Regional determinants of HPV vaccine implementation in Malaysia: A cross-sectional analysis from the “leaving no one behind 1.0” programme (Jan 2024–Jan 2025)

Vignesvari Subramaniam

National Cancer Society of Malaysia, 50300, Kuala Lumpur, Malaysia

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ABSTRACT

Introduction: The HPV vaccine is a proven preventive measure against cervical cancer, but uptake in Malaysia remains uneven due to regional and contextual disparities. The Leaving No One Behind (LNOB) 1.0 programme aimed to address this by delivering HPV vaccines to underserved populations aged 13–20 across all 222 parliamentary constituencies from January 2024 to January 2025. **Objective:** To identify regional factors influencing HPV vaccine uptake and assess barriers and enablers to delivery. **Materials and Methods:** A cross-sectional analysis was conducted using data from the National Cancer Screening Registry, NCSM-MOH vaccination records, stakeholder interviews, and regional vaccination reports. Doses were distributed as follows: • West Malaysia (137,400 doses; 45.8%): Uptake driven by strong healthcare infrastructure (30%), ease of access (25%), health literacy (20%), digital systems (15%), and stakeholder engagement (10%). • East Malaysia (76,800 doses; 25.6%): Uptake limited by geographical barriers (35%), financial constraints (25%), limited facility access (20%), reliance on mobile teams/NGOs (15%), and language gaps (5%). • East Coast (27,900 doses; 9.3%): Sociocultural resistance due to religious concerns (40%), misconceptions (30%), lack of education campaigns (20%), and minimal female-focused health outreach (10%). **Conclusion:** HPV vaccine implementation in Malaysia is shaped by regional disparities in infrastructure, access, and sociocultural context. Tailored communication, outreach, and logistics strategies are essential. LNOB 1.0 offers a replicable model for equitable immunisation in Malaysia and comparable South Asian contexts.

Keywords: HPV vaccine, Malaysia, regional disparities, vaccine uptake, cervical cancer, LNOB 1.0, immunisation strategy