Which age groups should be targeted for mass vaccination campaigns?

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Considerations

Conjugate vaccines work due to a combination of direct and indirect (herd) protection

Mass campaigns provide both, if the age groups driving transmission are included

- -MenC campaigns in UK and Netherlands
- -MenAfriVac implementation across the meningitis belt

Models can be useful in simulating a wide range of options to investigate e.g.

- changes to UK MenC schedule
- long term strategies for MenAfriVac
- age targets for multivalent meningococcal vaccines

Good data needed on age-specific risks

Direct protection: Age-specific risk of meningitis





Age distribution of Nm disease in Niger, Campagne et al, Bull WHO 1999

Age-specific incidence of Nm disease in Burkina Faso, Chad, Mali, Niger, Togo reported to MenAfriNet. Soeters et al JID 2019

Indirect protection: Age-specific prevalence of carriage



Systematic review and metaanalysis of meningococcal carriage prevalence in Africa shows peak around 10-12 years of age.

But this peak is much less marked than in the analysis of studies in high income countries

Cooper et al, Epi & Infect 2019

Campaigns 1-29 years vs 1-18 years



- No Strain Replacement
- With Strain Replacement

Yaesoubi et al, PLOS Med 2018

A range of options



A range of options



To be modelled...

Geographical risk

Expand the existing meningococcal programme to support a **targeted approach** that includes ACW-containing multivalent meningococcal conjugate vaccines, contingent on WHO SAGE recommendation and a licensed, prequalified product that meets the financial assumptions of this investment case

Gavi 2018



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Data Source: World Health Organization Map Production: Public Health Information and Geographic Information Systems (GIS) World Health Organization

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