KEY DATA IN HEALTHCARE

General Hospitals

Edition 2019

.be

Colophon

SUBJECT

This report provides a **brief overview of the operation of general hospitals** based on a number of key figures. In four chapters on 'Organisation', 'Care activitiy', 'Financing' and 'Quality', some trends regarding the operation in this sector of healthcare are highlighted.

EDITORIAL COMMITTEE

The members of the Directorate-General for Healthcare, in particular the 'Acute & chronic care', 'Hospital financing' and 'Management Office' as well as 'Data & policy information' units and Sciensano.

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www.health.belgium.be
and **www.healthybelgium.be**

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INTRODUCTION

DEAR READER,

It is sometimes said that data is "the new oil". Even though some of the expectations about the possibilities of data are unrealistic and utopian, it is clear that an intelligent approach to collecting, processing, linking and analysing data has become an indispensable part of the strategy of every organisation; policy organisations are no exception.

The Directorate-General for Healthcare of the FPS HFCSE historically has a lot of data on the domains of hospitals, emergency medical care, healthcare professionals and mental healthcare. If we continue the metaphor of data as "the new oil", we sometimes hear the remark and the criticism that the focus in recent decades has often been more on pumping up the oil than on refining it and preparing it for the market and its users.

In 2017, in response to this criticism in particular, a comprehensive exercise was carried out within the DG Healthcare to work out how we could improve our data policy. One of the strategic lines that resulted from this exercise was better access to and exploitation of our data. A new product that was targeted within this strategy was the development of 'policy briefings' - or 'eye-catchers' - that would contain key figures in a comprehensible manner and put them into perspective regarding the domains mentioned above.

These eye-catchers are intended to be situated at a more detailed level than already existing initiatives such as the report of the KCE on the performance of our health system, of which the FPS is a partner, and at the same time with a more comprehensive view on a specific domain than e.g. detailed reports from our DG or other organisations that focus on a specific phenomenon within a relevant domain.

You are holding the first edition of this eye-catcher in your hands. Its focus is on hospitals, and general hospitals in particular. It is a modest first attempt to give readers with a certain prior knowledge of healthcare and the hospital landscape an overview of the data we have at our disposal in a comprehensible manner, in order to enhance their understanding of our hospital sector. Our target group is broad: political policymakers, civil servants at various levels of government, the field of work of healthcare institutions and health professionals, health insurance funds and patient organisations, the social partners, researchers and consultants, etc.

The approach is not evaluative or normative in nature. In the first instance, the eye-catcher is intended to show a number of key figures, accurately describe them and highlight a number of trends. Some figures require additional interpretation. These are ripe for debate. In future editions, we will examine how some of these interpretative elements can be incorporated to further increase the added value of the eye-catcher.

Finally, it is not the intention for the eye-catcher to remain an "isolated initiative". Certain data and key figures are available from our partners in the government and knowledge institutions. We would like to explore with the latter how our project and their initiatives can be linked in the spirit of cooperation and sharing.

We wish you happy reading and look forward to your feedback.

Pedro Facon
Director-General Healthcare

ORGANISATION OF THE HOSPITAL LANDSCAPE

HIGHLIGHTS

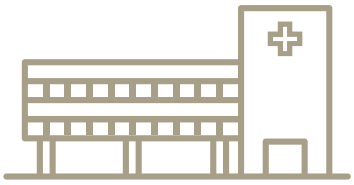
2019

103 general hospitals

79
classic general hospitals

7
general university hospitals

17
general hospitals with a university character



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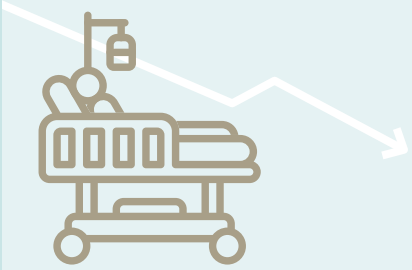
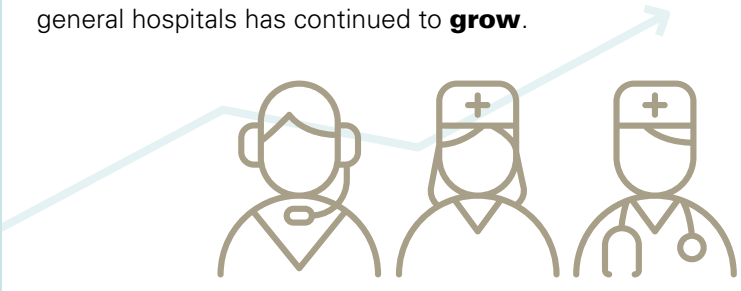


Decrease of **acute beds** in total hospital beds in favour of more beds for **chronic patients**.

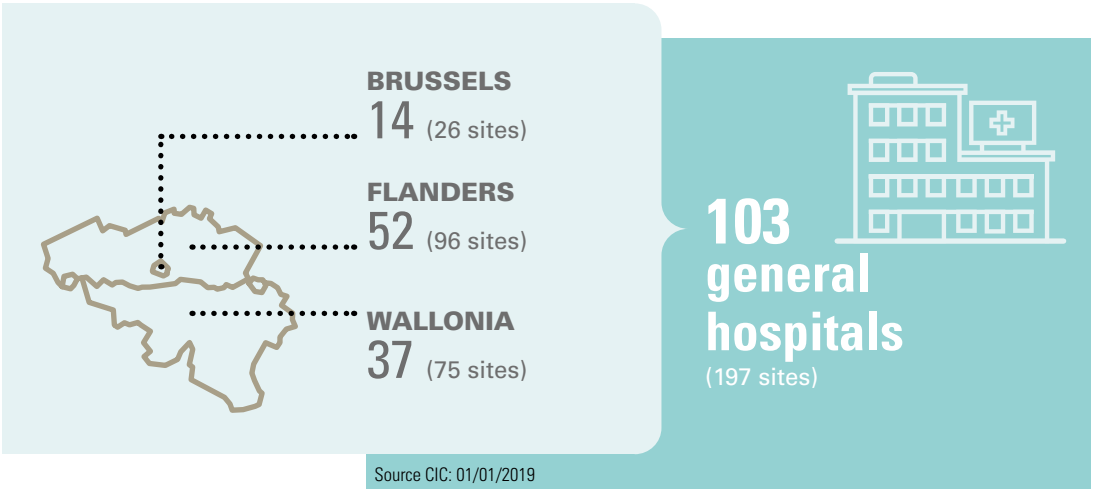
Over **20 years**, the **number of beds** **has continuously decreased in general hospitals**.

Number of **professionals** in general hospitals has continued to **grow**.

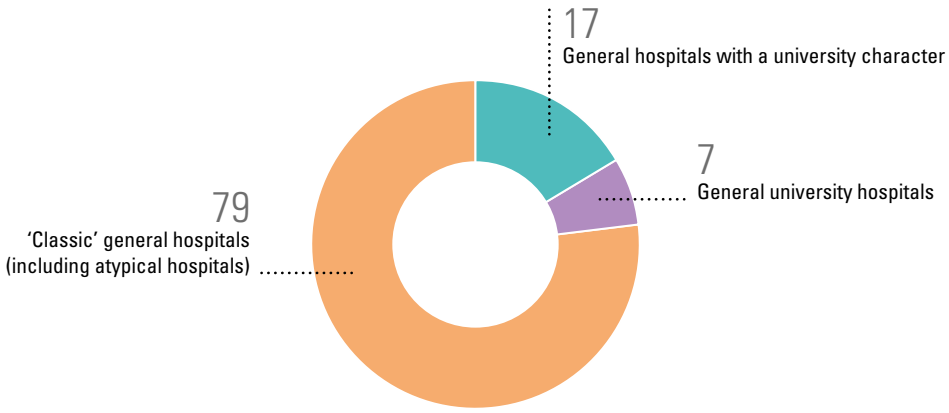


1. Types of hospitals

The present document focuses on general hospitals. As such, it does not cover psychiatric hospitals (which exclusively provide care for people with mental disorders) or specialist hospitals (which exclusively provide geriatric, revalidation or palliative care).



Among the general hospitals, we can distinguish 3 types of hospitals:



'CLASSIC' GENERAL HOSPITALS

These are essentially hospitals that receive patients both by day and by night for specialised medical assistance, and offer surgical and internal medicine treatments, complemented by various other disciplines such as geriatrics, maternity, paediatrics, neuropsychiatry and revalidation, for example.

Some atypical hospitals also fall into this category. During the 6th state reform, it was decided to transfer competence for specialist hospitals (offering exclusively revalidation and/or geriatric services) to the federated entities. While some of the entities in question chose to merge with a "classic" general hospital at the time, others preferred to expand their activities, generally by adding services in the field of psychiatry. By default, these entities are now part of general hospitals, although they do not have a surgical or internal medicine department.

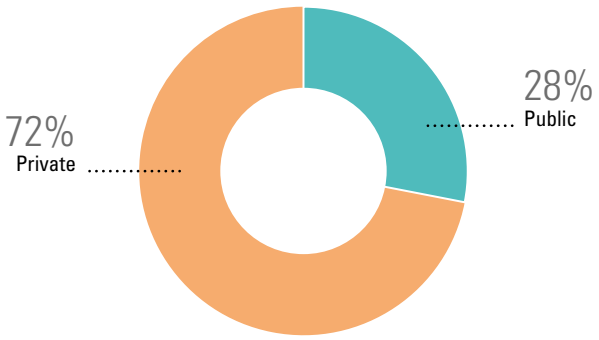
GENERAL UNIVERSITY HOSPITALS

These offer the same services as classic general hospitals, but are also assigned the tasks of training health professionals, scientific research and developing new technologies. They are connected to a university with a medical school offering a full course of study.

GENERAL HOSPITALS WITH A UNIVERSITY CHARACTER

These are general hospitals that have been allocated a number of university beds which are dependent on a university.

Of the 103 hospitals in Belgium, 28% are public as of 01.01.2019, i.e. managed by a public authority (municipality, intermunicipal, province, region, etc.), and 72% are private and run as non-profit organisations. Historically, the latter were the result of religious congregations, mutual societies, free universities or former company hospitals. However, given the large number of hospital mergers in recent decades, many institutions are now a legacy of both the public and private sectors. The Law on Hospitals applies in equal measure to both the public and private sectors, and their financing by the public authorities is identical



2. Categorisation of hospital activities

The hospital is characterised by its activity, organised into services, functions and care programmes.

Services group together activities that have a specific location within the hospital. A distinction is made between hospitalisation services, where patients reside during their stay in hospital, and medical or medico-technical services, where certain specific services requiring special expertise or equipment are provided. Medical services include transplant centres or centres for burn victims. Medical-technical services include medical imaging services (CT-scan, NMR, Pet-Scanner, etc.), human genetics centres, radiotherapy services and kidney dialysis centres.

Functions are hospital activities made available to all hospital departments. Various functions are subject to specific standards and control by the accreditation authority (community or region): hospital pharmacy, palliative care, intensive/emergency care, hospital blood bank, mediation, pain management, clinical biology laboratory, etc.

Care programmes can be defined as an organisational framework for implementing "care pathways" for a target group of patients. They are the result of an arrangement between hospitalisation services, medical or medico-technical services and functions necessary for quality care.

There are currently various care programmes:

- The **"cardiac pathology" care programme** which is offered to patients with heart rhythm disorders or heart failure. It includes various sub-sections related to different types of treatments: invasive or interventional procedures, electrophysiology, pacemaker placement, and heart transplants.

- The **"reproductive health" care programme**, which includes various activities such as the diagnosis and treatment of infertility problems, including indications regarding the use of AMP (Assisted Medical Reproduction) techniques.

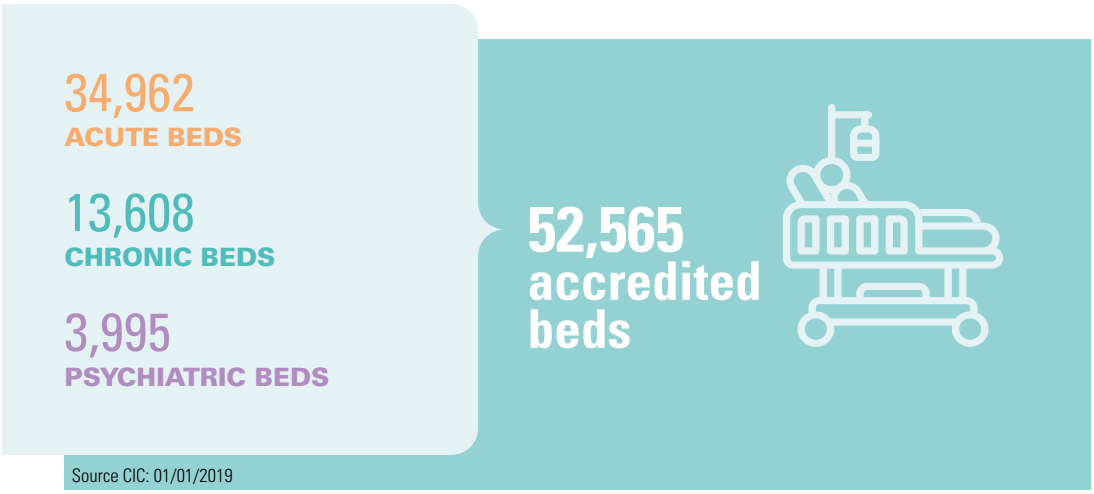
- The **oncology patient care programme**, which includes a 'basic' version and a more specialised version. A specific programme is also described for the treatment of breast cancer.

