

Activity Report 2020 - 2022



CHAIRE HOSPINNOMICS

A research chair in health economics focused on innovation in the hospital.

THE HOSPINNOMICS CHAIR



Hospinnomics (Hospital/Innovation/Economics) is a research chair in health economics, with the purpose of **building a bridge** between academic research and the needs for methods or results for health decision-makers, to contribute toward evidence-based policy.

Hospinnomics was set up in 2014, following the joint decision of the Chief Executive Officer of the Greater Paris University Hospitals (GPUH), Martin Hirsch, and the Director of PSE, Pierre-Yves Geoffard, in order to develop a national and international research center in health economics that relies both on the professional excellence of the GPUH and on the scientific network of PSE. The partnership was signed for three years in April 2014 and renewed in May 2017 for six years, with strong support from both GPUH and PSE.

In order to promote convergence between scientific production and expertise in the health field, Hospinnomics relies on an **original model of applied research** where:

- ▶ The expertise initially commissioned by the GPUH or other institutions makes it possible to subsequently file requests for research funding, leading *in fine* and over a longer period to the production of academic publications. These research projects complement the skills of the GPUH teams in economics and more generally, in the humanities and social sciences. They also allow ensuring that research projects address questions of interest to decision-makers (*Policy-oriented research*).
- ▶ Some of the research questions initially developed at Hospinnomics as part of doctorates or dissertations lead to the production of expertise (in the form of literature

reviews, data analysis, policy briefs) useful for GPUH teams or, more broadly, public health decision-makers (*Evidence-based policy*).

Innovation is at the heart of Hospinnomics activity as it constitutes one of the most important determinants of the increase in health expenditure. The cost of adopting innovation is often underestimated because innovation brings hope to patients. Its added value, however, must be weighed against the value of the strategies it is meant to replace. The evaluation of the **added value of innovation**, both from an individual and collective point of view, must be performed in a transparent and robust manner to document the Pricing and Reimbursement (P&R) decisions. This approach comes more broadly from public policy evaluation, which is still underdeveloped in the health sector, particularly in France.

Hospinnomics' scientific approach is based on the systematic consideration of trade-offs between efficiency and equity and the application to innovation evaluation of models from four main fields of economics (industrial, behavioral, labor and public economics). Three dimensions are encompassed. The first concerns **organizational innovation**, either in the production function (such as hospital mergers, tasks delegation, integrated care) or financing (optimal payment systems for hospitals and primary care). The second dimension concerns the **analysis of individual health- or non-health-seeking behaviors** and the third, **technological innovation**, where comparative evaluations are done between the new technology (drugs, medical devices, procedures) and the care strategy it is supposed to replace.

Develop academic research likely to impact decision-making.



Contribute, within the GPUH, to decision-making based on scientific assessments.

EDITORIAL

This activity report covers September 2020 to September 2022, a period marked by the Covid epidemic. While some activities could not be maintained, such as technical workshops or invitations to researchers from abroad, the epidemic has not impacted **the commitment of the members of the chair and their productivity**. Hospinnomics continues to rely exclusively on **multi-year research funding from public entities**, with an allocation from the GPUH which allows ensuring the coordination of projects and the submission of new grant applications. **New funding was obtained** during this two-year period, both at the national and European levels. **Existing collaborations have been strengthened in France** with the Sciences Po health chair, the chair of the École des Hautes Études en Santé Publique (EHESP), the LIRAES of the University of Paris-Cité as well as with the IMAGINE Institute, with a collaboration for a second doctoral thesis, and **new links have been established abroad**, with Bocconi University, the health economics chair of the University of Hanover and the Global Health Center at University College London.

Since its creation, Hospinnomics has systematically interacted with the medical and social sciences (philosophy, sociology, psychology), **in a relationship that is growing stronger with the members of the GPUH**. The chair actively participates in the new project of Hôtel-Dieu (@HTD) which brings together various disciplines on digital innovation. Similarly, the Hospital Medical Commission and the Strategy and Transformation Department (DST) requested the chair to evaluate the Medical-University Departments set up at GPUH in 2019. Finally, the chair participates in a large multi-year GPUH project (Booster) financed by the National Research Agency with the implementation of an ex-ante economic evaluation, of the early evaluation type. The chair is actively involved with **decision-makers at the national level** to respond to requests for expertise, such as the analysis of hospital investment carried out for the High Council for the Future of Health Insurance (HCAAM), or the [report submitted in March 2022](#) to France Strategy (FS) and the General Secretariat for Investment (SGPI) on the evaluation of health benefits in major public investment projects. Finally, research is carried out with **European funding**, with a first project completed in 2021 (IMPACT-HTA) and the procurement of two new projects (C-BIG Screen, 2021 and HI-PRIX, 2022).

During these two years, **the scientific program of the chair was reinforced on:**

- ▶ **Issues of equity**, both in terms of payment methods for healthcare providers (Hi-Prix Project), the financial participation of users (Equirac Project) or access to healthcare for disadvantaged people (C-big Screen Project).
- ▶ **Issues of methods**, in order to:
 - 1) Complement evaluations of health innovation with tools from behavioral and experimental economics, such as Discrete Choice Experiments (DCE) to better understand patient preferences concerning prevention (Resiste Project) or professionals' preferences concerning innovative technologies based on artificial intelligence methods (Project Booster)
 - 2) Develop *ex-ante* evaluation, either at a very early stage, before proof of the medical benefits provided by the innovation (Booster

Project), or by methods simulating the expected impacts of pricing reforms (Optisarc and Seqogen Projects), or by analyzing the conditions for the generalization of social experiments (Article 51 Project).

The studies carried out over the period, some already published, offer useful results for research and decision-making, such as:

- Investments in R&D are unequally distributed according to the burden of various pathologies (*Social Science and Medicine*, 2021);
- The reintroduction of expensive cancer drugs in the hospital tariff does not systematically affect prescription volumes, the choice of products (brand name versus generics) or price levels (Health Policy, 2021);
- The relationship between age and the value of statistical life (trade-off between the risk of death and money) is U-shaped (*Journal of environmental economics and management*, 2021);
- A health intervention that would be both less expensive but also less effective can be efficient because of its lower cost, in situations of clinical non-inferiority or even in certain cases of small losses of effectiveness compared to the usual treatment (Impact HTA Project);
- A rehabilitation program for people who have suffered an occupational accident should be targeted (*Journal of Occupational Rehabilitation*, 2020);
- Online appointment booking leads to an increase in hospital activity but also an increase in the time before the first appointment (PRDVEL Project).

The chair is comprised of a close-knit team of young project managers and research assistants interested in the prospect of **articulating academic research and decision-making support**. It benefits from the active collaborations of senior researchers in France (Paris, Montpellier 1 U., Lille 1 U., GATE, Lyon U., Aix-Marseille U., EHESP, ...) and abroad (UCL, U. of Toronto, OECD, Imperial College Business School, IUSM of Montreal, York U., LSE, Harvard T.H. Chan). It welcomes a growing number of students (18 over the period covered) for internships, Capstone projects (Master SIA) or dissertations, one of them, Olivier Supplisson having received the "Grande école and specialized Masters' dissertation prize" from the HEC foundation for his thesis produced as part of the EQUIRAC project. The chair relies on the active collaboration of affiliated researchers, with the establishment since 2022 of a **Project Monitoring Committee**. Due to Covid, inviting foreign visitors has proven difficult, but links have been preserved and new invitations are planned for fall 2022 and summer 2023. In order to share information in real-time concerning the life and outcomes of the team, a **bimonthly Newsletter** was launched in November 2021, available on the website and distributed by email.

Finally, this period was marked by the **departure of Jean-Claude K. Dupont**, deputy director of the chair between July 2015 and the end of January 2022, following his recruitment by the Institut Pasteur as head of the ethics department. A philosopher by training, Jean-Claude has strongly contributed to the multidisciplinary development of the chair. His skills, abilities and his strong commitment are greatly missed by all of us today.

Lise Rochaix

Scientific Director of the Chair

THE CHAIR'S ECOSYSTEM



Steering

Funders



Academic Partners



Institutional Partners

IN BRIEF

1. Research projects

Hospinnomics' **projects** demonstrate a **leverage effect** from the annual endowment of the GPUH ("**Core Funding**") and condition the ability to fulfil its scientific program of economics applied to health.

