Malaria Burden Estimation ERG
Key recommendations from 3rd meeting

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GLOBAL MALARIA PROGRAMME
**Malaria case estimation**

- **Current methods:**
  - Outside Africa and countries with strong surveillance systems in SSA: reported cases adjusted for care-seeking, testing, reporting completeness
  - Africa: MARA risk map, prevalence-incidence relationship, adjusted for ITN coverage

- **For 2013:** use current methods for case estimation;

- **For 2014 and after:**
  - Outside Africa and countries with strong surveillance systems in SSA: use current estimation methods.
  - Africa: estimate cases from MAP time series of prevalence maps (the "cube") and modelled prevalence to incidence relationship.
  - Report parasite prevalence as a key burden indicator in WMR along with cases, deaths – (issues include seasonality and data outside Africa).
  - Continue to present back-corrected time series for trends in each WMR.
Malaria case estimation

- Other
  - Further examine assumptions on parasitaemia and care-seeking behaviours by analysis of household survey data, especially outside of Africa.
  - Explore feasibility of collecting prevalence data on all age groups through household surveys and not just children.
  - Consider increasing prevalence data through additional surveillance, e.g. RDT at first ANC visits, at measles immunization, school deworming.
  - Linking with routine HIV prevalence monitoring may be possible but need to guard against malaria testing being stigmatized by association with HIV. May or may not be an issue.
  - Generate user-friendly and transparent methodologies for estimates of prevalence, cases and deaths that can be used by countries for national and sub-national estimation.
Malaria mortality estimation

- Current methods:
  - **Outside Africa**: fixed CFR applied to estimated cases
  - **Africa**:
    - <5: from CHERG model based on MARA map and adjusted for ITN coverage;
    - 5+: estimated from STPH model of relationship between child and adult deaths from representative data

- For 2013: use current methods for death estimation

- For 2014 and after:
  - Outside of Africa: Use current methods but refine if investigations suggest a need (e.g. case fatality rate)
  - Africa – no compelling evidence for radical change to methods yet, but further development of estimation methods required:
    - <5: use MAP time series of parasite prevalence in CHERG model
    - 5+: use STPH model but investigate validity
Follow-up work for malaria mortality estimation

- Validate STPH model by comparing predictions against other data sets such as hospital studies, including literature search (WHO, STPH)
- Identify (sentinel) hospitals in Africa with good data on age distribution of severe malaria, and community data on parasitaemia, for further analysis adult severe malaria burden (Molyneux)
- Validate INDEPTH verbal autopsy cause of death coding through independent clinical expert (Byass, Molyneux)
- Draft protocol for study in India on hospital mortality and RDT results (White, Kumar) – ERG members to review
- Case-control and cohort studies of malaria mortality being drafted (STPH)
- Avoid calling all over 5 deaths “adult” deaths!
- Further assessments may be required as methodology developed - activity could be subsumed in Surveillance Monitoring & Evaluation TEG (with some co-opted members from MBE ERG)