Optimizing the Existing Human Papilloma Virus (HPV) Vaccination Doses and Coverage for Prevention HPV-Attributable Cancers in Nigeria

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PRESENTATION OUTLINE

1 **Background**

2 **Problem Analysis using a Theoretical Approach (Social Ecological Model)**

3 **Key Considerations**

4 **Literature Review/Evidence-Base**

5 **Conclusion/Recommendations**

BACKGROUND

Current Situation:

- Low HPV vaccination coverage = 1.4%
- Gender-biased administration (young girls only)
- High incidence rates of HPV-attributable cancers but long-neglected/grey disease intervention area.
- Funding constraints – High vaccine costs and Federal cuts
- Recently received a commitment of 8 million doses for 2023 from Merck, and 11 million in 2021 for free, routine immunization.

Goal:
Take a rational, evidence-based decision in ensuring an optimized use of the HPV vaccine doses for the prevention of related cancers.

Source: NGITAG, 2022; Azuogu et al 2019; Bruni 2023; Ishola, 2022.

THEORETICAL APPROACH TO PROBLEM ANALYSIS

Using the Social Ecological Model (SEM) lens in reflecting on the problem

Societal/Policy level	No HPV vaccination policy, program, and data surveillance and monitoring systems in the country
Community level	No services and structures; feminization of HPV vaccination
Institutional Level	Only a few sophisticated clinics offer HPV vaccines at high costs
Interpersonal level	Parents' willingness-to-pay, low income parents
Individual level	Low awareness, gender, age

Source: CDC 2023; NGITAG, 2022; Azuogu et al 2019; Bruni 2023; Ishola, 2022; Umeh et al 2016.

KEY CONSIDERATIONS

CONSIDERATION #1: Whether to administer single, two-dose, or three doses of the HPV vaccine?

CONSIDERATION #2: Whether to continue the gender-biased (conventional feminized approach) or gender-neutral approach (boys + girls aged 9 – 14)

CONSIDERATION #3: Ensure that efficacy, equity in distribution, cost-effectiveness, and social return on investment are factored in the decision-making process

LITERATURE REVIEW & EVIDENCE-BASE

Equity Perspective: WHO and CDC recommend a gender-neutral vaccination approach to achieve herd immunity from HPV, and enhance reach/coverage

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Efficacy/Effectiveness Perspective: Systematic review and meta-analyses of 22 RCAs showed that single-dose HPV vaccination offered similar protection against HPV infection, pre-cancerous cervical lesions, and anogenital warts, and was non-inferior to 2 or 3 doses over a 10-year period., and was recommended for low resource, low-vaccination coverage settings:

Economic perspective:

Cost-effectiveness analysis (CEA) in the Netherlands indicates that also vaccinating boys would prevent 18, 13, and 25 more cases of anal, penile, and oropharyngeal cancers in men respectively, and save 205 QALYs.

CEA and meta-analysis in 188 countries found the single-dose vaccine to be highly cost-effective compared to the two-dose option.

Social return on investment (SROI) of a study in Italy showed HPV vaccination for adolescents was the most economically viable compared to vaccination for herpes in adults and influenza in the elderly.

Source: Whitworth et al 2020; PATH 2021; CDC 2021; Simons et al 2020; Prem et al 2022; Narbieri et al 2023.

CONCLUSION /PROPOSITION

Our recommendation is that single dose, gender-neutral Gardasil-4valent HPV vaccine schedule should be introduced into the free, routine immunization schedule this year and beyond for children 9-14 years for the following reasons:

- It will help to increase reach/coverage and promote equitable distribution.
- It is also relatively efficacious as it grants up to 10-year protection.
- It is economically viable (cost-effective and gives a good SROI)
- The 10-year span also gives ample time for the Health Ministry to put in place more sustainable funding and vaccine supply mechanisms for the country.

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