- ▶ 14 funded projects are ongoing.
- ▶ 3 funded projects have ended, but with publications in progress.
- ▶ 2 new European projects have been accepted (CBIG-SCREEN, Horizon 2021 and Hi-PRIX, Horizon 2022);
- ▶ 2 evaluation projects were carried out as part of the annual allocation (evaluation of online appointment booking and evaluation of GPUH medical-university departments) with publications currently being finalized, and others in progress (evaluation of virtual reality headsets).

2. Publications

Over the period covered by this report, 10 articles were published in peer-reviewed journals, including one in ***Social Science and Medicine*** (Rank 1 at the CNRS), 4 policy briefs from the chair, and a chapter on health quality in the 30th-anniversary book by the French College of Health Economists.

3. Theses defended

Two theses were defended during this period, the first by **Alex Proshin**, now on a post-doctoral contract at the University of Toronto with Audrey Laporte, and the second by **Ivan Tzintzun**, currently on a post-doctoral contract at Hospinnomics. The chair has three new doctoral registrations in economic sciences.

4. Participation in the scientific expertise of public institutions

The participation of the chair in the work of several public bodies for the production of reports (France Strategy, High Council for the Future of Health Insurance) or the production of opinions (Strategic Council for Health Innovation, Committee of Experts of France Strategy) shows the growing interest in the contributions of economics to public health decision-making.



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GOVERNANCE

Hospinnomics' governance consists of a **Steering Committee** with members of the two partner institutions (GPUH and PSE) and a **Scientific Advisory Board** (SAB).

The steering committee regularly monitors progress. The SAB assesses the added value of the academic research projects for health actors as well as the added value for the academic researchers of the expertise carried out in order to support health actors' decisions.

The SAB, chaired for 3 years by Professor **Pierre Corvol** (Collège de France), is now chaired by Professor **Yazdan Yazdanpanah** (GPUH). It is composed of:



Pr. Robert Elliott
Labor economist
Aberdeen University
United Kingdom



Pr. Randall Ellis
Industrial economist
Boston University
United States of America



Pr. Sherry Glied
Health economist
New York University –
United States of America



Pr. Alberto Holly
Econometrician
Lausanne University
Switzerland



Pr. Audrey Laporte
Health economist
University of Toronto
Canada



Pr. Pedro Pita Barros
Industrial economist
University Nova de Lisboa
Portugal



Pr. Carol Propper
Economist specializing in
public economics
Imperial College London
United Kingdom

TEAM AND AFFILIATES

Permanent Team



Lise Rochaix has been the scientific director of Hospinnomics since its creation.

Christine Meyer has been part of the permanent team for 5 years, working on out-of-pocket expenses reforms or innovative payment systems and improving the diffusion and visibility of Hospinnomics' activities and productions.



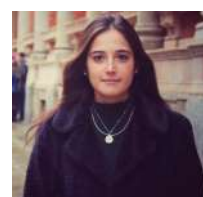
Caroline Després joined the team in January 2022. Caroline is a public health physician (DES) and a doctor in social anthropology and ethnology (EHESS).

Iván Tzintzun has been a post-doctoral fellow at Hospinnomics since January 2022, after defending his thesis on 04/16/2021 at the University of Paris 1 Panthéon-Sorbonne.



Thomas Pelloquin, senior scientific project manager, has been working at the Hospinnomics chair since December 2019.

Martina Tallarita, a philosopher from the University of Milan, joined the team in October 2021 as a research assistant.



Isis Catalina Páramo Herrera, a lawyer and an economist (National University of Colombia), with a Master's degree in Sustainable Development Economics at the University of Paris I, joined the team in November 2021 as a research assistant.

Marie Michon, currently registered for a philosophy thesis at the University of Paris 1 Panthéon-Sorbonne, joined the team in January 2022 as a research assistant.



Meng Jiang joined the team in April 2021 as a research assistant and since January 2022 is registered as a PhD student at PSE.

Camilla Fiorina, holder of a double Master's degree in public economics (U. Rennes 1 and U. of Turin), joined the chair in May 2021 as project manager.



Baptiste Haon joined the team in October 2021 as a data scientist, after a Master's degree in Computer Science and Statistics at the University of Toulouse.

Departures

Jean-Claude K. Dupont was the deputy director of the chair between July 2015 and January 2022 and has since joined the Institut Pasteur, taking over the management of the ethics division.

Rolando Leiva and **Lucie Sabin**, both project managers at Hospinnomics, each obtained a PhD scholarship at UCL (University College London) and left the team in September 2020 and September 2021 respectively.

Project Monitoring Committee

In 2022, Hospinnomics set up a project monitoring committee constituted of affiliated senior researchers. This committee meets once a month and each of the researchers is in charge of one or more projects, to which they devote one morning per week in direct contact with the project manager.

It is currently composed of:

- **Pauline Chauvin** (LIRAES),
- **Lionel Perrier** (GATE),
- **Abdelhak Nassiri** (UBO),
- **Valérie Seror** (AMSE)
- **Zeynep Or** (IRDES).

Affiliated researchers

The team has grown over the years with the affiliation of senior researchers to the Hospinnomics chair.

The affiliated researchers are:

Bénédicte Apouey (CNRS/PSE),
Marc Bardou (CHU Dijon Bourgogne),
Eliana Barrenho (OECD),
Luc Baumstark (Commissariat Général à l'Investissement),
Pauline Chauvin (LIRAES),
Valérie Clément (Université de Montpellier),
Benoit Dervaux (CHU de Lille),
Paul Dourgnon (IRDES),
Fabrice Etilé (PSE),
Matteo Galizzi (LSE),
Philippe Gorry (Université de Bordeaux),
Laurence Hartmann (CNAM),
Hélène Huber (Université Paris 1 Panthéon-Sorbonne/PSE),
Izabela Jelovac (CNRS),
Jean-Michel Josselin (Université Rennes 1),
Audrey Laporte (Université de Toronto),
Christine Le Clainche (Université de Lille),
Rolando Leiva (UCL),
Antoine Marsaudon (IRDES),
Grégoire Mercier (Université de Montpellier),
Marisa Miraldo (Imperial College Business School, London),
Antoine Nebout (INRA),
Grégory Ninot (Université de Montpellier),
Zeynep Or (IRDES),
Erwann Paul (CHU de Caen),
Lionel Perrier (Centre Léon Bérard),
Thomas G. Poder (Université de Montréal),
Thomas Rapp (LIRAES),
Silvana Robone (Università degli Studi dell'Insubria),
Valérie Seror (VITROME - IRD),
Vandana Sharma (Harvard T.H. Chan School of Public Health),
Jonathan Sicsic (LIRAES),
Sandy Tubeuf (Université Catholique de Louvain).





TRAINING

The chair is committed to the training of young researchers: post-doctoral, doctoral and master students. Courses are also provided by members of the chair in various establishments (Paris 1 Panthéon-Sorbonne, PSE, Sciences-Po Paris, Paris Cité University, EN3S).

DOCTORATES DEFENDED and POST-DOCTORATES

Alex Proshin obtained a scholarship from the Doctoral School of PSE and Paris 1 Panthéon-Sorbonne and completed his thesis at Hospinnomics under the joint supervision of Lise Rochaix and Audrey Laporte (University of Toronto). He defended his thesis on 02/09/2021 which focused on the evaluation of various health pricing reforms in Canada, France and Russia. After his doctoral defense, he continued as a post-doc at the chair until August 2021 and was then recruited as a postdoc at the University of Toronto to work with the Ontario Ministry of Health and Audrey Laporte on an evaluation of the efficiency of vaccinations in the Province of Ontario.

Ivan Tzintzun obtained a thesis grant from the doctoral school of PSE and Paris 1 Panthéon-Sorbonne and defended his thesis on 04/16/2021 on "Social Networks, Time Preferences and Market Failures: Three Essays on Health Economics", under the joint supervision of Lise Rochaix and Marc-Arthur Diaye (University of Paris 1). The thesis aims to provide an empirical examination of the causes and consequences of individual health investments. More specifically, it focuses on the study of the determinants of food choices as well as on understanding the impact of physical activity on the health of individuals. The common thread of this work is the highlighting of the crucial role played by the interaction of economic agents with their environment in their choice of health. Ivan is on a 2-year postdoctoral contract at Hospinnomics since April 2022.

