

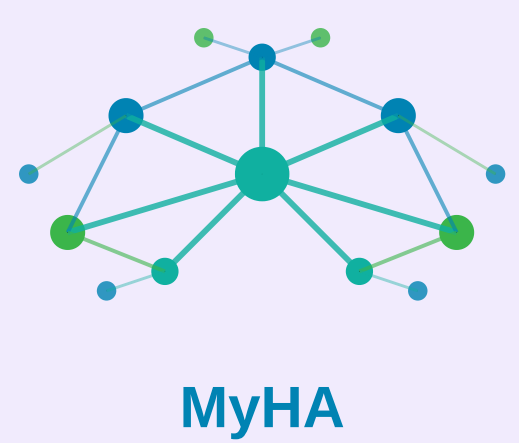
WHICH GENERATIVE AI METHOD USED FOR HIGH SPECIFICITY: A METHODOLOGICAL COMPARISON FROM THE SYSTEMATIC LITERATURE REVIEW OF THE BURDEN OF INFLUENZA IN FRANCE

MSR224

LAMARSALLE Ludovic<sup>1</sup>, LEMAITRE Magali<sup>2</sup>

<sup>1</sup>Healstra, Lyon, France | <sup>2</sup>Health data Expertise, Genissieux, France |

Contact Information:  
Ludovic LAMARSALLE, MSc, PharmD  
llamarsalle@healstra.com



