

# 14 HR HPV DETECTION: THE LAZIO EXPERIENCE IN THE NATIONAL HPV-BASED CERVICAL CANCER SCREENING IN ITALY

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## Background/Objectives

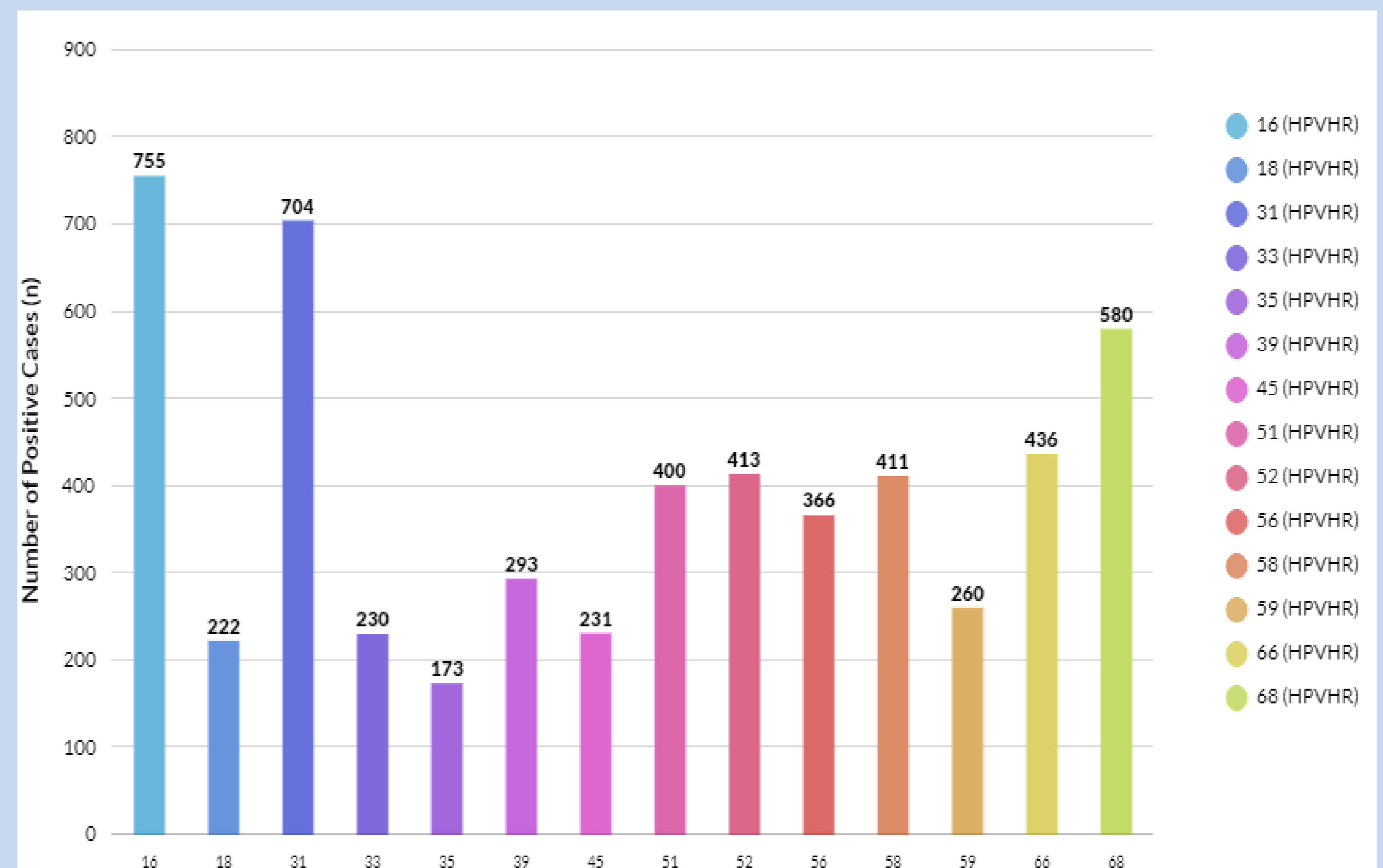
In the Lazio Region the national cervical cancer screening program for women from 30 to 64 years old is based on the detection of 14 HR HPV genotypes. The screening interval is 5 years. Our centralized laboratory, in Rome near the Colosseum, is one of two selected for HPV testing in our Region. Identification of HPV genotypes is important not only for epidemiology purposes but also because the persistence of an infection is a necessary condition for the development of cervical cancer. Furthermore, HR HPV genotypes have a different risk of progression. The purpose of our study was to analyze the prevalence of the 14 HR HPV genotypes in our laboratory, during six months (April to November 2022).

## Methods

We evaluated 30,445 samples received in our laboratory from April to November 2022. The samples were analyzed using the Anyplex™ II HPV HR Detection test by Seegene (Arrow), a Real time PCR method based on DPOTM technology (Dual Priming Oligonucleotides) and TOCETM (Tagging Oligonucleotide Cleavage and Extension) which identifies the 14 HR HPV: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68 (343 sessions processed and reported from April 28th to November 18th, 2022). The data were evaluated using the SG STATS platform for statistical analysis (Seegene, Arrow).

## Results

We had 4,244 samples that tested positive for HR HPV (13,9%). The total positive samples for only one genotype were 3,290 (77.5%), those with co-infections (from 2 to 5 genotypes) were 954 (22.5%). Total prevalences (single infection and co-infections) were: HPV 16 755 cases 13.8%, HPV 31 704 12.9%, HPV 68 580 10.6%, HPV 66 436 8.0%, HPV 52 413 7.5%, HPV 58 411 7.5%, HPV 51 400 7.3%, HPV 56 366 6.7%, HPV 39 293 5.3%, HPV 59 260 4.8%, HPV 45 231 4.2%, HPV 33 230 4.2%, HPV 18 222 4.0%, HPV 35 173 3.2%. The inadequate cases were 23 (0,0755%) due to technical pitfalls and 28 (0,0919%) due to poor cellularity. After repetition, we reported 18 inadequate cases (0.0591%) due to poor sample cellularity.



## Conclusions

Our results indicate that HPV 16 and 31 are the most prevalent in the Lazio Region followed by HPV 68, 66, 52, 58, 51 and 56 infections. These results are useful both for the treatment and prognosis of the patients and for the epidemiology of the infection considering however that the scenario could change with the enrollment in the screening of vaccinated girls. The possibility to detect 14 HR HPV single genotypes allows a better risk stratification and identification of multiple HPV genotypes infections.