CURRENT DOCTORATES

Sarah Nedjar-Calvet is in the second year of her thesis. She obtained a thesis grant from the EHESP at the end of her APE Master at PSE, under the joint supervision of Lise Rochaix and Nicolas Sirven.

Meng Jiang began her doctoral program in January 2022, after finishing her EDCBA (now SIA) master's degree at PSE and working as a research assistant at Hospinnomics. She is carrying out her thesis under the joint supervision of Lise Rochaix, Philippe Gagnepain (PSE) and Liza Friedlander (IMAGINE Institute) and benefits from the second thesis grant awarded to the chair by the IMAGINE Institute.

Thomas Pelloquin is registered for a thesis in economics at the EHESP under the joint supervision of Nicolas Sirven and Lise Rochaix. His work focuses on hospital investment, optimal pricing models, and the evaluation of pricing and organizational innovations in the context of Article 51 experiments.

MASTERS, INTERNSHIPS and CAPSTONE projects

Several students have completed their thesis or professional internships at Hospinnomics, coming from various teaching environments to which the members of the team belong (PSE, Paris 1, Sciences Po Paris), as well as from other establishments (ENS-Lyon, Paris Saclay, EHESP, HEC). Each year, the applications confirm that a growing number of young graduates are interested in the prospect offered to the chair of work closely articulating academic research and decision-making support. Over the period covered, 18 students completed an internship or their thesis at Hospinnomics (see appendix).

Produced as part of the EQUIRAC project at Hospinnomics, **Olivier Supplisson's** HEC Master's thesis received the 'Grande Ecole and specialized master thesis' prize from the HEC foundation, which rewards 8 people (students, researchers and professors) for their "academic work or pedagogical excellence". His contribution has made it possible to build a simulator, based on PMSI data from the GPUH, that allows testing different scenarios for reforming hospital out-of-pocket expenses (bundles, shields, etc.).

Meng Jiang presented her Capstone project and her dissertation under the joint supervision of Lise Rochaix and Patrick Jourdain (GPUH) for her Master 2 EDCBA (Economic Decision and Cost-Benefit Analysis), later renamed SIA (Sustainable Impact Analysis, at PSE - Ecole des Ponts). The project is entitled "*Costs analysis on dynamic and relative static staffing models and productivity analysis on current dynamic model*". By comparing the dynamic staffing model developed within the framework of the Covidom project to a static staffing model, she established the efficiency of a dynamic model for remote monitoring of user health status during the first and second waves of Covid-19.

Clara Brunel defended her Master 2 APE thesis (Economic Analysis and Policy) at PSE entitled "*Can private emergency departments help reduce neighboring public hospitals' congestion?*". Based on data from the emergency departments database set up by Hospinnomics, she observed a statistically significant reduction in waiting times in the emergency departments of public hospitals in the years following the creation of an emergency department at a nearby private hospital, this effect disappearing after 3 years.

Sarah Chauveau defended her Master 2 PPD (Public Policy and Development) thesis at PSE entitled "*Containing biomedicine expenditure: the effectiveness of biosimilars*". Based on the public Medic'AM database from the SNDS and the annual summaries of the ATIH, she was able to show that the entry of biosimilars on the market corresponded to an increase in price competition, which should make drugs derived from biotechnology more accessible to all.

Gabriela Huamani defended her Master 2 EDCBA thesis with Lise Rochaix at PSE entitled "*Health inequalities in Île-de-France: are the actions carried out by health professionals coherent with the Regional Health Project 2018-2022 of the Agence Régionale de Santé d'Île-de-France?*". The thesis proposes a theoretical contribution which (1) presents a typology of health inequalities based on the main economic theories of justice and (2) introduces a questionnaire which elicits the preferences in terms of inequalities of health professionals that will be considered in the Regional Health Project 2018-2022.

THESIS COMMITTEES AND JURIES

Lise Rochaix participated in **Alexandre Caron's** thesis committee, for a doctorate in public health on the theme "Usefulness and relevance of methods based on the value of information for decisions taken over the lifetime of the medical device", supervised by Benoît Dervaux, affiliated to Hospinnomics.

Five other theses were defended with the participation of Lise Rochaix as a reviewer, for the first four, or as president of the jury

for the last one:

- **Myriam Lescher-Cluzel** defended her thesis in economics on 09/15/20 under the supervision of Nicolas Sirven, at the University of Paris Cité, on the theme: 'Quality of hospital care, competition and patient choice in imperfect information: the French case'.

- **Morgane Michel** defended her research thesis on health services on 03/22/21, under the supervision of Carine Chevreul, on the theme: 'Influence of precariousness on the efficiency of hospital care in paediatrics'.

- **Maxime Large** defended his thesis in economics on 01/28/22, under the supervision of Laurent Carnis at Gustave Eiffel University, on the theme of 'Socio-economic valuation of the cost of road accidents in France: Estimation of Human Costs and Medical Costs of Road Injuries and Deaths: New Benchmarks'.

- **Xuemin Zhu** defended her thesis in economics on 11/05/22 under the supervision of Marjon Van der Pol at the University of Aberdeen on the subject: 'The role of physician's risk attitudes and personality in decision-making'.

- **Christophe Lousseuarn** defended his thesis in economics on 06/28/22 under the supervision of Yann Videau at the University of Paris-Est Créteil on the topic 'Effects of healthcare payment methods on the activity of private general medical practitioners in France'.

DEGREE FOR THESIS SUPERVISION (HDR)

Three researchers affiliated with the chair obtained their degree to supervise research (Habilitation à Diriger des Recherches - HDR) with Lise Rochaix as president of the jury or as guarantor. They will now be able to supervise theses in health economics and econometrics at Hospinnomics.

Valérie Seror, 1st class researcher at INSERM (Marseille) and affiliated with Hospinnomics, defended her HDR on September 24th, 2021 at the University of Paris 1 Panthéon-Sorbonne, with Lise Rochaix as guarantor, entitled 'From medical test to health information: attitudes, decisions and behavior in the face of quantified risk'.

