

Economic and societal impact study of CHU Brussels



CHU Brugmann, CHU Saint-Pierre, Queen Fabiola Children's University Hospital and the Jules Bordet Institute

Report carried out in partnership with BECI Brussels Chamber of Commerce and Industry and the Brussels Business Association

Economic and societal impact study of CHU Brussels







Centre Hospitalier Universitaire de Bruxelles - Universitair Ziekenhuis Centrum Brussel Siège social - Maatschappelijke Zetel : Hôtel de Ville - Stadhuis Grand Place - Grote Markt - Bruxelles 1000 Brussel Siège d'exploitation - Exploitation Zetel : rue Dejonckerstraat 46 - Bruxelles 1060 Brussel N° d'entreprise - Bedrijfsnummer : BE 0507.833.897

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Editorial

On the importance of hospitals in Brussels

"Everybody has someone in their family, their friends or acquaintances who works in or is in direct contact with the hospital sector". This statement may seem somewhat presumptuous. But it does reflect the economic weight of the sector, all too often underestimated.

Such a reality is reflected more obviously in Brussels. Its capital status and central position in the country have earned it a concentration of a substantial number of hospitals, several of which are university hospitals, and the generation of an inflow of patients from other regions (around 30%).

Studying its economic and societal impact, CHU Brussels, consisting of CHU Brugmann, CHU Saint-Pierre, the Queen Fabiola University Children's Hospital and the Jules Bordet Institute, sheds some light on its role in and for Brussels, both as an economic partner, public employer and patient care provider in the context of its duties to the population.

The contribution from BECI, the Brussels Chamber of Commerce and Industry and Business Association, highlights the vigour of the hospital sector and its consequent impact on employment and economic activity. It discusses in particular the direct and indirect benefits on the well-being of suppliers as well as on investment generated, especially in the construction sector.

This study should also provide food for thought on the Brussels economy of tomorrow, by presenting a series of goods and services related to health care. In the wake of this non-transportable sector opportunities for research, innovation and production are emerging. They should be seized with both hands.

We hope your enthusiastic perusal of the results of this economic and societal impact study on CHU Brussels will prove an instructive experience.

Michel Govaerts, Deputy Administrator, CHU Brussels

Olivier Willocx, Deputy Administrator, BECI



Foreword

The hospital sector presents itself today as a key sector. Although complex and confronted by numerous human, political, technical and financial challenges, it is often reduced to its function of care provider to the population.

Beyond this basic role, a hospital may also be considered as a research centre, an employer, a landowner, or a major client of the service sector. This multiplicity makes it a key player in the socio-economic development of a region.

But if its societal impact is well-known, as well as its correlation with jobs generated, less well-known is its economic role, both direct and indirect, in the Brussels Region.

The aim of this study is to measure the economic and social benefits of the University Hospital Centre of Brussels and the four public university hospitals it comprises in the Brussels-Capital Region.

This study was carried out as a collaboration between the University Hospital Centre of Brussels (CHU Brussels) and the Chamber of Commerce and Industry and Business Association of Brussels (BECI).



Overview of CHU Brussels and key figures

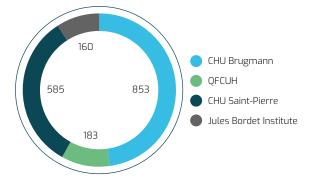
The University Hospital Centre of Brussels (CHU Brussels) was established in 2015. It coordinates care provision and pools a range of support services for the **four public university hospitals** associated with the IRIS network: CHU Saint-Pierre, CHU Brugmann, the Jules Bordet Institute and the Queen Fabiola Children's University Hospital (QFCUH). CHU Brussels also works in close liaison with a range of privileged partners such as the the City of Brussels, the Brussels CPAS (Public Centre for Social Welfare) and the VUB/ULB (Free University of Brussels). These hospital institutions are spread across **seven hospital sites, of which six are located on City of Brussels territory,** and the seventh in the Schaerbeek district.

These seven locations constitute around **371,761 m² of build**ings spread over more than **26 hectares.**



With **1,781 authorised beds,** CHU Brussels accounts for **21 %** of the beds in the **22 hospital institutions in the Brussels-**Capital Region.

Number of authorised beds in CHU Brussels on 31/12/2016



Beyond its primary role of providing accessible quality care to everybody, CHU Brussels has some other key roles:





With 1,781 authorised beds, CHU Brussels accounts for 21 % of the beds in the 22 hospital institutions in the Brussels-Capital Region.

Train future healthcare professionals and ensure continuous training of its staff

> **Care** for patients, at every stage of their lives, regardless of their socio-economic or philosophical affiliation

Research, innovate and stimulate diagnostic and therapeutic methodes

Play an **economic and societal role** both as a business and as a public employer

Perform roles of general economic benefit by providing care to the most disadvantaged and by working closely with local

CPAS

RESEARCH, A FUNDAMENTAL ROLE OF CHU BRUSSELS

Around one in three cases of breast cancer will lead to metastases despite treatment administered during the early stages of the illness. BIG-AURORA is an international research project coordinated by the Jules Bordet Institute, which seeks to understand why breast cancer generates metastases and why certain patients respond very well to standard treatment and others do not. It will enable researchers to discover new treatment targets that are better adapted to men and expectant women suffering from metastatic illnesses.

Key figures of 2016



HOSPITAL

- 4 public university hospitals
- 7 sites
- 371,761m² of buildings spread over more than
 26 hectares



ECONOMIC DATA

- **€834,349,027** in revenues
- **€489,956,948** in staff costs (**59%** of all costs)
- **€652,257,366** of cumulative investments between 2007-2016



HUMAN RESOURCES

- 6,778 salaried staff
- **5,550** FTE (full time equivalent) staff
- 1,237 independent,
 96 Interims and 425 secondments
- **55%** of salaried staff resident in the Brussels region
- **75%** of female staff salaried

CARE

- **1,781 lits** authorised beds
- 63,580 admissions¹
- 464,287 patients of whom 77% reside in the Brussels Region
- 193,878 emergencies
- **36,541** surgical interventions
- 6,593 deliveries



TEACHING

- **4,686** future professionals in training
- **77** training supervisors for trainee physicians
- Around 776,000
 hours of staff
 training at the
 employer's expense

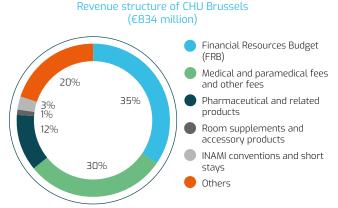


RESEARCH

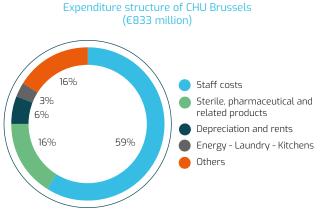
 615 scientific publications

 434 clinical research projects under way

CHU Brussels revenue amounts to €834 million for 2016 ².



Expenditure of CHU Brussels amounts to €833 million in 2016³.



¹ Recorded admissions include all days charged as admissions as defined by INAMI (National Sickness and Invalidity Insurance Institute), for both conventional hospitalisation and day patients, all medical disciplines combined.

² The item "Other receipts" covers mainly those arising from previous years, grants and subsidies, re-invoicing of patients between hospitals, clinical research receipts and debt recoveries. ³ The item « Other expenditure » mainly covers financial charges, maintenance contracts, minor equipment purchases, insurance contracts and other administrative costs.



Overview of BECI

BECI (Brussels Enterprises Commerce & Industry) emerged from the partnership between the Chamber of Commerce and Industry and the Brussels Business Association. BECI accounts for two thirds of all jobs in Brussels and more than 35,000 companies.

A private non-profit organisation, financed and run by its members, BECI is an inter-professional bilingual and neutral organisation that brings together the various sectoral federations, independent individuals, and organisations and companies of all sizes.

BECI's objective is to promote economic activity and socio-economic balance in the Brussels Region, through a number of services and activities aimed at small, medium or large companies.

As a social partner with a presence on numerous committees and commissions both public and private, BECI participates in sectoral negotiations, and represents and supports the interests of Brussels companies in their relations with the local, federal and international authorities, always doing so with a deep concern for the maintenance of social balance.

With the support of its Knowledge Centre BECI examines questions related to the economy, employment, education, transport, the environment, taxation, city planning and land-use planning. The role of the Centre is to produce studies and position papers. Its objective is to provide a solid strategic vision for supporting a resilient economy that is well integrated into the urban space. It is in this context that BECI participated in the carrying out of this study.



BECI aims to provide a solid strategic vision for supporting a resilient economy that is well integrated into the urban space.

General methodology

The aim of this economic and societal impact study is to measure the benefits to the Brussels-Capital Region's economy of the activity generated by CHU Brussels as an employer and, more specifically, by each of the four hospital institutions it comprises, in terms of monetary flows and jobs.

The data shown, unless otherwise stated, apply to the **year 2016**.



The economic and societal impacts are addressed separately in the study:

THE ECONOMIC IMPACT

This is calculated in terms of monetary flows based on two elements:

- Direct impact or local effect: a measure of the economic benefits generated in the Brussels Region by CHU Brussels and the businesses located on hospital sites, whose existence is directly linked to them (cafeterias, shops etc). For the Brussels hospital sector, these benefits equate mainly to salaries, purchases and investments;
- Induced impact or ripple effect: an estimate of the monetary flows and jobs that are cascaded down from CHU Brussels into the local Brussels economy, with a multiplier effect, in the form of a virtuous spiral.

MULTIPLIER COEFFICIENTS OF THE HOSPITAL SECTOR

Multiplier coefficients enable us to calculate the impact of final demand on production. They can be applied, in other words, to an increase in demand for healthcare, such as an increase in the number of patients, possibly correlated to demographic changes in the Brussels Region (population growth and ageing).

