

HOSPITALISATION COSTS FOR HPV-RELATED CANCERS IN MALES AND FEMALES IN FRANCE

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BACKGROUND

- Human papillomavirus (HPV) infection is a necessary cause of cervical cancer and is also associated with other anogenital cancers (anal, vulvar, vaginal, penile) and a subset of head & neck cancers (oral cavity, oropharynx/pharynx, larynx).
- HPV is likely to be responsible for a substantial disease burden in both men and women.
- Few studies have investigated the economic burden associated with these cancers in Europe. Such data would be valuable for evaluating the potential economic impact of HPV vaccination programmes.

OBJECTIVE

- This study aimed to assess the annual hospitalisation costs of HPV-related cancers for both genders in France.

METHODS

- Hospitalisation costs were collected in 2006/2007 from the French national hospital database (PMSI), which collects data from all public and private hospitals in France.
- All hospital stays with a ICD-10 code corresponding to selected cancers (anal, penile, vulvar, vaginal and Head and Neck) were extracted from the PMSI.
- Annual costs for each cancer were estimated from the healthcare payers' perspective, based on DRG tariffs.
- Hospitalisations costs included hospital stays (including exploratory and surgical procedures, medical treatments, palliative care) and radiotherapy and chemotherapy sessions.
- Statistics for HPV prevalence in different cancer types were obtained from existing literature, using European data where possible.

RESULTS

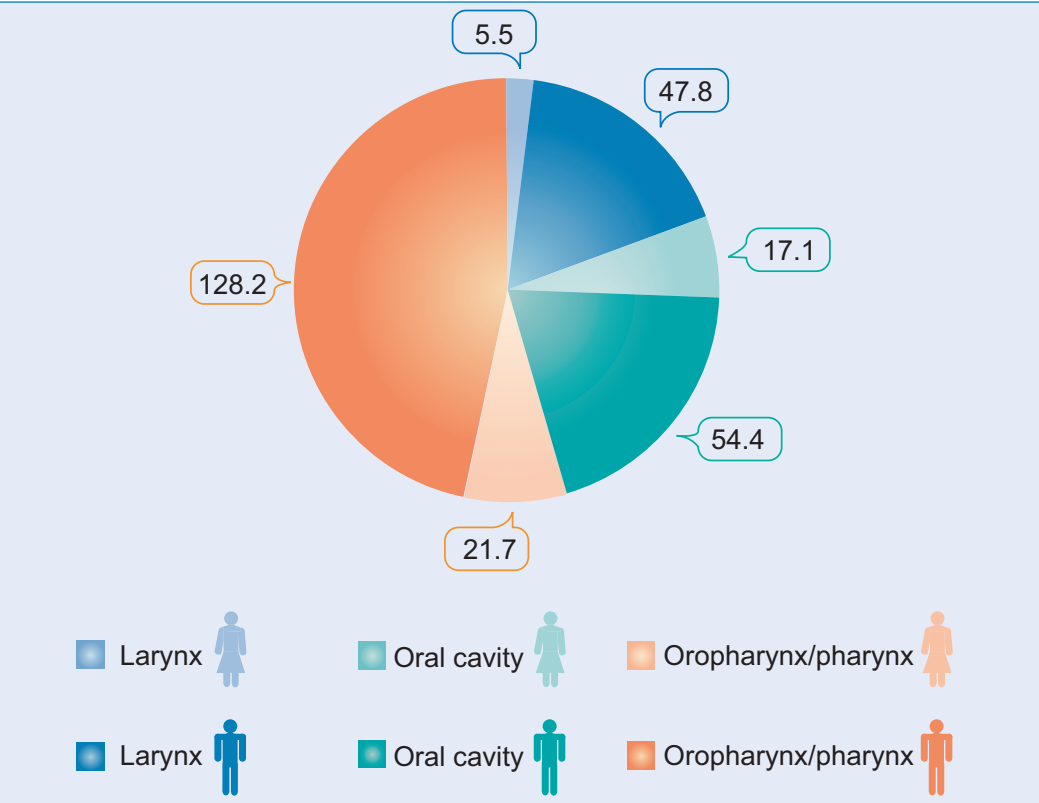
- In France, annual hospital cost of cervical and other selected cancers was estimated at 351.2 million € with more than two-thirds of these costs (€239.3 million) resulting from the treatment of men.
- The distribution of total hospitalisation cost by cancer localisation is shown in [table 1](#).