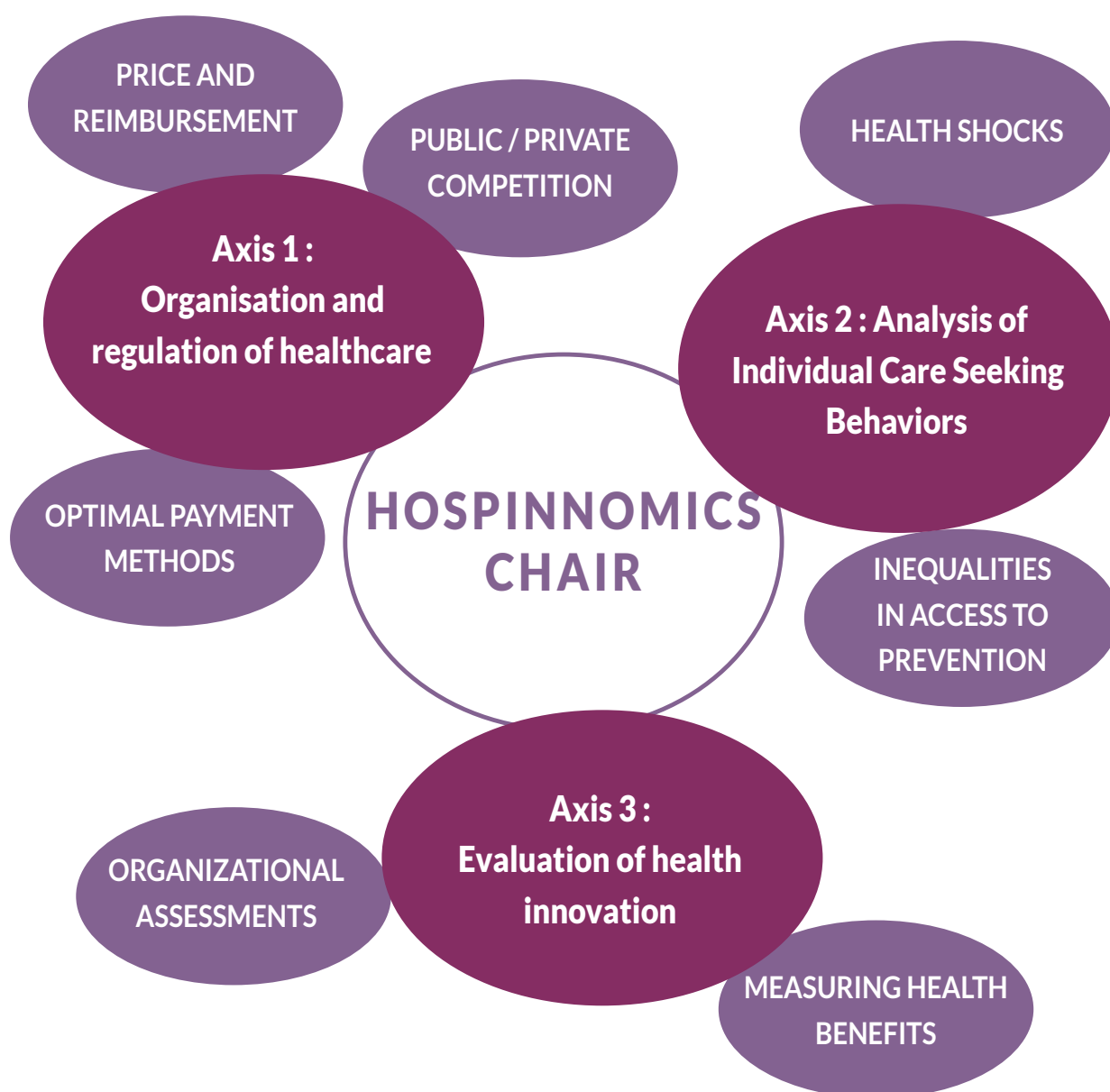
Abdelhak Nassiri, lecturer at the University of Western Brittany (UBO), presented a dissertation for his HDR under the title: 'Empirical evaluation of public systems and individual strategies in three sectors: employment, health, environment and natural resources', with Lise Rochaix as the president of the jury.

Pauline Chauvin, lecturer at the University of Paris-Cité defended her HDR entitled 'Improving the efficiency of the health system: prevention, treatment and care' on June 29th, 2022 at the University of Paris 1 Panthéon Sorbonne, with Lise Rochaix as guarantor.

RESEARCH AND EXPERTISE

The results of academic research and scientific expertise are presented jointly for the **three main areas of research** of Hospinnomics, the objective of the chair being to promote convergence between these two types of production. Indeed:

- Part of the expertise initially requested by decision-makers may give rise to requests for research funding, subsequently leading to the production of academic articles;
- Conversely, some of the research questions initially developed by the Hospinnomics chair and its ecosystem can lead to the production of scientific expertise (in the form of literature reviews, data analyses or policy-briefs), directly useful for health decision-makers.





AXIS 1: ORGANISATION AND REGULATION OF HEALTHCARE

This first axis of research focuses on the analysis of the organizational characteristics of health systems by studying the impact of regulatory changes or reforms on the efficiency, equity or quality of services. Several themes were pursued or developed over the period covered by this report.

PUBLIC-PRIVATE COMPETITION

The study conducted by Daniel Herrera and Lise Rochaix on the mechanisms of competition between public and private maternity hospitals was published in the *Journal of Environmental Economics and Management*. The findings confirm the importance of the degree of competition both between private maternities and between private and public maternities. The results also show that the latter only crowd out private maternity hospitals when the market is large enough. No crowding out effect is observed from the private sector to the public sector.

PRICE AND REIMBURSEMENT OF MEDICINES

• *Add-on List*

Laurie Rachet-Jacquet, Léa Toulemon and Lise Rochaix have studied the impact of removing expensive cancer drugs from the “Add-on List” through four waves of withdrawals. The findings, which were [published in the journal *Health Policy*](#) (Rachet-Jacquet, Toulemon et Rochaix, 2021), suggest that prescription volumes, product choices (principle versus generic) and price levels are not systematically affected by these withdrawals, regardless of the type of hospital.

• *Orphan drugs*

Research on the development of orphan drugs for rare diseases was developed as part of a research project on rare cancers funded by the National Cancer Institute (INCA) and developed in collaboration with the University of Bordeaux and Imperial College (London). This project led to [a publication](#) (Barrenho, Halmi, Miraldo, Tzintzun, Raïs Ali, Toulemon, Dupont et Rochaix, 2022) in the journal *Social Science and Medicine* (Rank 1 at the CNRS).

• *Rare diseases*

Following on from the thesis grant awarded by the IMAGINE Institute to Hospinnomics from 2016 to 2019 for Setti Raïs, a new thesis project has been selected by the Selection Committee for the PSE ‘Enterprise and Society’ partnership program, with three-year funding from the IMAGINE Institute. This project, prepared for the Hospinnomics chair by Meng Jiang, who graduated in 2021 from the M2 MDCBA (now SIA) at PSE, will be placed under the supervision of Pr. Lise Rochaix (PSE & University Paris 1 Panthéon-Sorbonne), Pr. Philippe Gagnepain (PSE & University Paris 1 Panthéon-Sorbonne) and Dr. Lisa Friedlander (IMAGINE Institute), as part of the co-construction of the scientific project. The thesis will focus on two

complementary axes in the field of rare diseases. The first, at the micro level, will analyze the determinants of delays in obtaining a diagnosis; the second, at the macro level, will study the spillover effects of R&D from rare diseases to common diseases. This thesis will allow to mobilize Meng Jiang's capacities as an economist and data scientist in order to explore the links to be developed between data from preference revelation surveys, such as Discrete Choice Experiments (DCE), and existing clinical and epidemiological databases.

OPTIMAL PAYMENT METHODS

• *EQUIRAC project*

Hospinnomics participates in a research consortium jointly with two other research teams (IRDES and ECEVE, INSERM UMR1123). The chair is in charge of work package (WP) 3, which is testing new proposals for reforms in out-of-pocket payments (restes-à-charge RAC), including free access to hospital care. The philosophical foundations of these reforms are analyzed, in addition to micro-simulation work on the effects of various reforms in terms of equity and efficiency. The historical analysis makes it possible to trace the conditions of emergence of this

concept of 'RAC' and places OOPs' reforms in their political and historical context.

- **EDS project**

Hospinnomics is part of a Consortium (EHESP, Hospinnomics, Sciences-Po Paris) placed under the responsibility of Nicolas Sirven (EHESP) for the evaluation of French experiments of article 51 on payments per episode of care (EDS). As part of this five-year contract with the CNAM, the objective is to build a multidisciplinary evaluation of the experimental financing mechanism implemented for surgical procedures, in 46 voluntary hospital sites meeting the specifications. This work is an integral part of Thomas Pelloquin's thesis project.

- **OPTISARC project**

Hospinnomics is part of a Consortium (Centre Léon Bérard, Ecole Nationale Supérieure des Mines, Center for Processing and Analysis of Data in Pharmaco-Epidemiology) and is in charge, with Lionel Perrier, the project's lead researcher, of analyzing the incentives put in place to encourage the performance of surgical operations in specialized centers, based on early diagnosis.

- **SEQOGEN project**

This project consists of an overall economic evaluation of two high-throughput sequencing platforms for diagnostic purposes (SeqOIA and AURAGEN). These platforms have been selected by the Ministry of Solidarity and Health as part of the call for projects for the implementation and evaluation of pilot projects of high throughput sequencing platforms for diagnostic purposes of the France Genomic Medicine Plan. 2025 (PFMG). Two teams of health economists (one from Lyon and the other from

Paris) have been brought together to form the 'SEQOGEN' consortium. Hospinnomics is in charge of WP 3 on pricing simulations, together with Lionel Perrier, from the Léon Bernard Center in Lyon.

