
Place: Online teams meeting – Date: 07.08.2024
Duration: 40.45 minutes
General hospital in Flanders

Sarah:
First of all, thank you for taking part in my study. Normally I speak Dutch fluently enough. I hope you will understand everything. It's not my native language, normally it's okay.

Mrs. Z:
In that case, Sarah, if there's anything you don't understand, just ask me. I don't mind saying it two or three times.

Sarah:
Okay, thank you for the help.

Mrs. Z:
Fine. Tell us something about yourself and especially about your studies and what your thesis will entail.

Sarah:
My name is Sarah. I am a final year student in a master's degree in Financial Analysis & Audit in HEC Liège. My thesis is about the Financial Management of Hospitals in Belgium. I was more focused on the impact that regulated cost price calculation can have on this financial management. To put a bit of context, in my literature review I first explained the various basic concepts of cost estimating, how it works, the normalized minimum basic account style and so on. And then I also explained the four major sources of funding, with the BFM and so on. That's kind of what I explained in broad strokes. In that direction, I opted for interviews to simply get more of the person's points about how it works, what they think about it, their position and so on. That's kind of the basis of my work.

And so, as an introduction, if you can just introduce yourself and what your position is in the hospital.

Mrs. Z:
Let me introduce myself first. My name is Mrs. Z, I work as a controller at the hospital G, so when the BMF comes in, I am the one who looks at it and who gets to work on it to see what we get money for everything. We also have to make predictions to see at the end of the year whether we should get any more money or should we give money back, I also calculate that. I also prepare the annual report. I help with the closing of the financial year by setting up a number of provisions. So that is actually part 1 and my second major task is to draw up the budget, which of course also includes the financing sources you mention. So, you actually got it right and in addition to the BMF, we also have lump sums for your pharma conversion, your RIZIV conversion and of course your doctor's fees.

I also included it in my email, because I had interpreted the question as a cost price calculation, meaning we know how much each intervention we do will yield at the end of the journey. That in itself is a very scary question, because no, we don't know and that is actually a very gray area. My husband works in a production company and he can say, down to the last cent, “okay, that bus of that product, it costs us so much in personnel, so much in materials, so much in packaging, so much in waste”. Here in the hospital, we cannot say that and he cannot understand that we cannot do that, but that is because it is all so complex. Money comes from that side, then another side, then we also have to give

a piece back to the doctors. It is actually a very difficult subject. That's why, because I had already briefly mentioned that in my email, but I think it will be a bit too short notice for you, I had forwarded you that data from Möbius, because they also help us at the moment with the government, for example, with a few project hospitals to actually set up flat-rate financing based on performance. So, they're going to say, okay, for an appendectomy the hospital gets 500 euros, for a delivery 2000 euros, and they are actually calculating together with that company, or looking for a way to calculate how much a hospital actually pays there. average for should get to make ends meet. That lady who helped us, she has even written a PhD on value-based finance, so she is actually working on that too, but I am indeed afraid that it will be a bit too short for you to have a conversation with her. So, I'm just going to let you ask your questions and then I hope I can provide enough information.

You probably also know that Flemish and Wallonia differ somewhat in some respects. Not the budget, but that some things are financed at Flemish and Walloon level, but I will explain that to you if necessary.

Sarah:
Yes, that is one of my questions normally that I ask, but I had already seen that it is a bit different and that is why it was also important for me, for me interviews, to get hospitals in Flanders and Wallonia. But yes, thank you.

And then the first question is, how would you characterize the cost price calculation of hospitals in Belgium? And what is the purpose of doing cost price calculation?

Mrs. Z:
It's very complex. It comes from different angles. Every patient is different, so if you have a new knee fitted, it can be faster for you, very efficient and with little use of materials, while receiving the same income, while they may have more work for me and use more materials. The difference between doctors sometimes makes it more expensive and cheaper, as we now notice through the Möbius study. We also see differences between doctors who require longer operating room time, who leave your patients an extra day for the same procedure, but as a result you are above your responsible light hour, so it is not financed. So yes, characterized is very complex and very difficult to predict. I think that's the gist of the answer.

Sarah:
Yes, that is certainly what always comes out, that it is very complex. But then, why do you think it is so necessary to have an extensive and thorough cost estimate?

Mrs. Z:
It is mainly about transparency and being able to make decisions at policy level. As you have probably heard from the others, the government is pushing very hard towards network formation, towards mergers in order to make strategic choices. We do not know what every hospital can offer, but is it necessary that a hospital knows “okay, that is good for us to do that, or that is not so good for us to continue doing that”. And now it's all a bit of guesswork. The government is still juggling savings. They will also ban certain procedures from being performed in certain hospitals. So, it is actually extremely important for us to gain insight into the cost price of an intervention in order to know at a strategic level where we are going to make additional investments, where we are going to purchase more expensive materials or more expensive equipment, which intervention will take place. we transfer to another hospital within the network. That is why it is gaining enormous importance.

Sarah:
Okay, perfect. And coming back to the funding sources, more the financial area. I have somewhat the same question. How would you characterize it? What do you think about that?