- The **care programme for children**, which focuses on the diagnosis, treatment and follow-up of diseases in children and provides a framework, infrastructure and equipment that are perfectly adapted to the needs of children.

- The **geriatric patient care programme**, which targets the geriatric patient population with an average age above 75 years who require a specific approach due to age-related co-morbidities or fragilities. The programme is based on the diagnosis, therapeutic process and revalidation of the geriatric patient in close collaboration with front-line professionals.

- The **cerebrovascular accident care programme** (CVA), subdivided into 2 sub-programmes: one with non-invasive care, the other for invasive treatments.

2.1. Types of hospitalisation services



Hospitalisation services are grouped into "care units" in each hospital. Each of them offers a specific form of care for a subgroup of patients. For each service, an index identifying the subgroup of patients is assigned. More than 25 specific indexes are used to classify these services.

Each service within the hospital must be accredited and meet specific standards, including minimum bed capacity, occupancy rate or required level of activity, technical equipment and type and number of medical, paramedical and nursing staff.

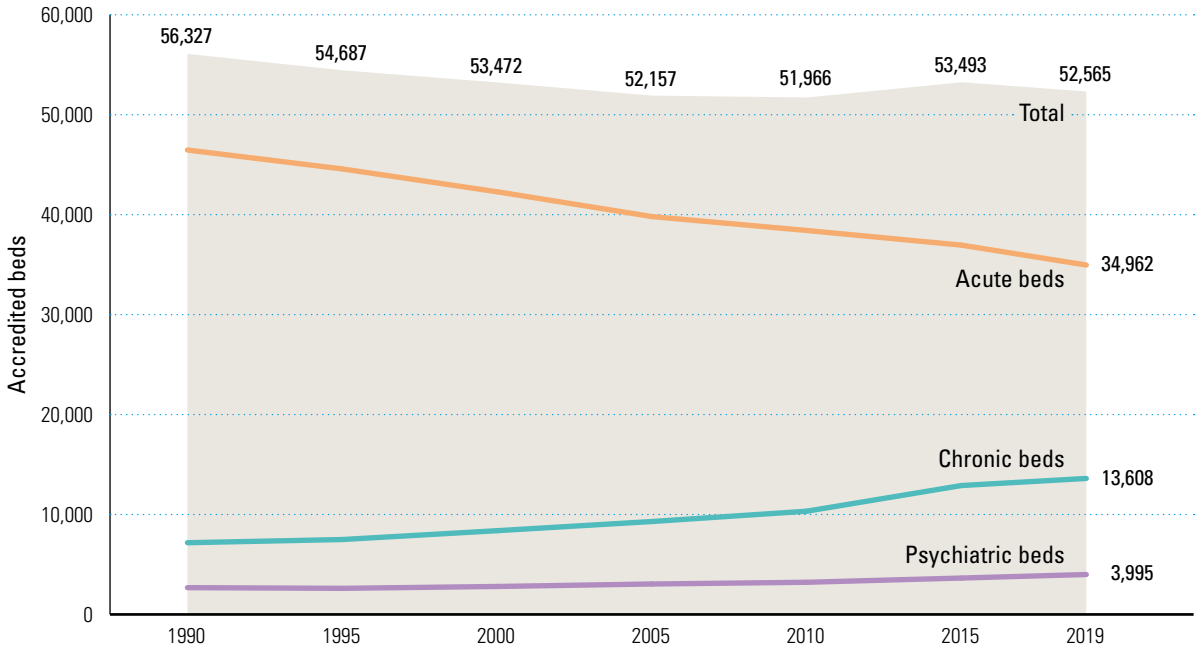
In order to give a better overview, we can group the different types of hospitalisation services according to whether they are more acute/chronic or more somatic/psychic in nature.

- **"Acute" beds:** for short stays, i.e. stays that do not require long-term treatment: e.g. surgery (index C), internal medicine (index D), paediatrics (index E), care of premature infants (index NIC), maternity (index M).

- **"Chronic" beds:** for longer-term hospitalisations or for patients requiring chronic treatment: geriatrics (index G), revalidation (index S1 for cardiopulmonary pathologies, S2: locomotor pathologies, S3 for neurological pathologies, S5 for chronic polypathologies and S6 for psychogeriatric pathologies), palliative care (index S4).

- **"Psychiatric" beds:** intended for the care of patients, possibly only during the day or at night with mental disorders: observation and neuropsychiatric treatment for adults (index A, A1, A2, T and T1) or for children (index K, K1 and K2).

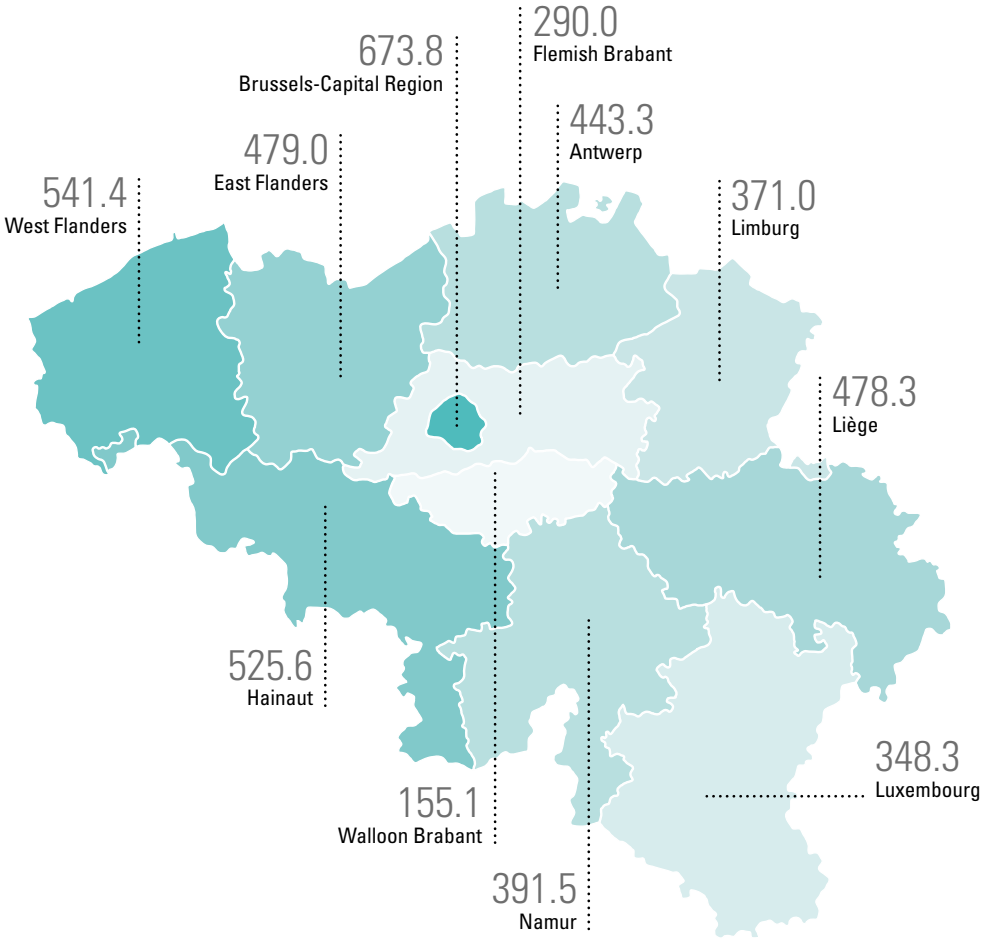
EVOLUTION OF THE NUMBER OF ACCREDITED HOSPITAL BEDS



The general evolution in the number of accredited beds between 1990 and 2019 is decreasing. Indeed, a decrease of 3,762 accredited beds has been recorded. Nevertheless, between 2010 and 2015, a small increase in accredited beds can be observed as a result of mergers between general and specialist hospitals.

2.2. The geographical distribution of accredited hospital beds

NUMBER OF BEDS (ALL INDEXES COMBINED) PER 100,000 INHABITANTS
PER PROVINCE AS OF 01.01.2019 IN GENERAL HOSPITALS



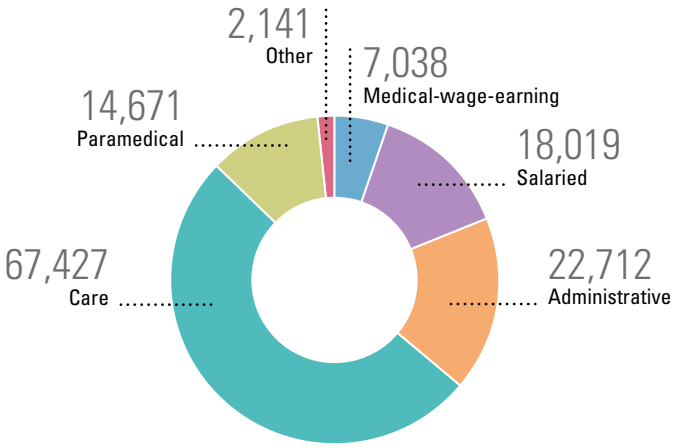
According to the data presented above, the Brussels-Capital Region has the highest number of beds per 100,000 inhabitants. In second and third place we find West Flanders and Hainaut respectively. Walloon Brabant and Flemish Brabant, on the other hand, are the provinces with the lowest number of beds.

Learn more about the location and the different services that the hospitals in Belgium have to offer:

www.health.belgium.be

3. Employment trends in the general hospital sector

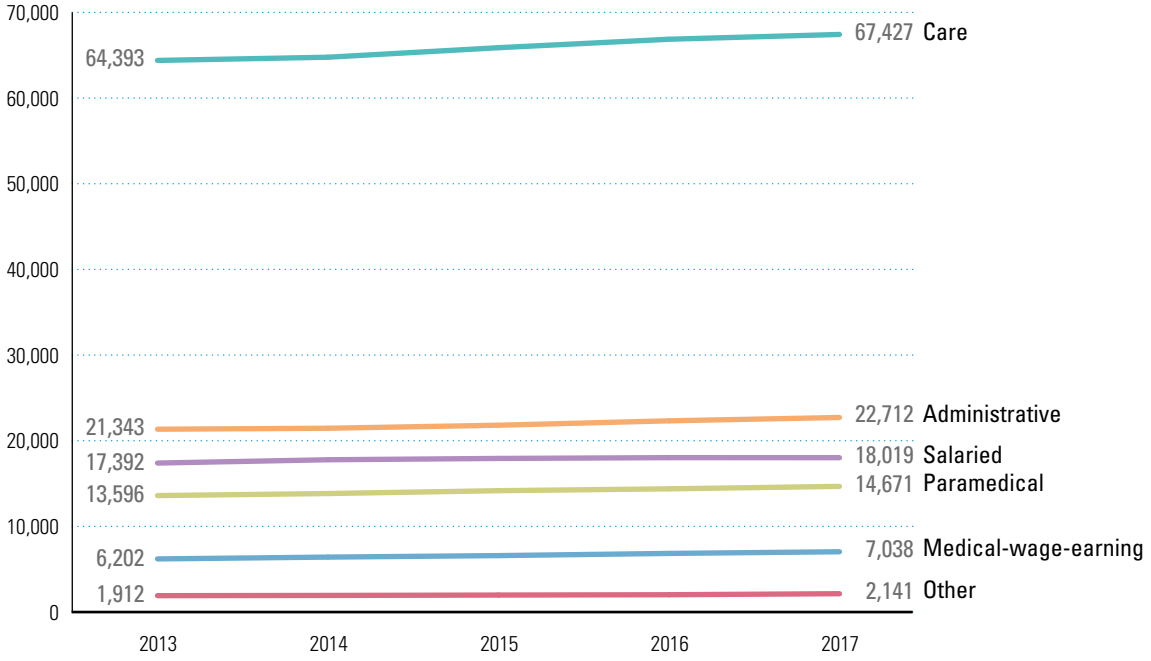
BREAKDOWN BY CATEGORY OF PROFESSIONALS (IN TERMS OF FTES) IN 2017



Overall, nursing staff (nurses and orderlies) represent just over half of the full-time equivalents in hospitals. However, the figures[1], shown in the graph below, largely underestimate medical activity, as many doctors work with self-employed status and are therefore not reported as 'hospital staff'.

In addition, over time, the volume of FTEs hired by hospitals is increasing in all professional categories. This may seem strange given the reduction in the number of accredited beds, but it should be noted that the number of hospital stays, and therefore the number of patients admitted, continues to increase over time (see below – chapter Care activity). In total, over 4 years, the volume of staff in general and university hospitals has increased by 7,171 full-time equivalents (+6%).

