

Costs of breast surgery reconstruction and mastectomy in France between 2019 and 2021

Objectives

Breast reconstruction after mastectomy and/or surgery can be done through a number of techniques, often employing the use of medical devices such as breast implants and biological or synthetic meshes¹. While some breast implants are reimbursed in the LPP^a in the case of use for malignant or congenital pathologies, meshes are, to this day, not reimbursed by Social Security in France and thus incur additional costs for the healthcare establishments using these implantable technologies.

Based on a preliminary analysis, the average reimbursement of a hospital stay for breast reconstruction or mastectomy in the public sector was €3,459, including an average of €164 for reimbursable medical devices.

The objective of this study was to describe the real costs associated with hospital stays for mastectomy and/or reconstruction when meshes are potentially used compared to current hospital DRG reimbursement tariffs in France.

Methods

An observational retrospective study was conducted using the French National Hospital Database (PMSI²). Adult (≥18) patients with at least one hospital stay for mastectomy and/or breast reconstruction surgery between 2019 and 2021 were included, identified via specific medical classification for clinical procedure (CCAM) codes.

The 10 most frequently associated DRGs were described in terms of costs for patients with a CCAM code QEMA006 (Breast reconstruction with a prosthetic implant) coded during the hospital stay.

The real costs associated to those DRGs were then extracted, when available, from the ENCC³ (Etudes Nationale de Coûts à méthodologie Commune) 2019, a detailed report of all spendings associated to a stay, made on a voluntary basis by a sample selection of healthcare establishments.

For this poster, the cost analysis was focused on the public sector.

Conclusion

The majority of breast reconstructions with a prosthetic implant were done in the case of mastectomies or major surgeries for malignant tumors and consisted of stays with a low severity level. On average, 10% of stays were rehospitalizations for new reconstructive surgery, over the 3 years of study (cf. "Study Population").

Compared to the real expenditure, the full reimbursement often sat between the minimum (average stay without any extra procedures) and maximum (presence of additional procedures such as sentinel node biopsy) cost reported by the ENCC in the public sector (cf. "Average total real costs/stay"). However, despite the DRG tariff covering the minimum real cost of the stay, the real expenditure was consistently higher than the reimbursement for implantable medical devices listed in LPP, possibly due to the use of meshes. The average difference between the real expenditure for medical devices and the reimbursement, for all DRG codes, was €215.9/stay in the public sector.

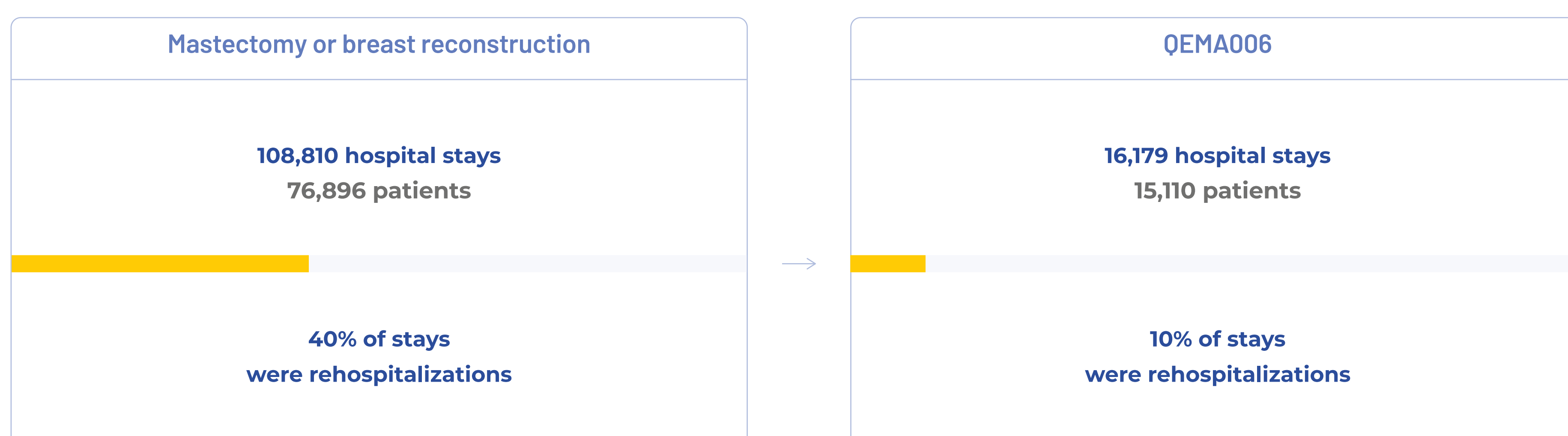
Considering that not all women receiving breast reconstruction are provided with meshes, the real hospital costs for those receiving a prosthesis and mesh would be higher than the reported average cost.