- **HOSPITAL INVESTMENT Project**

An economic analysis of the investment in healthcare structures was carried out at Hospinnomics, in partnership with the consultancy firms Ylios and Frontier, as part of a call for tenders submitted by France Strategy for the High Council for the Future of Health Insurance (HCAAM). Within the consortium, the work carried out by Hospinnomics consists of an analysis of lessons from the economics literature useful for the regulation and planning of investments. On the one hand, the report consists of a general analysis of investment behavior in economic theory and its implications for the health sector, in particular within the framework of multidimensional uncertainty. On the other hand, the document proposes a theoretical framework for the involvement of the State in the regulation and planning of investment in healthcare structures. Finally, some specific avenues of intervention are explored through the transformation of the incentive framework in which the actors of investment evolve, and through the direct implication of the State as an investor. One of the results is the observation of a low volume of publications about investment in healthcare structures and its regulation. Hospinnomics opens new research perspectives through this project, which continues in particular with the doctoral work of Thomas Pelloquin.

- **ARTICLE 51 Project**

A new project is launched as part of Thomas Pelloquin's doctoral work, with the Sciences Po Health chair.

The work, funded by the CNAM via the Sciences Po Health chair, spans 2 years with half-time funding over the period. The objective is to inform the opportunity to generalize experiments by identifying particular methods of pricing and organization of care or specific to different social experiments for which a collective benefit exists according to existing evidence. The work will consider the opportunity to deploy organizational and pricing innovations according to their characteristics and the assessments performed; it will consist of a cross-section analysis and a synthesis of the results obtained by the evaluators. The work is developed in three phases:

- a preliminary phase of collection of the empirical material and definition of the research with stakeholders,
- the second phase of classification of the empirical material and,
- finally, a third phase for its analysis.

This work will be carried out in close collaboration with the evaluation unit of the Ministry of Health and the CNAM.

- **Hi PRIX Project**

Hospinnomics participated in a funding request with a large European consortium led by Bocconi University, under the Horizon 2022 projects on the theme 'Pricing and payment models'. This new European project will start in January 2023, with the responsibility of a transversal work package on the effects in terms of equity of the different pricing methods and the analysis of the solutions adopted to mitigate the negative effects.

AXIS 2: ANALYSIS OF INDIVIDUAL HEALTH BEHAVIORS

This second axis of research focuses on the analysis of the behavioral determinants of lifestyle choices and access to prevention, diagnosis or treatment.

HEALTH SHOCKS

- *Be-Health Project*

The research on health shocks, initiated as part of Antoine Marsaudon's doctoral thesis, continues as part of the Be-Health project funded by the ANR. The objective of this project is to set up a behavioral module for the Constances cohort, similar to the one that exists in the United Kingdom for the '*Understanding Society*' cohort.

- *DO-D-KS Project*

This project, funded by the IRESP and led by Christine Le Clainche, Lise Rochaix and Antoine Marsaudon has led to the production of a final report. It analysed the role played by personality traits (extraversion, sociability) and individual preferences (with regard to time and risk) in explaining possible delays in obtaining a breast cancer diagnosis. Two scientific articles are being written, the first focusing on the behavioral dimension of the use of prevention and the second on the analysis of variations over time between the first symptoms and seeking care.

INEQUALITIES IN ACCESS TO PREVENTION

- *RESISTE and C-BIG-SCREEN Projects*

Hospinnomics is a member of the RESISTE Consortium led by Marc Bardou (CHU Dijon) which aims to assess the effectiveness, ethical and economic issues, as well as the distribution of the benefits of an incentive intervention aimed at encouraging cervical cancer screening among socially disadvantaged women. The study carried out under Hospinnomics' work package uses discrete choice experiments to measure the revealed preferences of patients and professionals concerning self-testing and the implementation of financial incentives for patients in France.

A large consortium (CBIG-SCREEN) financed by the EU makes it possible to develop a project similar to RESISTE but on a European scale, by adopting an approach of co-construction of prevention policies that can meet the needs of women in situations of vulnerability. As part of this project, Hospinnomics is in charge of WP 4, together with Pia Kirkegaard (Denmark), to study the preferences of women in vulnerable situations through a discrete

choice experiment. Ethical analyses and qualitative field work will make it possible to address the issues related to the implementation of non-financial incentives in terms of screening policies. It will be conducted according to the methods used to document ethical aspects in the assessment of health technologies, but also empirically due to the link established with the qualitative results obtained in the anthropological section of the two projects.



AXIS 3: EVALUATION OF INNOVATION

This axis is at the heart of Hospinnomics' activity and is divided into three sections: measurement of benefits, evaluation of treatment strategies and evaluation of organizational innovation.

MEASUREMENT OF BENEFITS

Going from measuring costs alone to comparing them with benefits broadens the evaluative perspective in order to anchor system priorities to the patient/user perspective. This is the point of view adopted to shed light on the definition of priorities and rules for access to health services.

• VSL Project

Daniel Herrera and Lise Rochaix conducted an empirical evaluation of the effects of age and health on the propensity to accept compensation for an increased risk of mortality. This estimate was made using the revealed preference method in the Constances cohort. The results show that the relationship between age and the value of statistical life is U-shaped. This work has been [recently published](#) (Herrera Araujo et Rochaix, 2020).

• IMPACT-HTA Project

Some projects, such as the participation in the Horizon 2020 European project, IMPACT-HTA, led by Panos Kanavos (LSE), are now complete. The behavioral component of the work package for which Hospinnomics was responsible aimed to define the ethical and economic conditions under which it is possible to resort to less innovative but also less costly interventions. A 'decrementally cost-effective' health intervention can be efficient because of its lower cost, in situations of clinical non-inferiority or even in certain cases of minor losses of effectiveness compared to current practice. The work carried out led to the exploration of two hypotheses: 1° the consideration of decrementally cost-effective alternatives offers substantial margins allowing the reallocation of resources, 2° it can lead to making more explicit the reasons underlying the decisions of allocation of health resources, thus contributing to the democratic

debate. The European Commission's external evaluators delivered their assessment of the European IMPACT HTA project in May 2021. The Commission's reviewers considered that the chair's contribution "stimulates the debate and provides tools for considering decrementally cost-effective interventions, which is extremely relevant for modern societies that dare to make promises of very large benefits associated with innovation, all this to obtain political support from the population". This work has been the subject of a report and a guide available on the EU website as well as presentations, in particular, at the conference of the European Association of Health Economists in Oslo on July 6th, 2022 and the EuHEA doctoral conference on August 29th, 22, with two publications in progress.

• Santé/Environnement Project

The Committee of Experts on Economic Evaluation Methods established by France Strategy and the General Secretariat for Investment (SGPI) appointed Benoît Dervaux and Lise Rochaix in January 2020 to chair a 'Health-Environment' working group responsible for proposing a methodology that is both operational and scientifically robust for assessing the health effects of investment projects. The [report submitted](#) in March 2022 (Dervaux et Rochaix, 2022) presents a method applicable to different sectors. In addition to Bénédicte Meurisse (CGDD), reviewer and general coordinator with the help of Alice Robinet, the working group convened 85 experts from different disciplines and fields, with four different thematic groups: psychological damage from floods, health benefits from energy renovation in housing, disturbances linked to construction site noise and health benefits of physical activity in public spaces and a transversal group. Additionally, the report provides turnkey tools for integrating health effects

(mortality and morbidity) into ex-ante socio-economic assessments of public investment projects. This report is intended for all actors likely to request, perform or use results of socio-economic evaluations of public investment projects or of public policies affecting health, even beyond the four applications studied.

• Non-drug strategies evaluation project

Measuring the benefits of non-drug strategies is quite complex in economic evaluation, as clinical evidence is often insufficient or of low value. However, evidence is increasingly requested on the value of non-drug strategies as useful complements to drug therapies. In this context, Ivan Tzintzun and Lise Rochaix explore, in a forthcoming article, the effect of physical activity on the perception of the state of health and the number of non-communicable diseases in early adulthood. The results suggest that leisure-related physical activity has a significant positive effect on health and reduces the number of chronic diseases. In addition, intense work-related physical activity has the opposite effect: it decreases perceived health status and increases the risk of chronic diseases. Moreover, Hospinnomics participates in the methodological work carried out at the University of Montpellier 1 by Gégory Ninot for the drafting of a methodological guide for the evaluation of non-drug therapeutic strategies.

