

# Using French national healthcare databases (SNDS) to estimate economic burden of diseases - A literature review

## Objectives

The French national medico-administrative database called SNDS ("Système National des Données de Santé") contains hospital records, primary and secondary care for 68 million people. All dispensed and reimbursed drug prescriptions are collected and these data are individualized and anonymized. The General Beneficiaries Sample (EGB) is a representative sample (1/97) of the SNDS<sup>1</sup>.

We aim to provide an overview of cost of illness assessment from medico-administrative databases, focusing on data extracted from SNDS and EGB.

## Methods

A literature review of French and English language publications from 2011 to 2021 was conducted in PubMed, searching keywords related to the SNDS database studies. Only human studies were selected. All publications including a cost analysis conducted through these databases were included. We excluded studies without any cost analysis and studies with cost data extracted from other databases or retrieved from PMSI (hospital database) only.

## Identification through PubMed searching

Search strategy:

- + Keywords: related to costs and SNDS databases,
- + Search engine: PubMed,
- + Filters: Human studies, French and English languages,
- + Time horizon: Last 10 years (2011).



## Screening and after reading: exclusion of 78 publications

- Not full text (abstracts, posters),
- Epidemiological studies without any cost analysis,
- Cost data extracted from databases or retrieved from PMSI only.



## Results

These studies were conducted by public actors, consulting companies, contract research organizations and pharmaceutical industries.



Private actors were involved in half of the studies.

### What pathologies were studied ?



### Who published these studies?



### What databases were used ?



### Perspective



The articles defined two perspectives:

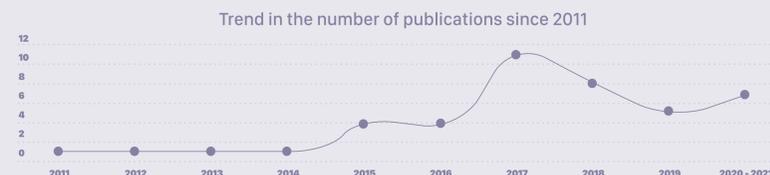
- The French National Health Insurance (NHI) perspective included all amounts reimbursed by the NHI
- The collective perspective included in addition all amounts paid by patients and complementary health insurances.

To note that no difference was made in hospital for diseases considered as a long-term disease.

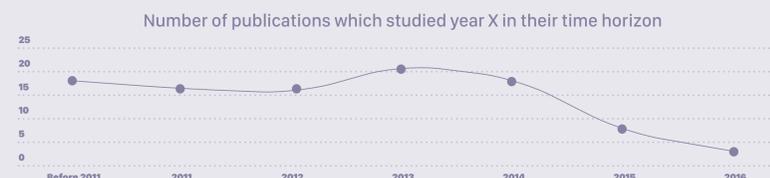
Here, this term does not have exactly the same meaning as in a medico-economic evaluation, where the medical-social and family fields are also considered, in addition to the medical one.

### Time horizon

#### How has the number of publications changed over the years since 2011?



#### Are the time horizons studied recent?



Almost half of the studies considered costs over only a 1-year period or less (46.5%).

### Discounting

Discounting was not applied in most cases (79%).

This can be explained by the fact that a large majority of studies consider costs over a 1-year period only and discounting is not thus necessary when the time horizon is greater than 12 months<sup>3</sup>.

### Direct/indirect costs

Direct medical (hospitalizations and ambulatory care) or non-medical costs (transportation) were retrieved from French administrative databases, and 8 publications also considered some indirect costs (sick leaves, daily allowances, disability pensions). Other types of productivity losses such lost wages of family caregivers or impaired word performance were not considered.

According to the French guide<sup>2</sup>, it may be more relevant to cite the costs taken into account without mentioning direct and indirect costs, since these definitions change from one country to another, and even sometimes from one study to another, in order to avoid confusion.

The French authority of health (HAS) recommends that only direct costs be considered for efficiency studies<sup>3</sup>.

## Discussion

Comparing our results with the study of Tuppin et al. (2017) allowed us to confirm that our search algorithm provided consistent results. Over the 2007-2016 period, 23 publications had an economic analysis conducted on health insurance databases (including 7 with EGB data, 7 with SNIIRAM data). Over our study period (2011-2021) we included 43 publications, which shows a significant increase in published number of SNDS cost studies after 2016.

As an important advance in the conduct of studies, research or evaluations, the SNDS tends to be increasingly used in the future years<sup>4</sup>. This literature review is limited by the fact that we only assessed published articles, and didn't take into account all the abstracts and posters produced for conferences and events.

### Acronyme

- SNDS:** Système National des Données de Santé
- EGB:** Echantillon Généraliste des Bénéficiaires
- PMSI:** Programme de Médicalisation des Systèmes d'Information
- HAS:** Haute Autorité de Santé

### References

- (1) Tuppin, P., J. Rudant, P. Constantinou, C. Gastaldi-Ménager, A. Rachas, L. de Roquefeuil, G. Maura, et al. « Value of a National Administrative Database to Guide Public Decisions: From the Système National d'Information Interrégimes de l'Assurance Maladie (SNIIRAM) to the Système National des Données de Santé (SNDS) in France ». *Revue d'Epidémiologie et de Santé Publique* 65 (octobre 2017): S149-67. <https://doi.org/10.1016/j.respe.2017.05.004>.
- (2) Clément, Olivia. « Actualisation partielle du Guide méthodologique pour l'évaluation économique des stratégies de santé », s. d., 118.
- (3) « Choix méthodologiques pour l'évaluation économique à la HAS », 2020, 118.
- (4) « Qu'est-ce que le SNDS ? | SNDS ». Consulté le 23 juillet 2021. <https://snds.gouv.fr/SNDS/Qu-est-ce-que-le-SNDS>.

## Conclusion

The SNDS is an exhaustive medical-administrative database which can provide real world cost data to assess burden of diseases. These studies can raise awareness about the substantial economic burden of a condition on society, demonstrating that some costs could be avoided with better care organization or the implementation of prevention and screening programs.

These cost data also provide inputs for medico-economic and budget impact models, which are essential components of the economic evaluation in order to support decisions at market entry.