The calculations are based on coefficients produced by the Planning Bureau in 2015 on the basis of data from 2010, as part of an inter-regional and sectoral approach (Hospital activity - code NACE 86 A).

In this case these coefficients enable us to assess the direct and indirect benefits on revenues and employment in the Brussels Region, cascading out of the activity produced by the supply chain, to respond to the increase in demand:

 Multiplier coefficient for revenue: the intraregional multiplier coefficient for the Brussels Region which is specific to the hospital sector is 0.71.

One million Euros of revenue generated by the hospital sector will produce an injection of 710,000 Euros into the Brussels economy.

• Multiplier coefficient for jobs: the coefficient applied is 13.1 Full Time Equivalent (FTE) jobs for one million Euros of final demand for domestic production. This means that an investment of one million Euros in the hospital sector generates on average, directly within the sector, 9.9 FTE and also generates indirectly, in the supply chain, 3.2 FTE.

One FTE at CHU therefore indirectly generates 0.33 FTE in the supply chain

THE SOCIETAL IMPACT

This is assessed with a more qualitative approach, which enables the following elements to be appreciated:

- The volume and type of jobs created by CHU Brussels hospitals and by the businesses located on its hospital sites, within the economic fabric of Brussels;
- The attractiveness of CHU Brussels to patients residing in the Brussels Region but also in other regions, not to mention other countries;
- Services of general economic interest performed by public hospitals in Brussels.

SCOPE OF THE STUDY

The study covers the economic and societal impact generated by the activities of the four public university hospitals comprising CHU Brussels, and by those of the legal entity of CHU Brussels for shared support services (in2016: legal and human resources departments).

Five "employers" (distinct legal entities) are thus involved:

- 1. CHU Brugmann;
- 2. Queen Fabiola Children's University Hospital (QFCUH);
- 3. CHU Saint-Pierre;
- 4. Jules Bordet Institute;
- 5. CHU Brussels as the coordinating structure⁴.

Included in "CHU Brussels staff" are contractual or statutory staff paid directly by one of these five employers ("salaried staff"), staff placed at the disposal of the employer by another employer (secondments), independent (mainly paramedics and physicians) and Interims. Students (nurses, physicians, paramedics etc.) are not included, with the exception of candidate specialist physicians in training – also called "post graduates" (PG) - who are paid and accounted for as salaried staff.

The study addresses the economic and societal impact of CHU Brussels in the three Regions of Belgium (the Brussels-Capital Region, the Flemish Region, and the Walloon Region), with a more specific focus on the Brussels Region.

LIMITS OF THE STUDY

The study assigns no value to the indirect economic impact of CHU Brussels such as the economic benefits (hotel expenses, various purchases etc.) generated by patients, students in training and participants in any events organised by the CHU who do not reside in the Brussels Region. Such an approach has not been adopted. This first study focuses on estimating, in terms of activity, the attractiveness of CHU Brussels to patients and staff not resident in the Brussels Region⁵.

⁴ Taking into account the low economic and societal impact of CHU Brussels as a coordinating structure, only the data and results of each of the four hospitals are detailed in the last four sections of the report. Data on the coordinating structure is recorded in these results, at the start of the report, for CHU Brussels as a whole.

⁵ Other similar studies carried out in French regions have estimated this indirect economic impact to be less than 2% of the direct economic impact, or a marginal indirect impact compared to direct impact. This concerns, particularly, the Economic and Societal impact Study of CHU Limoges in the Limoges Region (2014) and the Economic Impact Studies of the Grand Ouest CHU and CHR (2014). The following expenditure and receipts items have been extrapolated, wholly or partially, on the basis of objective data:

- **Training:** the amount of training expenditure includes only the training costs directly reimbursed by the employer. Training costs, conference participation and other amounts spent on training by medical professionals have not been estimated and so are not accounted for.
- Aggregate payroll of FTEs employed by businesses/ non-profit organisations located on hospital sites; we have obtained, from the majority of businesses and non-profit organisations located on hospital sites and paying staff, the number of FTE and people remunerated up to 31/12/2016. We have estimated the corresponding aggregate payroll by applying the average CHU Brugmann staff cost by the employee profile in the business/ non-profit organisation.
- Benefits for the Brussels Region: most of these are estimates based on the application of appropriate ratios. Apart from the above-mentioned multipliers used to estimate the induced impact, some ratios have been applied to identify the direct economic benefits of CHU Brussels and the businesses and non-profit organisations located on its sites. In terms of the aggregate payroll, for example, it is the known rate for each member of salaried staff residing in the Brussels Region that has been applied. For general purchases the ratio applied to the five entities is the rate for suppliers of general purchases

to CHU Brugmann whose registered offices are in the Brussels Region. For investments we have applied the rate calculated for each entity in the "top 100 suppliers⁶" whose registered offices are in the Brussels Region. For training, we have separated the PG data - to which we have applied the rate of residence in the Brussels Region for salaried staff of the hospital concerned - from the other data (other training expenditure). For this, the rate for CHU Brugmann service providers (all services included: accounts 611 to 616) whose registered offices are in the Brussels Region has been applied to all of the data concerned.

As the data used has been rounded, some graphs display a total of 99% or 101%.

⁶ This mainly concerns, for each entity, the 100 suppliers with the highest total orders recorded in 2016 regarding investments (acquisition values).



Economic and societal mpact of CHU Brussels

Economic impact of CHU Brussels

Direct economic impact of CHU Brussels

The direct economic impact is the result of expenditure by CHU Brussels and by the businesses located on its sites: aggregate payroll, purchases and investments.

CHU BRUSSELS EXPENDITURE

JOBS AND AGGREGATE PAYROLL

Employing 8,536 people, CHU Brussels is the largest hospital employer in the Brussels Region (cf infra).

These jobs consist of 6,778 salaried staff (5,550 FTE), 425 secondments (330 FTE), 96 Interims (107 FTE) and 1,237 independent healthcare professionals⁷, principally paramedics and physicians.

Total staff costs amount to around 490 million Euros⁸. Salary costs account for 59% of CHU's total costs (833 million Euros).

Around 55% of CHU Brussels staff (4,672 people⁹) are resident in the Brussels Region. Based on these rates, the benefits for the Brussels area in terms of staffing costs are estimated as being close to 269 million Euros¹⁰, through personal income tax, savings, and household consumption.

- ⁷ These independents are paid per service provided; it is not therefore possible to estimate the FTE equivalents
- ⁸ Staff costs include independents' fees

¹⁰ 55% x €490 million (total staff costs of CHU Brussels).

⁹ Rate of 55% of salaried staff resident in the Brussels Region applied to members of staff as a whole (salaried, Interims, secondments and

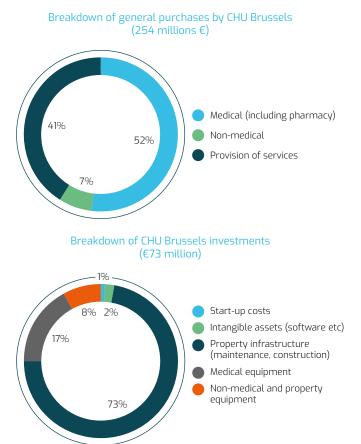
PURCHASES AND INVESTMENTS

In 2016 CHU Brussels made more than &254 million of general purchases and close to &73 million of investments. In ten years (from 2007 to 2016) CHU Brussels has invested more than &652 million¹¹.

The Brussels Region is the biggest beneficiary of these purchases and investments. The impact on the Brussels Region is estimated to be:

- 36% for investments, or around €26 million of investments (around 1,000 suppliers) in 2016 and around €200 million in ten years;
- 49 % for general purchases, or around **€124 million of general purchases** from suppliers with registered offices in the Brussels Region.

€26 million of investments (around 1,000 suppliers) in 2016 and around €200 million in ten years in the Brussels Region



¹¹ Acquisition values of investments



PROFESSIONAL TRAINING COSTS

In 2016 CHU Brussels funded, for around €16 million¹², some 184,000 hours of training for 5,602 salaried staff, and around 592,000 hours of training for the benefit of 320 candidate specialist physicians (PGs) in training.

Close to €9.5 million have been spent on providers resident in the Brussels Region $^{\rm 13}.$



COSTS OF BUSINESSES LOCATED ON CHU BRUSSELS SITES

The hospitals abound with activities that go beyond their principal roles (care, research and training). Indeed, **several dozen non-profit organisations and related companies** are located on CHU Brussels sites, such as the Francisco Ferrer High School, the Robert Dubois School, the "ONE" (Birth and Children Office), cafeterias, the Belgian Red Cross, a branch of Cuisines Bruxelloises and some retail outlets.

These non-profit organisations and companies account for a significant volume of jobs (284 FTE- **343 people**), amounting to around €18 million. **Their economic impact on the Brussels Region amounts to around €10 million**¹⁴**.**

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€9.5 million have been spent on training

on providers resident in the Brussels Region.

PROFESSIONAL TRAINING – A SERIOUS COMMITMENT

Since 2015 CHU Brugmann's Nursing and Paramedical Department has been systematically training all of its staff members in SBAR standardised methodology, which enables precise, comprehensive and unambiguous communication, guaranteeing continuity of care for patients. The Department was awarded the 2017 Learning Award Prize for this extensive training programme.

¹² These training costs include estimates of salaries paid to candidate specialist physicians in training (PG). The economic impact of companies located on the hospital sites represents about

€10 million for the Brussels Region.

¹⁴ Application to estimated aggregate payroll of the rate for salaried staff resident in the Brussels Region (55%)

¹³ For training, we have separated the data related to PGs from the other data (other training expenditure). For these, the rate for CHU Brugmann service providers (all services combined: accounts 611 to 616) whose registered offices are in the Brussels Region (73%) has been applied to the hospitals as a whole.