ORGANIZATIONAL INNOVATION ASSESSMENT

Projects completed

Four organizational innovation evaluation projects, carried out with Hospinnomics' core funding or in response to project calls, have now been completed. They have been reported and academic publications, when possible, are currently developed.

- **EVALCASE Project**

This project was funded by the Caisse Nationale d'Assurance Maladie to assess the impact of "personalized" management in cases of serious occupational accidents on the level of incapacity for work, as well as on treatment costs. The evaluation shows that the program led to an increase in temporary and permanent incapacity for work scores, as well as an increase in treatment costs during the first year. An [article was published](#) in the *Journal of Occupational Rehabilitation* (Rolando, Rochaix, Kiefer et Dupont, 2021).

- **PRDVEL Project**

The Hospinnomics chair was commissioned by the GPUH to assess the impact of a new online appointment booking system on Doctolib for outpatient consultations. The final evaluation delivered in the fall of 2020 shows that the online dating service leads to an increase in activity, a decrease in the no-show rate and an increase in the delay before the first appointment. An academic article is currently being written.

- **DMU Project**

In March 2022, Hospinnomics was commissioned by the GPUH Medical Establishment Commission to evaluate the adoption in July 2019 of an internal organisation change: the medical-university departments (DMU). This project led to the creation of two online questionnaires (for doctors and midwives, on the one hand, and for health managers, on the other hand) with a large participation of the targeted staff (approximately, 2400 and 940 respondents respectively). The analysis of the questionnaires was submitted in May and June 2022 and will then be subject to scientific valorization.

- **ROSIE Project**

This project was funded by the network of public and private gerontology centers in the Paris region (GEROND'IF), led by the GPUH, to map pathologies and describe the use of social robots in geriatrics. In cooperation with Benoit Dervaux (CHU Lille), Hospinnomics has identified the need for adaptation of economic

evaluation methods to the special features of these medical devices, to the health needs of institutionalized elderly people and the specificities of elderly care environments. The report, submitted in July 2022, will be subject to scientific valorization.

Current projects

Five organizational innovation assessment projects are ongoing, funded by public calls for projects.

- **PIC-R Project**

Funded by the Medico-Economic Research Program (PRME) and co-directed by Lise Rochaix and Evangeline Pillebout, nephrologist at GPUH, this project aims to assess the added value of therapeutic education disseminated by an interactive and community internet platform, for kidney diseases in hospitals. The inclusions, ending in the 2022 summer, will allow to perform the economic analysis and to promote these results through publications.

- **AMBU-ENDO Project**

Co-directed by Lise Rochaix and Geoffroy Canlorbe, gynecologist and obstetrician at GPUH, in collaboration with two Hospinnomics' affiliates (Jean-Michel Josselin and Valérie Clément), this project aims to assess the comparative effectiveness of day surgery versus full hospitalization for endometrial cancer. This project aims to compare two strategies for evaluating health benefits (in terms of Quality Adjusted Life Years (QALYs) and well-being) and to measure the preferences of patients and professionals through a discrete choice experiment on the main characteristics of the management of endometrial cancer.

- **CRISTAL IMAGE Project**

This project was set up by the Biomedicine Agency (ABM), the entity in charge of organ donation in France. CRISTAL is a remote information system allowing real-time visualization of the characteristics and imaging of donor organs so that transplant teams can decide whether to accept organs. Hospinnomics is responsible for incorporating into this

project a preference elicitation study to measure the willingness of transplant professionals to adopt this system and to measure their preferences about characteristics concerning the provision of imagery. The discrete-choice study will be conducted in the summer of 2022 and will later allow a joint publication of the results with ABM clinicians.

- **BOOSTER Project**

The Hospinnomics chair is in charge of the early evaluation of health technologies developed within the framework of the RHU ANR BOOSTER, a French project which aims to improve the management of patients with ischemic strokes. Hospinnomics develops an economic evaluation of the added value of predictive patient stratification techniques and an ethical analysis of barriers to the adoption of artificial intelligence technologies. The research carried out for 2021 and 2022 focuses on the modeling of a patient pathway based on stroke patient care data made available by the Rothschild Foundation, with approximately 1,100 care pathways in this hospital, specialized in mechanical thrombectomy. The first results of the baseline study are derived from an analysis of care pathways for the management of patients with ischemic stroke. A similar study will be conducted on data from the GPUH Health Data Warehouse as soon as access to the data is obtained.

- **TELEX Project**

Hospinnomics, the DST of the GPUH and the clinical research unit in health economics (URC-éco) responded to the call for projects of the Scientific Council of the ATIH in May 2021 and the TELEX project was selected in November 2021. The objective is to improve the traceability of tele-expertise through a better understanding of the uses and associated procedures. The development of indicators allowing a more exhaustive and structured collection of data is also planned.

EVENTS

SEMINARS

- The work of the investment project was presented at the High Council's regulation seminar and later at the HCAAM plenary session by Lise Rochaix and Thomas Pelloquin on December 9, 2021.
- On March 24 and 25, 2022, the first annual meeting of the European project CBIG-SCREEN was held at PSE. The project partners, from 10 European countries, gathered in Paris to present their respective progress.
- Thomas Pelloquin represented Hospinnomics on the second RHU Booster Steering Committee in March 2022 in the presence of the International Scientific Council and representatives of the ANR.
- Lise Rochaix presented at the second round-table of the College of Health Economists organized at the Hôtel-Dieu on May 24, 2022 on the theme of the future of hospitals.
- As part of the EQUIRAC project, two seminars were organized on May 31st and June 9th, 2022. The meetings enabled the project partners to put their results into perspective and discuss further work. In this context, Lise Rochaix, Christine Meyer

and Baptiste Haon presented the progress of the WP under the chair's responsibility.

CONFERENCES

- Antoine Marsaudon, PhD student at Hospinnomics until 2019, presented his paper entitled *"Do physical health events impact mental health? Evidence from European panel data"*, of which Lise Rochaix is co-author at the French Health Economics meeting (Journées des Economistes de la santé Français - JESF) on December 6th, 2020.
- Lise Rochaix chaired the first "Health and Work" session during which Sarah Nedjar-Calvet, doctoral student at the École des Hautes Études in Public Health (EHESP) under the co-direction of Nicolas Sirven and Lise Rochaix, presented her paper on the links between psychosocial risks and the health of French hospital workers (French Health Economics meeting - JESF) in December, 2021.
- Lise Rochaix led the Scientific Committee of the 4th Health&Tech symposium organized by Care-Insight, in collaboration with the Health&Tech think tank and Hospinnomics. The chosen theme was

that of *Point of Care (POC) technologies*. This international symposium organized on December 15th, 2021 provided a better understanding of the issues, and the potential but also the risks of adopting POCs, in their great diversity, both in terms of technologies and target populations.

- The submission of the report "The socio-economic evaluation of the health effects of public investment projects" was the subject of a symposium, organized on March 10th, 2022, at France Strategy, in the form of two panels. The afternoon introduction, chaired by Marc-Antoine Lacroix (General Secretariat for Investment), enabled the two co-chairs of the working group, Lise Rochaix and Benoît Dervaux, to present the methods and the main results of their report. The first panel, chaired by Vincent Marcus (General Commissioner for Sustainable Development), questioned researchers and practitioners of socio-economic assessment on the possibilities of applying the methods and turnkey tools proposed in the report. The second panel, co-chaired by the two co-chairs of the working group, discussed the recommendations and opened up prospects for the transposition of the





results to other applications, such as environment or road safety.

- On the occasion of the 2021 national conference (Journées de l'Économie - JECO), Lise Rochaix organized and moderated a panel on the following questions: should health economists change their research methods and programs following the 'Covid shock'? What are the conditions under which they will count, tomorrow, among those who provide evidence for health decisions? Speakers included Christian Gollier (Professor of Economics, Toulouse School of Economics), Jérôme Wittwer (Professor of Economics, Institute of Public Health, Epidemiology and Development - ISPED - of the University of Bordeaux) and Carol Propper (Professor of Economics, Imperial College London).