EVOLUTION OF THE VOLUME OF FTES



1 Source: Finhosta

CARE ACTIVITY WITHIN GENERAL HOSPITALS

HIGHLIGHTS

We have observed a **13.9% increase** in **contacts/ hospital stays** over a period of **10 years**.

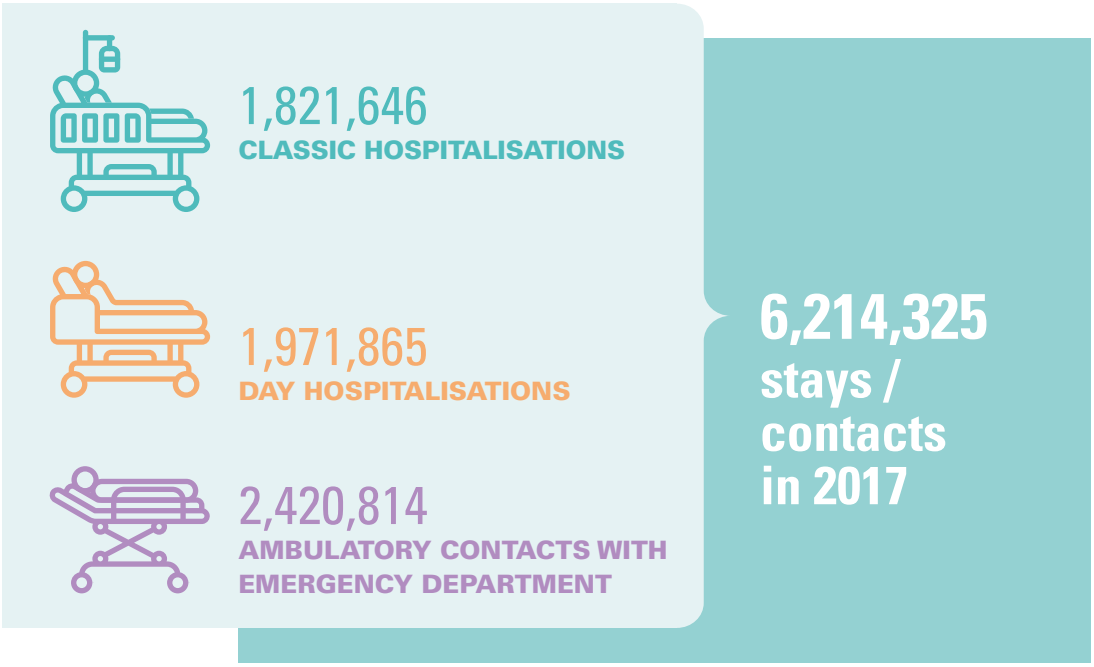
The most common reasons for **classic and day hospitalisations** are due to diseases of the **digestive system**, admissions for **chemo- and immunotherapy** and diseases concerning the **nervous system**.

Patients living in **Flanders** generally have **fewer contacts** with hospitals than people living in Wallonia and Brussels.

The **average length of stay fell by 1 day** over the last ten years.

From **2013** onward, the number of **day hospitalisations** is **higher** than the number of **classic hospitalisations**.

1. Hospital stays[2]



There are various types of hospital stays or hospital contacts. During a **day hospitalisation**, the patient comes to the hospital without spending the night there, unlike **classic hospitalisation** where the patient stays at least one night in the hospital and/or where a daily cost is charged. A **stay via the emergency department** may mean a contact **without hospitalisation** (hereinafter referred to as an "ambulatory contact with emergency department") as well as **a contact followed by a hospitalisation** (day or classic). In some cases, a patient stays several times during a year to have specific diseases treated (for example, for cancer chemotherapy) or due to various causes.

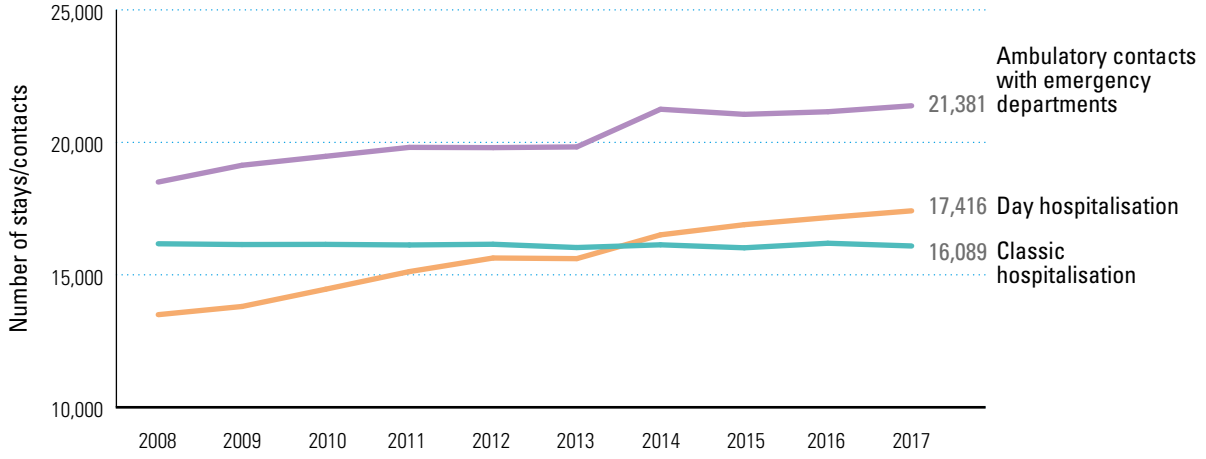
1.1. Evolution of the number of stays / contacts

In 2008, the total number of hospital stays (which includes classic or day hospital stays and ambulatory contacts with emergency departments) was 5,138,177. This number increased to 6,214,325 in 2017.

To accurately compare this evolution over time, it is necessary to look at the number of stays /contacts per 100,000 inhabitants. From 2008 to 2017, this number increased by 13.9%. This is mainly due to a higher number of day hospitalisations (+29%) and ambulatory contacts with emergency departments (+15.5%). Another lesson is that from 2013 onwards, day hospital stays exceed those of classic hospitalisation.

2 Source of figures 'Minimum Hospital Data (MZG in Dutch)'. The following types of stays were not included: non-terminated stays (except the first period of a lengthy hospital stay , full psychiatric stays, stays of newborns which were not invoiced, stays for which the gender of the patient cannot be determined, stays in day hospitalisation for which a mini-fee or no fixed sum was charged.

EVOLUTION OF THE NUMBER OF STAYS/CONTACTS
PER 100,000 INHABITANTS BY TYPE OF HOSPITALISATION



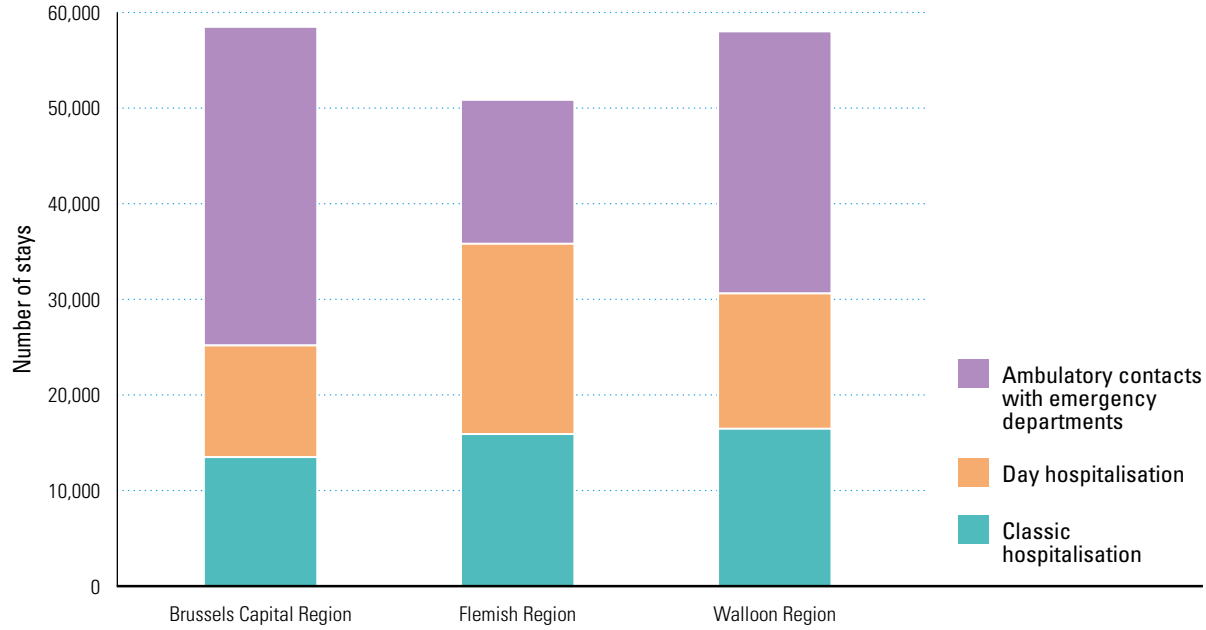
1.2. Number of hospital stays / contacts according to region [3]

In 2017, the total number of stays per 100,000 inhabitants in Flanders was 50,862 (+14.4% since 2008), 58,495 in Brussels (+9.4% since 2008) and 58,023 in Wallonia (+14.4% since 2008).

A closer look at the 3 regions reveals several differences between them.

In general, the rate of hospital care use is lower in Flanders than in the other two regions. The use of day hospitalisation is significantly higher and the use of ambulatory contacts with the emergency departments lower. The rate of use of ambulatory emergency services is twice as high between the Flemish region and the Brussels-Capital Region. In all three regions, the classic hospitalisation is comparable per 100,000 inhabitants, although remains a little less frequent in the Brussels-Capital Region.

NUMBER OF STAYS PER 100,000 INHABITANTS
BY TYPE OF HOSPITALISATION AND BY REGION (2017)



3 Region of origin of the patient.

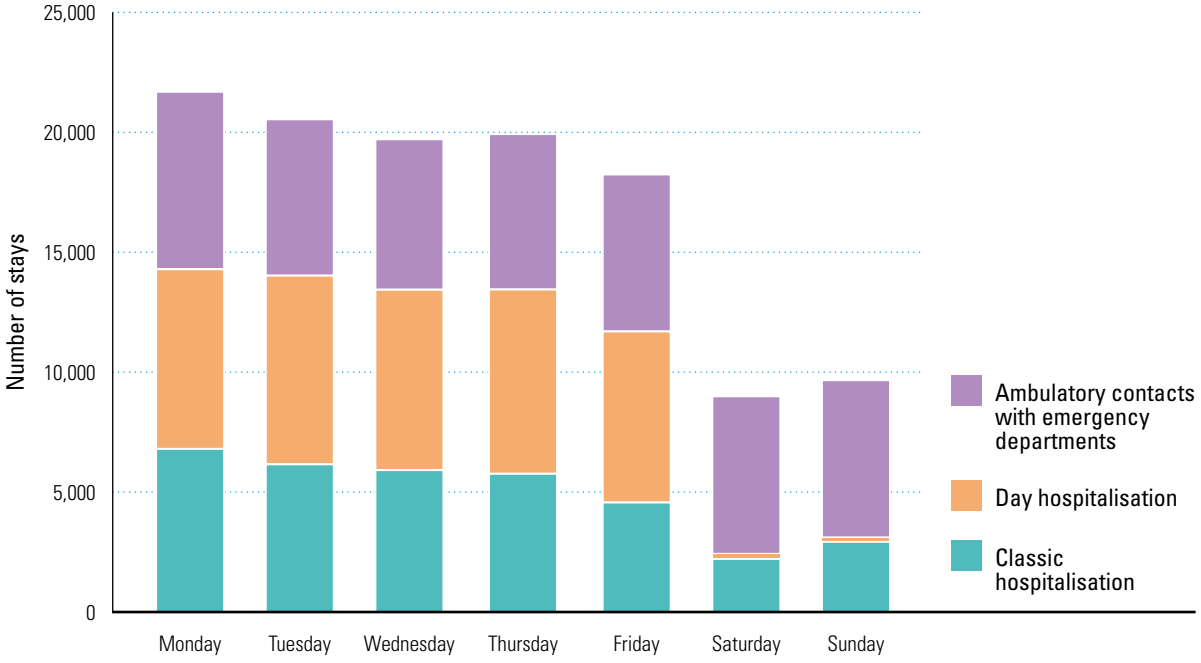
1.3. New hospital stays during the week

16,947
stays/contacts per day

For the year 2017, the average number of new hospital stays and contacts with the emergency department per day was 16,947. However, this average number varies according to the day of the week. The ambulatory contacts with emergency department remain fairly stable, but stays in classic hospitals gradually decrease from Monday to Saturday and increase again from Sunday onwards. This slight increase on Sundays is due to stays for surgical procedures scheduled for the following morning.