DIRECT IMPACT OF CHU BRUSSELS IN TERMS OF MONETARY FLOWS AND JOBS IN THE BRUSSELS REGION: OVERVIEW

Direct impact in terms of monetary flows	All regions combined	Brussels Region
Hospitals	816,709,934	417,810,434
Staff costs ¹⁵	489,956,948	268,169,100
Purchases ¹⁶ (including training courses) and investments	326,752,986	149,641,334
Non-profit organisations/ companies located on the sites (estimated aggregate payroll)	17,919,966	9,920,326
Total	€834,629,900	€427,730,760

Divert import in towns of isks	All regions combined		Brussel	s Region
Direct impact in terms of jobs	NO. OF JOBS	FTE	NO. OF JOBS	FTE
Hospital	8,536	5,987.4	4,672	3,246
Salaried staff	6,778	5,549.8		
Independents	1,237	Not applicable		
Interims/secondments	521	437.6		
Non-profit organisations/ companies on sites	343	284.2	191	158
Total	8,879 people	6,272 ETP	4,863 people	3,404 FTE

¹⁵ Staff costs include certain training costs (e.g. salaries paid to PG).
 ¹⁶ General purchases include other training costs.

Induced impact of CHU Brussels in the Brussels Region (multiplier effect)

Induced impact is based on a projection of monetary flows and jobs that the revenue and jobs generated directly by CHU Brussels will eventually inject into the local economy. Indeed, CHU Brussels' revenue and jobs themselves indirectly engender other revenue and jobs, particularly at suppliers of CHU Brussels but also at these suppliers' suppliers, producing a cascading multiplier effect over time, in the manner of a virtuous spiral.

592.387.809 € of indirect benefits for the Brussels Region

The intraregional multiplier coefficient of monetary flows for the Brussels Region specific to the hospital sector is **0.71**, which means that one million Euros of **revenue** generated by the hospital sector will result over time in an injection of 710,000 Euros into the Brussels economy.

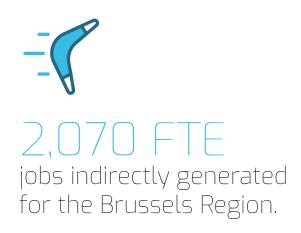
The induced economic impact, in terms of monetary flows, of CHU Brussels in the Brussels Region from CHU Brussels activities is thus:

0.71 x 834,349.027 (CHU Brussels revenue) = €592,387,809 of indirect benefits for the Brussels Region.

One FTE at CHU Brussels indirectly generates in the Brussels Region supply chain: 0.33 FTE

The induced impact in terms of jobs indirectly generated by CHU Brussels in the Brussels Region is therefore:

0.33 x 6,272 FTE (5,987.4 FTE from CHU Brussels¹⁷ + 284.2 FTE salaried staff employed by non-profit organisations/companies on sites, all regions combined) **= 2,070 FTE jobs indirectly generated for the Brussels Region**.



¹⁷ FTEs considered include CHU Brussels salaried staff but also secondments and Interims. Independents are excluded.

Societal impact of CHU Brussels

Impact in terms of jobs

Employing 8,536 people, CHU Brussels is the **largest hospital** employer in the Brussels Region. It is placed in the top ten employers of the Region, all sectors combined¹⁸.

These jobs amount to **6,778 salaried staff (5,550 FTE)**, **425 secondments (330 FTE)**, **96 Interims (107 FTE) and 1,237 independent healthcare professionals¹⁹**, principally paramedics and physicians.



No. 1 employer in the Brussels hospital sector in the Drussels hospital sector in top 10 of Brussels employers all sectors combined

> Hospital sector (public + private) in Belgium = 147,000 FTE

> Hospital sector (public + private) in Brussels = 24,000 FTE

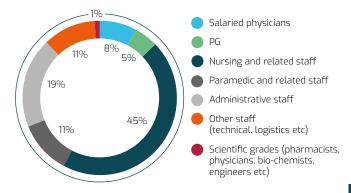
> > Source: FPS Public Health 2014

CHU Brussels employs workers with all levels of qualifications, but predominantly those who have received further and higher education (66%). **Medical professionals, scientific staff** (pharmacists among others), paramedics and nursing staff account for around 70% of salaried staff.

¹⁸ After eliminating the effects on registered offices brought about by certain companies whose registered offices are in the Brussels Region but whose salaried staff work in another region (SNCB, BPost etc).

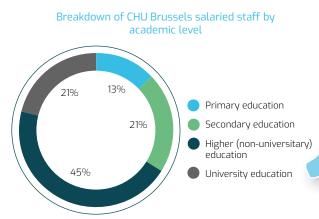
¹⁹ These independents are paid per service. It is therefore not possible to estimate a number of FTE equivalents.

Breakdown of CHU Brussels salaried staff by professional category

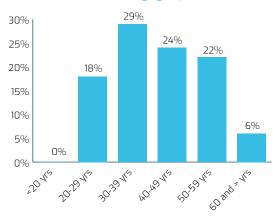


Economic and societal impact study of CHU Brussels

CHU Brussels is a provider of jobs for all academic levels, insofar as it outsources very few. **34% of salaried staff members** (around 2,400 people) are non-graduates. With a sustained and accessible training policy at all qualification levels, CHU Brussels is a key player in the economic and social development of the Region.



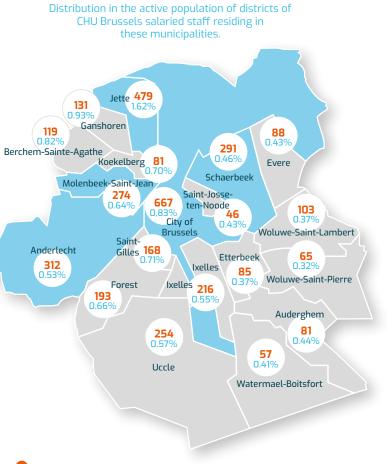




CHU Brussels employs around **4,700 people²⁰ (55% of staff members) who reside in the Brussels Region.** These are the districts of the City of Brussels, Jette, Anderlecht, and Schaerbeek, which house most of CHU Brussels' salaried staff. Other staff members reside in the Flemish Region (26%) and the Walloon Region (19%).

55% of staff members reside in the Brussels Region

²⁰ Rate of 55% of salaried staff resident in the Brussels Region applied to members of staff as a whole (salaried, Interims, secondments and independents).



Number of salaried staff residing in the district

% Members of salaried staff in the district's active population

Sources : total population: FPS Interior (data 2016) – employment rates : BISA (data 2012).

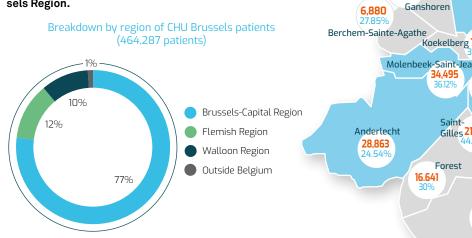


TOP 5

- City of Brussels: 667 salaried staff or 0.83% of the active population
- **2 Jette:** 479 salaried staff or 1.62% of the active population
- **3** Anderlecht: 312 salaried staff or 0.53% of the active population
- **3** Schaerbeek: 291 salaried staff or 0.46% of the active population
- **6** Molenbeek-Saint-Jean: 274 salaried staff or 0.64 % of the active population

Attractiveness effect of CHU Brussels for patients

By virtue of their vocation as public institutions, CHU Brussels hospitals have a strong local footing in terms of the patient care catchment area: of the 464,287 patients treated by CHU Brussels, 77% of patients (357,118) are resident in the Brussels Region.



patients who reside in these districts.

12,742

Evere

4,944

Woluwe-Saint-Lambert

3,235 7.86%

Auderghem 3,581

10.749

Woluwe-Saint-Pierre

53,070

Schaerbeek

Etterbeek

6,003

3,430

Watermael-Boitsfort

Saint-Josse

Ixelles

4.897

ten-Noode 7,619 28.28%

40.37

Jette 23,931

Koekelberg 7,307

87,159

Bruxelles

Ixelles

12,789

Uccle

34,495

Saint-

Forest

30%

Gilles 21,941

36129

7,591

Distribution in the total population of districts of CHU Brussels'

Number of patients who reside in the district % of patients in the district's total population.

Source : FPS Interior (data 2016).



TOP 5²¹

- 1 City of Brussels: 87,159 patients out of 174,272
- **2** Schaerbeek: 53,070 patients out of 131,456
- **3** Molenbeek: 34,495 patients out of 95,514
- 4 Anderlecht: 28,863 patients out of 117,597
- **5** Jette: 23,931 patients out of 51,835 inhabitants:

²¹ NB: a patient who in 2016 was treated in several CHU hospitals will be counted several times. A patient treated in 2016 in the same hospital is only counted once.

of the patients are resident in the Brussels Region

464.287

patients treated at CHU

Brussels

Impact in terms of services of general economic interest

Public hospitals in Brussels take on with commitment and professionalism a range of services of general economic interest, over and above those of healthcare, research and training.

These services need specific organisation and resources in order to respond to multiple challenges: patients in difficult socio-economic circumstances, insurance problems, linguistic and cultural barriers, and continuation of accessibility to healthcare.

The economic impact, in the form of the specific responsibilities of these services, was measured. It includes, particularly:

- Responsibilities inherent in the requirement for non-discriminatory accessibility to healthcare for patients, including the most needy;
- Recovery and waiver of debts induced by the high number of needy patients;
- Additional needs for social workers and social interpreting;
- Data exchange and payment terms with the CPAS (public social welfare centres);
- Geographical coverage.

