

A Recent Genotypic Surveillance of Human Papillomavirus (HPV) Infections in Hong Kong

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Introduction

Human papillomavirus (HPV) infection is a major global burden, being one of the most prevalent sexually transmitted diseases and the leading cause of cervical cancer. Genotypic surveillance of HPV infection can help monitor any shifting patterns and the efficacy of the nonavalent HPV vaccine in Hong Kong since 2019. This vaccine covered the HPV genotypes of 6, 11, 16, 18, 31, 33, 45, 52 and 58 which accounts for over 90% of cervical cancer cases. Continued monitoring is crucial to detect emerging genotypes, evaluate vaccine efficacy and guide public-health interventions.

Aim of Study

This study aimed to determine the prevalence of HPV infection in Hong Kong and to characterize the distribution of circulating HPV genotypes detected within the recent six-month period.

Prevalence and Genotype Distribution of Human Papillomavirus (HPV) in Hong Kong, 2025-2026

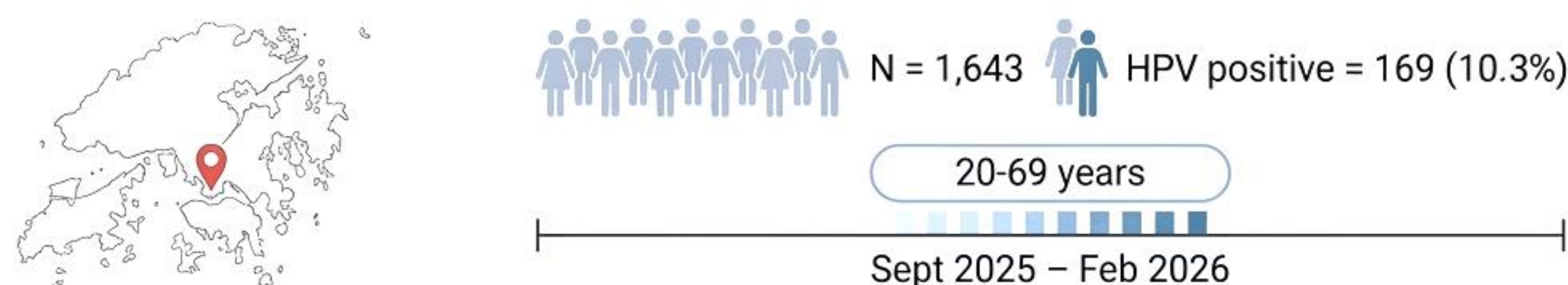


Figure 1. Basic Summary of the study

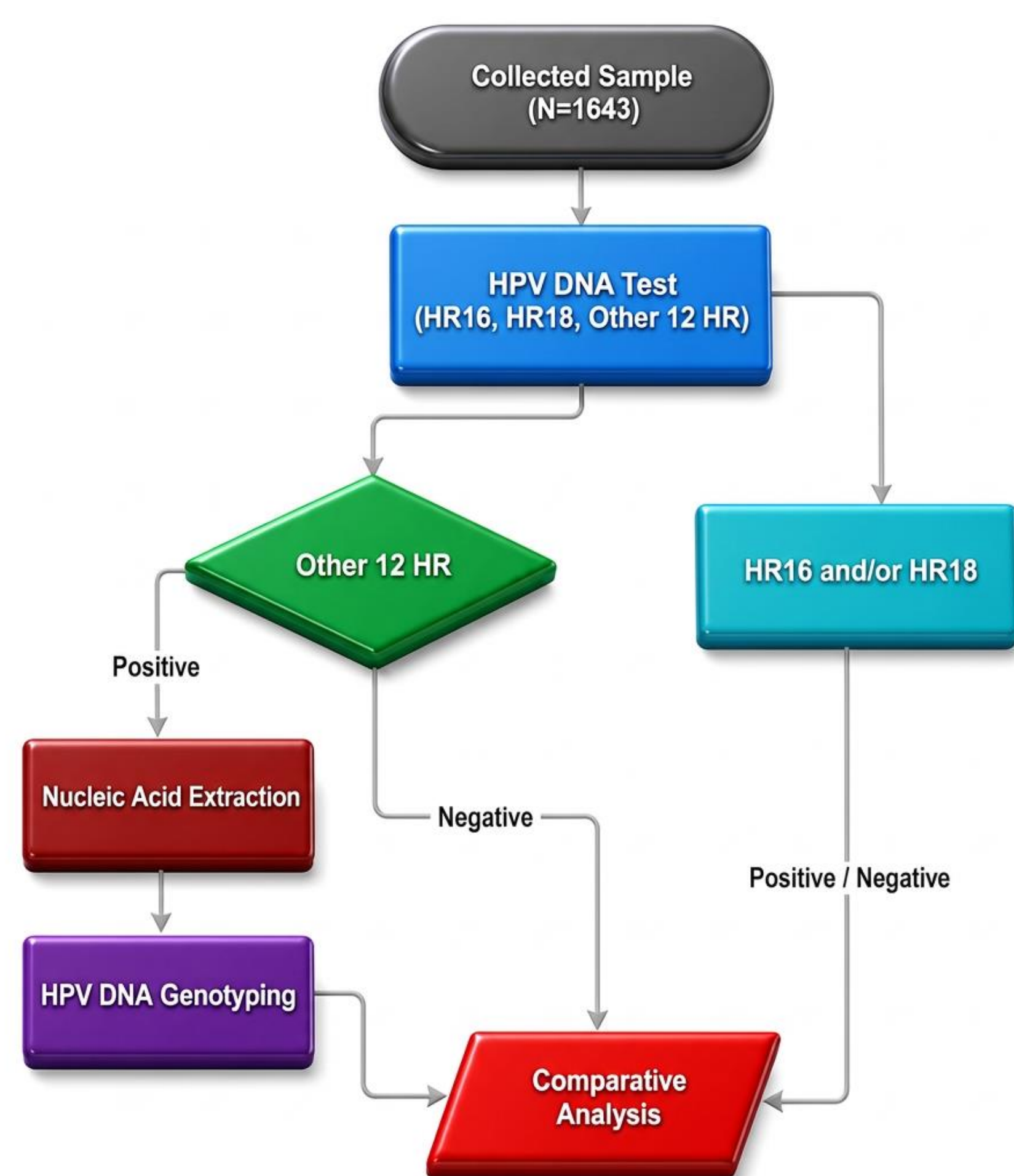


Figure 2. Flowchart of the study

Distribution of HR HPV by Percentage

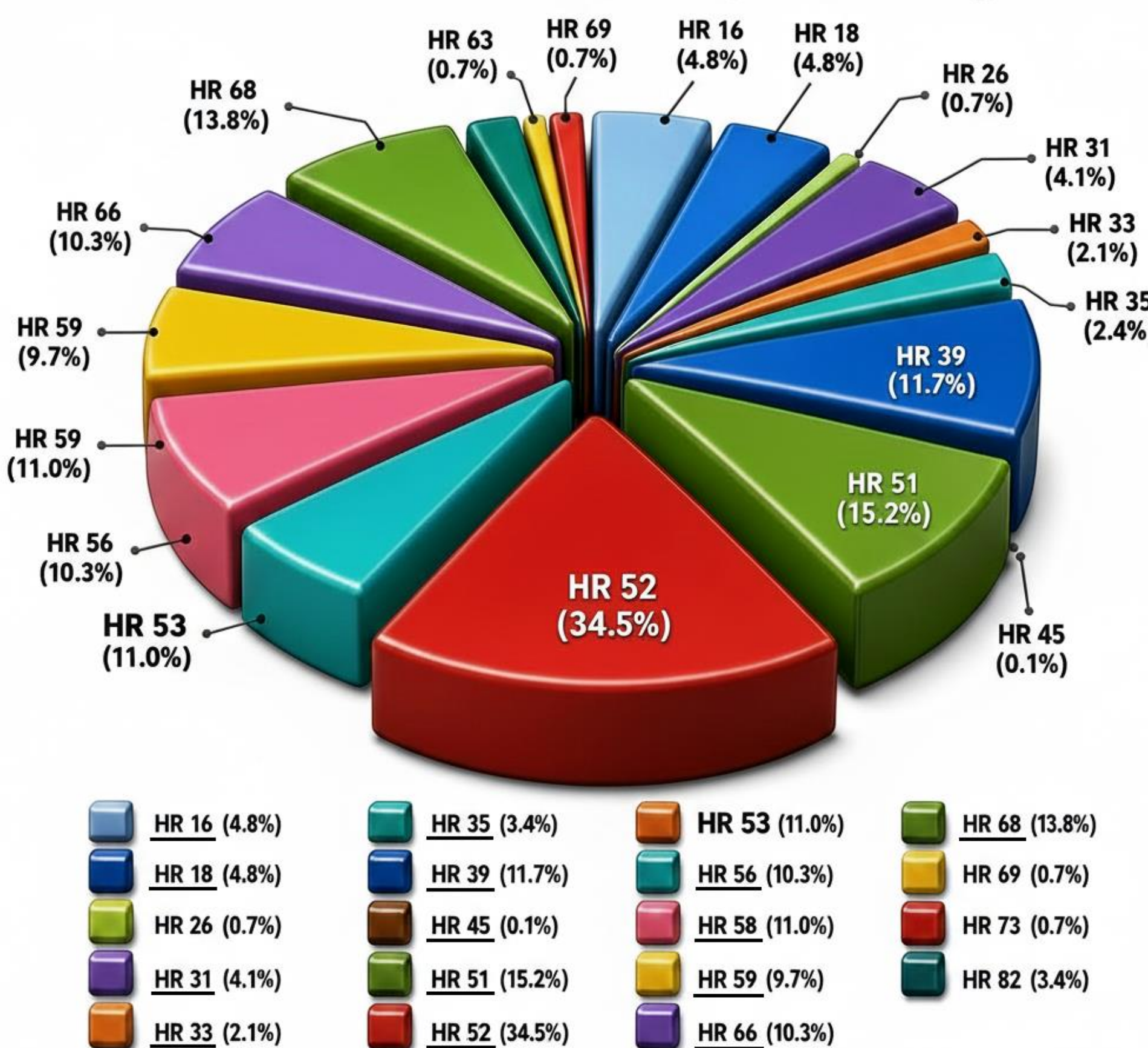


Figure 3. Distribution of high-risk HPV by percentage.
Total 19 different HR genotypes were detected.
The 12 HR genotypes from first screening are underlined.

Results and Discussion

The anonymous HPV genotypic and demographic data were collected from 1,643 patient samples aged 20 to 69 years at a local clinical diagnostic laboratory from September 2025 to February 2026. The overall positive rate including both HR- and low-risk (LR)-HPV was 10.3% (169 cases in which the highest prevalence observed in individuals aged 45 to 49 years (15.9%); while the three most prevalent HR-HPV genotypes were HPV-52 (34.5%), HPV-51 (15.2%) and HPV-68 (13.8%). Other than the 14 HR-HPV genotypic screening, HPV-53 (9.5%) demonstrated a notable high prevalence and may have emerged as a more prominent contributor to recent HPV infections.