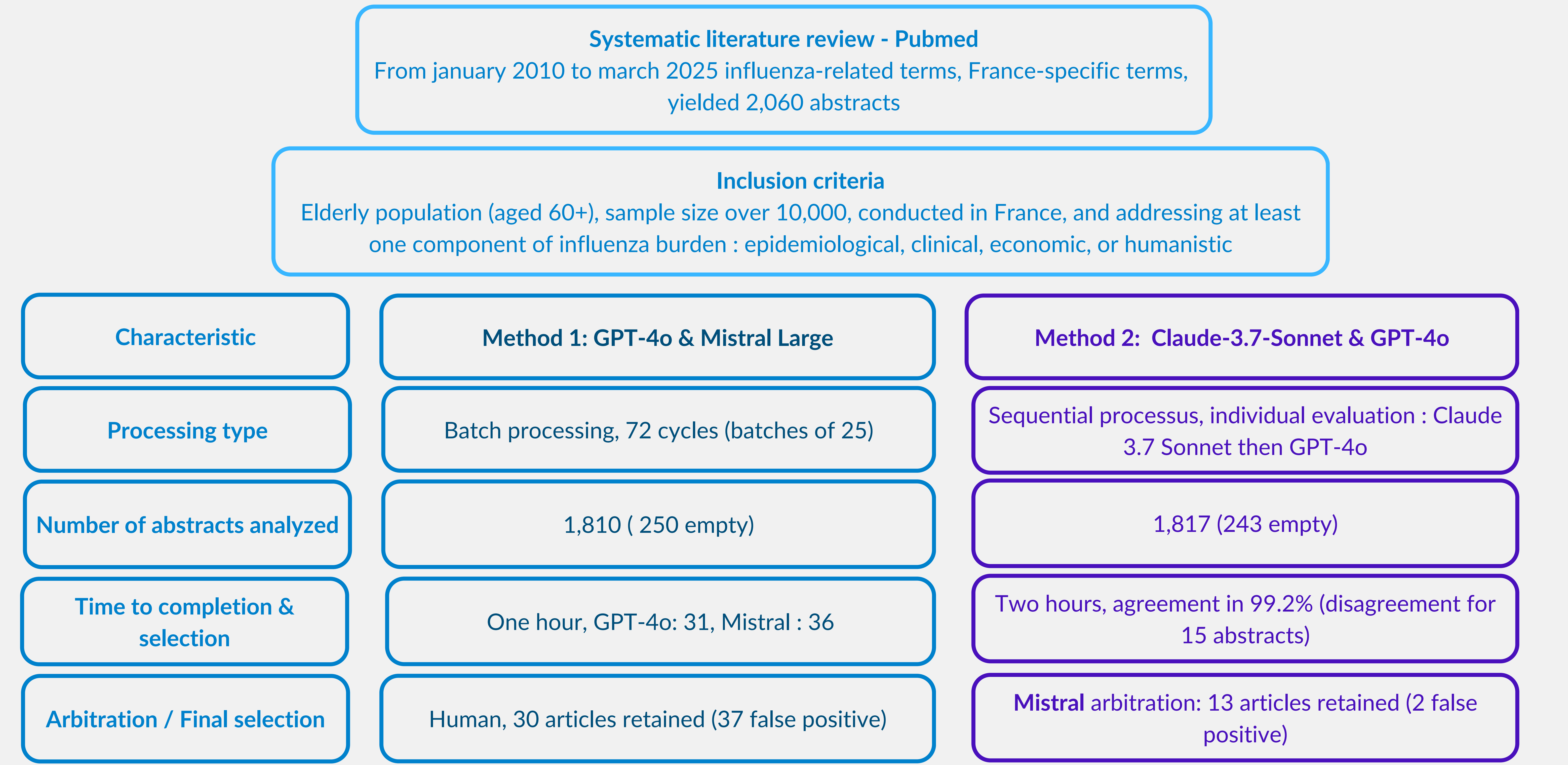
INTRODUCTION

- 1- **Systematic literature reviews (SLRs)** are essential for evidence synthesis in health economics and outcomes research, but face increasing challenges due to exponential growth in published literature. Manual screening of thousands of abstracts is time-consuming, resource-intensive, and subject to reviewer fatigue and inconsistency.
- 2- **Generative artificial intelligence (AI)** offers promising solutions to enhance SLR efficiency while maintaining rigorous selection standards. However, optimal AI implementation strategies remain unclear: single vs. multiple models, batch vs. individual processing, human vs. algorithmic arbitration.

OBJECTIVES

To evaluate the efficiency and accuracy of **two artificial intelligence (AI) methodologies for conducting systematic literature reviews (SLR)** on **influenza burden among elderly populations** in France, comparing performance metrics, resource utilization, and consistency of findings.