For CHU Brussels the direct economic impact of these services of general economic interest was estimated in 2016 to be **around €31 million.**



€31 million estimated direct economic impact of services of

general economic interest provided by CHU Brussels



PROVIDING ACCESS TO HEALTHCARE FOR THE MOST DEPRIVED

Job instability and social exclusion increase inequalities in terms of material access to healthcare. As social assistant in obstetrics at CHU Saint-Pierre, I regularly meet mothers-to-be who, despite their entitlement (urgent or mutual assistance), through unawareness or linguistic barriers, arrive at the hospital without social security at the time of delivery. Identifying the status of patients, informing them and guiding them are essential roles of my job, and this is done in collaboration with the network outside the hospital.

Overall impact of CHU Brussels in the Brussels Region: summary

MORE THAN €1 BILLION INJECTED INTO THE BRUSSELS ECONOMY IN 2016!

Direct impact in terms of monetary flows	All regions combined	Brussels Region
CHU Brussels	816,709,934	417,810,434
Staff costs	489,956,948	268,169,100
Purchases and investments	326,752,986	149,641,334
Non-profit organisations/companies located on the sites (estimated aggregate payroll)	17,919,966	9,920,326
Total (A)	€834,629,900	€427,730,760
Induced impact in the	Induced impact in the Brussels Region (B)	
Revenue of CHU Brussels, all regions combined		834,349,027
Intraregional Brussels revenue multiplier coefficient		0.71
Overall impact on monetary flows in the Brussels Region (A+B)		€1,020,118,569

AROUND 7,800 JOBS CREATED IN THE BRUSSELS REGION!

	All regions combined		Brussel	s Region
Direct impact in terms of jobs	NO.	FTE	NO.	FTE
CHU Brussels	8,536	5,987.4	4,672	3,246
Salaried	6,778	5,549.8		
Independents	1,237	Not applicable		
Interims/secondments	521	437.6		
Non-profit organisations/companies on sites	343	284.2	191	158
Total (A)	8,879 people	6,272 FTE	4,863 people	3,404 FTE
Induced jobs in the	Brussels Region (B)		2,930	2,070 FTE
Direct CHU Brussels jobs, all regions comb	ined		8,879	6,272
Brussels revenue intraregional multiplier coefficient			0.33	
Overall impact on jobs in t	he Brussels Region (A	ι+B)	7,793 people	5,474 FTE

Conclusion and perspectives: the hospital of the future, our common challenge

The impact study on CHU Bruxelles, carried out in collaboration with BECI, shows unambiguously the importance of hospital activity in the economic and social fabric of the Brussels Region.

Employing more than 8,500 salaried staff, Interims, secondments or independents (around 6,300 FTE²²), CHU Brussels is the largest hospital employer in the Brussels Region. In terms of jobs, it ranks in the Region's top ten, all sectors combined.

CHU Brussels also has a strong local footing as around 55% of its employees and 77% of its patients reside in the Brussels Region. It also acts as a powerful magnet for several dozen companies and non-profit organisations located on its hospital sites (shops, Cuisines Bruxelloises, the Infectious Illnesses Centre for Research, the Francisco Ferrer High School, etc). Generating jobs for 343 people (284 FTE), these account for around €10 million in economic benefits for the Region.

Over ten years CHU Brussels has invested more than 650 million Euros in its infrastructure and technical equipment! Apart from direct jobs and revenue resulting from its activities, CHU Brussels also generates, indirectly, jobs and revenue in its supply chain, which themselves become generators of other jobs and revenue, producing a cascade effect over time, in the form of a virtuous spiral. The intraregional multiplier effect used in the study is 0.33 for jobs and 0.71 for revenue, which in the Brussels Region results in around 7,800 jobs and an economic impact of more than one billion Euros!

CHU Brussels devotes a substantial part of its revenue to research, staff education and training, all levels combined. Knowing that 34% of its salaried staff are non-graduates, CHU Brussels plays a significant development role in the Region.

Beyond the roles previously mentioned, the university hospital is an essential place for healthcare innovation. CHU Brussels hospitals have a rich history of innovation. They are committed to ensuring that this also continues into the future, so that they may continue to redefine the hospital of the future.

The most recent innovations have been particularly in computerisation, connectivity as well as the use of large data fields, and artificial intelligence in the taking of medical decisions. These innovations are in response to the legitimate expectations of patients to play more of a part in their treatment, and over a longer care period than the time spent in hospital.

Such innovations constitute a major challenge to the hospitals responding to them, more often than not hand in hand with businesses, start-ups, "intrapreneurs", other healthcare institutions, medical-social partners, healthcare professionals outside the hospital, our affiliated universities (the ULB and the VUB), our staff and many others.

For the hospital sector the time has come for networking, so as to structure still better those collaborations that are already in place. We pledge that the networking of Brussels hospitals will strengthen still further the quality of healthcare provided by them, with the most cost-effective performance of services. All this in order to maintain and strengthen Brussels' position as the Capital of healthcare for the benefit of its patients.



CHU Brussels is the largest hospital employer in the Brussels Region.

7,800 jobs and an economic impact of more than 1 billion Euros generated in the Brussels Region!

²² Excluding independents who are paid per service and for whom it is not possible to estimate the equivalent FTEs.



CHU Brugmann

Overview and key data



HOSPITAL

- Public general and university hospital
- 3 sites
- 160,000 m² of buildings spread over more than 20 hectares



ECONOMIC DATA

- €310,442,777 in revenues
- **€186,010,503** in staff costs (**60%** of all costs)
- **€267,496,745** of cumulative investments between 2007-2016



HUMAN RESOURCES

- 2,583 salaried staff
- 2,122 salaried FTE
- 485 independents,
 61 Interims and 83 secondments
- **57%** of salaried staff resident in the Brussels Region
- 74% of females salaried staff

CARE

- 853 authorised beds
- **29,035** admissions
- 158,586 patients of whom 80% residing in the Brussels Region
- 68,955 emergencies
- **12,450** surgical interventions
- 3,370 deliveries



TEACHING

- **1,590** future professionals in training
- **28** training supervisors for trainee physicians
- Around **350,000** hours of staff training at the employer's expense

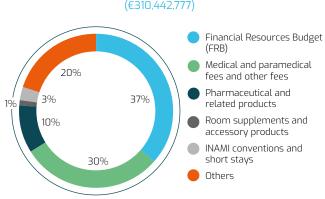


RESEARCH

- 141 scientific publications
- 164 clinical research projects under way

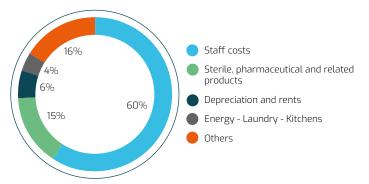
CHU Brugmann is a public general and university hospital comprising **three sites:** the Horta site (Laeken), the Brien site (Schaerbeek) and the Reine Astrid site, located in the military hospital in Neder-Over-Heembeek. Designed in a large park planted with trees in 1923 by the famous architect Victor Horta, the Horta site, a pavilion structure, is particularly remarkable on the architectural level.

CHU Brugmann also houses, with more than 3,400 deliveries a year, **the largest maternity unit in Brussels**, which is particularly specialised in the monitoring of high-risk pregnancies and foetal medicine.



Revenue structure of CHU Brugmann (€310,442,777)





Economic impact of CHU Brugmann

Direct economic impact of CHU Brugmann

CHU BRUGMANN EXPENDITURE

JOBS AND AGGREGATE PAYROLL

Employing **3,212 people**, CHU Brugmann, **at the heart of CHU Brussels, is the largest of the five employers.** The jobs consist of 2,583 salaried staff (2,122 FTE), 83 secondments (72 FTE), 61 Interims (63 FTE) and 485 independent healthcare professionals.

Total staff costs amount to around **€186 million**, or 60% of CHU Brugmann's total costs (€310 million).

Around 57% of CHU Brugmann's staff members (1,831 people²³) are resident in the Brussels Region, generating economic benefits of around ≤ 106 million²⁴ for the Region, through personal income tax, savings and household consumption.

PURCHASES AND INVESTMENTS

In 2016 CHU Brugmann made **€88 million worth of general purchases and €24 million of investments.** In ten years it has invested €267 million²⁵, mainly for renovation and maintenance of its infrastructure and to acquire cutting edge technological equipment.

 ²³ Rate of 57% of salaried staff resident in the Brussels Region applied to staff as a whole (salaried, Interims, secondments and independents).
 ²⁴ 57% x €186 million (total staff costs of CHU Brugmann).

²⁵ Acquisition values

We estimate that 49% of purchases (or €43 million) and 35% of investments (or around €9 million) were made with suppliers whose registered offices are in the Brussels Region.

PROFESSIONAL TRAINING EXPENDITURE

In 2016 CHU Brugmann spent around \in 7million on training for its staff as a whole, or around 150,000 hours of training provided to 2,860 salaried staff and around 199,000 hours of training to 105 candidate specialist physicians (PG).

We estimate the amount relating to the Brussels Region to be around \notin 4.6 million²⁶.

EXPENDITURE OF COMPANIES AND NON-PROFIT ORGANISATIONS LOCATED ON CHU BRUGMANN SITES

This concerns principally the "Cuisines Bruxelloises", two cafés, a retail store, the Francisco Ferrer High School, the laboratory of medical psychology, the ONE (Birth and Children Office) and the branch of the Public Social Welfare Centre of the City of Brussels (gardening, laundry room, carpentry). These non-profit organisations and businesses provide jobs for a total of **196 people** (161 FTE), amounting to around \notin 9 million of the aggregate payroll. We assess **that the economic impact for the Brussels Region is** \notin 5 million²⁷.

²⁶ €7 million x 73% (rate of recorded purchases of services for CHU Brugmann from suppliers whose registered offices are in the Brussels Region.

²⁷ Application of the rate of salaried staff of CHU Brugmann resident in the Brussels Region to the estimated aggregate payroll of employees of nonprofit organisations/companies located on CHU Brugmann's hospital sites.