The number of weekday day hospital stays is higher than other types of stays and is almost non-existent during the weekend.

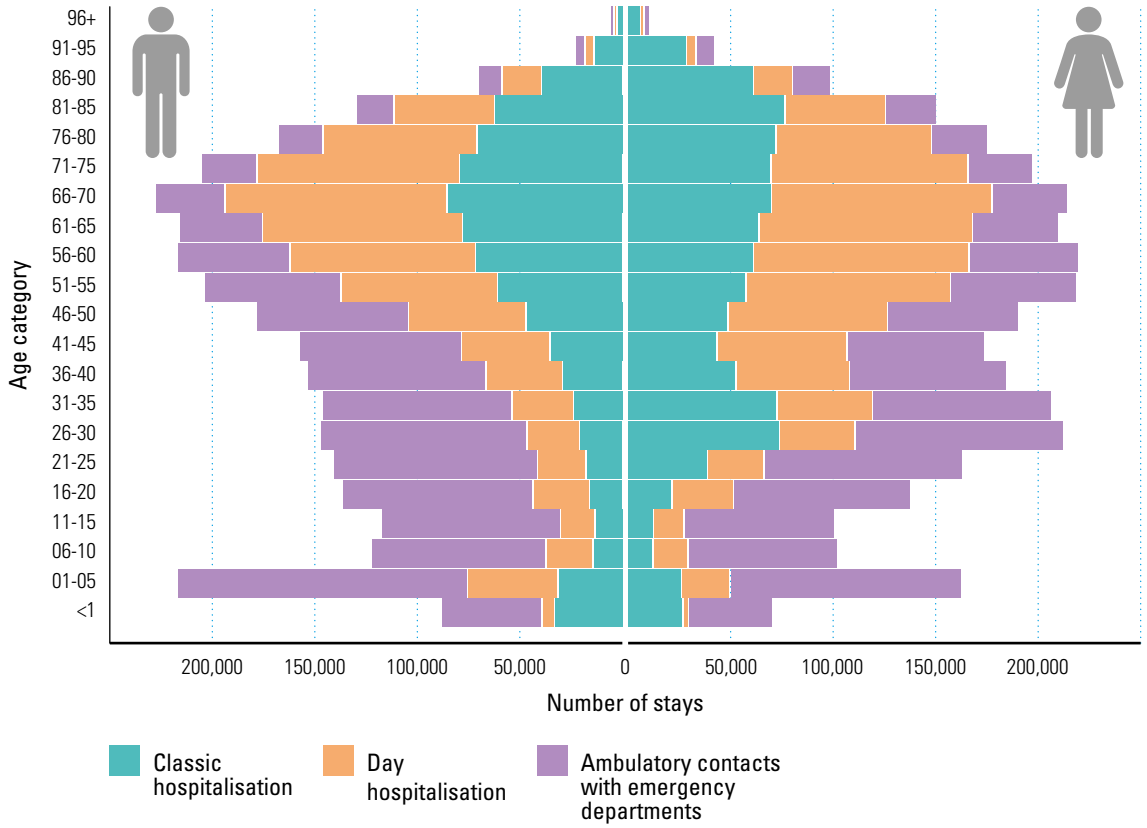
AVERAGE WEEKLY NUMBER OF NEW STAYS BY TYPE OF HOSPITALISATION (2017)



1.4. Age and gender of the patient

20% of stays are patients between 55 and 70 years of age

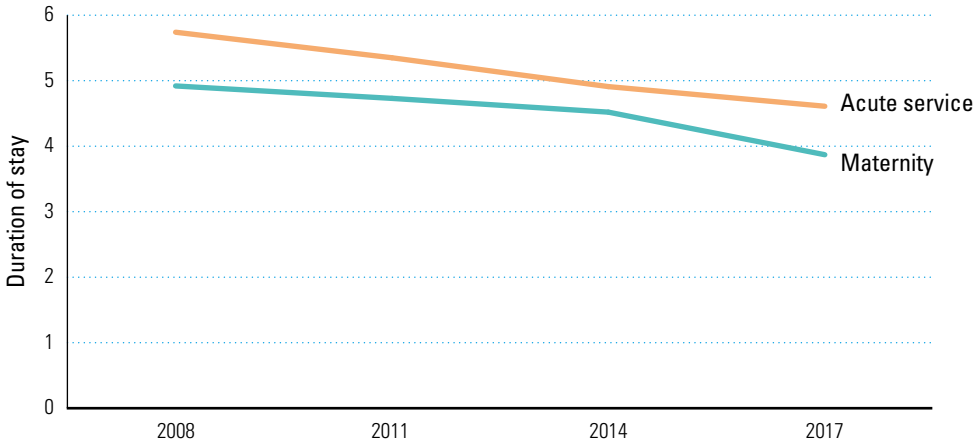
About one-fifth of hospital service users are between 55 and 70 years of age. There is also a peak for children aged 1 to 5 years, mainly due to higher use of ambulatory emergencies. After age 80, women have a higher total number of hospital stays due to longer life expectancy. The higher use of hospital care by women aged 20 to 40 compared to men in this age group is mainly related to childbirth.



1.5. Average length of stay in classic hospitalisation

For several years, health care policies have encouraged a reduction in the length of stay in order to ensure efficiency and appropriate use of hospital infrastructure without compromising the quality of care and taking into account the specific situation of patients. We examine here, firstly, the evolution of the length of stay starting in an acute department (whereas stays started at the maternity are excluded)[4] and, secondly, the length of stays starting at the maternity department. Between 2008 and 2017, the average length of stay in these services decreased by one day.[5]

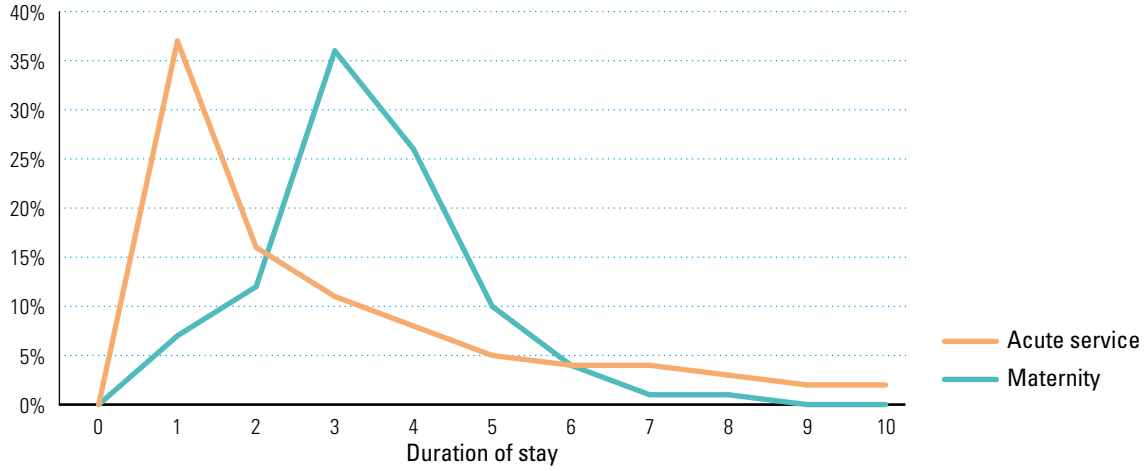
AVERAGE DURATION OF STAY PER TYPE OF STAY



A closer analysis of the number of days spent in hospital for acute care and maternity shows that just over half of acute care stays do not exceed 2 days of hospitalisation, and that the average length of stay for acute care is 4.6 days.

In maternity, in 55% of cases, the duration does not exceed 3 days and 80% of stays do not exceed 4 days.[6]

DURATION OF STAY FOR CLASSIC STAYS ACCORDING TO THE TYPE OF STAY (2017)



4 Stays that start in a service for surgery (index C), internal medicine (index D), pediatry (index E) and care for newborns (index NIC) are taken into account.

5 It is the case that 81% of classic hospital stays correspond to acute care (excluding stays starting in maternity departments), which represented nearly 1.5 million hospitalisations in 2017. Maternity stays represent 7.6% of stays.

6 Psychiatric and chronic stays are not included in these graphs. Stays longer than 10 days (9% of acute stays, 2% of maternity stays) are not shown in this graph for the sake of readability.

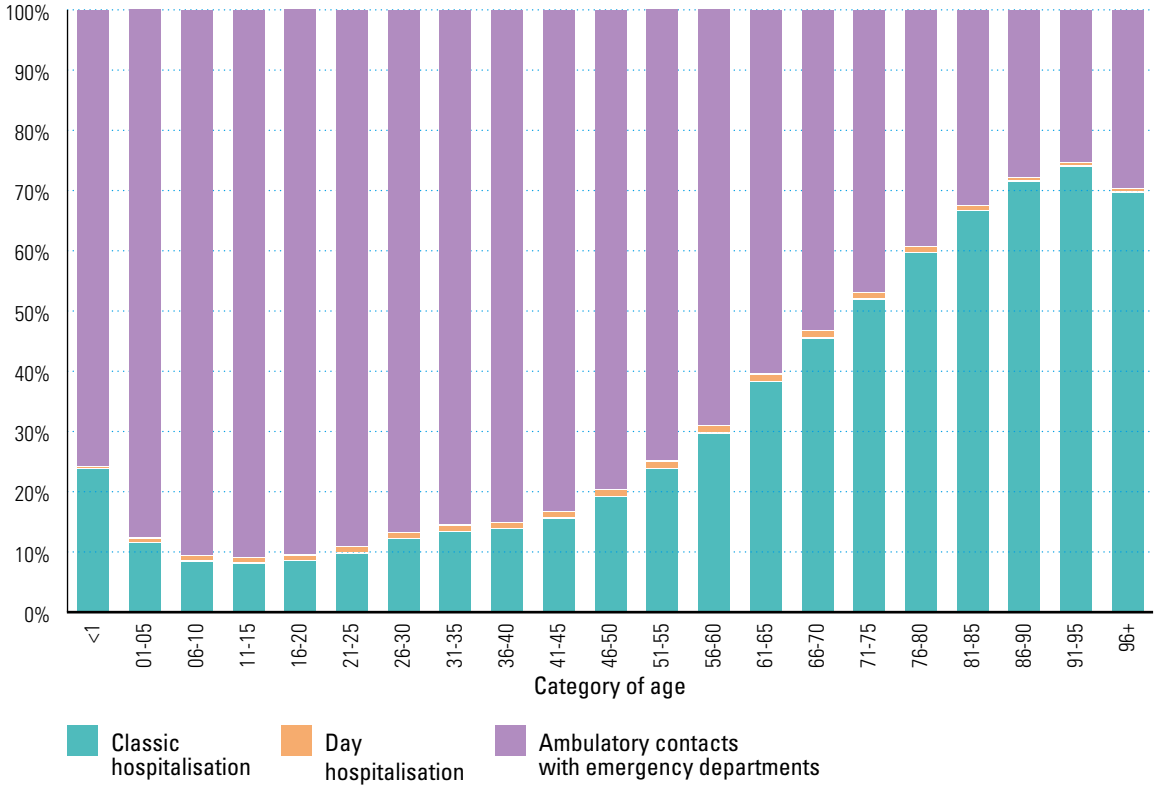
1.6. Emergency admission

The following graphs describe hospitalisations following an emergency department visit, as regards the ambulatory contacts with the emergency department (without hospitalisation).

BREAKDOWN ACCORDING TO AGE

With children, youth and young adults an ambulatory use of emergency departments results rarely in hospitalisation. While among the elderly, hospitalisations following a visit to the emergency department are more frequent. After the age of 70, a contact with the emergency department is followed in more than half of the cases by classic hospitalisation. Rarely consulting the emergency department is followed by a day hospitalisation.