- On June 14, 15 and 16, 2022, the 70th edition of the annual congress of the French Association of Economic Science (AFSE) was held in Dijon. Lise Rochaix chaired the session on health economics entitled "*The cost and returns of Health systems*" and participated in the round table on the issue of climate change and its introduction in economics training.

- The European Association of Health Economists (EUHEA) conference was held in Oslo from July 5 to 8, 2022 with three oral presentations (two by Ivan Tzintzun and one by Camilla Fiorina) and an invited session was proposed and chaired by Lise Rochaix.

- The chair participated in the doctoral conference organized by EuHEA from August 29 to 31 in Galway, Ireland, with a presentation by Ivan Tzintzun of the results of work carried out as part of the 'Impact HTA' project.

ANNUAL TECHNICAL SEMINARS

The **annual technical seminars** organized by Hospinnomics constitute a free space for presentation and discussion between health economists and decision-makers, thus offering the opportunity to researchers, professionals (in particular from the GPUH), and public policy decision-makers to exchange informally.

- The 2020 **Technical Seminar on Risk Adjustment** was organized jointly with Nicolas Sirven from EHESP and Grégoire Mercier from the University of Montpellier. The closing of the workshop (01/14/21) was made by Randall Ellis (Boston University): "*Advanced Risk Adjusters and Predictive Formulas for Diagnosis-Based Risk Adjustment*".

- As part of the Impact-HTA project, Hospinnomics organized a '**decision makers/experts' technical seminar** to measure their willingness to adopt or recommend so-called "decrementally cost-effective" strategies through a discrete choice experiment.

• Drug Technical Seminar 2022

Session 1 (12/05/22)

- **Bruno Versaevel**, Em-lyon business school & GATE UMR 5824. "*Efficient and fair pricing of medicines in an unequal world: who should pay for R&D?*" Co-authors: Etienne Billette de Villemeur, University of Lille & LEM UMR 9221, Vianney Dequiedt, University Clermont Auvergne & CERDI UMR 6587

- **Lise Rochaix**, Hospinnomics, & **Léa Toulemon**, Institute of Public Policies, Paris School of Economics. "*Hospital payment schemes and*

high-priced drugs: Evidence from the French Add-on List", DOI: [10.1016/j.healthpol.2021.04.012](https://doi.org/10.1016/j.healthpol.2021.04.012). Co-author: Laurie Rachet-Jacquet, Center for Health Economics, University of York

Session 2 (12/05/22)

- **Iván Tzintzun** presented the article published in Social Science and Medicine: 'Inequities in cancer drug development in terms of unmet medical need'.

The next sessions are scheduled for September, October and December 2022.

INVITATIONS

James Robinson and **Kimberly MacPherson** from the University of California - Berkeley will participate in September at the Medicines Technical Seminar 2022, as part of the Agora of digital care organized by the AP-HP and the Digital Economy Association (September 8 and 9, 2022).

Annika Herr, professor of economics and head of the 'health economics' chair at the University of Hanover, will be invited in spring 2023.

THE HOSPINNOMICS NEWSLETTER

Since September 2021, a bimonthly newsletter (available on the website) has allowed providing updates from the chair in real time concerning the team, research projects, publications and interventions.

PUBLICATIONS

ARTICLES IN PEER-REVIEWED JOURNALS

1. **Fiorina, Camilla, Jean-Michel Josselin**, Maude Trépart-Normand, Pierre Tattevin, and Emma Bajoux. '[Should Anti-Malarial Chemoprophylaxis Be Reimbursed in France? A Cost-Effectiveness Analysis of Different Reimbursement Strategies](#)'. *Infectious Diseases Now* (26 June 2022).
2. **Barrenho, Eliana**, Réka Halmi, **Marisa Miraldo**, Iván Tzintzun, **Setti Raïs Ali**, **Léa Toulemon**, **Jean-Claude K. Dupont**, and **Lise Rochaix**. '[Inequities in Cancer Drug Development in Terms of Unmet Medical Need](#)'. *Social Science & Medicine* 302 (1 June 2022) : 114953.
3. Kardaś-Słoma, Lidia, Sandra Fournier, **Jean-Claude K. Dupont**, **Lise Rochaix**, Gabriel Birgand, Jean-Ralph Zahar, François-Xavier Lescure, Solen Kernéis, Isabelle Durand-Zaleski, and Jean-Christophe Lucet. '[Cost-Effectiveness of Strategies to Control the Spread of Carbapenemase-Producing Enterobacterales in Hospitals: A Modelling Study](#)'. 2022.
4. **Leiva, Rolando**, **Lise Rochaix**, Noémie Kiefer, and **Jean-Claude K. Dupont**. '[Evaluating the Impact of Intensive Case Management for Severe Vocational Injuries on Work Incapacity and Costs](#)'. *Journal of Occupational Rehabilitation* 31, no. 4 (December 1, 2021): 807–21.
5. **Rachet-Jacquet, Laurie**, **Léa Toulemon**, and **Lise Rochaix**. '[Hospital Payment Schemes and High-Priced Drugs: Evidence from the French Add-on List](#)'. *Health Policy* 125, no. 7 (July 1, 2021) : 923–29.
6. Gesbert, Cedric, Joëlle André-Vert, Marc Guerrier, Margaret Galbraith, Christine Devaud, **Jean-Claude K., Dupont**, and Marie-France Mamzer. '[The Contribution of French Patient and Consumer Groups to Health Technology Assessments over a 2-Year Period: An Observational Retrospective Study](#)'. *International Journal of Technology Assessment in Health Care* 37, no. 1 (2021).
7. Guillon, Marlène, **Lise Rochaix**, and **Jean-Claude K. Dupont**. '[Enjeux de l'évaluation Économique de L'activité Physique](#)'. *Actualité et Dossier En Santé Publique* N° 114, no. 2 (2021): 43–44.
8. Pillebout, E., **Lise Rochaix**, Luc Behaghel, L Farge, Isabelle Durand-Zaleski, and **Jean-Claude K. Dupont**. '[Évaluation Médico-Économique de L'éducation Thérapeutique Par Une Plateforme Interactive Communautaire, Dialyse et Transplantation Rénale, PIC-R](#)'. *Néphrologie & Thérapeutique* 17, no. 5 (2021): 315–315.
9. Herrera Araujo, Daniel, and **Lise Rochaix**. '[Does the Value per Statistical Life Vary with Age or Baseline Health? Evidence from a Compensating Wage Study in France](#)'. *Journal of Environmental Economics and Management* 103 (September 2020).
10. Herrera-Araujo, Daniel, and **Lise Rochaix**. '[Competition between Public and Private Maternity Care Providers in France: Evidence on Market Segmentation](#)'. *International Journal of Environmental Research and Public Health* 17, no. 21 (2020).

POLICY BRIEFS

1. **Rochaix, Lise**, **Jean-Claude K. Dupont**, et **Thomas Pelloquin**. '[Évaluation de La Prise de Rendez-Vous En Ligne à l'AP-HP](#)'. Hospinnomics Recto-Verso 13 (Septembre 2021).
2. **Alex Proshin**, **Rochaix, Lise**: '[Impact of Tariff Refinement on the Choice Between Scheduled Cesarean Section and Normal Delivery: Recent Evidence from France](#)'. Hospinnomics Recto-Verso 14 (Novembre 2021).
3. **Alex Proshin**, **Rochaix, Lise** and **Audrey Laporte**: '[Impact of Quality-Based Procedures on Orthopedic Care Quantity and Quality in Ontario Hospitals](#)'. Hospinnomics Recto-Verso 15 (Novembre 2021).
4. **Alex Proshin**: '[Impact of Child Subsidies on Child Health, Well-being and Investment in Child Human Capital: Evidence from Russian Longitudinal Monitoring Survey 2011-2017](#)'. Hospinnomics Recto-Verso 16 (Novembre 2021).

BOOK CHAPTERS AND REPORTS

1. **Or, Zeynep**, **Lise Rochaix**, and **Nicolas Sirven**. '[Quelles Politiques de Santé Pour Améliorer la Qualité des Soins ?](#)' In *Le Système de Santé Français Aujourd'hui : Enjeux et Défis*, 223–52. Eska editions, 2021.
2. Dervaux, Benoît, and **Lise Rochaix**. '[L'évaluation Socioéconomique des Effets de Santé des Projets d'investissement Public](#)'. Rapport France Stratégie, March 2022.