The new polyclinic on the Horta site in Laeken opened its doors in September 2017. It displays a uniquely modern and pleasant space of 10,000 m², bringing together all ambulatory care operations, nearby to the medico-technical units and to public transport. With its underground parking and 120 consulting booths, it embraces at least 29 disciplines and provides new state of the art infrastructure for the 130,000 consultations forecast per year.

DIRECT IMPACT OF CHU BRUGMANN IN TERMS OF MONETARY FLOWS AND JOBS IN THE BRUSSELS REGION: SUMMARY

Direct impact in terms of monetary flows	All regions combined	Brussels Region
CHU Brugmann	298,380,070	157,454,308
Staff costs	186,010,503	105,931,649
Purchases and investments	112,369,567	51,522,658
Non-profit organisations/ companies located on the sites (estimated aggregate payroll)	8,962,700	5,104,193
Total	€307,342,770	€162,558,501

Divert langet in toward of inte	All Regions combined		Brussel	s Region
Direct Impact in terms of jobs	NB	ETP	NB	ЕТР
CHU Brugmann	3,212	2,257	1,829.3	1,285
Salaried	2,583	2,122		
Independents	485	Not applicable		
Interims/secondments	144	135		
Non-profit organisations/ companies on sites	196	161	111.5	92
Total	3,408 people	2,418 FTE	1,941 people	1,377 FTE

Induced impact of CHU Brugmann in the Brussels Region (multiplier effect)

The intraregional multiplier coefficient of monetary flows for the Brussels Region specific to the hospital sector is **0.71**, meaning that one million Euros of **revenue** generated by the hospital sector will eventually result in 710,000 Euros being injected into the Brussels economy.

The economic impact induced in terms of monetary flows generated in the Brussels Region by the activities of CHU Brugmann is therefore:

0.71 x €310,442,777 (CHU Brugmann revenue) = €220,414,372 of indirect benefits for the Brussels Region

1 FTE at CHU Brugmann indirectly generates in the Brussels Region **0.33** jobs in its supply chain.

The induced impact in terms of jobs created indirectly by CHU Brugmann in the Brussels Region is therefore:

0.33 x 2,418 FTE (2,257 FTE at CHU Brugmann plus 161 FTE employed by non-profit organisations/companies on the sites, all regions combined)
 = 798 FTE jobs indirectly generated for the Brussels Region



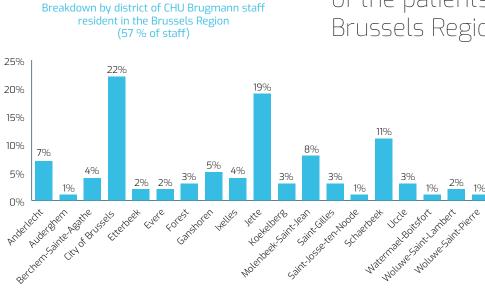


Societal impact of CHU Brugmann

Impact in terms of jobs

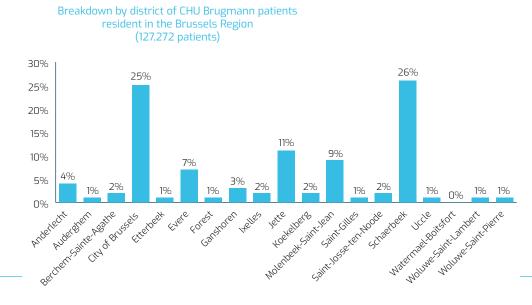
CHU Brugmann has 3,212 members of staff, consisting of 2,583 salaried (2,122 FTE), 61 Interims (63 FTE), 83 people placed at the disposal of the hospital (secondments - 72 FTE), and 485 independents. CHU Brugmann is the largest employer within CHU Brussels.

Around 57 % of CHU Brugmann staff (1,831 people) are resident in the Brussels Region, mainly in the City of Brussels, and in the districts of Jette and Schaerbeek.



Attractiveness effect of CHU Brugmann for patients

In 2016, **158,256 individual patients** were dealt with by CHU Brugmann, which has a strong local footing and a wide reach covering a range of referral centres. **Around 80% of its patients (127,272) are resident in the Brussels Region.**



Impact in terms of services of general economic interest

As a public hospital CHU Brugmann takes on services of general economic interest (SGEI) (cf supra). Its contribution for 2016 is estimated at **€11 million.**

80% of the patients reside in the Brussels Region.

Overall impact of CHU Brugmann in the Brussels Region: summary

AROUND €383 MILLION INJECTED INTO THE BRUSSELS ECONOMY IN 2016!

Direct impact in terms of monetary flows	All regions combined	Brussels Region
CHU Brugmann	298,380,070	157,454,308
Staff costs	186,010,503	105,931,649
Purchases and investments	112,369,567	51,522,658
Non-profit organisations/companies located on its sites (estimated aggregate payroll)	8,962,700	5,104,193
Total (A)	€307,342,770	€162,558,501
Induced impact in the	Induced impact in the Brussels Region (B)	
CHU Brugmann revenue, all regions combined		€310,442,777
Brussels revenue intraregional multiplier coefficient		0.71
Overall impact on monetary flows in the Brussels Region (A+B)		€382,972,873

AROUND 3,100 JOBS GENERATED IN THE BRUSSELS REGION!

	All regions	combined	Brussel	s Region
Direct impact in terms of jobs	NO.	FTE	NO.	ЕТР
CHU Brugmann	3,212	2,257	1,829.3	1,285
Salaried	2,583	2,122		
Independents	485	Not applicable		
Interims/secondments	144	135		
Non-profit organisations/ companies on its sites	196	161	111.5	92
Total (A)	3,408 people	2,418 FTE	1,941 people	1,377 FTE
Induced jobs in the Brussels Region (B)		1,124 people	798 people	
Direct CHU Brugmann jobs, all regions con	nbined		3,408	2,418
Brussels jobs intraregional coefficient multiplier			0.33	
Overall impact on jobs in t	he Brussels Region (A	\+B)	3,065 people	2,175 FTE



The Queen Fabiola Children's University Hospital

Overview and key data



HOSPITAL

- Public university hospital devoted to children's medicine
- •1 site
- **27,000 m²** of buildings on the Horta site (18 ha)



ECONOMIC DATA

- **€93,544,840** of revenue
- **€51,371,196** of staff costs (**55%** of all costs)
- €55,388,109 of cumulative investments between 2007-2016



HUMAN RESOURCES

- 863 salaried staff
- 673 salaried FTE
- 121 independents,
 71 Interims and secondments
- **54%** of salaried staff resident in the Brussels Region
- **84%** of females salaried





CARE

- 183 authorised beds
- **7,301** admissions
- 64,135 patients of whom 74% reside in the Brussels Region
- 40,796 emergencies
- **3,851** surgical interventions

TEACHING

- 724 future professionals in training
- **8** training supervisors for trainee physicians
- Around **90,000** hours of staff
 training at the
 employer's expense



RESEARCH

- **86** scientific publications
- 63 clinical research projects under way

Inaugurated in 1986, the Queen Fabiola Children's University Hospital (QFCUH) is the **only Belgian university hospital given over entirely to children's medicine:** everything there is designed with them and their parents in mind. From birth to adolescence, children receive the most comprehensive care, in respect for the charter of rights for the hospitalised child.

QFCUH brings together specialists from various fields of children's medicine. It is the ULB's main location for academic activity on children's medicine.

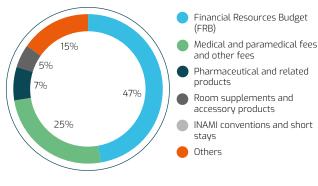
It is a place for training and research work in the medical and paramedical disciplines for children. Numerous medical and

scientific collaborations with other hospitals, as well as with Belgian and foreign universities, are under way.

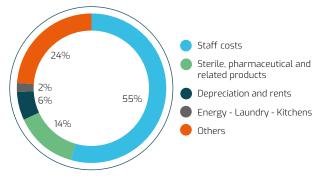
QFCUH is located in Laeken, on the Horta site, in close proximity to CHU Brugmann with which it forms a mother-child centre that is unique, both in terms of its organisational lay-out and its architecture. The Brugmann maternity unit is in fact directly connected to QFCUH by a walkway, a real "umbilical cord", designed to focus on an efficient and continued mother-child relationship, crucial in the first days of life.



Revenue structure of QFCUH (€93,544,840)



Expenditure structure of QFCUH (€93,544,840)





La vaccination protège la santé à toutes les étapes de la vie



VACCINATION: CUTTING EDGE PREVENTION AND RESEARCH AT QFCUH

The upsurge in extremely contagious illnesses poses a real problem for public health. The Queen Fabiola Children's University Hospital provides parents with reliable and balanced information to respond to their concerns and questions on the subject. In terms of research, the expertise of QFCUH's teams is also clear; a vaccine against streptococcus will be available within a few years.

Economic impact of QFCUH

Direct economic impact of QFCUH

OFCUH EXPENDITURE

JOBS AND AGGREGATE PAYROLL

QFCUH employs 1,055 people, which amounts to 863 salaried staff (673 FTE), 71 Interims or placed temporarily at the disposal of the hospital (11 FTE) and 121 independent healthcare professionals.

Total staff costs amount to around €51,3 million, or around 55% of QFCUH's total costs (€93.5 million).

Around 54% of QFCUH staff (570 people²⁸) reside in the Brussels Region, generating economic benefits of around €27.7 million²⁹ for the Region, through income tax, savings and household consumption.

PURCHASES AND INVESTMENTS

In 2016 QFCUH made more than €27 million of purchases and around €5 million of investments. Over ten years it has invested €55 million³⁰, mainly on renovating and maintaining its infrastructure and obtaining cutting edge technical equipment.