PERCENTAGE OF TYPE OF STAY FOLLOWING A VISIT TO THE EMERGENCY DEPARTMENT BY CATEGORY OF AGE (2017)

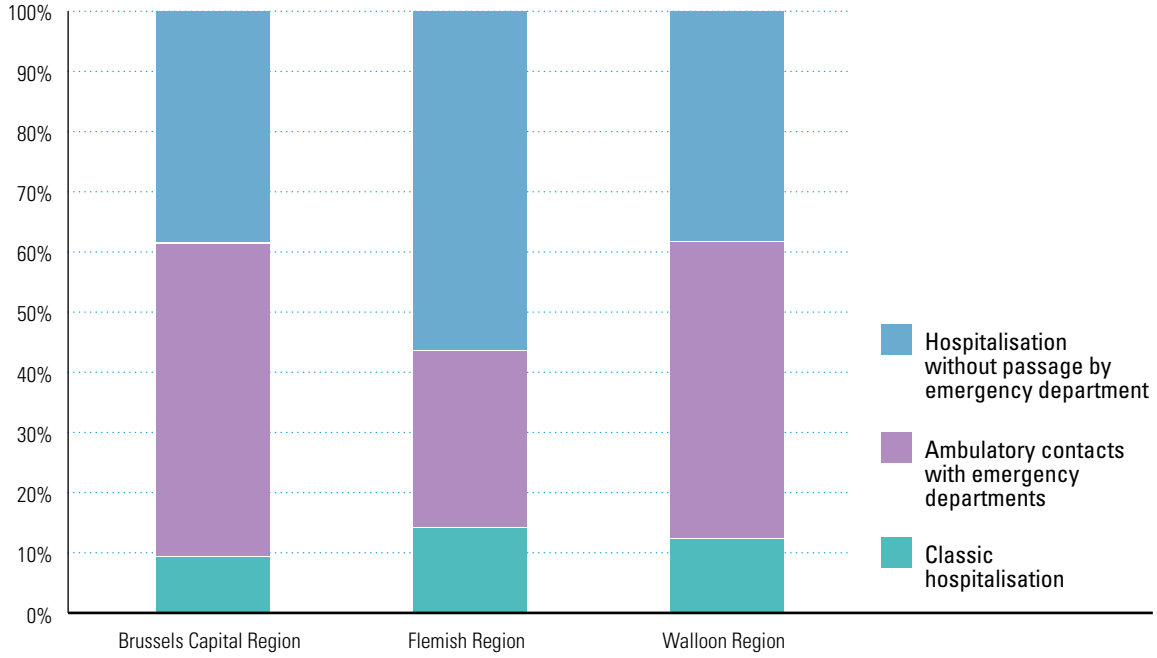


BREAKDOWN ACCORDING TO REGION

Almost 45% of contacts with a hospital in the Flemish region start with a visit to the emergency department, compared to just over 60% in the Brussels-Capital Region and the Walloon Region, which is related to the breakdown, according to regions, of the types of stays per 100,000 inhabitants mentioned below.

In Flanders, the emergency services are proportionally less used, per 100,000 inhabitants, and one third of emergency visits continue with hospitalisation. This proportion is higher than in the other 2 regions. In Wallonia and Brussels, four out of five patients return home after their visit to the emergency department. These results reflect different uses of emergencies.

PERCENTAGE OF STAYS BY TYPE
AND ACCORDING TO THE REGION OF THE HOSPITAL (2017)



Remark: The stays in the day hospitalisation are less than 1% and therefore not taken into account in the figure.

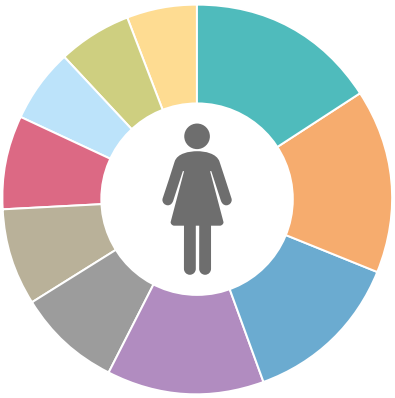
2. The most frequent diagnoses in general hospitals

The graph below shows the number of stays (classic and day hospitalisation combined) for the ten main groups of diagnoses according to the ICD-10-CM classification[7] for all ages. It should be borne in mind that during the same year, a patient may stay in hospital several times for the same or different reasons.

With this in mind, digestive tract diseases top the list within this group dental, gastric and intestinal problems as the most common diagnoses. Stays related to chemotherapy and immunotherapy are in 2nd position. Diseases of the nervous system are in 3rd position with the most frequent diagnoses being chronic pain, sleep disorders or epilepsy.

A higher number of women than men are treated for disorders of the osteoarticular system; this gender ratio is reversed for diseases of the circulatory system.

TOP 10 OF THE MOST FREQUENT DIAGNOSTIC GROUPS (2017)



1,509,508

16.1%	Digestive system
15.3%	Chemotherapy and immunotherapy
13.1%	Nervous system
13.1%	Muscles, bones and articulations
8.7%	Tumours
8.1%	Lesions
7.9%	Circulatory system
6.1%	Respiratory system
5.9%	Eye
5.8%	Genitourinary system

1,436,016

16.6%	Digestive system
13.3%	Chemotherapy and immunother
11.5%	Nervous system
10.9%	Circulatory system
10.3%	Muscles, bones and articulation
9.7%	Tumours
8.7%	Lesions
7.4%	Respiratory system
6.9%	Genitourinary system
4.6%	Eye

7 Chapters of ICD-10-BE, taking into account only chemo- and immunotherapy for chapter XXI (62%). The other stays from this chapter were not included in the analysis.

3. Nursing care within the general hospital[8]

Nursing care in our Belgian hospitals is diverse.. In an attempt to gain more insight into the reams of information with respect to nursing care, we try to divide the collection of care provided to the patient into 5 large groups of 'types' of nursing care. When we look at the care provided to the patient per moment in their stay at the hospital, we can immediately see that there are two large groups. The group with highly 'technical' care (about 10% of the nursing period) and a group where less technical care is provided, but a large variety of 'basic' care (the remaining 90%). The basic care can be described as nursing support in meeting the needs of general daily life (ADL treatment) such as assistance with food, assistance with hygienic care, assistance with travel, etc. Technical actions, on the other hand, are tasks ranging from taking a blood sample to patient ventilation.
If the care groups are arranged from basic care low to high-technical care, we would see that the number of nursing activities and the care burden in terms of the required competence of the nurse and the amount of time spent on this care are on the increase.

These five broad categories correspond more or less to the Nursing Related Groups (NRG). This is a grouping system that is used as a basis for funding surgical, internal and paediatric nursing care. You can find more information in this regard here.

BASIC CARE

LOW	MEDIUM	HIGH
• This includes patients who are independent and receive only follow-up from a nurse. • Characteristic for the services maternity, rehabilitation, infectious diseases and in the services for diagnosis and treatment.	• This includes patients who are accompanied in activities such as washing or eating. • Characteristic for the recovery room, the labour and delivery room and in the general services for diagnosis and treatment.	• This includes patients who often receive complete assistance with, for example, washing, dressing and eating. The administration of more technical care is limited. • Characteristic of the services neonatology, geriatrics, paediatrics and palliative care units. • This type of care is mainly provided to young children and seniors.

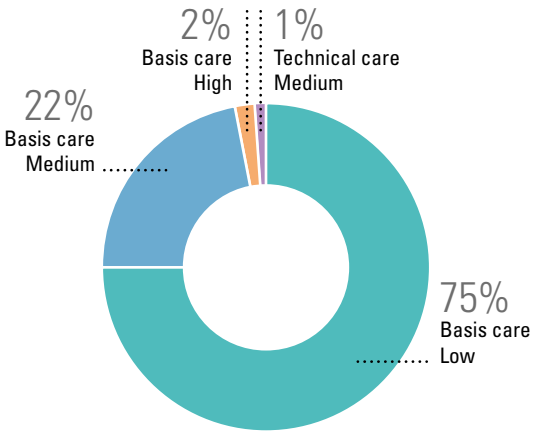
TECHNICAL CARE

MEDIUM AND HIGH
• This includes patients who are distinguished by the high number of technical care they receive. These patients receive a lot of medication, can be ventilated and are closely followed up by a nurse. Those patients receive often a lot of basis care too. • Characteristic of intensive care departments and burn centres.

8 Source numerical data: MHD 2017

3.1. Nursing care within a maternity department and within geriatric services

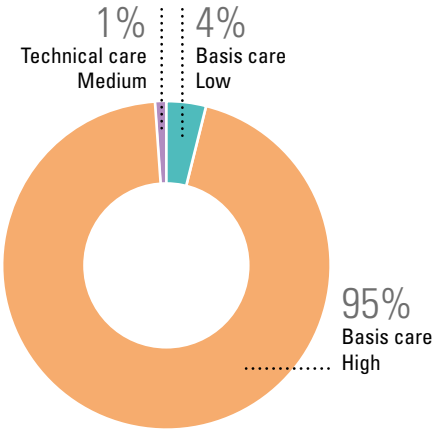
NURSING CARE FOR **MOTHERS** WITHIN A **MATERNITY DEPARTMENT** (59%)



Most characteristic nursing actions:

- Specific care post-partum (e.g. monitoring of uterine height, maternal flow, lactation, etc.)
- Structured specific education (e.g. Education on breastfeeding, giving a baby bath, etc.)
- Wound care on a suture (e.g. Episiotomy)

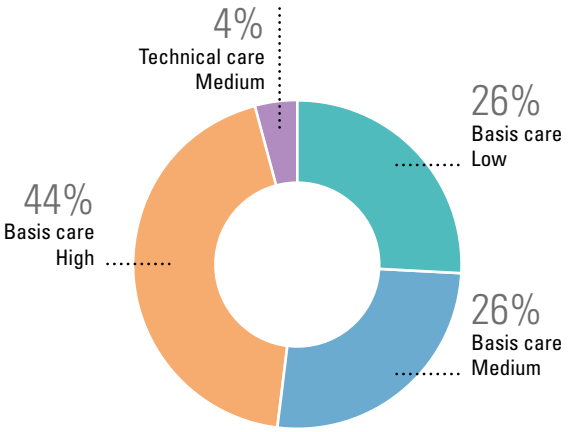
NURSING CARE FOR **BABIES** WITHIN A **MATERNITY DEPARTMENT** (41%)



Most characteristic nursing actions:

- Care relating to urinary and faecal excretion
- Care relating to mobility: assistance in installing/moving patients
- Follow-up of nutritional and moisture balance
- Wound care on a suture or insertion point (e.g. umbilical stump)
- Skin-to-skin contact

NURSING CARE **WITHIN GERIATRIC SERVICES**:



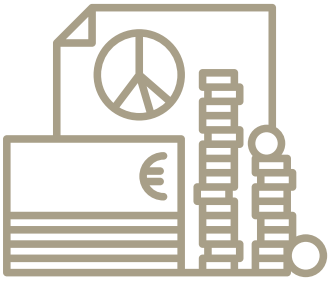
Most characteristic nursing actions:

- Care relating to urinary and faecal excretion
- Care relating to mobility
- Help with eating and/or drinking
- Support in hygienic care Prevention of bedsores

FINANCING OF GENERAL HOSPITALS

HIGHLIGHTS

The **turnover** of the general hospitals amounted to approximately **€18.2 billion** in **2017**.



The **Financial Resources Budget** is allocated partly on the basis of **fixed sums** and partly on the basis of the **justified activity** of each hospital.

The **Financial Resources Budget** consists of

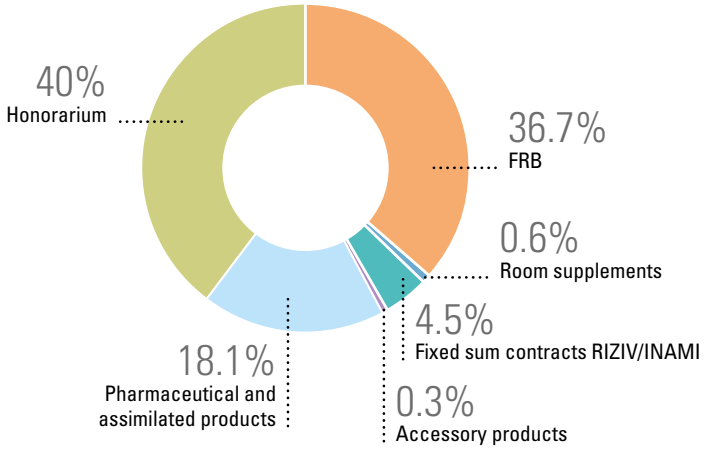
3 main components

- Costs for **infrastructure** and **materials**
- **Operating costs**
- Costs for **regularisation** of previously allocated financial resources budgets

1. Financial Resources

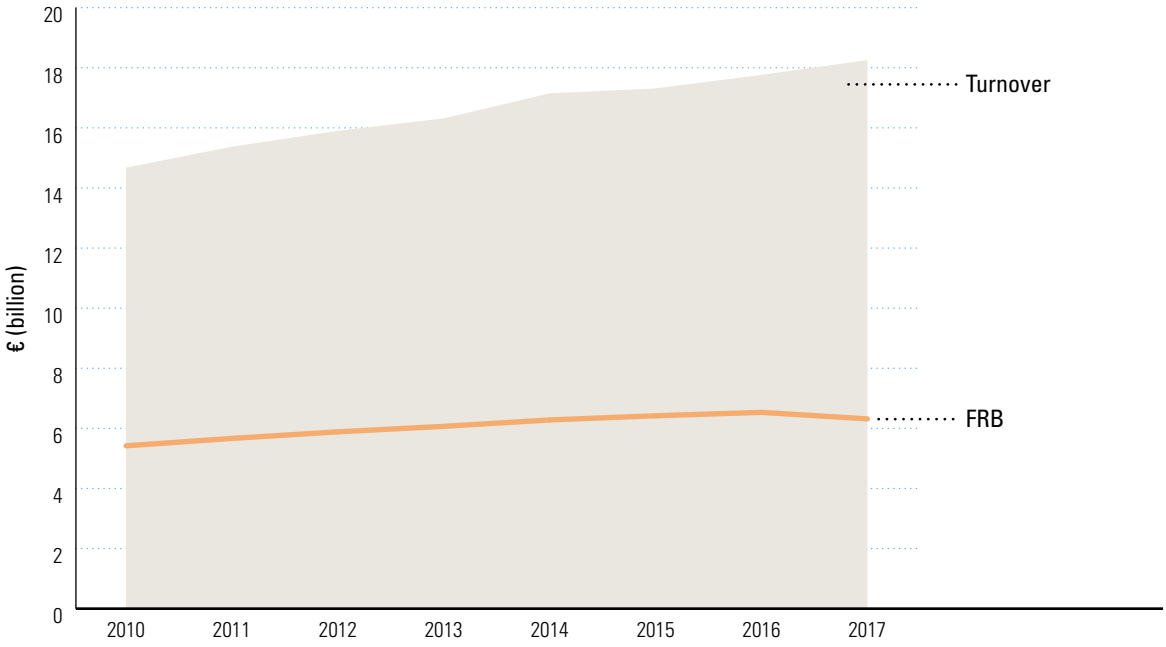
The general hospital sector represents EUR 18,2 billion in total turnover in 2017.[9]

BREAKDOWN OF TURN-OVER (2017)



The main sources of financing for hospitals are the Financial Resources Budget (FRB) fees of doctors, dentists and certain categories of medical and paramedical staff, INAMI/RIZIV fixed sums, pharmaceutical and similar products, room supplements and the patient share.