Mrs. Z:
Yes, the point about the financial resources budget, BFM, is complex in the sense that it is a whole lodge of legislation, it is also underfunded, the financial resources budget underfunds the things that they should actually be financing. It often happens that people say, in the context of such and such a measure, you get an additional FTE for a certain amount and that amount is from the start well below the real cost of such an FTE. So, the underfunding is actually only increasing. We always compare this here with a lasagna model. I don't know if you've heard that term, lasagna model. Actually, they started in 2002 with one layer, and then there is a new minister who has added another layer and then someone else comes and adds another layer. And so those layers are actually on top of the other layer every time, so that it has actually become so extensive that no one really has a picture of what is behind it anymore. And another very difficult thing is that due to a shortage of staff at the breeding services, the revisions actually take an extremely long time, with the result that you sometimes interpret lines that you may have interpreted incorrectly and then during the revision it turns out that it was wrong. We currently have over 4 million outstanding claims on the government from 1917 to now I think. So we are actually pre-financing money that we currently have to borrow ourselves to pay our suppliers and so on, which we should actually get back from the government. They actually wait far too long to make the corrections, which means that certain things are dragged along for a very long time that then have to be corrected, or they introduce measures that then apply retroactively to previous years. That actually makes it all very complex. They then push everything into part C2 and then that has to be followed up again. Sometimes it really is worth staying with the pain. And then the part about the fees, that is the second most important thing, these are actually money from the doctors that we actually have to pass on to the doctors, but then withhold a little. What remains in the hospital is actually the result of negotiations, so that is often a very difficult point, because suppose you have shortages, as is the case with us now, it is not that easy to start saying we have a shortage, we should actually have a little more. This sometimes creates some tension between the two parties.

Sarah:
And what do you think are the most important advantages and disadvantages of this system in Belgium for hospitals?

Mrs. Z:
The disadvantage is the complexity and what I have already mentioned a few times. Advantages? In principle, the rules of the game are the same for everyone. If everyone follows the agreement, everyone would get their money in the same way, so I think that's what they tried to achieve. There is also clarity on January 1 and then on July 1, when the new budget comes in, for example, what a hospital stay would actually mean on a patient's bill, depending on performance of course, but the basic amounts per empty day are known in advance. your nomenclatures are known. They do try to create some linearity and transparency. We are well financed in Belgium. Basic financing in Belgium is better than in other countries. I think that we as a Belgian hospital and Belgian patients certainly have no complaints about the budgets available. I think there are other countries where the patient has to pay more out of pocket. I think that is one of the great advantages of our current financing model.

Sarah:
Okay, perfect. Then I come back to this question of what are the major different points between Wallonia and Flanders in this view?

Mrs. Z:
For me personally, I don't actually know enough about Walloon financing, but as far as I am concerned I think that it is mainly infrastructure financing that is most regionally arranged. In my opinion, that is the biggest difference because, for example, nursing homes and healthcare institutions have bigger

differences because they are fully financed by the regions, but the hospitals are largely federally financed. Indeed, they only moved the infrastructure.

Sarah:
Okay perfect. I've also chatted a bit about the pandemic in my literature, because it's been having an effect from now on. The first question is what financial impact has this pandemic had on hospitals?

Mrs. Z:
You actually had to make a distinction with the period surrounding the pandemic. So, 2020, 2021 and a bit of 2022, and a bit after that. Actually, you should keep that distinction very clear. Why? In fact, funding during the pandemic has enabled us as a hospital to absorb the decline in activity. We actually survived the pandemic as a hospital, but our results were still satisfactory. Due to the loss of that financing and because of the biggest consequences for us as an individual hospital, so I am not talking about the trend in Flanders or in Belgium, for us as a hospital the trend is that the activity has still not become what it used to be before COVID. So, we have lost a lot of activity and we have not actually recovered from that at the moment. As a result, our income has also fallen sharply, but our fixed expenses are all the same. In fact, the corona and the financing of the pandemic have enabled us to keep our heads above water for a while, but now that all the financing has disappeared, we are suffering the consequences of corona twice as hard. We actually no longer have the activity of the past and then there is the energy crisis and inflation, which have not been factored in at all in indexations of the BFM, or indexations of the fees. So, we feel those two factors very hard at the moment.

It might also be interesting to mention that we are involved in a general purchasing process with the hospitals from our region. This is actually a kind of purchasing center to which all hospitals from the region are affiliated and we were actually fortunate that during the period when energy prices were at their highest, we were able to purchase at lower fixed prices. We actually received a stay of execution again a little later, but less harshly than hospitals that did not have fixed click prices, so in itself it could have been even worse. That was actually a bit of luck for us in 2021 and 2022, but now we are starting to notice that energy prices have risen seriously and that income is not following suit because we have received one compensation for the energy crisis. received from the government, but that only happened in 2022. The first half of 2022, not since then, but those high prices have not dropped in the meantime, so that was actually a temporary relief, but now we are bleeding again.

Sarah:
And has this pandemic period also highlighted strengths and weaknesses for this financial system, but also the cost price calculation?

Mrs. Z:
That's a difficult question. Actually, the problem with that financing is that they use MZG figures from two years ago. So, you know, through 2023, they took the 2019 numbers. Now for 2024 they have taken 2022 for the first time, but as I just said, our activity has seriously dropped. That has exposed the measures, because we are now working very hard on those activities and the like, but there is always a two-year delay. So, all the measures we are taking at the moment will not affect our result for this year, nor will they affect our result for next year, and we will actually only know what their impact is within two years. We have actually been confronted with the fact that it is a major disadvantage that if you take measures or if you make guidance decisions, you are actually deciding something now that will bear fruit in two years' time. That is on the income side and you can cut back a bit on the costs side, but you are also limited there. Take for example, we have 30 operational beds on a shift. The standard says that we must staff as many people for those 30 beds, minimum staffing, but because the financing works with responsible activity that has decreased because that normal activity has also decreased, we are actually no longer funded for those people who we are actually obliged to staff there. And that sometimes leads internally to very strong discussions between, on the

one hand, nurses who say “yes, we need those people from the government”, who have heads there and the financial side says “yes, but financially you only get half of those heads are reimbursed,” so you can phase out. That does cause internal discussions and that has continued to happen in the last two years. So that is certainly a consequence of those post-corona times.