We estimate that 49% of purchases (or €13 million) and 45% of investments (or €2 million) were made with suppliers whose registered offices are in the Brussels Region.

EXPENDITURE ON PROFESSIONAL TRAINING

In 2016 QFCUH spent around €1.7 million on training for its staff as a whole, or around 7,000 hours of training provided to 825 salaried staff and around 83,000 hours of training for 46 candidate specialist physicians (PG) in training.

We assess the amount relating to the Brussels Region to be around €913,000.

EXPENDITURE OF NON-PROFIT ORGANISATIONS/ COMPANIES LOCATED ON THE OFCUH SITE

This mainly concerns the cafeteria, the Francisco Ferrer High School and the branch of the Robert Dubois school. Together these non-profit organisations and companies account for jobs for **58 people** (50 FTE), which according to our estimates amounts to an aggregate payroll of around €3.3 million. We assess the economic impact in the Brussels Region to be €1.8 million³¹.

²⁸ Rate of 54% of salaried staff resident in the Brussels Region applied to staff as a whole (salaried, Interims, secondments and independents). ²⁹ 54% x €51 million (total QFCUH staff costs)

³⁰ Acquisition values

³¹ Application of the rate of salaried staff at QFCUH (54%) resident in the Brussels Region to the estimated aggregate payroll of staff of non-profit organisations/companies on its site.

DIRECT IMPACT OF QFCUH IN TERMS OF MONETARY FLOWS AND JOBS IN THE BRUSSELS REGION : SUMMARY

Direct impact in terms of monetary flows	All regions combined	Brussels Region
QFCUH	83,362,776	43,150,100
Staff costs	51,371,196	27,739,256
Purchases and investments	31,991,580	15,410,845
Non-profit organisations/ companies located on the site (estimated aggregate payroll)	3,327,000	1,796,503
Total	€86,689,776	€44,946,603

Direct Impact in terms of jobs	All regions combined		Brussels Region	
	NO.	FTE	NO.	ЕТР
Õ ЕСЛН	1.055	684	570	369
Salaried	863	673		
Independents	121	Not applicable		
Interims/secondments	71	11		
Non-profit organisations and companies on the site	58	50	31	27
Total	1,113 people	734 FTE	601 people	396 FTE



Induced impact of QFCUH in the Brussels Region (multiplier effect)

The **intraregional** coefficient multiplier for the Brussels Region specific to the hospital sector is **0.71**, which means that one million Euros of **revenue** generated by the hospital sector will result over time in 710,000 Euros being injected into the Brussels economy.

QFCUH's induced economic impact in terms of monetary flows generated in the Brussels Region is therefore:

0.71 x €93,544,840 (QFCUH revenue) = €66,416,836 of indirect benefits for the Brussels Region

One FTE at QFCUH generates indirectly in the Brussels Region **0.33** FTE in its supply chain.

The induced impact in terms of jobs indirectly generated by QFCUH in the Brussels Region is therefore:

0.33 x 734 FTE (684 QFCUH FTE + 50 FTE employed by non-profit organisations/companies on its site, all regions combined)
 = 242 FTE of indirect jobs generated for the Brussels Region



242 FTE of indirect jobs generated for the Brussels Region

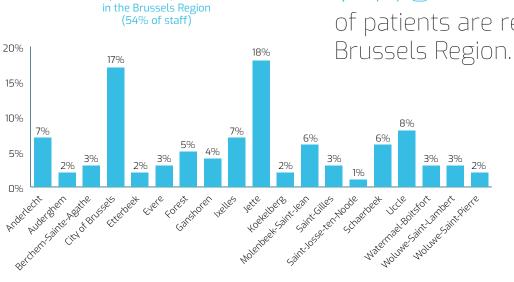
Societal impact of QFCUH

Impact in terms of jobs

QFCUH consists of 1,055 staff made up of 863 salaried staff (673 FTE), 71 Interims or staff placed at the disposal of the hospital (11 FTE) and 121 independents.

Around 54 % of QFCUH staff members (570 people) are resident in the Brussels Region, mainly in the City of Brussels, and the Districts of Jette and Uccle.

Breakdown by district of QFCUH staff resident



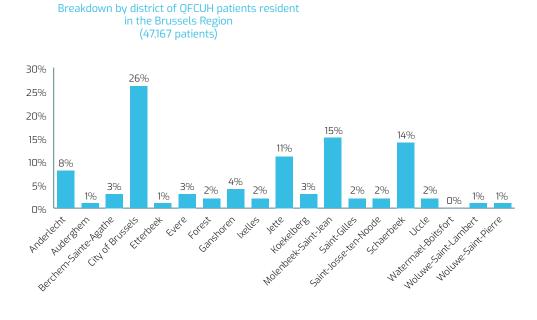
Impact in terms of services of general economic interest

As a public hospital QFCUH takes on services of general economic interest (SGEI) (cf supra). Its contribution in 2016 is estimated to be €2.6 million.

74% of patients are residing in the Brussels Region.

Attractiveness effect of QFCUH for patients

In 2016, 64,135 individual patients were dealt with by QFCUH, which is building up a strong local footing and a national and international reach. Around 74 % of its patients (47,167) are resident in the Brussels Region.



Overall impact of QFCUH in the Brussels Region: summary

MORE THAN €111 MILLION INJECTED INTO THE BRUSSELS ECONOMY IN 2016!

Direct impact in terms of monetary flows	All regions combined	Brussels Region
QFCUH	83,362,776	43,150,100
Staff costs	51,371,196	27,739,256
Purchases and investments	31,991,580	15,410,845
Non-profit organisations/companies located on its site (estimated aggregate payroll)	3,227,000	1,796,503
Total (A)	€86,689,776	€44,946,603.3
Induced impact on th	€66,416,836.3	
QFCUH revenue, all regions combined	93,544,840	
Brussels	0.71	
Overall impact on monetary flows in the Brussels Region (A+B)		€111,363,440

AROUND 1,000 JOBS GENERATED IN THE BRUSSELS REGION!

	All regions combined		Brussels Region	
Direct impact in terms of jobs	NO.	FTE	NB	ETP
QFCUH	1,055	684	570	369
Salaried	863	673		
Independents	121	Not applicable		
Interims/secondments	71	11		
Non-profit organisations/ companies on its site	58	50	31	27
Total direct jobs (A)	1,113 people	734 FTE	601.1 people	396.3 FTE
Induced jobs in the Brussels Region (B)			367.4 people	242.2 FTE
Direct QFCUH jobs, all regions combined			1,113	734
Brussels jobs intraregional multiplier coefficient			0.33	
Overall impact on jobs in the Brussels Region (A+B)		969 people	639 FTE	



Overview and key data



HOSPITAL

- General public and university hospital
- 2 sites
- 148,971 m² of buildings spread over 30,295 m²



ECONOMIC DATA

- **€271,641,568** of revenue
- €167,273,557 of staff costs (62% of all costs)
- €231,531,085 of cumulative investments between 2007-2016



HUMAN RESOURCES

- 2,519 salaried staff
- 2,074 salaried FTE
- 574 independents,
 20 Interims and 13 secondments
- **53%** of salaried staff resident in the Brussels Region
- 74% of females salaried



CARE

- 585 authorised beds
- 21,264 admissions
- 217,109 patients of whom 78% residing in the Brussels Region
- 81,628 emergencies
- **15,253** surgical interventions
- 3,223 deliveries



TEACHING

- **1.830** future professionals in training
- **28** training supervisors for trainee physicians
- More than 253,000 hours of staff training at the employer's expense



RESEARCH

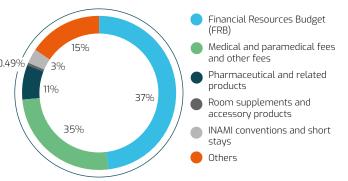
- 187 scientific publications
- **111** clinical research projects under way

CHU Saint-Pierre is a **general public and university hospital situated in the heart of Brussels.** It uses **two sites,** the Porte de Hal site in the Marolles quarter and the César De Paepe site located close to the Brussels' Grand-Place. Constructed in 1783 in an old leprosarium, the Porte de Hal site was extensively and repeatedly re-designed, the most recent wave 0,49% of renovations of which will be completed in 2018.

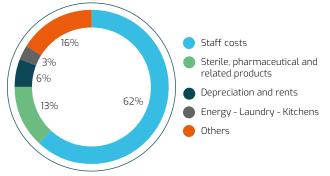
CHU Saint-Pierre is well-known for its reception which is particularly accessible to all patients, and for its highly performing **emergency service**. CHU Saint-Pierre also has an **international reputation in infectious medicine, particularly in the fields of tuberculosis and HIV,** for which it furthermore acts as a national referral centre.

CHU Saint-Pierre also has a substantial maternity unit (more than 3,200 deliveries a year).

Revenue structure of CHU Saint-Pierre (€271,641,568)







Economic impact of CHU Saint-Pierre

Direct economic impact of CHU Saint-Pierre

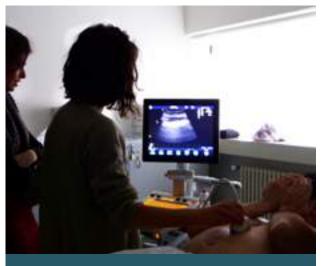
CHU SAINT-PIERRE EXPENDITURE

JOBS AND AGGREGATE PAYROLL

CHU Saint-Pierre employs **3,126 people** made up of 2,519 salaried staff (2,074 FTE), 20 Interims (24 FTE), 13 secondments (14 FTE) and 574 independent healthcare professionals.

Total staff costs amount to around **€167 million,** or 62% of CHU Saint-Pierre's total costs (€272 million).

Around 53% of CHU Saint-Pierre's staff (1,657 people³²) are resident in the Brussels Region, which generates around €88 million³³ in economic benefits for the Region, through personal income tax, savings and household expenditure.