EVOLUTION OF TURNOVER AND BMF[10]



9 Source: Finhosta

10 In order to demonstrate the evolution, categories A1 and A3 were included.

2. The financial resources budget

The financing of a hospital through the **financial resources budget** comes from the individual distribution among all hospitals of the overall hospital budget[11]. In July 2019, this overall budget was set at a maximum amount of € 6,251,249,619 for general hospitals[12].

The FRB has three main components: an infrastructure and materials budget (PART A), an operating costs budget (PART B) and a budget for the regularisation of post-financing of the various parts of the FRB (PART C). Hospital financing is mainly based on lump sums, real costs or fee-for-service services.

THE SUBDIVISIONS OF THE BUDGET FINANCIAL RESOURCES	% (july 2019)
A: INFRASTRUCTURE & EQUIPMENT	
A1: Investment expenses	
A2: Short-term credit charges	0.56%
A3: Investment expenses NMR - Radiotherapy - Petscan	
B: OPERATIONAL COSTS	
B1: Common service charges	23.58%
B2: Hospital service charges	42.87%
B3: Operating costs NMR - Radiotherapy - Petscan	1.02%
B4: Recycling and fixed fees	17.24%
B5: Pharmacy operating costs	1.72%
B6: Employee benefits expenses excluding FRB	1.19%
B7: Costs related to university functions	1.93%
B8: Costs related to the social nature of the patients	0.33%
B9: Social agreements expenses	8.34%
C: CORRECTIONS	
C2: Catch-up amounts	1.37%
C3: Partial recovery of room supplements	-0.16%

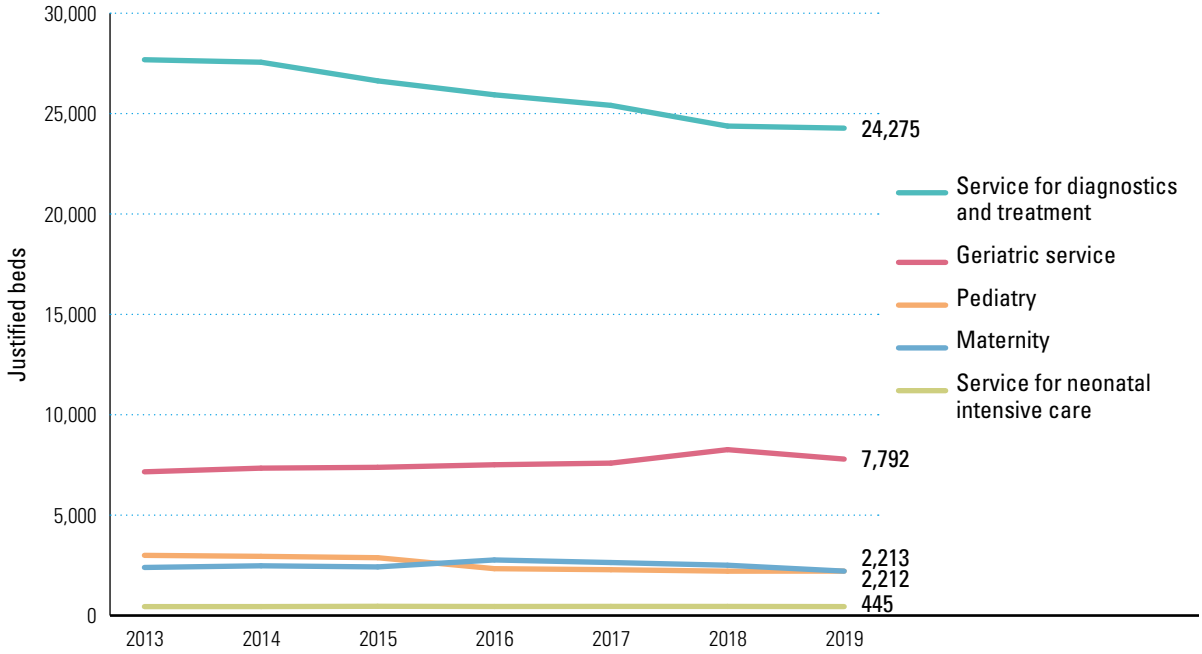
11 The allocation is made on the basis of the procedures laid down in the Royal Decree of 25 April 2002 on the fixing and settlement of the budget for the financial resources of hospitals.

12 We notice that the competence concerning the financing of infrastructure (A1 and A3) has been transferred to the federated entities by the sixth state reform. Therefore the categories A1 and A3 are excluded.

3. Justified hospital beds

For acute hospitals, funding is essentially based on patient-related activity: a "justified activity" is determined, hospital by hospital. The activity of each hospital is therefore defined according to the number and type of admissions for a reference year. Each person admitted is granted a length of stay justified according to their pathology. The total number of justified hospital days is divided by a normative occupancy rate multiplied by 365 to obtain a **justified number of hospital beds**.

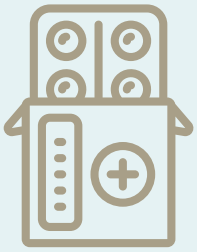
EVOLUTION OF THE NUMBER OF JUSTIFIED BEDS



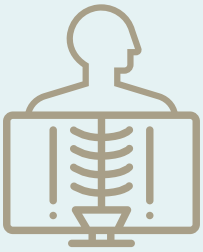
QUALITY

HIGHLIGHTS

In **2017**, it was found that in more than **70%** of the cases, **the guidelines for hand hygiene were complied with**.



To **limit resistance to antibiotics**, **unnecessary use of antibiotics** must be **avoided**.



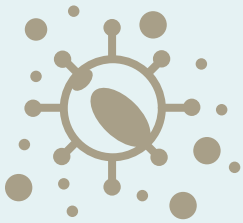
The **«Medical images are not holiday snapshots»** campaign prompts a **decrease** in the number of **CT scans for children and adolescents**.

The first steps are being taken to **reward hospitals** if they achieve positive results in the context of certain indicators via the **Pay for Performance programme**.

The issue of quality of care covers a wide range of elements: the choice of the most appropriate technologies and treatments for the patient, the efficacy of care, an environment that guarantees patient safety, patient satisfaction, the integrated nature of interventions for better continuity... To act on these different levels, various initiatives are taken by different federal authorities (FPS Public Health, but also INAMI/RIZIV, KCE, Sciensano, Superior Health Council, etc.) or at the level of federated entities (VIP² on the Dutch-speaking side, PAQS on the French-speaking side, etc.), or even within the framework of private initiatives (scientific associations, accreditation bodies, etc.), but also international (OECD, EU, WHO, etc.). These initiatives take various forms: from the development of guidelines to awareness-raising campaigns, laying down measurement indicators and taking measures in the field, benchmarking, peer reviews and financial incentives.

This chapter highlights, by way of example, a number of initiatives that have been taken in recent years to measure and improve the quality of healthcare in Belgium. Other initiatives could also be mentioned in the context of clinical pharmacy in hospitals, newborn care, the use of blood products, the use of psychotropic drugs, transmural care and integrated care, etc.

1. Positive developments in compliance with guidelines for hand hygiene



7.3%
of patients in acute hospitals suffer from a **healthcare-associated infection**

Healthcare-associated infections (infections that occur 48 hours after the day of hospitalisation) are considered a major threat to patient safety. The results of a European study show that in Belgium, at any given time, approximately 7.3% of patients in acute hospitals suffer from a healthcare-associated infection (2017)[13].

According to the World Health Organisation (WHO), good hand hygiene should be promoted as one of the most important interventions to prevent healthcare-associated infections in patients[14]. In recent years, various campaigns have been organised in Belgian hospitals to highlight the importance of hand hygiene and improve the use of alcohol gel for hands. Before and after each campaign, hospitals observed the extent to which health care providers comply with the regulations for clean hands (percentage of hand hygiene compliance)[15].

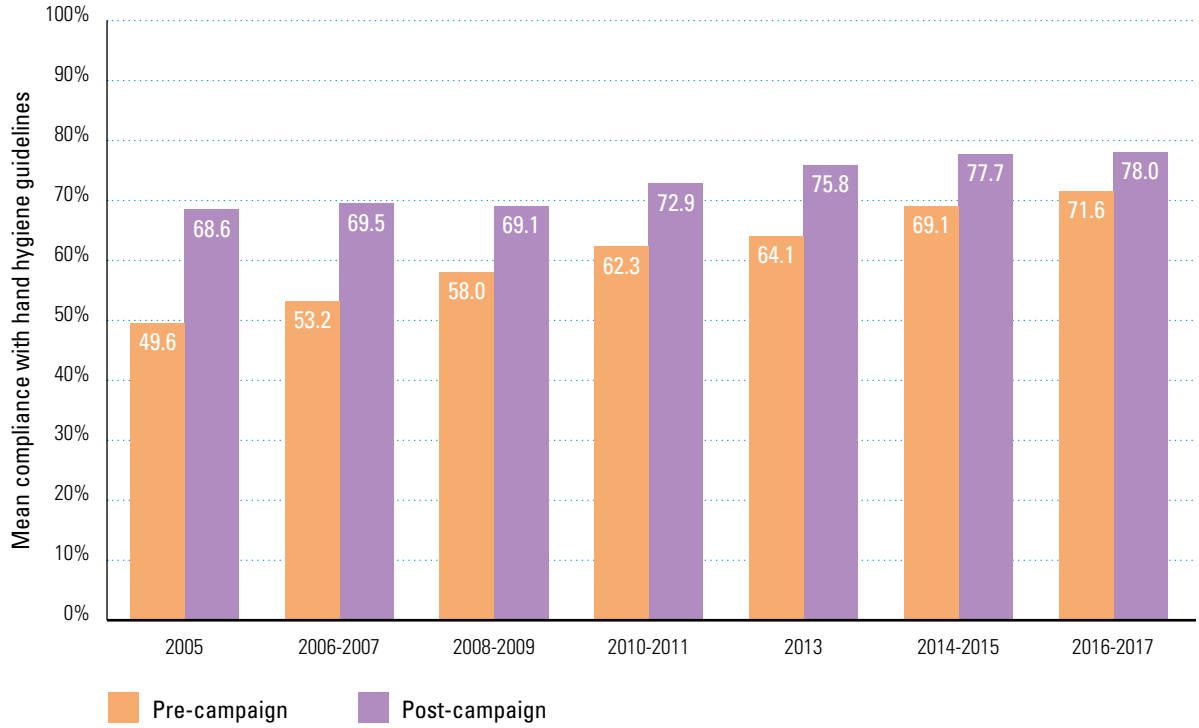
13 Vandael E, Catry B, Latour K. Point Prevalence Study of healthcare-associated infections and antimicrobial use in Belgian acute care hospitals: Results of the ECDC PPS 2017. Brussels, Belgium: Sciensano; 2018. 34p. Report Number: D/2018/14.440/37. Available from: http://www.nsih.be/ecdcpps/download_nl.asp

14 World Health Organisation. (WHO). Antimicrobial resistance: Global report on surveillance. Geneva 2014. Available from: http://apps.who.int/iris/bitstream/10665/112642/1/9789241564748_eng.pdf?ua=1

15 More information on the methodology and results of the hand hygiene campaign can be found in the national report on the NSIH website (http://www.nsih.be/surv_hh/inleiding_nl.asp).

The figure below shows a clear increase over time and after each campaign in the extent to which the guidelines for hand hygiene are adhered to. During the last campaign, hand hygiene compliance (national weighted average) rose from 71.6% pre-campaign (170 participating hospitals) to 78.0% post-campaign (147 participating hospitals). An improvement was observed among all care providers (on average +7.5%) with the best results for nurses.