Sarah:
Thank you. If I now return more to the cost price calculation, what impact does these cost price calculations, methods have on the budget procedure, but also the decision-making procedure and so on for a hospital?

Mrs. Z:
The largest component of the budget financial resources is your B2 component. That's the part that funds your nursing staff. In terms of budget, we always make an estimate for the revenue side based on the fixed part, i.e. all ABCs, and a variable part based on B1 and B2. This will be adapted to the activity we expect. For example, for 24, we have provided a status quo compared to 23, in this way we also use this for the fees, we look per discipline at what we expect in terms of activity and we then compare that with the amounts that may be indexed. We use the data from the planning agency for this and also the data from the RISIF, which calculates three or four months in advance how much the nomenclatures would increase in terms of indexation. In this way we apply it to the preparation of the budget and to the policy decision, as I already said there that that is a very difficult one, because we do want to work on that, but as I said, you actually always have that delay of two years. The main policy decision that we are actually making now is that we are having difficulty finding staff, we have too many staff for the activity, we should actually close beds, which creates bed pressure on the other beds, causing the responsible activity is much better. Because what happens now? What if there are ten beds and three are empty? Why would you fire someone who may not yet feel 100%, who is no longer responsible, so we don't get any money for that, but yes, care for the patient is also important and it is better that the patient can be at ease restore. While if your ten beds are all occupied and a new patient arrives, you must be able to fire someone to transfer that patient, but your responsible activity will be fully financed. So that is actually a very difficult balancing act that cannot be done for us at the moment because we simply do not have that bed pressure at the moment. That is sometimes a very difficult decision, should we just close a department for the summer? And in terms of budget, that is one of the most important tools that the hospital will use to look at the next year. How do we expect our financial position to be and what can we possibly do to ensure that the forecasts may actually be better than they are?

Sarah:
Okay, thank you. And in your opinion, do these cost price calculation methods have an impact on the total activity of the hospitals or not? Does it perhaps have an impact, directly or indirectly? Or just no impact?

Mrs. Z:
Indirectly yes. For example, we have a robot for knee surgery here and you know that knee surgery is low-variability care. So that is a fixed amount, you cannot charge an amount more or less as low-variable care. It yields the same amount as a classic knee procedure, but a robot has its advantages, not only for the hospital, but also for the patient, such as faster recovery, it is less invasive and so on. The problem is that as a hospital you are not reimbursed by the government for this, because you actually provide better care for the patient. That is a policy choice that you make, we know that we will make a loss on that procedure, but it is better for the patient and we are therefore trying to profile ourselves as a hospital that is better for knee surgery than the average hospital. We hope that in this way more patients from other regions will actually come here. We know that we will not be able to do that, but we will still decide, okay, we are going to make that investment to attract good doctors, attract other patients, perhaps allow other disciplines to also have a positive impact because I had a

good operation there on my knee, so I will also have a good operation there on my elbow, for example. That we actually have a positive impact this way, despite the fact that it is not financed.

Sarah:
Okay. And in that area too, have you perhaps known of a specific case where the use of this cost price calculation method has led to underfinancing? I think we have already had numbers of examples.

Mrs. Z:
For example, for the cancer plan and the financial resources budget, this is financed per number of mocks. You will receive one FTE per 250 mox for nursing, for psychology and for patient support and social services. They raised an amount there in 2008, so many thousand euros. The only thing that happens to that amount is that it is indexed with that 2%. In the meantime, for example, IFIC has been introduced, but the increase in IFIC has not been considered. So yes, there are still lines that they actually say, look, for a palliative function, they say, okay, you get so many thousand euros and you have to finance a doctor, a nurse and a psychologist for that, but they don't say how much that will cost. the doctor has to go. So that's very difficult to trigger that. So that, as a standard, causes underfinancing because, for example, a psychologist thinks that we will now put around 60,000, 70,000 euros that we will receive for that cancer plan. On average, a psychologist costs around 85, 90. This also includes nursing, which is certainly provided by IFIC, okay, we have also received some additional budgets for that, but still not enough. They cost 90 and we get 80 financed, but if you have 300 running around, that is a lot of money at the end of the day.

Sarah:
And this probability of underfinancing must then be a challenge for the hospitals with the cost price calculations and the financial systems.

Mrs. Z:
The thing is then you have to get the money somewhere else. Your doctors are also not open with their portfolio to ask how much we need, so it is either save elsewhere or postpone certain things. It's a very difficult balancing act. In the past, which might be a nice example to use in your thesis, the hospital also made a lot of margin on pharmacy, i.e. on pharmacy sales. A lot of effort has also been made to purchase at the lowest possible prices, because the sales price is fixed, so if you want to make a profit, you have to tinker with the purchase prices, and the purchasing center has also worked very hard on this. Now the government is starting to realize that higher margins are being achieved, so they are also starting to implement savings measures because they say okay, the hospitals make a profit on their pharmacies, so we are going to take some money away from them and we're going to give them a little less for their pharmacy. They have made it mandatory to purchase generic medicines, which we do as much as possible, but sometimes a doctor is not convinced enough of the generic and still wants the real stuff. What they recently did for the clinical lab, I don't know if you got that from the 15%, that was actually their reasoning. We see that hospitals realize between 15 and 30% surplus on clinical labs, so we reason that they get that many percent too much and we are going to remove that from the nomenclature. We will compensate for that in a different way, but it is definitely out of the nomenclature. Now experience shows that this happens to everything, that in the future these amounts will be frozen and that, for example, they will no longer be indexed. Then you will definitely see your income decrease over time.