3. **Rochaix, Lise**. Analyse de l'investissement hospitalier. Rapport Haut Conseil pour l'Avenir de l'Assurance Maladie (HCAAM), 2021.

WORKING PAPERS

1. **Proshin, Alex**. '[Impact of Child Subsidies on Child Health, Well-Being and Parental Investment in Human Capital: Evidence from Russian Longitudinal Monitoring Survey 2011-2017](#)', May 2020.
2. **Proshin, Alex**, **Lise Rochaix**, Adrian Rohit Dass, and **Audrey Laporte**. '[Impact of Quality-Based Procedures on Orthopedic Care Quantity and Quality in Ontario Hospitals](#)', June 2020.
3. **Rochaix, Lise**. Publication derived from the project DMU. Work in progress.
4. **Rochaix, Lise**, and **Jean-Claude K. Dupont**. Integration of decrementally cost-effective interventions in policy decision-making (Political Economy Part). Publication derived from the project impact-HTA. Work in progress.
5. **Rochaix, Lise**, and **Jean-Claude K. Dupont**. Acceptability of decrementally cost-effective interventions (Ethical Part). Publication dérivée du projet impact-HTA. Travail en cours.
6. **Rochaix, Lise**. Decrementally cost-effective interventions (Econometric Part). Publication derived from the project impact-HTA. Work in progress.
7. **Le Clainche, Christine**, **Antoine Marsaudon**, **Lise Rochaix**, **Olivier Supplisson**, and Jean-Cristophe Vergnaud. Do behavioral characteristics influence breast cancer diagnosis delay? Evidence from French retrospective data. Publication derived from the project DO-D-KS. Work in progress.
8. **Rochaix, Lise**. Implementation of specific evaluations of projects in the context of health innovation (art.51 LFSS) Publication derived from the project EDS. Work in progress.
9. **Rochaix, Lise**, et **Meng Jiang**. Publication derived from the project Maladies rares. Work in progress.
10. **Rochaix, Lise**. Publication derived from the project EQUIRAC. Work in progress.
11. **Rochaix, Lise**. Publication derived from the project Be-Health. Work in progress.
12. **Rochaix, Lise**. Publication derived from the project OPTISARC. Work in progress.
13. **Rochaix, Lise**. Publication derived from the project SEQOGEN. Work in progress.
14. **Rochaix, Lise**, and **Camilla, Fiorina**. Publication derived from the project RESISTE et C-BIG SCREEN. Work in progress.
15. **Rochaix, Lise**, and **Benoît Dervaux**. Publication dérivée du projet ROSIE. Work in progress.
16. **Rochaix, Lise** and **Thomas Pelloquin**. Publication derived from the project Innovations tarifaires article 51. Work in progress.
17. **Rochaix, Lise**, and Evangéline Pillebout. Publication derived from the project PIC-R. Work in progress.
18. **Rochaix, Lise**, Geoffroy Canlorbe, **Jean-Michel Josselin** et **Valérie Clément**. Publication derived from the project AMBU-ENDO. Work in progress.
19. **Rochaix, Lise**, and **Jean-Claude K. Dupont**. Publication derived from the project CRISTAL IMAGE. Travail en cours.
20. **Rochaix, Lise**. Publication derived from the project TELEX. Work in progress.

MASTER THESES WRITTEN IN HOSPINNOMICS

- Olivier Supplisson**. '[Capping the French hospital out-of-pocket to fight back the risk of extreme financial burden for patients](#)'.
- Meng Jiang**. '[Costs analysis on dynamic and relative static staffing models and productivity analysis on current dynamic model](#)'.
- Sarah Nedjar-Calvet**. 'Relation entre les soins primaires et les admissions dans les services d'urgences' (stage de 6 mois en 2020).
- Clara Brunel**. '[Can private emergency departments help reduce neighbouring public hospitals' congestion?](#)'.
- Sarah Chauveau**. 'Contenir les dépenses de biomédicaments : l'efficacité des biosimilaires'.
- Gabriela Huamani**. '[Health inequalities in Île-de-France: are the actions carried by health professionals coherent with the Projet Régional de Santé 2018-2022 of the Agence Régionale de Santé d'Île-de-France?](#)'.

ANNEXES

Interns Year 2022

Audrey Glass, already an intern during the summer of 2021 and wishing to continue working on the CRISTAL IMAGE project, joined the team in November 2022. Following a Master 2 in Applied Economics, majoring in "Public Policy", at the University of Paris 1 Panthéon-Sorbonne, she worked on CBIG SCREEN, Impact-HTA and the distribution the CRISTAL IMAGE questionnaire.

Lucille Collet joined the team in February as an intern, as part of her Master 2 in Applied Economics, majoring in "Public Policy", at the University of Paris 1 Panthéon-Sorbonne. Lucille is working on a project in collaboration with the EPRI (Infectious Risk Prevention Team) in Bichat on the socio-economic risk factors of infections with bacteria highly resistant to antibiotics. She was also involved in the implementation of a questionnaire aimed at evaluating Medical-University Departments (DMU) as perceived by the medical staff working in the DMUs of GPUH.

Sarra Ben Yahia joined the team in April as an intern. After a bachelor's degree in economics at the University of Paris 1 Panthéon Sorbonne, she moved on to the Econometrics and Statistics master's degree at the same university. She was mainly involved in the BOOSTER project and has contributed to the analyzes of the questionnaires on the evaluation of DMUs.

Loïc Douvillé joined the team in February 2022 to complete his master's thesis in the Master 2 in Applied Economics, majoring in "Public Policy", at the University of Paris 1 Panthéon-Sorbonne. His thesis, part of the TELEX project, focused on a review of the literature on the different uses of tele-expertise made by health professionals.

Claire Gefflot joined Hospinnomics in May 2022 as an intern. Finalizing her master 1 Econometrics, Statistics at the University of Paris 1 Panthéon-Sorbonne, she will continue next year in master 2 Information processing and data-science in business (TIDE) within the same university. She worked on the DODK-S, BOOSTER and EQUIRAC project.

Marie Guettier joined the Hospinnomics team in July 2022, as part of her Master's degree at Boston College in Applied Economics, major in "Data Analysis", following a first Master's degree at Erasmus University Rotterdam in "Economic Policy". She mainly worked on the DOD-KS project.

Abhinav Devaria joined Hospinnomics in May 2022 as an intern as part of his master's degree in Public Policy - Global Health (MPP) at Sciences Po Paris. In India, he worked for several years in the health field for multinational organizations. As part of his internship, he mainly worked on a "Policy Brief" on the topic of Point of Care Tests (POCT) Digital Health and on the PRVDEL project.

Stéphane Frachot joined the Hospinnomics team at the end of May 2022 after obtaining his degree in economics from the University of Paris 1 Panthéon-Sorbonne. He mainly worked on the OPTISARC project on an incentive model for cooperation between expert centers and peripheral centers in the treatment of sarcomas.

Noé Vidal-Naquet joined the team in June 2022 after a Sociology-Economics training at ENS Paris-Saclay. He was involved in the CBIG-Screen project, where he was responsible for developing a questionnaire aimed at encouraging the participation of populations in vulnerable situations in a discrete choice experiment. He was also responsible for exploring the ethical issues of out-of-pocket payments in the EQUIRAC project.

Interns Year 2021

Paige Goodwin completed in December 2021 the internship she had started in June 2021 as part of her studies in Global Health Policy at Sciences Po Paris. She worked mainly on the EDS and CBIG-SCREEN projects.

Barbara Saget completed a 2-month internship at Hospinnomics from June to July 2021. She produced a review of the literature on the death valley of innovation, between research and business.

Etienne Billon completed a 4-month internship at Hospinnomics from May to August 2021. He worked mainly on the hospital investment project, with a focus on the economic theory of Public-Private Partnerships.

Clara Brunel completed a second 4-month internship at Hospinnomics from April to August 2021 in order to complete her Master 2 APE (PSE) thesis under the title: "Can private emergency departments help reduce neighboring public hospitals' congestion?", with the Emergencies database created by Hospinnomics.



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