Healthcare Resources Utilization and Costs of Treatment Associated With Anogenital Warts in South Africa: Public and Private Perspective

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#### Background

Human papillomavirus (HPV) infections are the etiologic agents of genital warts (GW) and squamous intraepithelial lesions.<sup>1</sup> HPV is one of the most frequent sexually transmitted viral infections<sup>2</sup> and has more than 130 identified virus types.<sup>3</sup> HPV 6 and 11 alone are estimated to cause approximately 90% of GW infections.<sup>4</sup> GW are highly infectious, and nearly 65% of individuals with an infected partner develop lesions within 3 weeks to 8 months of first contact.<sup>5</sup> HPV prevalence varies by age and is higher among women and more common for young women with a new sexual partner.

# Figure 1. Weighted cost per patient for diagnosis, treatment, AEs, and complications



Overall (females and males combined) reported annual incidence (including new and recurrent) ranges from 160 to 289 per 100,000, with a median of 194.5 per 100,000.<sup>6</sup> Age-specific GW incidence peaked for male patients aged 25-29 years and female patients aged 20-24 years and remained significant in patients aged 30-45 years.<sup>5</sup> According to the literature review on epidemiology and risk factors for anogenital warts in sub-Saharan Africa, the incidence rates were higher among the HIV-positive subgroup (3.0 per 100 person-years) in comparison with 1.1-2.7 per 100 person-years among women and 1.4 per 100 person-years among men.<sup>7</sup>

# **Objectives**

To analyze the pattern of healthcare resource utilization (HCRU) and associated costs of treatment of patients with anogenital warts (AGW) in South Africa in both the public and private healthcare sectors.

#### Figure 2. Weighted cost per patient for recurrence



### Figure 3. Estimated economic burden for patients with AGW in South Africa



# Methods

This was a questionnaire-based descriptive study seeking to elicit opinions on HCRU and costs for AGW from 50 subject matter experts (SME) from South Africa. Cost per AGW case was estimated using resource utilization estimates, and corresponding unit costs were determined. The public-sector costs of procedures were captured from the latest version of the published Uniform Patient Fee Schedule,<sup>9</sup> and privatesector tariffs were collated from a variety of published medical aid tariffs.<sup>8</sup> Drug list prices were used to calculate the costs of pharmaceutical treatments. The cost per episode of care was then calculated by summing up the costs associated with the diagnosis, treatment, and management of complications and adverse events. Exchange of Rand per US dollar=18.1006.

### Results

The occurrence of AGW was higher in the public sector (21.4%–34.4%) vs the private sector (13.1%–23.2%).



# Limitations

- Data are based on expert opinion rather than objective and quantitative medical records or administrative databases
- Indirect costs were not taken into consideration

# Conclusions

The results demonstrated that AGW represents a significant burden in South Africa and is associated with substantial costs from both public- and private-sector perspectives. These results may assist policymakers on the need for HPV immunization programs, including 4-valent and 9-valent

According to SMEs, recurrence of AGW ranged from 37.6% in patients in public settings to 43.9% in private ones. Public-sector SMEs treated 4 times more AGW patients per month vs private-sector ones (public sector: 24.58 patients/ month; private sector: 5.63 patients/month). The weighted total cost per patient per episode for treating AGW in the public sector ranged from 14,271 ZAR (\$788) in males to 19,220 ZAR (\$1,062) in females. In the private sector, costs ranged from 17,812 ZAR (\$984) to 22,482 ZAR (\$1,242). The estimated economic burden of AGW in the public sector ranged from 228.8 billion ZAR (\$12.6 billion) to 346.2 billion ZAR (\$19.1 billion); costs in the private market ranged from 27.7 billion ZAR (\$1.5 billion) to 47.7 billion ZAR (\$2.6 billion).

# vaccines targeting AGW.

#### References

Winer RL, et al. *Am J Epidemiol*. 2003;157(3):218-226.
Arima Y, et al. *J Infect Dis*. 2010;202(8):1181-1184.
Haupt RM, et al. *J Adolesc Health*. 2011;49(5):467-475.
Garland SM, et al. *J Infect Dis*. 2009;199(6):805-814.
Pirotta MV, et al. *Sex Transm Dis*. 2009;36:375-379.

6. Patel H, et al. BMC Infect Dis. 2013;13:39.

7. Banura C, et al. Infect Agent Cancer. 2013;8(1):27.

8. The Mediclinic Southern Africa Private Tariff Schedule 2023. MCSA Private Tariff Schedule (South Africa) - 1 Jan 2023.xlsx (mediclinic.co.za). Accessed 21 September 2023.

9. Department: Health Republic of South Africa, Uniform Patient Fee Schedule. Available from: https://www.health.gov.za/uniform-patient-fee-schedule/. Accessed 21 September 2023. Copies of this poster obtained through Quick Response (QR) Code are for personal use only and may not be reproduced without permission from the Congress or the author of this poster.



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