Sarah:
All very complex. And now if I just come back to this main question of the impact of regulated costing on financial management. Would you say there is an impact? In fact, is it direct or indirect? And is it a big impact, a smaller impact?

Mrs. Z:
Yes, it is very simple, without income there is no hospital, and without costs there is also no hospital. We cannot invest if we achieve breakeven, so they basically say that a surplus of x percent is at least necessary to secure the future. We currently no longer have those reserves, and our results are under enormous pressure. We are taking measures to ensure that this is reversed in the future, which is why cost price calculation is very important. In the sense of, look, we want to be and remain an innovative acute hospital, we may have to divest certain things, whether or not within the network, and then such a cost price calculation obviously plays a decisive role because you don't want to divest anything that actually makes you a profit and keeping something that actually only makes your money bigger. Then again there is the balancing act with trying to be innovative. So that plays a very big role. I think that in any company, profit or non-profit, at the end of the day, breaking even is not enough to guarantee the future and you always have to know where your money comes from and where it goes. Without cost price calculation you cannot unite a company or a hospital.

Sarah:
Okay, perfect. We have already answered this question a bit, but here it will put everything together a bit. What adjustments or improvements would you propose for the extensive system in Belgium for hospitals?

Mrs. Z:
In the area of budget finances, moving away from creating new layers and new lines every time. If they decide something, immediately implement it in the center and do not wait to retroactively add or decrease again if it turns out to be too much. In terms of fees, I think that the awarding of fees should be examined and that they should look at what has changed since the start of this method of payment. Certain medical disciplines are very strongly and very well reimbursed, while other disciplines are actually less well reimbursed. In fact, one should ensure that there are fewer discussions between doctors and hospitals, where the money must come from to guarantee operations and that is something that the government should be able to facilitate in a well-structured manner.

Sarah:
And in the costing area, the methods, is it okay as it is?

Mrs. Z:
I think that what Van den broucke is trying to do with financing per type of intervention or per type of pathology would be nice in itself, but I fear that in the current context it is all too complex to bring that to the world in the short term. to get. I think that is the future and that it may be a good way that also makes it fairer for a hospital, that every hospital receives the same amount for a knee operation. That it is not dependent on your other complex interventions that you receive more money for certain things. I think so on that level.

Sarah:
Yeah, I talked about that a little bit too because this morning I had a person who was doing a study on this pathology and stuff. It was someone from the PACHA study in Brussels. They're working on that so I've heard a little bit about that.

Mrs. Z:
Yes, that's nice because PACHA is about the same as what Möbius does for us, which is also a cost price calculation model, but that is also very difficult to set up because everything comes from your accounting and everything is entered in your accounting. one big pile and that must then be divided with assumptions and assumptions. It is very difficult and I think that is also where the problem for the government lies, the fact that everyone processes it in their own way in each hospital and that it is actually very difficult to draw a line about what should or should be done. is not part of the costs or

proceeds of an intervention. I fear that as long as they do not say how certain things should really be stated explicitly, I don't think they will be able to determine one price for one procedure very quickly.

Sarah:
Exactly. Well, I've run out of questions a bit. Normally, my last question is simply if you have more information or another perspective that you find interesting to share, I can always listen, but otherwise, my questions have already been asked.

Mrs. Z:
Good. Thank you. I wish you the best of luck.

Sarah:
Good. Thank you. Have a nice day.

ANNEXE XVI: Transcription interview 9

Interview 9
Place: Online teams meeting – Date: 07.08.2024
Duration: 58.17 minutes
PACHA study – Pol Leclercq

Sarah:
Hello, I am representing myself. I'm Sarah, I'm a master's student in financial analysis and auditing at HEC Liège and as part of my thesis, I focused a little on the financing of hospitals and more particularly the impact that accounting costs could have on the financial management of hospitals in Belgium.

In this context, I had an interview with Mr. Y who gave me all his points of view on the subject and we came to talk about the PACHA project. It's something I hadn't really heard of, except briefly in press articles once or twice and I found it very interesting. So, I wanted to know a little more about how it happens, what the real objective is and what it really consists of.

Paul:
Okay, so I think maybe the easiest thing would be for me to go find a presentation that we usually do at hospitals to try to show you this.

So, first of all, you were talking about what framework does PACHA fall into? This is obviously within the framework of flat-rate pricing by pathology, which is obviously a method of financing, I imagine you know that well. And so, with this in mind, you know that financing can be organized either prospectively or retrospectively. If we look retrospectively, based on existing data, we can base ourselves on the hospital's expenses, these are the budgetary expenses, I would say, that you have regularly, traditional accounting, or of course the basis of the activity. In the basis of the activity, you essentially have a lump sum financing technique per pathology.

In principle, to put it simply, you have in Belgium a hospital payment system which is for the moment a system organized on a fee-for-service basis, and hospitals receive approximately 40% of their funding through this type of source, i.e. i.e. 40% is paid based on actions. You have part of the financing of the hospital, which is the nursing staff, the care unit, the administration authority, which is paid through what you call the BMF, and then the rest is pharmacy and implants. So the idea, basically, is to cut funding for the nomenclature today into two sectors. A sector which only finances doctors because today, when we finance a procedure in a hospital, we in fact finance the entire procedure, both the medical part, the doctor, and both the cost part. functioning. The current reform of the nomenclature at the moment aims to cut the acts in two and then to bring together in a package all the operating costs linked to the act, but also all other sources of financing, the BMF, the pharmaceutical products, and all this must be paid through a lump sum that you probably know. You enter a hospital for, for example, the treatment of an illness, a hip joint problem, you will have an amount that will be paid for the treatment of patients overall. This is an idea that has currently been, let's say, implemented for a long time in France, the United States, and Germany, and which we obviously want to realize in Belgium, but with a lot of delay. So, that's the general framework and in practice, it remains the same.