Table 1 . Estimated annual costs of hospitalisations for selected cancers in France

Cancer type	Hospitalisation costs (€ million)		
	Total	Women	Men
Invasive cervical	43.9	43.9	N/A
Vulvar	5.7	5.7	N/A
Vaginal	4.0	4.0	N/A
Anal	20.3	14.0	6.3
Penile	2.6	N/A	2.6
Head and neck	274.7	44.3	230.4
Total	351.2	111.9	239.3

- H&N costs represented the vast majority of hospitalisation costs and were distributed across different localisations ([figure 1](#))

Figure 1. Distribution of hospitalisations costs for H&N cancers by localisation



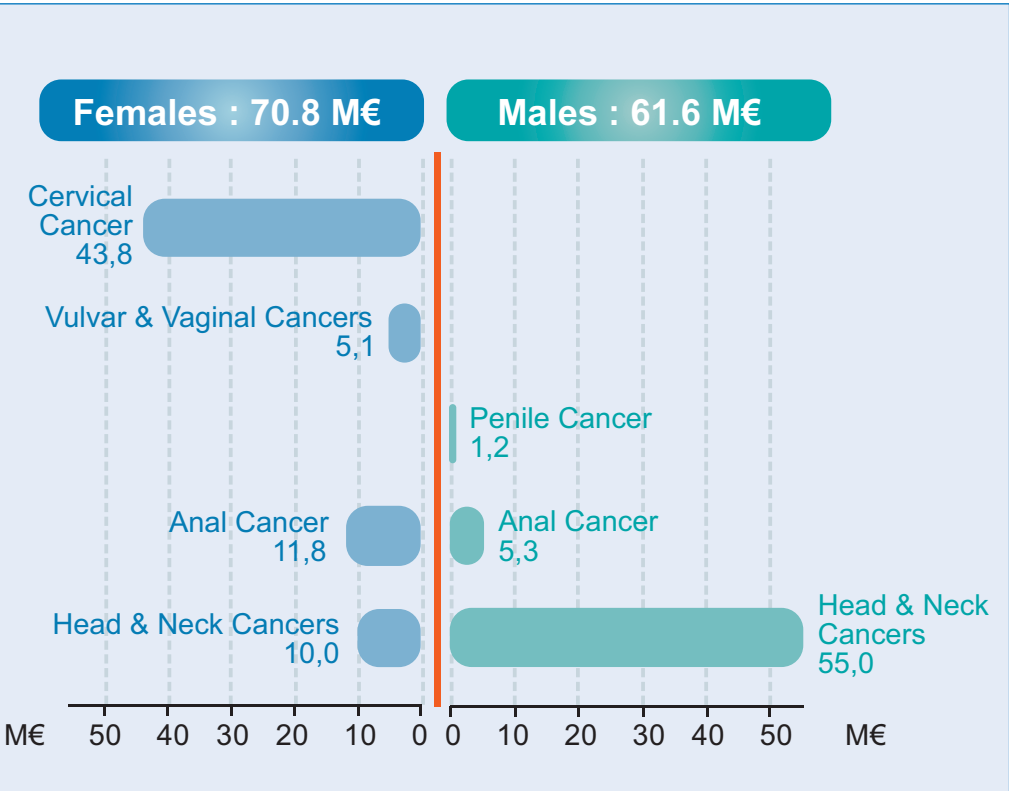
- Considering the assumed proportion of cancers attributable to HPV, the overall hospitalisation costs associated with HPV-related cancers were approximately €132.2 million ([table 2](#))

Table 2 . HPV prevalence in different cancer types and estimated HPV-related hospitalisation costs

Cancer type	Cancer cases attributable to HPV (%)	Estimated HPV-related hospitalisation costs (€ million)
Invasive cervical	99.7 ¹	43.80
Vulvar	34.7 ²	1.98
Vaginal	76.8 ²	3.10
Anal	84.2 ²	17.10
Penile	46.7 ³	1.20
Head and neck		65.00
Oral cavity	16.0 ⁴	11.40
Oropharynx/ pharynx	28.2 ⁴	42.30
Larynx	21.3 ⁴	11.40
Total	-	132.20

- Overall hospitalisation costs due to HPV-related cancers were estimated at €61.6 million in males and €70.8 million in females annually ([figure 2](#))

Figure 2. Estimated annual HPV-related hospitalisation costs for males and females in France



DISCUSSION

- Hospitalisations due to invasive cervical cancer, and vulvar, vaginal, anal, penile, and head and neck cancers represent a significant burden to the French healthcare system, costing over €350 million annually. HPV-related cancers accounted for approximately 40% of the hospitalisation costs associated with these cancer types.
- Hospitalisation costs incurred by men and women were important. While cervical cancer incurs costs in women, the main costs among men were associated with head and neck cancers.
- This burden is probably underestimated since the PSMI database does not document outpatient management, some expensive drug costs, costs associated with patient rehabilitation or indirect costs.
- In conclusion, the economic burden due to HPV-related cancers and the high level of unmet medical need for non-cervical cancers (i.e. lack of routine screening, mutilating treatment...), suggest that there could be significant public health benefits from vaccinating both genders.

References
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Acknowledgments:
We thanks HEVA who extracted and analysed the data from the PMSI database.