APPEALING EMERGENCY TRAINING FOR TRAINEE PHYSICIANS

Training in and practice of emergency ultrasound motivate candidate trainees in emergency medicine to do their training at CHU Saint-Pierre. The institution is at the forefront of this field in Belgium.

Training is given at the ULB by a team co-ordinated by Doctors Claessens and Alard. In-service instruction enables the candidate to acquire this technique and use it in caring for patients suffering from serious conditions.

The medical approach to emergencies is being transformed by this fast-emerging technology.

³² Rate of 53% of salaried staff in the Brussels Region applied to staff as a whole (salaried, Interims, secondments and independents).
 ³³ 53% x €167 million (total staff costs of CHU Saint-Pierre).

PURCHASES AND INVESTMENTS

In 2016 CHU Saint-Pierre made general purchases of around €78 million and investments of more than €24 million. Over ten years it has invested more than €231.5 million³⁴, mainly on renovating and maintaining its infrastructure and to obtain cutting edge equipment.

We estimate that 49% of purchases (or €38 million) and 51% of investments (or €12.4 million) were made with suppliers whose registered offices are in the Brussels Region.

EXPENDITURE ON PROFESSIONAL TRAINING

In 2016 CHU Saint-Pierre spent more than €5 million on training for its staff as a whole, amounting to around 20,000 hours of training provided to 1,356 members of salaried staff and around 233,000 hours of training provided to 127 candidate specialist physicians (PG) in training.

We assess the amount relating to the Brussels Region to be around €3 million.

EXPENDITURE OF NON-PROFIT ORGANISATIONS/ COMPANIES LOCATED ON CHU SAINT-PIERRE SITES

This concerns mainly the ONE, the Belgian Red Cross, a cafeteria and various non-profit organisations such as the FARES (Respiratory Infections Fund) and the CRMI (Centre for Infectious Illness Research). These non-profit associations/companies provide employment for **47 people** (37 FTE), amounting, according to our estimates, to an aggregate payroll of around ≤ 2.6 million. We assess the economic impact for the Brussels Region to be ≤ 1.4 million³⁵.

³⁴ Acquisition values

³⁵ Application of rate of salaried staff at CHU Saint-Pierre (53%) resident in the Brussels Region to the estimated aggregate payroll for staff of non-profit organisations/companies located on CHU Saint-Pierre hospital sites.

DIRECT IMPACT OF CHU SAINT-PIERRE IN TERMS OF MONETARY FLOWS AND JOBS IN THE BRUSSELS REGION: SUMMARY

Direct impact in terms of monetary flows	All regions combined	Brussels Region
CHU Saint-Pierre	269,356,005	138,820,889
Staff costs	167,273,557	88,451,122
Purchases and investments	102,082,449	50,369,767
Non-profit organisations/ companies located on the sites (estimated aggregate salary)	2,591,500	1,370,337
Total	€271,947,505	€140,191,226

Direct impact in terms of jobs	All regions combined		Brussels Region	
	NO.	FTE	NO.	FTE
CHU Saint-Pierre	3,126	2,112	1,653	1,084
Salaried	2,519	2,074		
Independents	574	Not applicable		
Interims/secondments	33	38		
Non-profit organisations/ companies located on sites	47	37	25	20
Total	3,173 people	2,149 people	1,678 people	1,104 FTE



Induced impact of CHU Saint-Pierre in the Brussels Region (multiplier effect)

The intraregional multiplier coefficient for monetary flows in the Brussels Region specific to the hospital sector is **0.71**, which means that one million Euros of **revenue** generated by the hospital sector will result over time in 710.000 Euros being injected into the Brussels economy.

The induced economic impact of CHU Saint-Pierre in the Brussels Region is:

0.71 x €271,641,568 (revenue of CHU Saint-Pierre) = €192,865,513 of indirect benefits for the Brussels Region

1 FTE at CHU Saint-Pierre indirectly generates **0.33** FTE in the Brussels Region, in its supply chain.

The induced impact in terms of jobs indirectly generated by CHU Saint-Pierre in the Brussels Region is therefore:

0.33 x 2,149 FTE (2,112 FTE CHU Saint-Pierre FTE + 37 FTE employed by non-profit organisations/companies on its sites, all regions combined)
 = 709 FTE indirect jobs generated for the Brussels Region

Societal impact of CHU Saint-Pierre

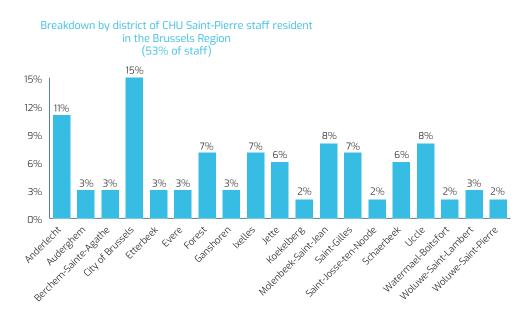
Impact in terms of jobs

CHU Saint-Pierre has **3,126 members of staff** made up of 2,519 salaried (2,074 FTE), 33 Interims or secondments (38 FTE) and 574 independent healthcare professionals.

Around 53% of CHU Saint-Pierre members of staff (1,657 people) are resident in the Brussels Region, mainly in the City of Brussels, and in the districts of Anderlecht, Uccle and Molenbeek-Saint-Jean.



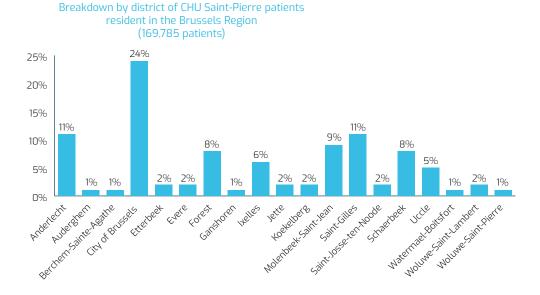
709 FTE indirect jobs generated for the Brussels Region



Attractiveness effect of CHU Saint-Pierre for patients

In 2016, **217,109 individual patients** were dealt with by CHU Saint-Pierre.

CHU Saint-Pierre has a strong local footing as well as a wide reach to a range of referral centres. Around 78% of its patients (169,785) are resident in the Brussels Region.



Impact in terms of general economic services

As a public hospital CHU Saint-Pierre takes on services of general economic interest (SGEI) (cf supra). Its contribution is estimated to be €14 million in 2016.

78% of patients are resident in the Brussels Region.

Overall impact of CHU Saint-Pierre in the Brussels Region : summary

MORE THAN €333 MILLION INJECTED INTO THE BRUSSELS ECONOMY IN 2016!

Direct impact in terms of monetary flows	All regions combined	Brussels Region
CHU Saint-Pierre	269,356,005	138,820,889
Staff costs	167,273,556.6	88,451,122
Purchases and investments	102,082,448.9	50,369,767
Non-profit organisations/companies located on its sites (estimated aggregate payroll)	2,591,500	1,370,337
Total (A)	€271,947,505	€140,191,226
Induced impact in the Brussels Region (B)		€192,865,513
Revenue of CHU Saint-Pierre, all regions co	271.641.568	
Brussels	0.71	
Overall impact on monetary flows in the Brussels Region (A+B)		€333.056.739

MORE THAN 2,700 JOBS GENERATED IN THE BRUSSELS REGION!

Direct impact in terms of jobs	All regions combined		Brussels Region	
	NO.	FTE	NO.	FTE
CHU Saint-Pierre	3,126	2,112	1,653	1,084
Salaried	2,519	2,074		
Independent	574	Not applicable		
Interims/secondments	33	38		
Non-profit organisations/ companies on its sites	47	37	25	20
Total direct jobs (A)	3,173 people	2,149 FTE	1,678 people	1,104 FTE
Induced jobs in the Brussels Region (B)			1,047 people	709 FTE
Direct CHU Saint-Pierre jobs, all regions combined			3,173	2,149
Brussels jobs intraregional multiplier coefficient			0.33	
Overall impact on jobs in the Brussels Region (A+B)		2,725 people	1,813 FTE	

The Jules Bordet Institute

Overview and key data



HOSPITAL

- Public university hospital devoted entirely to oncology
- 1 site
- **31,002 m²** of buildings spread over **30,440 m²**
- Reconstruction of an 80,000 m² building costing €255 million under way



ECONOMIC DATA

- **€148,757,363** of revenue
- **€79,442,173** in staff costs (**54%** of total costs)
- **€97,515,340** of cumulative investments between 2007-2016



HUMAN RESOURCES

- 807 salaried staff
- 675 salaried FTE
- 57 independents,
 15 Interims and 257 secondments
- 54% of salaried staff resident in the Brussels Region
- **73%** of females salaried





- 160 authorised beds
- **5,980** admissions
- 24,457 patients of whom 53% reside in the Brussels Region
- 2,499 emergencies
- **4,987** surgical interventions

TEACHING

- **539** future professionals in training
- **13** training supervisors for trainee physicians
- More than 83,000 hours of staff training at the expense of the employer



RESEARCH

- 201 scientific publications
- **96** clinical research projects under way

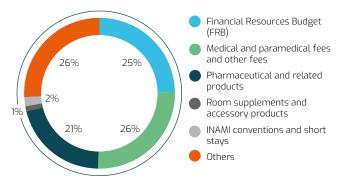
An integrated multidisciplinary centre, unique in Belgium and internationally recognised, the Jules Bordet Institute is a **hospital devoted entirely to patients suffering from cancerous illnesses.** For more than 75 years, its teams have been providing patients with diagnostic strategies and multidisciplinary and state of the art therapies for preventing, detecting and actively combating all types of cancer. The Jules Bordet Institute also leads on **important research activity in cooperation with other national and international cancer research centres,** deploying specialised high-level university training in the field of cancerology.

