Malaria Epidemiology in Tanzania

National Malaria Control Forum

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Outline

- Headline messages
- Background
- Trends in malaria prevalence
- Changing patterns in prevalence
  - Change patterns of anaemia and its association with malaria control
- Severe disease trends
- Malaria indicators trends in IHI HDSS platform
Headline messages

- Dramatic decline in malaria over 10 years
- Even bigger impact than expected
  - Malaria prevalence halved
  - Anaemia down
  - Malaria admissions down
  - Fever (and ARI) down
  - Mortality down (much more than expected)
  - Considerable scope for further progress
Background

- Malaria accounts for over 30% of the national disease burden

- Malaria transmission and the estimated levels of exposure to malaria infected mosquitoes (EIR) varies with season, altitude, proximity to breeding sites, socio-economic status, agro-ecological system

- Multi-faceted malaria control strategies are yielding significant results in malaria indicators
National trends in malaria prevalence

Significant declines in parasite prevalence

Source: NMCP 2006, 2008
Malaria prevalence by age and residence

Shift in level of infection and to older age groups

- Prevalence in rural areas more than twice that in urban

Source: THMIS 2007/08
Malaria decline in Dar, Rufiji and Ifakara

All-age malaria Prevalence, Rufiji and Ifakara DSS Areas

All-Age Malaria Prevalence in Dar es Salaam, 2004-8

68% decline in rural

85% decline in urban

Source: IHI HDSS 2000-2008

Source: THMIS, NMCP
Has malaria transmission declined?

- There are much fewer mosquito bites than before
- Decline in the mosquito infectiousness (EIR)
- Bednet coverage has gone up

Source:
Under 5 anaemia reduced

Peak at 12-23 months

Rural-urban disparity has disappeared

~30% relative decline over 3 years only

Source: TDHS 2004/05 and THMIS 2007/08
Anaemia trends in Rubya DDH 1997-2008

Severe Anaemia, Rubya DDH Lab. Results

% of cases anaemia <7g/dl

61% decline in severe anaemia
Less morbidity in under-5s

% Under-fives with fever in previous two weeks; Tanzania 1991-2007/8

- 31% in 1992
- 30% in 1997
- 35% in 2002
- 24% in 2007

Annual No. Slides Malaria Positive, 13 sentinel hospitals

- Number of positive slides has decreased

Fevers in under 5 have gone down
Net use, mortality, fever, PR and anaemia

Net use has increased

Mortality declined by 45%

Parasite rates declining

Source: IMPACT study, HDSS, ALIVE study and ACCESS study

54% decline in mortality

Source: THMIS 2007
Progress over the last decade: 2000-2010

- Significant declines in parasite prevalence

- 18% of children aged 6-59 months tested positive for malaria in mainland Tanzania; expected to be even lower

- Significant urban/rural difference in prevalence

- Relative decline in anaemia ~30% over 3 years only!

- Significant declines in under five mortality: 45%