What do we do when we want to calculate the pathology fee? We use a classic system which is a cost calculation system and from the costs, we will determine prices. So, there is a whole approach which is based on how to calculate the cost of caring for a patient and then caring for a patient in terms of costs, we try to move to prices with a whole certain number of adaptations between cost and tariff. And so, we are in something which is how to calculate costs and for that, in principle, there are two ways of doing things. A way which starts from the overall cost of the hospital and which tries to say

how to divide the latter into cost per DRG, or a more basic way which consists of saying that we will try to look at what each patient consumes and calculate the cost per patient based on the cost of each resource consumed by each type of patient. So there, the most usual system, all in all, is to say, let's first determine the part of the cost which is inherent to hospital activities, since the complication of a hospital is that there are two activities in the hospital. You have the outpatient activity and you have the activity of patients who are taken care of by the hospital. Only patients who are hospitalized have a DRG, so they actually have a system for identifying pathologies. Thus, the pathology financing system can only be applied to hospitalized patients, while the rest continues to be done on a per-act basis, or per case, that's what you want, but not on a per-case basis. pathology, since pathology cannot be attached to every outpatient, at least not in the current system.

The first difficulty in this system is to say what hospital costs relate to hospitalized patients. If you take for example the cost of admission, it goes very well if you have the admission well divided into the admission part for inpatients and the admission part for outpatients. Otherwise, it is necessary to divide the admission service into what is reserved for hospitalized patients and what is reserved for outpatients. If you take a service such as the medical imaging service, in traditional accounting, you have a cost for the medical imaging, but here, it is a question of saying what is the cost of the medical imaging which will be assigned to hospitalized patients. It's not that simple to properly divide the cost of the overall hospital into two large packages, but once you have that, the second important element is the case mix. Here, we have taken a small, simple example to clearly illustrate the case. Let's assume that the incorporated costs are 500,000 euros, it's ridiculous, of course, we should rather talk about 50 million or 100 million euros, but 500,000 euros let's admit that this is the cost for hospitalization. The case mix is the DRG, that is to say ultimately that each hospitalized patient has a pathology and we can say that the hospital case mix is 30 patients who have pathology 20 patients who have pathology Y, 15 patients who have pathology Z, and so on. Once you have that, you just need to have a relative value scale, a cost weight scale. In other words, what does a patient with pathology X ultimately weigh in terms of costs? What does a patient with pathology Y weigh in terms of costs? And so on and so forth. That's the difficulty of the operation, where this cost scale comes from, we're going to get there. But once you have this kind of thing, you multiply the number of patients who have pathology and if you do the total, you have the total units of work, therefore the total, if you like, of the units of weight, consumption, cost in the hospital. If you have this figure, you can obviously divide at that time the cost of the entire hospital, hospitalization part, by the units of work, therefore 145 units, and you have the cost of a units of work. So a patient who has pathology X will receive one unit of work each time, 3448 euros. A patient who has pathology Z consumes 5 times more resources in terms of costs and therefore he will have 5 times this amount, therefore 17,241 euros in costs.

So, it's a way, let's say, of calculating costs by pathology, lump sum costs ultimately by pathology, but the problem always comes back to how do we create this scale of relative value? And unfortunately, there are not 36,000 possibilities, these scales of relative value, in principle, they only come through a sample of hospitals that work in a rather traditional way, that is to say that they will calculate the cost of each resource consumed by each hospital. It's much more cumbersome to do so, in fact, most hospitals use a system like this without asking too many questions. Somewhere, we tell them, here we are, we provide you with a scale of relative value of relative weight and these scales we will obviously look for them in commercial systems or in other countries, for example, the scale of relative value developed in the United States, in Maryland and we will apply it in Belgium. So, Pacha, it's a system that is essentially based on this type of approach.

Pacha, as you see, it is a certain number of hospitals and the goal that we set is to evaluate the profitability of the hospital activity of the pathologies of a hospital. So in fact, what is interesting for a hospital is to say to itself, when I take care of a patient for a heart attack, do I cost more in my hospital than in other hospitals? other hospitals? So somewhere, can I compare my cost of caring for a patient who has a particular pathology with the cost of other hospitals for which the costs are calculated in

the same way and for a heart attack? do I cost more or less? That is obviously important. If you cost more, the question is what are you going to do? If you cost less, you can tell yourself that you have peace of mind, that you are efficient. Performance can also change over time, so you can take your own cost of caring for the patient who has a heart attack and say, is it 2 years, 3 years, 4 years, 5 years ago? it cost less, more, and why am I costing more over time, why am I managing to improve my costs? The third objective is the one we aimed for at the start, it is obviously to simulate reimbursement rates in such a way as to be able, or to actively participate in the establishment of a flat-rate system by having elements discussion, or to participate in a defensive manner if a system is imposed on you without explaining it to you, or wondering what it is based on. That is to say, we know how to calculate costs, explain to us how you calculate yours and we will see if it holds up. In certain countries, it has happened that political authorities have imposed flat-rate financing systems without explaining where the costs came from and simply having said "I'm going to look for a system in Switzerland for example or a system in Australia and I'm going to impose on you, let's say roughly, the packages obtained from this system. So, it's important to be able to tell hospitals, we're preparing you to possibly ask the right questions to those who would like to put you in this situation. Currently, the tendency is rather to say that we have acquired enough advance to be considered a partner if the system must evolve in the direction of financing pathology. Which is basically the idea of the current minister, but as you know, we are asking ourselves the question of who the next government will be, and therefore, we do not really know if this will be in the objectives of the next government to persevere in funding pathology, which was still the case for the three previous governments which did not provide funding for pathology,but who were nevertheless decided, in their program at least, to do so.