EVOLUTION IN FOLLOWING THE GUIDELINES ON HAND HYGIENE[16]



2. Inappropriate use of antibiotics as a major cause of antibiotic resistance

> Around 33,000 people
> die every year in Europe
> as a result of **infection** due to
> **antibiotic-resistant bacteria**

Bacteria can become resistant to the effects of antibiotics, meaning that they can no longer be killed by these medicines. This resistance has become a major problem in healthcare. Indeed, around 33,000 people die every year in Europe as a result of infection due to antibiotic-resistant bacteria. In Belgium, there are an estimated 530 deaths every year[17]. The inappropriate use of antibiotics

16 Source: National report 7th hand hygiene campagne – www.nsih.be

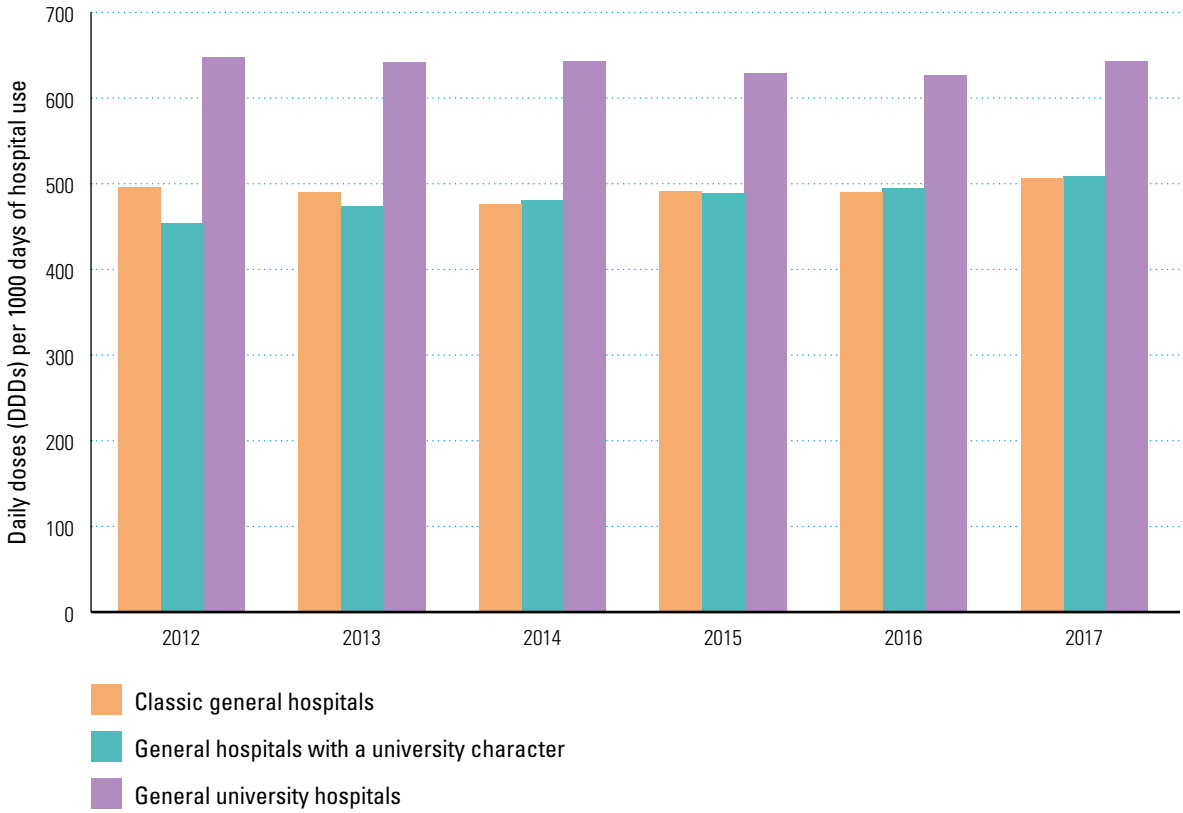
17 Cassini A, Högberg LD, Plachouras D, Quattrocchi A, Hoxha A, Simonsen GS, et al. Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis. Lancet Infect Dis 2019;19(1):56-66.

is a major cause of bacteria developing antibiotic resistance. As such, the use of antibiotics must be properly monitored and, where necessary, adapted[18].

The results of a study on the use of antibiotics in Belgian acute hospitals from 2017 show that an estimated 28.1% of the patients in an acute hospital are treated with at least one antibiotic at any given moment. This figure is highest in general university hospitals (30.8%) and within intensive care (52.7%). This is to be expected given that more patients with more serious problems are in general university hospitals and in intensive care. The prevalence in all participating European hospitals was 30.5% (spread among European countries: 15.9-55.6%)[19].

The figure below shows the median antibiotic consumption per type of hospital for the period 2012-2017. It has been observed that the median antibiotic consumption remains fairly stable over time, but there is a large variation between hospitals.[20]

MEDIAN ANTIBIOTIC USE IN ACUTE HOSPITALS
(EXCLUDING DAY HOSPITALISATIONS AND PSYCHIATRIC WARDS),
EXPRESSED IN DAILY DOSES (DDDS) PER 1000 DAYS OF HOSPITAL USE, PER TYPE OF HOSPITAL



In order to limit resistance to antibiotics, unnecessary use of antibiotics must be avoided. If treatment with antibiotics is necessary, it is recommended to use antibiotics within a narrow spectrum, according to the guidelines (only active against a specific group of bacteria). For example, broad-spectrum antibiotics can be stored for complicated cases where narrow-spectrum antibiotics are not sufficient or no longer work. Nevertheless, the use of broad-spectrum antibiotics remains

18 OECD (2018), Stemming the Superbug Tide: Just A Few Dollars More, OECD Publishing, Paris. Available from: https://doi.org/10.1787/9789264307599-en

19 Plachouras D, Karki T, Hansen S, Hopkins S, Lyytikainen O, Moro ML, et al. Antimicrobial use in European acute care hospitals: results from the second point prevalence survey (PPS) of healthcare-associated infections and antimicrobial use, 2016 to 2017. Euro Surveill 2018;23(46). doi: 10.2807/1560-7917.

20 Source: Belgian Hospitals - Surveillance of Antimicrobial Consumption, Sciensano

high (about 30% of total antibiotic use in Belgium, spread between European countries): 16-62%[21]). The large variation in antibiotic use between acute hospitals and the high consumption of broad spectrum antibiotics are attention points for improvement. The KCE wrote some recommendations concerning a more effective antibiotic policy in Belgium. More information can be found on their website.

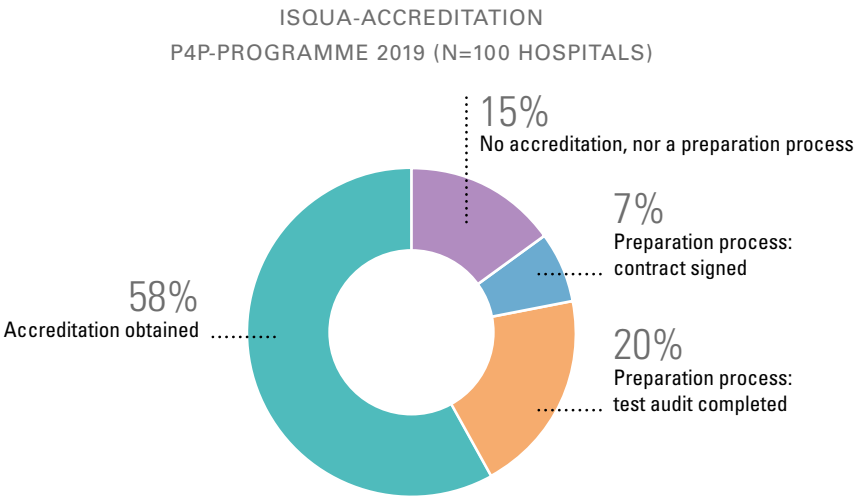
3. Pay for performance

The introduction of a **Pay for Performance programme** (P4P)[22] is a clear priority in the context of the reform of hospital financing. "Pay for Performance" is a system that rewards hospitals financially if they achieve good results on a selected set of indicators. These indicators are a yardstick for the organisation and processes within the hospital, the care provided and the health outcomes of the treated patients.

In 2018 and 2019, the first P4P indicator sets for Belgian hospitals were developed, consisting of a range of hospital-wide and pathology-specific indicators. These can be seen as a first step towards a fully-fledged P4P programme. A modest start-up, pragmatism, availability of national data and short-term feasibility are four elements that played a role in selecting the indicators. The set of indicators will be optimized in the coming years.

A number of indicators are highlighted below. More detailed information about the 'Pay for performance programme' and the full set of indicators can be found here.

ISQUA ACCREDITATION



In a hospital-wide ISQUA (International Society for Quality in Health Care)[23] accreditation, the actual quality of care is checked and tested against defined high standards and norms. The accreditation of health care institutions is a mostly voluntary and external evaluation method that refers

21 The use of antibiotics, in Belgium, is observed via national surveillance (BeH-SAC: Belgian Hospitals – Surveillance of Antimicrobial Consumption). More information about this surveillance can be found via http://www.nsih.be/surv_gm/introduction_en.asp and www.healthstat.be.

22 Annemans L, Boeckxstaens P, Borgermans L, De Smedt D, Duchesnes C, Heyrman J, Remmen R, Sermeus W, Van Den Broecke C, Van Herck P, Vanmeerbeek M, Willems S, De Gauquier K. Voordelen, nadelen en haalbaarheid van de introductie van "Pay for Quality" programma's in België. Health Services Research (HSR). Brussels: Federal Knowledge Centre for Health Care (KCE). 2009. KCE Reports vol 118A. D/2009/10.273/50.

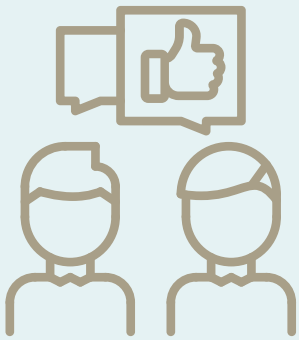
23 http://isqua.org/docs/accreditation/cf-001-iap-application-form.docx

to a professional process by which a health care institution demonstrates that it meets, in its operation and practices, a set of formalised requirements presented in the form of a manual, i.e. "the reference" recommended by an accreditation body. The accreditation body and its manual are validated by an independent external body, ISQua, which is internationally recognised by hospital professionals. It is a major exercise that has an impact on all departments and all levels in the hospital. Healthcare institutions make great efforts to obtain an ISQUA accreditation quality certificate. Hospitals that have already obtained the certificate as well as those that are still in a preparatory phase are financially rewarded through the P4P programme.

PATIENT EXPERIENCE

Measuring patients' experience is important. Patients should be involved as active partners to improve care. Healthcare institutions can use patients' feedback to improve the quality of their care.

The 2019 P4P programme evaluates the patient's experiences in two ways: the patient's level of satisfaction with the hospital stay and the extent to which the patient would recommend the hospital to family and friends.



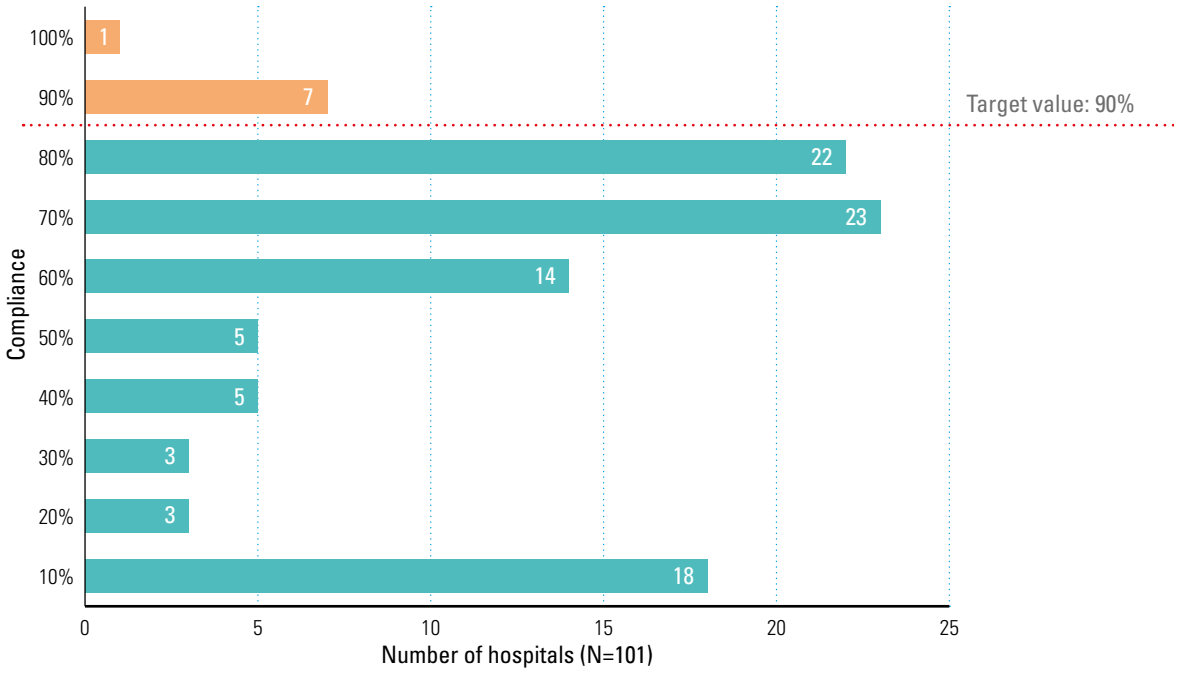
94.2%
of all patients surveyed were **satisfied** with the stay and **recommends the hospital** to family and friends
(score ≥ 80%)

ANTIBIOTIC PROPHYLAXIS DURING IMPLANTATION OF A (PERMANENT) PACEMAKER

Antibiotic policy and infection control are fundamental pillars for the quality of care and also contribute to patient safety. The policy paper of the BAPCOC (Belgian Antibiotic Policy Coordination Committee) for 2014-2019 underlines the importance of continuous monitoring of some quality indicators in hospitals, including the indicator "Choice of the antibiotic in the context of surgical prophylaxis". This is important for optimizing the use of antibiotics to avoid the risk of infection in individual patients and reduce the risk of bacterial resistance for the general population. This indicator measures whether the **selection** and **dose** of the antibiotic is in accordance with the antibiotics guidelines for fitting a (permanent) pacemaker[24]; the time and duration of the prophylaxis are not taken into account. The preferred antibiotic is cefazoline (min. 1 gram to max. 2 grams per day) and an alternative is cefuroxime (1.5 grams per day).