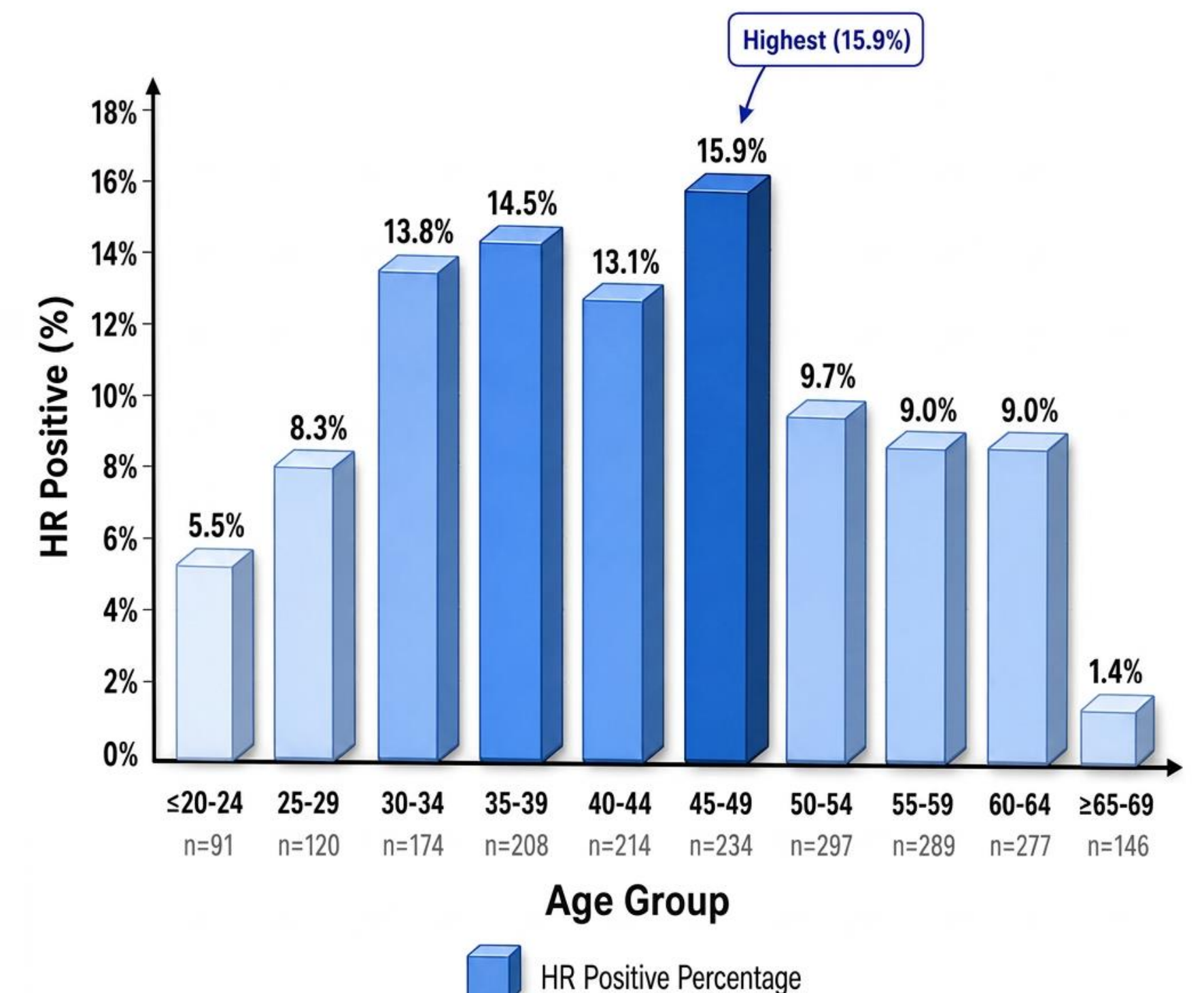


Figure 4. Breakdown of HR-HPV positive rate by age group

Prevalence of High-risk HPV Types in Cervical Cancer

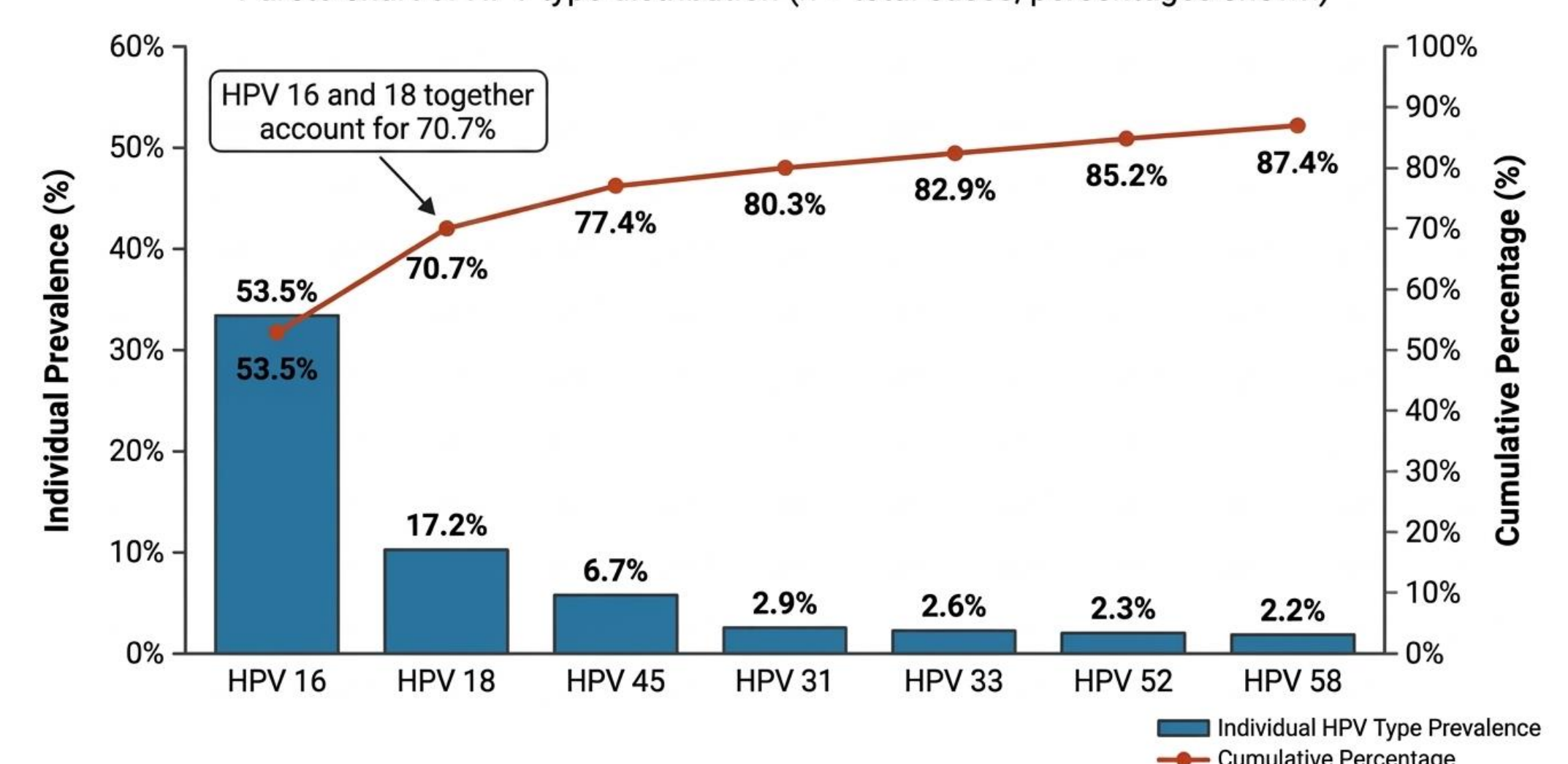


Figure 5. Pareto chart of high-risk HPV genotype distribution

Conclusion

These findings suggested that shifts in circulating HR-HPV genotypes may reflect the ongoing impact of vaccination programs, which have effectively reduced the prevalence of HPV-16 and -18 but allowed other HR types to become more prominent. This study reflected a limitation of standard HR-HPV detection spectrum for capturing high prevalence HR-HPV. More advanced molecular diagnostic methods with improved detection sensitivity and spectrum are warranted to enable clearer identification of emerging genotypes such as HPV-53. Continued HPV genotypic surveillance remains essential to monitor these evolving patterns and guide targeted public-health strategies.

References

- Centre for Health Protection, Department of Health. (2025). Cervical Screening Programme Annual Statistics Report 2024. Hong Kong: Centre for Health Protection, Department of Health.
- Centre for Health Protection, Department of Health. (2026). Cervical Screening Programme Annual Statistics Report 2025. Hong Kong: Centre for Health Protection, Department of Health.
- Scientific Committee on Vaccine Preventable Diseases and Scientific Committee on AIDS and STI. (2016). Consensus Statement on the use of Human Papillomavirus (HPV) Vaccine in prevention of cervical cancer. Hong Kong: Centre for Health Protection, Department of Health.
- The Hong Kong College of Obstetricians and Gynaecologists. (2024). Guidelines for Cervical Cancer Prevention and Screening. In HKCOG Guidelines. Hong Kong: The Hong Kong College of Obstetricians and Gynaecologists.
- The Hong Kong College of Obstetricians and Gynaecologists. (2026). Addendum to Guidelines for Cervical Cancer Prevention and Screening (January 2024) - Guidance on Self-Collected Vaginal Samples for HPV testing. In HKCOG Guidelines. Hong Kong: The Hong Kong College of Obstetricians and Gynaecologists.

Declaration of Conflict of Interests

There is no conflict of interests to be disclosed.