To explain to you roughly what we do, the principle is simple, it is in the hospital, asking yourself which sector provides which service and for which patient, therefore for which diagnosis, and for what cost, and for what income. That's basically, let's say, what we're trying to do. We start, let's say, from classic resources, these are the expenses that you know, that is to say the expenses which are represented by the medical expenses, the doctors, the personnel expenses, whether administrative staff or the nursing staff, the expenses relating to equipment, charges relating to everything that is a pharmaceutical product and so on. These charges are grouped in a traditional way, that's the analytical accounting that you know well in the different sectors, but the originality here is obviously to move from these charges by sector to charges per patient. For that, we obviously have to go through the different services, either medical procedures, or pharmaceutical services, or hotel or administrative services and for each of these services, if we take the medical procedures, we must each time be able to say what is the cost of medical staff, what is the cost of nursing staff, what is the cost of medical consumables, what is the cost of equipment, what are other direct costs and what are indirect costs, for example, administrative costs . If you have the cost of each medical procedure or each pharmaceutical service, if you know for each patient what was done, in terms of quantity of procedures, of each type of procedure of course, you will be able to have a shot per stay. When you have one shot per stay, by grouping the stays by pathology, since each stay is linked to a pathology, you arrive at one shot per pathology. That's what we're trying to do. If you have a cost per pathology, you can contrast that with the revenue per pathology and see if your cost in your hospital is higher or lower than the revenue allocated to you under the current funding system, but you can also compare yourself, as was said earlier, by pathology in other hospitals.

So, we follow a whole procedure for that, it’s a procedure in a dozen steps. The first step, the essential, is a specification which says everything that we ask hospitals to provide us. These are all the elements that are inherent to the patient journey, so where did they go through, all the procedures that were done for each patient, the medical products, the diagnoses, all the economic data of the hospital, it is indeed all that is asked. We therefore ask for the analytical balance, we ask where the patients have gone, so all of this is well codified, how hospitals must hand over everything, this type of element. What was the activity for each patient? What did we do? In which sector did we do it? What was the number of actions carried out? The amounts that were paid by the insurers and by the patient? And

as we told you, for each patient, we ask for the AP-DRG, the severity of course. We ask for everything that can be useful for the distribution of costs, for example, if the hospital has it, the times that are recorded in the operating room or the duration of interventions in any other sector, the number of people that can be use to carry out a medical procedure and so on. When all this is obtained, we ensure the structuring of the hospital into sectors. So, a priori, cost accounting is supposed to do this kind of thing, but in fact, it's not that clear. In many cases, we have analytical accounting which is far too detailed and poorly managed in general, or which is too basic. That is to say that, for example, administration is a single center of activity, a single cost center and it is a little short for what we want to do. So, we manage to check that hospitals are using their cost centers properly. For example, we have a Dutch-speaking hospital, we see the equipment costs, the costs of medical products, and so on. Then you see that in the laboratory of this hospital, you see that the laboratory is subdivided by the hospital into hematology, microbiology, and then there is a thing called laboratory. We don't really know what it is when we receive the documents. And then, another laboratory where we don't really know where we're going with this, but we can see clearly that it's subdivided. The small problem is that if you look closely at the figures, you already see that there is indeed a division at the serology laboratory, but you see that we find absolutely nothing in terms of loads or products in this sector. If you look at hematology, you see that there are absolutely no personnel assigned to this hematology and if you look at microbiology, it's the same. So, you see that it is not enough to have made cost center divisions, you still have to feed them correctly. And in fact, here, they are mainly used for their revenues where they have actually allocated, and that is easier to allocate revenues than expenses.

So, what do we have in this system? A system in which we see that charges are fairly poorly allocated to cost centers. So, what should we do? We must obviously review the allocation of charges with the hospital, or else we must consider that all of this constitutes only one cost center. This problem should not be underestimated, it is a very big problem. This is the problem, let's say, of the way in which the hospital is structured so logically, it would tend to have in each hospital a cost center or a center of activity for management, accounting, staff, commissary, where the costs of these sectors are calculated correctly. The same goes for medical logistics and hospitalization, but unfortunately, this is something that is completely lacking in Belgian hospitals today. This is a big difficulty when you calculate costs per pathology. As I told you, the difficulty is to distribute the costs of the cost centers across the procedures. The first difficulty is to have good analytical accounting of cost centers. That, you must remember, today, is not the case. The patient journey is somewhat the same principle. Today, we work in silos. Admission works for her, pricing works for her, and pharmacy works for her. Once you try to have a cross-sectional view, you're often going to run into problems, such as a patient for whom you haven't recorded a charge or the diagnosis is not recorded correctly, or the patient has entered on a date which does not correspond to the dates which are in the recording of the diagnostic form, you have patients for whom you have an identification, but you have nothing at the pharmacy level. It's possible, but it's still often surprising. You have patients for whom you have identification, but you have nothing in the way of medical activity. There you also have, let's say, a big problem of reliability of recording acts, let's say, both patient identifications and medical acts and therefore you have to do a lot of verification or validation work before you start to do these distributions that I spoke to you about.