For an average of 53.7% of hospital stays in 2012, 2013 and 2014 with a fitting of a (permanent) pacemaker, antibiotic prophylaxis took place in accordance with the antibiotics guidelines. We see a large variation between hospitals, with 8% of the hospitals achieving the target value of an average of 90%.

COMPLIANCE WITH ANTIBIOTIC GUIDELINES
DURING IMPLANTATION OF A PERMANENT PACEMAKER



24 Sanford, J.P., Gilbert, D.N., Chambers, H.F., Eliopoulos, G.M., Moellering, R.C., Saag, M.S. The Sanford guide to antimicrobial therapy 2012-2013 (Belgian/Luxembourg edition), 189-197.)

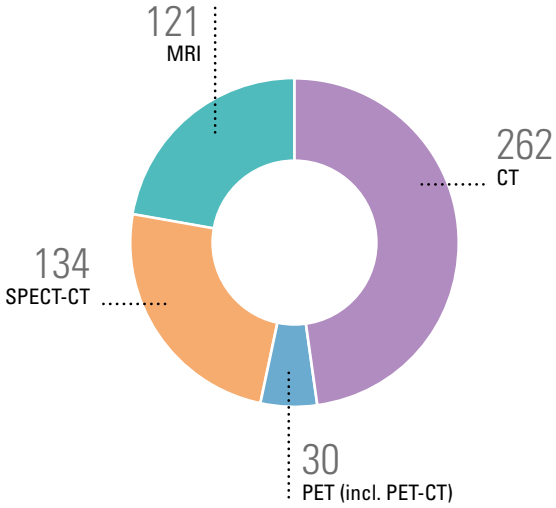
4. Medical imaging

'Medical imaging' is a collective term for various techniques for obtaining an image of the body. In hospitals, medical imaging is used to diagnose, detect and monitor diseases at an early stage, support medical interventions and evaluate treatments.

The following heavy-duty medical imaging devices can be distinguished:

- **CT:** In computer tomography, X-rays are used to make cross-sections of the inner body. As such, the patient is 'scanned', as it were. This device is therefore colloquially referred to as 'the scanner'.
- **MRI:** Magnetic Resonance Imaging uses a strong magnetic field and radio waves to image the inner body.
- **SPECT-CT:** a radioactive product that is injected is used here. The radiation is then measured with detectors that rotate around the patient. The measurements are then added to CT images in order to clearly see where the injected product is distributed.
- **PET** (including PET-CT and PET-MRI): As with SPECT-CT, a radioactive product is used. The radioactive product used in PET has the unique characteristic that it can always be measured in two directions. By combining the information from 2 measurements, doctors obtain a highly accurate picture of the distribution of the injected product.

NUMBER OF HEAVY MEDICAL IMAGING DEVICES IN BELGIUM (01/01/2018) [25]

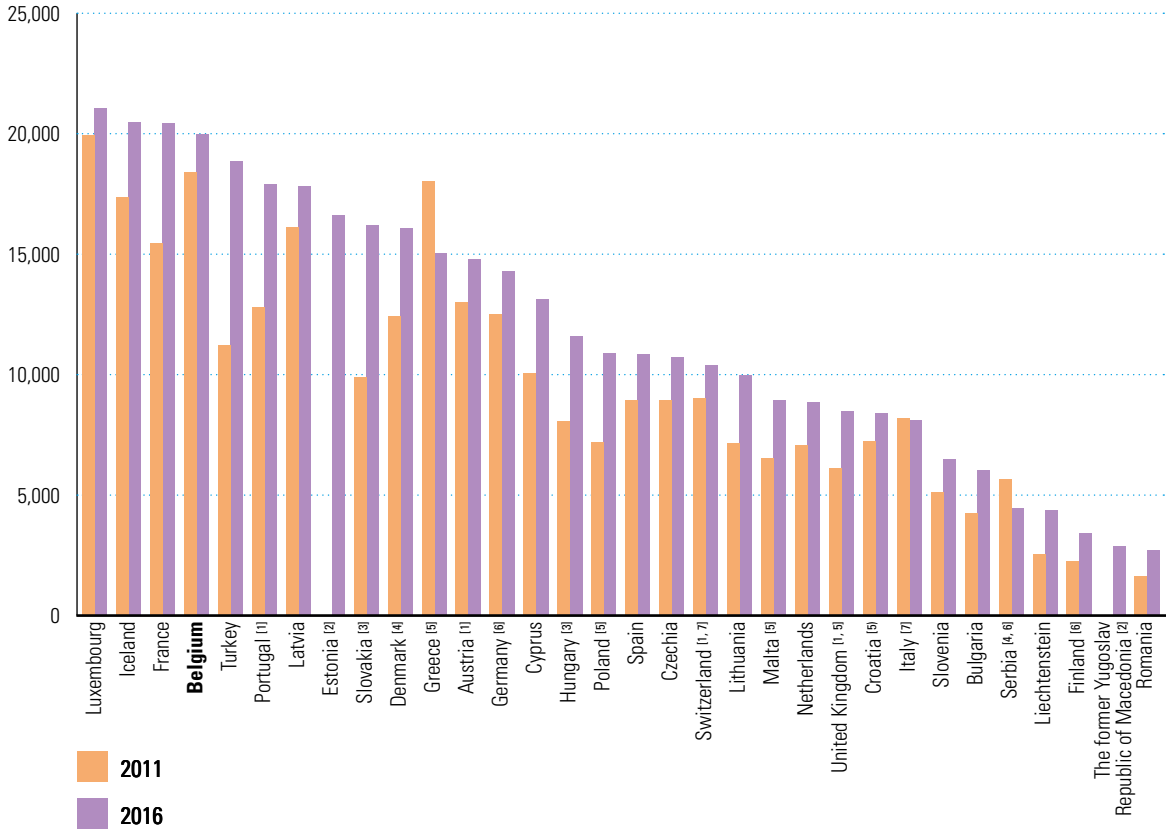


The above techniques all have their strengths and weaknesses. There is therefore no generally applicable technique. What is a good imaging technique for one disorder is not always the same for another

25 These are the devices which have the necessary accreditations and permissions and which were reported to the FPS Public health. Source: National registry for heavy, medical equipment.

Medical imaging has played a major role in the enormous progress made in modern medicine and plays an every greater role in our healthcare. However, there is also a downside to the frequent use of techniques such as CT scans, namely the increased exposure to ionising radiation. In comparison with other countries, many CT scans are performed in our country.

NUMBER OF CT-SCANS IN EUROPE PER 100,000 INHABITANTS IN 2011 AND 2016

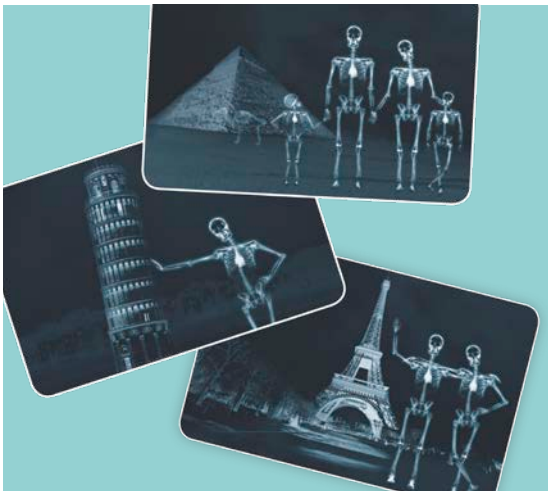


Note: Ireland and Sweden, not available.
[1] Hospitals only. [2] 2011: not available. [3] 2011: definition differs. [4] Break in series. [5] 2012 instead of 2011. [6] 2015 instead of 2016. [7] 2013 instead of 2011.
Source: Eurostat (online data code: hlth_co_exam)

MEDICAL IMAGES ARE NOT HOLIDAY SNAPSHOTS

To inform the sector and the public about the importance of the correct use of medical imaging, the FPS Public Health launched an annual campaign between 2012 and 2016, called "Medische beelden zijn geen vakantiekiekjes" (Medical images are not holiday snapshots).

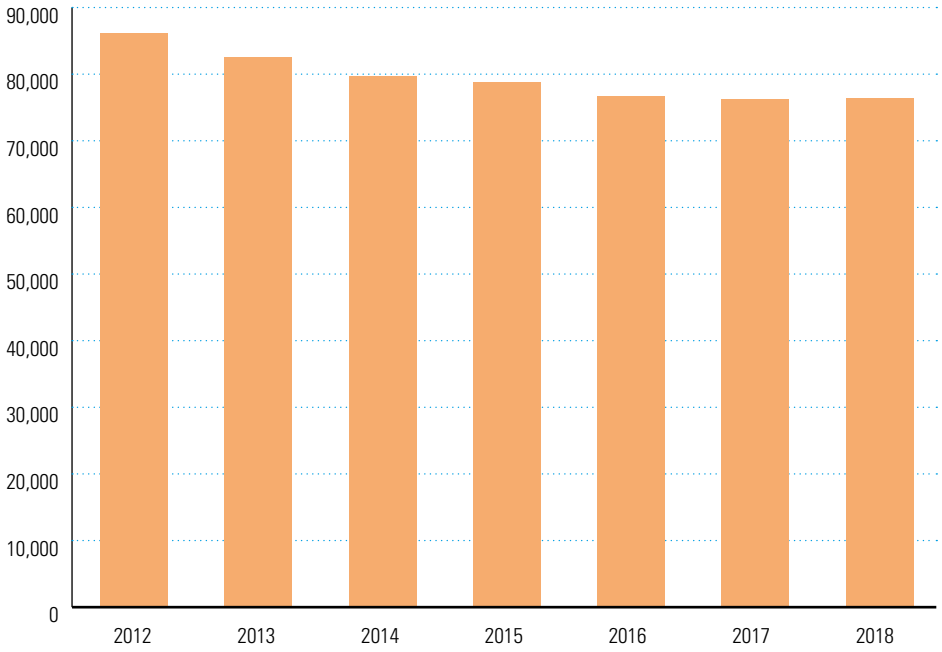
The campaigns had a wide reach, so citizens were better informed and inclined to ask questions to their doctor more rapidly[26]. This was reflected, among other things, in a decrease in the number of CT scans among children and young people under the age of 20.



www.zuinigmetstraling.be

26 For more information about the results of the inquiry, take a look at: http://www.becaremagazine.be/nl_NL/2479/39752/belgian_medical_imaging_platform_belmip.html

NUMBER OF CT SCANS ON CHILDREN AND YOUNG PEOPLE (0-20 YEARS OLD)[27]



Overall, however, the use of CT scans in our country continues to increase. The large number of CT scans means that the Belgian public is exposed to more radiation. Since MRI scans (as opposed to CT scans) do not involve a radiation risk and can be an alternative to CT scans for certain indications, the FPS Public Health collaborates with the INAMI/RIZIV and experts from the sector in order to obtain a shift from using CT scans to MRI scans. In this regard, it is important that the offering is well attuned to the needs.

To determine the supply of medical imaging equipment objectively, the ratio of the number of equipment per 100,000 inhabitants per region was calculated. In order to bring this ratio more into line with the different parts of the country, the number of MRI devices was increased in 2014 by 12 devices (protocol agreement of 24 February 2014). Following an evaluation of this expansion, it was decided in 2018 to expand the number of MRI devices again, this time by 18 devices (follow-up protocol of 5 November 2018). These new devices will be operational in hospitals within two to three years.

27 Source: facturation data from RIZIV/INAMI.

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