OPTIMUNISE PROJECT: Lessons learnt from West Africa
Questions

• How different vaccines affect child survival
• How vaccines may interact with other vaccines
• How effects of vaccines may differ for girls and boys
Reaching MDGs (MDG 4)

• Mortality declined in all 3 sites
• Navrongo and Bandim reached MDG 4
• Navrongo – 78% reduction in under 5 mortality from 1996 – 2015 (235/1000 to 51.6/1000)
• Bandim
  • Urban area – 71% reduction from 1990 – 2014 (227/1000 to 65/1000)
  • Rural area – 68% reduction from 1995 – 2014 (241/1000 to 76/1000)
• Nouna – 54% reduction from 1990 – 2015 (XX/1000 to XX/1000)
Non-Specific Effects of Vaccines

- Vaccines confer specific protection against disease through adaptive immune memory.
- Vaccines also modulate the immune response to unrelated pathogens i.e. vaccines have NSEs.
- Live vaccines (BCG, Measles, OPV) have beneficial NSEs.
Studies on BCG

• Age of BGC vaccination very important
• Earlier BCG given, greater the reduction in mortality. Applies even in LBW babies
• BCG has important NSE on neonatal mortality
• To improve on mortality, wastage policy should not be applied to BCG vaccines
• BCG scar associated with lower mortality
Role of Measles Vaccine in reaching MDG 4

- Being fully immunized associated with 22% lower mortality (analysis from 6 sites)
- Measles campaigns lower mortality
- Effect much more in those previously vaccinated with MV
- Beneficial to receive more than one dose of MV
- Measles campaigns highly cost effective
- Out of sequence vaccination with MV and DPT containing vaccine increases mortality
OPV Campaigns

• OPV campaigns also reduce mortality
Early Measles Vaccine Trial

• Children are susceptible to measles infection at 4-6 months
• A 2 dose MV strategy with the 1st dose from 4 months of age is protective
• No difference in mortality between children receiving MV at 4 + and 9 months or at 9 months only
Sex Differential Effects of Vaccines

• NSEs often have sex differential
• Increase in F to M mortality when Penta vaccines are given
• ?OPV + Penta2 have protective effect for males
• Vit A supplementation in neonate causes higher mortality in females
• Vit A in DPT window causes significantly higher mortality in girls compared to boys
• Non live vaccines (DPT, IPV, HBV, Measles, Penta) have adverse effect for girls (higher female mortality)
• Sequence of vaccination important