Finally, unfortunately, at least one hospital in two has the bad habit of not imputing activity relating to patients in the activity centers which produced this activity. For example, you can imagine a hospital where the activity is recorded in full, so all the actions are recorded, but they are not recorded in the right place. This is a situation that we encounter quite often. Here, for example, you have a hospital and you see in the operating room that the expenses are 6 million, but you see that the products, therefore the income from the procedures, is 300,000 euros for a sector which spends 6 million. So, there is something that poses a problem and the problem is that the actions which were in fact carried out in the operating room were not attributed to the operating room. This is due to the current financing system. Hospitals have the bad habit of considering that it is easier to discuss with doctors if

we have directly attributed all the actions carried out by gynecologists, for example, in a single center of activity. So, if you look at what happened here, you see that here, we're going to look at it a little closer. In analytical accounting, everything that starts with 8 is everything that is polyclinic and, in this hospital, cost center 8432, is the gynecology consultation. However, in this gynecology consultation, you find of course the consultations but you find, curiously, 86 hysterectomies, 483 deliveries by cesarean operation. So, you see that what happened is that the hospital imputed the entire activity carried out by the gynecologists in this center of activity instead of imputing the activity carried out by the gynecologists when they did it in the operating room, when they did it in the delivery room, and so on. For us, this is a big problem because we work by productivity sector. We will distribute the costs of the gynecology consultation on the activity which is in fact attributed to this sector and the costs of the operating room on the activity attributed to the operating room. So if the acts are not attributed to the right places, to the places where they were carried out, that will pose a problem for us. In these conditions, we must review the analytical accounting with the hospital, doing it retrospectively. Well, we're going to say, "this cesarean delivery, where was it carried out?" » Was it carried out in the operating room, which some hospitals do? Was it carried out in the delivery area, which others do? And so there you have to go back a little bit if you want, but it's quite complicated and cumbersome to do.

So, these are all the problems that we can encounter when we set up a system of this type and we go back to the hospital to explain all the problems that we encounter and we discuss with them. We can argue by saying “this is what we observe in the hospital which does not seem correct to us at this level and this is what we are being offered as a correction”. Then, what is true for activity is also true for resources. Hospitals are not allocating resources correctly. For example, personnel are not properly imputed in the sectors where they should be imputed. There are obvious mismatches between resources and production, that I have just shown you. There are cost centers where we put, for example, easy things, like I have a floating team, I put the floating team in a cost center called a floating team but what is the activity of this cost center? Well no, that's not okay. It must be said that it is equivalent to working to carry out which activity so we have to go and redispatch it in the different sectors for which it has worked. All of this is work that takes time to complete. In fact, if you take the doctors, it's even more complicated. Where does a doctor work? Take the case of a gynecologist, as we have told you, he works in the operating room, he works in the delivery room, he works in consultations, he works in a fertilization unit, he works in hospitalization. So, if we look a little at our activity, the simplest thing is to say if I take for example a doctor and we are in gastroenterology, we can work as a gastroenterologist, in endoscopy, in the operating room, in consultation, in hospitalization, in other units, for example in emergency, he can do research. So, what's important is to say, "Tell me where each of your doctors works." If you ask that in a hospital, in each department, you realize that in general, hospitals are not prepared for this kind of thing. They say “we have these many urologists, we pay them the same overall”, but when they have to say where exactly they worked, it's a different story.

What we are trying to do is to obtain this type of information to be able to distribute the cost of doctors since that is what pays each doctor a priori, to distribute it among these different sectors so as to have the amount of the cost of the doctors who work for endoscopy, for the operating room, since that is what we will distribute over the endoscopy procedures. This is what we will distribute over the procedures created in the operating room. And that is true for all corners of the hospital so, if you have a hospital that says, I have as many stretcher costs, for example, 2 million or 3 million, the question is, is Do you have a system that allows you to correctly distribute the cost of stretching patient by patient? “Yes, we have it, but we only know how to output it on PDF”, but we don't know how to do anything with this kind of thing.

Let's say that basically, the problem is that we must obtain complete and fairly reliable data on the patient journey. The hospital must make the best use of the accounting plan and when you have all

that, you know, for each sector, a priori, in a reliable manner, what the cost of the sector was, subdivided into doctors, staff, equipment cost, medical product cost, and other direct and indirect costs. Then, you have everything that was actually produced as an act by this sector for which you also have the costs. At that point, you can start to say to yourself, here I'm going to try to distribute load by load, I'm going to try to distribute these loads with appropriate keys across the different activities. So, it's asking yourself, for example, how am I going to distribute the doctor's costs over the different procedures? That's really PACHA's work and for that, we're going to use a whole series of keys. So, in this case, you see that in this sector, we have medical costs of 802,000 euros, we have nursing staff costs of 756,000 euros, paramedical staff at 103,000 euros and we have all the activity. To make this distribution, distribution keys and cost drivers are needed for each category of resources. For example, you will have the standardized duration that a doctor will spend to carry out a consultation of this type in this hospital, or to carry out an examination of this type, or to carry out a graphic assessment, etc. Of course, the problem is that you have to have these types of cost drivers, or the necessary nursing time, or the necessary paramedic time, or a key for the equipment. So all of this is a bit of what PACHA has spent the last 20 years doing, which is to create this type of distribution key that we use by default in hospitals that have nothing and that we try to encourage hospitals to build up over time.

