EE594

NCFB Hospitalisations Costs across different Healthcare Systems: Insights from England and France in 2022 using HES and PMSI Databases

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WHAT WAS KNOWN

- Non-cystic fibrosis bronchiectasis (NCFB) is a chronic inflammatory lung disease marked by **permanent bronchial dilatation**[1], mucus retention, and impaired mucociliary clearance. Patients often experience **acute exacerbations**[2], persistent cough, sputum production, breathlessness.
- Exacerbations **worsen health related quality of life**, lung function, and survival, with severe cases sometimes requiring hospitalisation. While there is no curative treatment, current therapies mainly target infections [3, 4].
- The medico-economic burden of NCFB in England and France is influenced **significantly by severe exacerbations requiring hospitalisation**. Recent data on clinical and economic burden of NCFB is lacking, especially in France, and the generalisability of published studies from other European countries is unknown.

OBJECTIVE

The study compared the medico-economic burden of NCFB hospitalisations for severe exacerbations in England and France.

METHODS

This retrospective observational study was based on two medico-administrative hospital databases used separately **Hospital Episode Statistics (HES)** in England and the **French National Hospitalisation database -** Programme de Médicalisation des Systèmes d'Information **(PMSI)** in France.
Both databases are large-scale hospital data systems used to record and analyze patient care and hospital activity for management. They are longitudinal and have an exhaustive description of historical care pathway at hospital. They both include information for each hospital stay such as patient demographics, diagnosis recorded in ICD-10 and procedures and/or medical acts (with the following codifications OPCS-4 for HES, CCAM for the PMSI, standard national classification in each country).

In this study, patients over 12 years old hospitalized in 2022 for any acute episode with bronchiectasis and without any previous diagnosis of cystic fibrosis were included.-Exacerbation were identified with one of the following two criteria:

- **Criteria 1:** A primary diagnosis (i.e., diagnosis field one in HES and main diagnosis -DP- in PMSI) of bronchiectasis defined as one of the following ICD10 codes: J47xx (bronchiectasis) or Q33.4 (congenital bronchiectasis)
- **Criteria 2:** An associated diagnosis (diagnosis field 2 only in HES and related and associated diagnosis - DR /DASa in PMSI) of bronchiectasis as one of the following ICD10 codes (bronchiectasis) or Q33.4 (congenital bronchiectasis) AND a primary diagnosis of one of the following conditions defined by the listed ICD10 codes: J12-J18 (pneumonia), J20 (Acute bronchitis), J22 (Unspecified acute lower respiratory infection), J96.0 (Acute respiratory failure), R04.2 (Hemoptysis)

All NCFB hospitalisations recorded in 2022 were analysed. Comorbidities, NCFB hospitalisations characteristics and associated costs were described. Quantitative variables were reported as mean, standard deviation, min and max values (mean [SD], min-max) and qualitative variables as percentages (%). Means were compared using Welch's t-test and proportions using Pearson's chi-squared test.

RESULTS

Over the year 2022, 8,942 NCFB hospitalised patients were included from HES and 7,621 from PMSI.

Table 1. Patients characteristics and associated cost of NCFB patients hospitalised for exacerbation in 2022

	HES (n=8,942)	PMSI (n=7,621)	P-value
Asthma comorbidity	31.8%	11.6%	< 0.001
COPD comorbidity	35.4%	30.9%	< 0.001
Length of hospitalisation (days)	8.5 [10.3], 1-174	8.8 [8.4], 1-152	0.030
Proportion of patients with multiple hospitalisations (>=2 events)	8.8%	10.2%	0,003
Proportion of critical care admissions	0.6%	7.2%	< 0.001
Overall hospitalisations cost per patient for NCFB)	4,260€** [2,706€**], 160€-46,588€**	4,673€ [5,772€], 96€-92,425€	< 0.001

** £ 3,561 [£ 2,663], £134- £38,948 – conversion rate from Dec. 2022

Although mean estimates appear close in magnitude, the observed differences between the two countries are unlikely due to sampling variation:

On the one hand, both groups have a very close length of hospitalisation (8.5 in HES vs. 8.8 days in PMSI) and proportion of patients with COPD (35.4% in HES vs. 30.9% in PMSI). These results suggest a similar baseline burden of chronic disease and hospital stay duration.

On the other hand, proportion of patient with asthma is much higher in HES (31.8% vs. 11.6%). PMSI patients experienced more multiple hospitalisations and more critical care admissions (7.2% vs. 0.6%). This might be explained by the difference in patient management, French hospitals may admit patients to critical care more readily, while UK patients may be more managed in standard wards. These differences, as well as the consideration of costly medications and devices*** in France and not in England can explain the slightly higher cost in France.

****In the French PMSI system, the list of reimbursable drugs and medical devices is called the "Liste en Sus". The Liste en Sus is a list of expensive drugs and medical devices that are reimbursed separately from the standard hospital tariffs*

CONCLUSION: WHAT THIS STUDY ADDS

- Despite a statistically significant difference, **the overall hospitalisation cost per patient for NCFB in 2022 remains in the same order of magnitude in both countries.**
- Remaining differences could be explained by coding, hospitalisation practices, and healthcare resource allocation.
- These results confirmed a real burden of hospitalisation for acute exacerbation of NCFB in each country
- Conducting such studies at the European level is **essential to support medico-economic dossiers** and **strengthen future guidelines and recommendations**.

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