The Jules Bordet Institute is a hospital devoted entirely to patients suffering from cancerous illnesses.

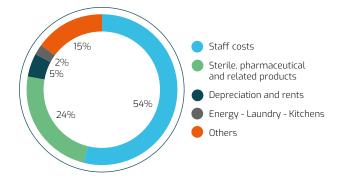


CLINICAL RESEARCH: A KEY ELEMENT IN THE PROGRESS OF MEDICINE

A fundamental principle of the Jules Bordet Institute is the close integration of day to day medical practice, enabling patients to participate in clinical research using entirely new diagnostic techniques and therapies and to benefit as soon as possible from the latest discoveries in the research labs. Numerous clinical research programmes are run in co-operation with other national and international cancer centres and networks. The Institute participates for example in several clinical research projects in the field of immunotherapy and, more particularly, in performance analyses of immunostimulant medicines being used by patients suffering from metastatic cancer. Revenue structure of Jules Bordet Institute (€148,757,363)



Expenditure structure of Jules Bordet Institute (€147,548,342)



54% of staff reside in the Brussels Region.

Economic impact of the Jules Bordet Institute

Direct economic impact of the Jules Bordet Institute

EXPENDITURE OF THE JULES BORDET INSTITUTE

JOBS AND AGGREGATE PAYROLL

The Jules Bordet Institute employs 1,136 people made up of 807 salaried staff (675 FTE), 15 Interims (15 FTE), 257 secondments (239 FTE) and 57 independent healthcare professionals.

Total staff costs amount to €79.4 million. or around 54% of the Jules Bordet Institute's total costs (€147.5 million).

Around 54% of Jules Bordet Institute members of staff (613 people³⁶) are resident in the Brussels Region, generating around €43 million³⁷ of economic benefits for the region, through personal income tax, savings and household consumption.

PURCHASE AND INVESTMENTS

In 2016 the Jules Bordet Institute made general purchases of around €57 million and investments of around €20 million. Over ten years it has invested around €98 million³⁸, mainly in renovating and maintaining its infrastructure and to acquire cutting edge equipment.

We estimate that 49% of purchases (or €27.5 million) and 14% of investments (or €2.7 million) were made with suppliers whose registered address is in the Brussels Region.

EXPENDITURE ON PROFESSIONAL TRAINING

In 2016 the Jules Bordet Institute spent €1.6 million on training for its staff as a whole, or around 6,800 hours of training provided to 561 salaried staff and around 76,500 of training for 42 candidate specialist physicians (PG) in training.

We estimate the amount relating to the Brussels Region to be more than €920,000.

EXPENDITURE OF NON-PROFIT ORGANISATIONS/ COMPANIES LOCATED AT THE JULES BORDET INSTITUTE.

This consists principally of a cafeteria and two non-profit organisations (The Friends of the Bordet Institute and the Breast International Group). Together these provide jobs for 42 people (36 FTE), amounting, according to our estimates, to an aggregate payroll of around €3 million. We assess **the economic** impact for the Brussels Region to be €1,6 million³⁹.

as a whole (salaried, Interims, secondments and independents,

- ³⁷ 54% x €79 million (total staff costs of the Jules Bordet Institute) ³⁸ Acquisition values.

³⁹ Application of the rate of salaried staff at the Jules Bordet Institute (54%) resident in the Brussels Region to the estimated aggregate payroll for staff of non-profit organisations/companies on its site.

DIRECT IMPACT OF THE JULES BORDET INSTITUTE IN TERMS OF MONETARY FLOWS AND JOBS IN THE BRUSSELS REGION: SUMMARY

Direct impact in terms of monetary flows	All regions combined	Brussels	
Jules Bordet Institute	155,565,889	73,404,357	
Staff costs	79,442,173	43,117,313	
Purchases and investments	76,123,716	30,287,044	
Non-profit organisations/ companies located on the site (estimated aggregate payroll)	3,038,766	1,649,293	
Total	€158,604,655	€75,053,650	

Divect impact in towns of ichs	All regions combined		Brussels Region	
Direct impact in terms of jobs	NO.	FTE	NO.	FTE
Jules Bordet Institute	1,136	928.5	616	504
Salaried	807	674.8		
Independents	57	Not applicable		
Interims/secondments	272	253.7		
Non-profit organisations/ companies on site	42	35.7	23	19
Total	1,178 people	964 FTE	639 people	523 FTE



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Induced impact of the Jules Bordet Institute in the Brussels Region (multiplier effect)

The **intraregional** multiplier coefficient for the Brussels Region specific to the hospital sector is **0.71**, meaning that one million Euros of revenue generated by the hospital sector will result over time in 710,000 Euros being injected into the Brussels Economy.

Induced economic impact in terms of monetary flows generated in the Brussels Region by the Jules Bordet Institute's activities is:

0.71 x €148,757363 (revenue of the Jules Bordet Institute) = €105,617,728 of indirect benefits for the Brussels Region

1 FTE at the Jules Bordet Institute indirectly generates, in the Brussels Region, **0.33 FTE** in its supply chain.

The induced impact in terms of indirect jobs generated by the Jules Bordet Institute in the Brussels Region is therefore:

0.33 x 964 FTE (928.5 FTE at the Jules Bordet Institute + 35.7 FTE employed by non-profit organisations/companies on its site, all regions combined)
 = 318 FTE of indirect jobs generated for the Brussels Region

Societal impact of the Jules Bordet Institute

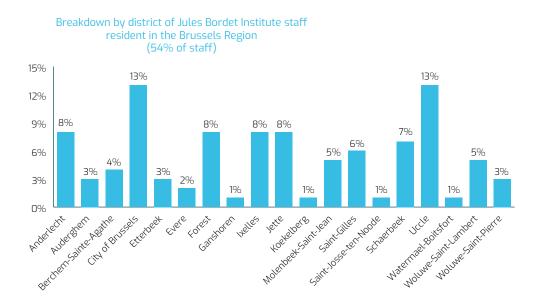
Impact in terms of jobs

The Jules Bordet Institute has **1,136 members of staff** made up of 807 salaried staff (675 FTE), 15 Interims (15 FTE), 257 secondments (239 FTE) and 57 independent healthcare professionals.

Around 54% of members of staff at the Jules Bordet Institute (613 people) are resident in the Brussels Region, mainly in the City of Brussels, but also in the districts of Uccle and Ixelles.



318 FTE of indirect jobs generated for the Brussels Region

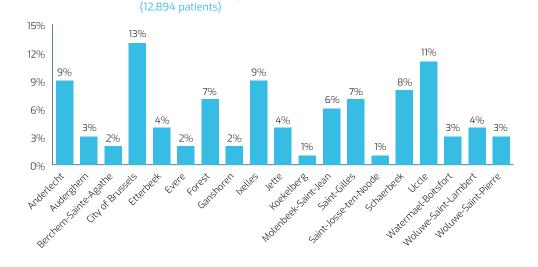


Attractiveness effect of the Jules Bordet Institute for its patients

In 2016, 24,457 individual patients were dealt with by the Jules Bordet Institute. The recruitment pool for Jules Bordet Institute patients extends broadly beyond the Brussels Region since around **47 % of its patients are resident outside of the Brussels Region**⁴⁰. This attraction underlines the uniqueness of the Jules Bordet Institute, as does its renowned expertise in oncology.

Breakdown by district of Jules Bordet Institute patients resident in the Brussels Region

47% of its patients are resident outside of the Brussels Region.



Impact in terms of services of general economic interest

As a public hospital the Jules Bordet Institute takes on services of general economic interest (SGEI)(cf supra). Its contribution is estimated to be €3 million in 2016.

⁴⁰ Geographical distribution of Jules Bordet Institute patients : 53% in the Brussels Region, 14% in the Flemish Region, 31% in the Walloon Region and 3% of patients coming from abroad.

Overall impact of the Jules Bordet Institute in the Brussels Region: summary

AROUND €181MILLION INJECTED INTO THE BRUSSELS ECONOMY IN 2016!

Direct impact in terms of monetary flows	All regions combined	Brussels Region
Jules Bordet Institute	155,565,889	73,404,357
Staff costs	79,442,173	43,117,313
Purchases and investments	76,123,716	30,287,044
Non-profit organisations/companies located on its site (estimated aggregate payroll)	3,038,766	1,649,293
Total (A)	€158,604,655	€75,053,650
Induced economic impact	€105,617,728	
Revenue of the Jules Bordet Institute, all r	148,757,363	
Brussel	0.71	
Overall impact on monetary flows in the Brussels Region (A+B)		€180,671,378

MORE THAN 1,000 JOBS GENERATED IN THE BRUSSELS REGION!

Direct impact in terms of jobs	All regions combined		Brussel	s Region
	NO.	FTE	NO.	FTE
Jules Bordet Institute	1,136	928,5	616	504
Salaried	807	674.8		
Independents	57	Not applicable		
Interims/secondments	272	253.7		
Non-profit organisations/companies on site	42	35,7	23	19
Total direct jobs (A)	1,178 people	964.2 FTE	639 people	523 FTE
Induced jobs in the Brussels Region (B)			389 people	318 FTE
Direct jobs at the Jules Bordet Institute, all regions combined			1,178	964
Brussels jobs intraregional multiplier coefficient			0.33	
Overall impact on jobs in the Brussels Region (A+B)		1,028 people	842 FTE	

Management of the study: F de Drée, Director General, CHU Brugmann. Coordination and editing of the study: E Born – Coordinator, Projects and Organisation Office, CHU Brugmann, in close collaboration with L. Nakhlé – City Planning/Property Advisor, BECI (Brussels Enterprises Commerce & Industry). Graphic design, lay-out and website: <u>Simpl.</u>