Once you have this type of thing, you know in the hospital the number of examinations or services that have been carried out of each type, you actually have the distribution key and what you are going to do, that is a calculation that multiplies one by the other. These are in fact an intensity that can be compared to a quantity of services. We do not know how to add up quantities of services which consume resources in a variable manner, but we know how to accumulate units of work, that is to say an intensity assigned to each service. And so you effectively calculate that we have done as many consultation work units as we can add up with work units for an ultrasound assessment, as we can add up with work units for a stress test. When we've done that for the whole thing, what do we have? We have costs for each, we each have points which represent the total consumption of resources and therefore, calculate the cost of the point of each type of resource and you multiply this cost of the point by the number of points to finally have the cost unit of each service in terms of doctor, nursing staff, etc. Which will give you the total cost of the unit. So, we obviously do this sector by sector. In certain cases, we obviously have very precise information on the duration. This allows us to show that a circumcision, for example, does not necessarily have the same cost in the same hospital, in the same operating room, obviously depending on who did it or the patient to whom we realized it. You can go really far with this stuff. For childbirth, you see that the problem is that there are specificities each time. The cost of a nurse is not the length of time the patient stayed in a delivery area, since we do not care for a patient who has stayed for 24 hours. There is not a nurse at his bedside for 24 hours, so we have to find ways to calculate these cost drivers in an optimized way. So, each time, we invent systems that make it possible to say when we are taking charge of a birth, for example, the nurse takes charge during the first 30 minutes of the stay in the delivery area. Then, if we do an epidural, we will add another 30 minutes. And then, if the patient stays 10 hours, every hour, we devote 5 minutes to her, every 2 hours about 10 minutes and so on, but you need a lot of data to be able to do this kind of thing.

When we have done all that, I will give you the slightly specific problems at the level of current medical products, at the level of hospitalization, in addition to hospitalization, for example for nursing care, we will look in the records nurses the care that the nurses provided, we value them in terms of minutes and we then value them in terms of amounts. So, you see the complexity of the system, it takes a lot of information. So, you ultimately have a cost for each service, whether nursing, medical, pharmaceutical products. You put these costs together per patient and you effectively get the cost per stay. So, you have for a patient here, her cost of stay was 3,475 euros, made up of charges at the patient's bedside, 1,209 euros of direct charges and charges induced by the patient's stay. These are hotel charges, administrative charges and medical procedures. So, you see, for this patient, we carried out 1,526 euros worth of medical procedures, including 37 euros of biology. It's a patient who came for a birth, which represented 3,475 euros, as much in gynecologist costs, as much in anesthesiologist

costs, like that and so on. We calculate this for each patient and we calculate the income at the same time, that is to say that here we take the BMF, we take back everything that was billed for the procedure, and here it is rather the side of what the hospital obtains today for each procedure. And when we've done all this work, which is just as complicated as the cost work. So what do we get as a result? The result is that you see that here, for example, we have for the average cost of a sample of 15 hospitals, for the management of a stay, you have for an obstructive pulmonary disease, for example, you have the amount of the average cost and you have the figure in your hospital so you say "In my hospital, it is hospital number 16, I tell you I cost 577 euros while the average of the 15 hospitals in the group to which I compare myself is only 170 euros" and so I can at that moment start to ask myself the question "why do I cost more? » and like that straight away. You see that afterwards, we can go back down and say, well, indeed, you see its turnover, you see its total, so it is a hospital whose turnover is 264 million euros and its total cost is 258 million euros. So, he is in profit, he is not worse off. So, 6 million euros. You can break down its turnover and its cost by major category of pathologies, so for example everything that is nervous system, 32 million turnovers for 30 million costs and so on. Here, you see that you have 5 million for ENT revenue for 5.2 million costs. You can go through in one click, you go through, let's say, this time, all the DRGs, all the ENT pathologies, and you will eventually see the pathologies for which there is actually a cost which is particularly important, you see, 945,000 euros for 98,000 euros of turnover. You have at that moment, let's say, the possibility, each time, to return to the constituent elements of each of these elements. You take for each pathology, here you therefore have, by severity, you can review what the turnover was, what the statistical cost was the previous year, and you can come back each time to the constituent elements which allow us to analyzed in great detail.

This is basically what PACHA does. Here you also have the possibility to compare yourself to all hospitals which are anonymized. But you see that if you take for example here for each hospital, you have the average turnover, you have the average cost, you have the average deviation. So you see that for certain pathologies, you see that there are hospitals which are clearly profitable and hospitals which are clearly loss-making and that way you have the possibility of positioning yourself. So, basically, you wanted to know what PACHA does, you have the answer to your question but if you have any questions, I will be happy to answer them.

Sarah:
Actually, no, I had questions that I took a little like that, but frankly, it was very well presented and all that. It's not always clear when you read what you can see on the Internet like that, but suddenly this project has existed for at least twenty years, right?

Paul:
So, exactly. We started in the 2000s. We started first with one, two, three, four hospitals and now, let's say, there are 17 hospitals, mainly French-speaking and Brussels, which have gradually merged into the PACHA application.

Sarah:
Ok, yes, in Flanders, it's not very developed then?

Paul:
So, it is less developed, indeed, in Flanders. There is something on the KUL side, but it is not, let's say, at least, to my knowledge, as developed.

Sarah:
Okay, yes. It will still help me a lot, because I really didn't understand the whole concept exactly, and now it's quite clear.

Paul:
So, in principle, indeed, what we are trying to do is obviously to follow roughly the same techniques as what is followed in France, or in Germany, or in Switzerland. In theory, the next legislature, if it comes to fruition, this time should really be the transition to activity-based pricing. Apparently ministers took a long time to admit this, but now, based on costs because there are two ways of thinking; either you provide funding for pathology, basically, which is just the collection of what we currently pay, but per patient and per pathology or you will actually calculate your prices based on real costs. That's a little bit of what we're trying to do. That is apparently the current trend, so a priori, we should move towards something where the samples would be more scientifically determined, since somewhere, there would have to be Dutch-speaking hospitals, there would have to be hospitals of all types, both private and public, etc. The problem is essentially the reliability of the data and unfortunately, let's say, the big criticism that we can make is that traditional analytical accounting, therefore at the service of Belgian hospitals, leaves something to be desired. And so, that is obviously a big criticism that we can make of the calculation of costs by pathology, it is that it is based on a series of data which are at this stage probably questionable.

Sarah:
Perfect, thank you very much for introducing me to all this. I wish you a good day.