METHODS - AI Method comparaison for Literature review



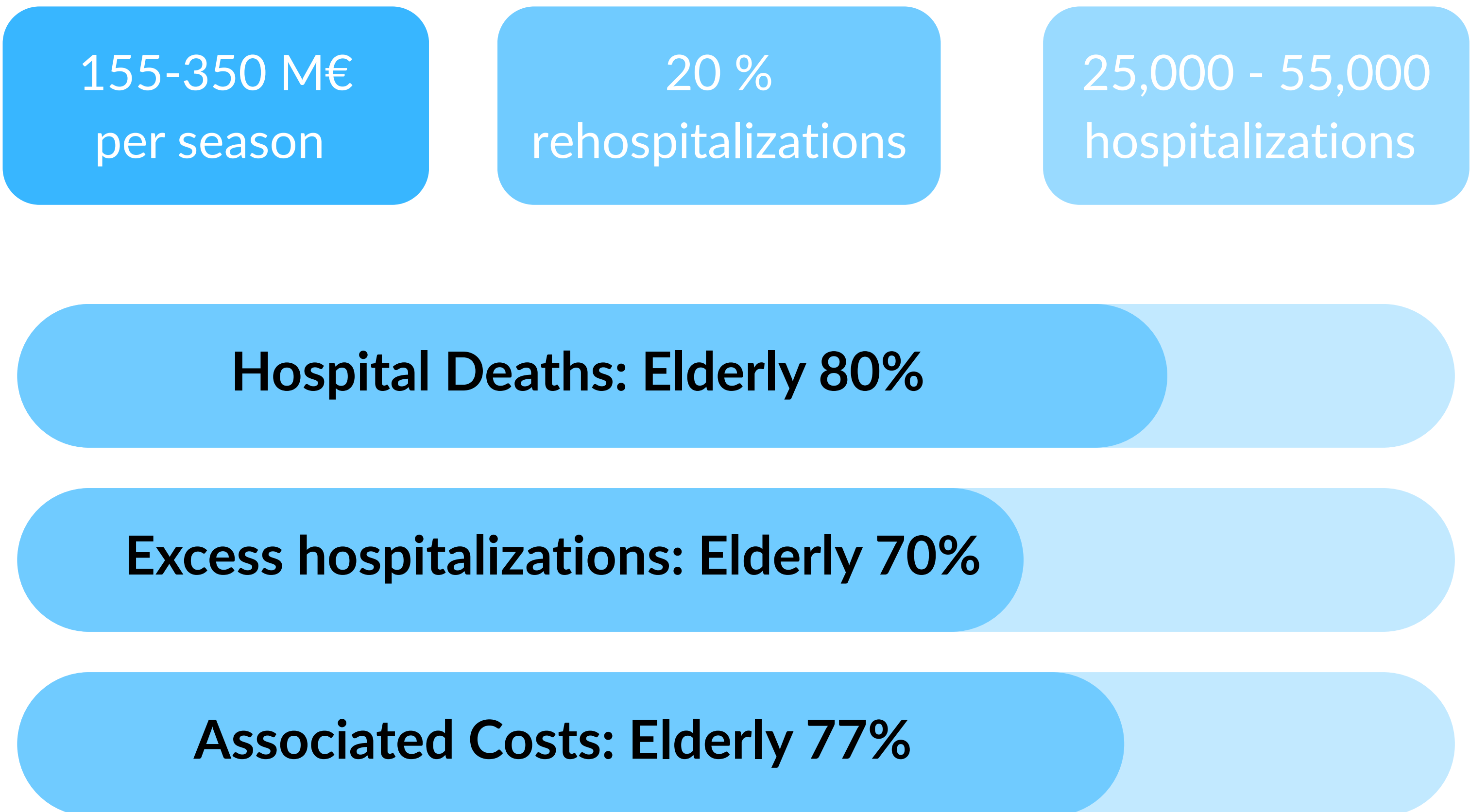
RESULTS

- Superior precision (method 2)**  
Model consensus approach showed 56% better specificity with 94.6% reduction in false positives (37→2) and 99.2% inter-model agreement.
- Efficiency trade-off**  
Method 1: Faster (2 sec/abstract) but lower precision.  
Method 2: Double time (4 sec/abstract) but 10-fold reduction in validation burden.

CONCLUSION

- High-volume validation**  
Both methods successfully processed ~1,800 abstracts, demonstrating scalability for comprehensive SLRs across 15 years of literature.
- Recommendation**  
Use Method 2 for SLRs requiring high specificity and rigorous selection criteria. Processing time investment (2x) yields substantial reduction in false positives (18.5x).

A disproportionate influenza burden for elderly populations



References

Demont C, Mouaddin NE, Chillotti L, Bénard S, Salhi A, Uhart M, et al. Fardeau de la grippe, de la COVID-19 et du VRS dans les hôpitaux français: Analyse des données du PMSI de 2018 à 2023. Médecine Mal Infect Form. 1 juin 2025;4(2, Supplement):S127-8.

Lemaître M, Fouad F, Carrat F, Crépey P, Gaillat J, Gavazzi G, et al. Estimating the burden of influenza-related and associated hospitalizations and deaths in France: An eight-season data study, 2010-2018. Influenza Other Respir Viruses. juill 2022;16(4):717-25.

Paternoster M, Masse S, van der Werf S, Lina B, Levy-Bruhl D, Villechenaud N, et al. Estimation of influenza-attributable burden in primary care from season 2014/2015 to 2018/2019, France. Eur J Clin Microbiol Infect Dis Off Publ Eur Soc Clin Microbiol. juin 2021;40(6):1263-9.

Romane Le Goff, Andrea Contini, Pascal Crepey, Jacques Gaillat, Gaetan Gavazzi, Odile Launay, Anne Mosnier, Léa Antoniali, Hélène Bricout. Impact de la Grippe sur le Parcours de Soins des Personnes Âgées en France - Une étude sur les données issues du chaînage EMR/SNDS. JN1 2025;

Pivette M, Nicolay N, de Lauzun V, Hubert B. Characteristics of hospitalizations with an influenza diagnosis, France, 2012-2013 to 2016-2017 influenza seasons. Influenza Other Respir Viruses. mai 2020;14(3):340-8.