References

- Logan Ellis, H., Asaolu, O., Nebo, V. et al. Biological and synthetic mesh use in breast reconstructive surgery: a literature review. World J Surg Oncol 14, 121 (2016). <https://doi.org/10.1186/s12957-016-0874-9>
 - Boudemaghe T, Belhadj I. Data Resource Profile: The French National Uniform Hospital Discharge Data Set Database (PMSI). Int J Epidemiol. 2017 Apr 1;46(2):392-392d. doi: 10.1093/ije/dyw359
 - <https://sante.gouv.fr/professionnels/gerer-un-etablissement-de-sante-medico-social/financement-des-etablissements-de-sante-10795/financement-des-etablissements-de-sante-glossaire/article/etude-nationale-de-coûts-a-methodologie-commune-enc>
- a Every product or service registered on the list of products and services (LPP) is covered by the Public Health Insurance Fund. This list includes for example: Medical devices intended for the diagnosis and treatment of diseases and injuries and implantable medical devices.
- b DRG levels: Level 1 = no severity, Level 2 = minor severity
 Levels depend on associated diagnosis, patient age, stay length, discharge mode (i.e. death)
- c max = certain DRGs also report a higher cost in the presence of additional procedures, such as sentinel node ablation
- d the ENCC report for DRG 09C061 includes DRG 09C06T as well (ambulatory breast procedures for non-malignant conditions other than biopsy and local excision procedures)

Results

Study population



Surgery for malignant tumour

Most frequent DRGs of QEMA006 patients

Level 1*	Level 1*	Level 2*	Level 2*	Level 1*
09C041 Total mastectomies for malignant tumors	09C181 Major surgery for malignant breast tumor with prosthetic reconstruction	09C042 Total mastectomies for malignant tumors	09C182 Major surgery for malignant breast tumor with prosthetic reconstruction	09C051 Subtotal mastectomies for malignant tumors

Total number of stays with QEMA006 & % reported to the total stays with QEMA006 (N = 16179)

29,4% 4,754 stays	19,9% 3,213 stays	7,2% 1,159 stays	4,3% 698 stays	3,5% 566 stays
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Number of stays in the public sector & % reported to the total stays in public and private under the same DRG

70,3% 3,343 stays	73,5% 2,361 stays	76,7% 889 stays	76,6% 535 stays	56,0% 317 stays
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DRG tariff

€4,772	€6,031	€5,574	€7,610	€2,620
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Average amount for reimbursed medical devices / stay (Reimbursed)

€330.8	€357.6	€302.9	€386.5	€310.2
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Average amount for all implantable medical devices + other consumables/stay (2019 ENCC reported real costs)

min. €541	max.* €770	Not reported	min. €542	max.* €795	Not reported	min. €353	max.* €510
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Total average reimbursed/stay (Reimbursed)

€5,117.0	€6,396.7	€5,923.8	€8,045.1	€2,940.9
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Average total real costs/stay (2019 ENCC reported real costs)

min. €5,148	max.* €4,065	Not reported	min. €5,390	max.* €6,421	Not reported	min. €2,944	max.* €3,787
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Surgery for non-malignant conditions and reconstruction

Most frequent DRGs of QEMA006 patients

Level 1*	Level 1*	Level 1*	Level 1*	Level 2*
09C211 Major surgery excluding malignant breast tumor	09C061 Breast procedures for non-malignant conditions other than biopsy and local excision procedures	09C06T Ambulatory breast procedures for non-malignant conditions other than biopsy and local excision procedures	09C111 Breast reconstruction	09C062 Breast procedures for non-malignant conditions other than biopsy and local excision procedures

Total number of stays with QEMA006 & % reported to the total stays with QEMA006 (N = 16179)

10,6% 1,716 stays	10,6% 1,711 stays	6,2% 1,011 stays	1,3% 207 stays	1,0% 164 stays
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Number of stays in the public sector & % reported to the total stays in public and private under the same DRG

53,7% 921 stays	50,3% 860 stays	52,9% 535 stays	72,0% 149 stays	54,9% 90 stays
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DRG tariff

€3,214	€2,762	€2,776	€7,288	€3,542
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Average amount for reimbursed medical devices / stay (Reimbursed)

€370.2	€359.5	€352.9	€295.9	€315.6
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Average amount for all implantable medical devices + other consumables/stay (2019 ENCC reported real costs)

Not reported	min. €366*	max.* n/a	min. €366	max.* n/a	min. €1,097	max.* €1,191	min. €514	max.* n/a
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Total average reimbursed/stay (Reimbursed)

€3,587.7	€3,146.0	€3,128.6	€7,590.3	€3,857.8
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Average total real costs/stay (2019 ENCC reported real costs)

Not reported	min. €2,581*	max.* n/a	min. €2,581*	max.* n/a	min. €7,966	max.* €8,540	min. €4,706	max.* n/a
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