

# Human Papilloma Virus in Italy: retrospective cohort analysis and vaccination effect from real-world data.

A Marcellusi<sup>1,2</sup>, P Sciattella<sup>1</sup>, G Fabiano<sup>1,2</sup>, G Favato<sup>2</sup>, FS Mennini<sup>1,2</sup>

<sup>1</sup>CEIS-Economic Evaluation and HTA (EEHTA), Faculty of Economics, University of Rome "Tor Vergata", Rome

<sup>2</sup>Institute for Leadership and Management in Health, Kingston University, London, UK

**INTRODUCTION:** The objective of this study is to estimate the lifetime risk of hospitalization associated with Human Papilloma Virus (HPV)-related disease in Italy.

**METHODS:** A retrospective, non-randomized, observational study was developed based on patients hospitalized between 2008 and 2016 in Italy. All hospitalisations were identified through administrative archives, according to the International Classification of Diseases (ICD-9 CM). Information related to the hospital discharges of all accredited public and private hospitals, both for ordinary and daycare regimes, was taken into account. We included hospitalizations related to resident patients presenting one of the ICD9-CM codes as primary or secondary diagnosis: Genital warts (GW): 'Condyloma acuminatum' (078.11); 'Anal cancers'(AC)(154.2–154.8); Oropharyngeal cancers(OC): 'Oropharyngeal cancer'(146.0–146.9) and 'Head, face and neck cancers'(171.0); Genital cancers(GC): 'Penis cancer'(187.1–187.9) and 'Cervical cancer'(180.0–180.9). Data was stratified by birth years and divided into two groups: a) cohort born before 1996 (Not vaccinable) and b) cohort born after 1997 (Vaccinable – first cohort that could be vaccinated at the beginning of immunization schedule in girls since 2008 in Italy). Hospitalisation risks for both groups were estimated by year and age.

## Results

Epidemiological data demonstrate that the peak of hospitalization risk was occurring at: 24-26 years of age for GW (both male and female), 33 – 41 and 47 – 54 years for AC male and female respectively, 53 – 59 and 52 – 58 years for OC male and female respectively and 54 – 60 and 39 – 46 years for GC male and female respectively. Focusing on GW and GC, Vaccinable female demonstrate a significant reduction on hospitalization risks (-54% on average) compared to Not vaccinable female until the 20 years of age (maximum follow-up available for girls born after 1997). Comparing the same birth cohort of male, no differences in the hospitalization risk were found.

## Conclusions

This study represents the first analysis that estimates the effects of anti-HPV vaccination preventive strategies in Italy based on real world data.