WHO Informal Consultation on fever management in peripheral health care settings: a global review of evidence and practice

Global Malaria Programme, WHO
Section I - Review on etiologies and management of febrile illness

What are we trying to do?

• Intended aim need to be clear:
  - Reduce antibiotic prescription / drug resistance
  - Increase appropriate treatment
  - Reduce severe disease
  - Save money

Etiologies

• Common findings of studies on etiologies so far:
  
  *Children* <5 years: ½ ARI, 1/10 to ¼ diarrhoea, rest unspecific fever, UTI always low, typhoid low in Africa, high in Asia

  *Adults*: driven by HIV (40% even in low prev area)
  more vector-born, live-stock, outdoor (lepto, rickettsia, typhus...)

• Low specificity of RR for pneumonia in underfive confirmed → viral etiology

• As we go away from ‘gold standard diagnosis’ towards clinical outcome,
  ‘Treatment failure’ need to defined (e.g pneumonia)
Section I - Review on etiologies and management of febrile illness

Epidemiology

- Good estimates of incidence or prevalence only if clinical data or asympt. group associated to ‘crude’ laboratory data (biased pop.)
- Serology lack specificity and PCR is too sensitive → high pos. rate in asympt group
- Severe disease is very rare at peripheral level, especially community (true?)

The way forward

- No need to repeat extensive etiology studies
  → use simplified design
  → build on existing networks (GEMS, PERCH, TSAP...)
  → at different levels: community / outpatients / admissions
  → in different age groups: underfive, 5-15y children, adults
- Methodology:
  → target unspecific fevers in different areas
  → is asymptomatic control group always necessary?
  → common definitions for diseases
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The way forward

• Analytical Considerations
  Possible/useful to develop a ‘standard’ framework for data analysis
  – Descriptive epidemiology
  – Risk factors for disease progression, severe illness, drug resistance
  – Risk factors for treatment with an antibiotic
  – Effects of recommending specific treatment (e.g. doxycycline)
  – Modelling to inform target product profiles of new diagnostics
  – Disease severity vs pathogen-specific
  – Respiratory rate counters, pulse oximetry
  – Target sens/spec
  – Algorithm design (e.g. ALMANACH)

• Formulating algorithms
  → etiologies
  → other factors (distance to HF, economical status, ease of referral..)
  → continuum of care
  → potential of electronic guides for compliance and data collection
Section II - Available WHO guidelines and tools for the management of fevers

Tools available

- **Hospital**
  - Children: Blue book
  - Adults: District manual

- **Health facility**
  - Children: IMCI
  - Adults: IMAI

- **Community (informal private)**
  - iCCM
  - ?

- No guidelines for adults in community
- No guidelines for children 5 to 15 years
- Algorithm for malaria diagnosis & treatment well integrated in most of guidelines
- Home Based Malaria (2002-2005) should be put in archives
- Several points in need for update:
  - Criteria for high and low malaria risk area
  - Testing of anemic children in high malaria risk
  - Testing before referral/pre-referral treatment
  - Time interval new malaria infection (>14 days)

- IMCI & IMAI should be widely disseminated
  - → no more malaria diagnosis & treatment without IMCI/iCCM

- Adherence to iCCM OK, to IMCI problematic → find new strategies for HFs
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Algorithms available

• Up to which degree of place and time should algorithms be refined?
  → need to go below
  → possible to have them different
  national guidelines? algorithms according to season?
  
  → Probably rather by level of health system
  (keep it simple for the community level)

• To keep in mind: HWs are trained and leave, trained and leave again…

• Algorithms for typhoid (and Dengue) in high endemic areas are urgently needed

• Carefully evaluate each new test for cost/benefit before adding it (e.g. Dengue)

• IMCI booklets have already become too heavy

• IMAI: How to cope with long list of diseases in the fever branch?
Section II - Available WHO guidelines and tools for the management of fevers

New diagnostic tests

- More specific, more expensive (clinical → epidemiology → severity test → pathogen test)
- POCTs already available, some usable as they are (Dengue) other not (Typhoid)
- New POCTs in development
  - to specifically detect one pathogen
  - to ‘generically’ identify: - patients at risk for progression to severe disease.
    - patients in need for antibiotic

- Electronic tools to measure essential clinical parameters (RR, O₂ Sat, temp.)
Essential medicines

- High level of bacterial resistance to first line treatments:
  - How to quickly adapt guidelines to these changes?
  - How to replace cotrimoxazole by amoxicillin for ARI (dispersible)

- Should also think in terms of ‘class of antibiotics’ (not only yes/no)

- No evidence to split the list by level of health care ➔ responsibility of countries

- No injectables in the list for community level (pre-referral antibiotic???)
Section III - Agencies and NGOs experience with iCCM

iCCM task force

- Specific tasks:
  - develop tools (training packages, job aids…)
  - set up supply chain management
  - M&E
  - operational research
  - policy & advocacy
  - country support (difficult)

→ based on lessons learned, new manual to guide countries

- Extension to newborns considered, but not to school-children or adults

Challenges to the scale-up (multi-countries review):

- Retention of CHWs in the context of limited HR:
- Supervision of CHWs: more experience peer rather than clinician of HF
- Severe drug shortages: necessity of introducing parallel system → not sustainable
- Care seeking behaviour: communities need to know what care they can expect
- Weak M&E: innovative technologies (basic phones are enough)
Results of operational research

- ↓ mortality with AM (ongoing studies will tell us for AB)
- High compliance with lab-test, low compliance with clinical-test (RR)
- CHWs not good to pick up danger signs (rarely seen)
- Do not refer (Why? Know that patients will not comply?)
- ↑ utilisation of CHWs, but still below expected incidence of diseases
- Very difficult for CHWs to identify danger signs in newborns
- How to measure quality of care: DO without reexam, registers, scenarios not enough for RR and danger signs
- Access should take into account other factors than geograph. Distance
- More and more salaries → helps for retention of HWs
- Feeling of managers: should remain a limited mandate (regulatory problems)
- Costs: much cheaper to manage sev. pneumonia at community level
Section IV - Experiences of community case management of fevers

Public sector

- Rollout of iCCM in different countries with different adaptation of algorithm, training, supervision, data collection/reporting and remuneration/motivation approaches

- Quantification challenges for RDTs and for different medicines (antimalarials, antibiotics and ORS) due to different prevalence of the 3 diseases in different parts of the country

- Supply chain challenges addressed in different ways: in the future need to integrate the current parallel distribution system with the main drug supply system managed by central medical store

- Issues with services at community level outperforming health facilities, and need to review package of services at referral level

- Need to clarify role of amoxicillin for pre-referral treatment of severe pneumonia at community level

- Simplified algorithm required, focusing on malaria, pneumonia and diarrhoea, with focus on danger signs requiring referral
IMCI - Caring for the sick child in the community

- **Danger signs**
  - YES: Antimalarials and antibiotics \( \rightarrow \) REFER
  - NO:
    - Fever <7 days
      - **RDT**
        - POS: Malaria \( \rightarrow \) ACT
        - NEG: No drug
    - Cough
      - Fast breathing
        - YES: Pneumonia \( \rightarrow \) Antibiotics
        - NO: Cold
    - Diarrhea
      - Blood in stool
        - YES: Dysentery \( \rightarrow \) REFER
        - NO: ‘Watery’ diarrhea \( \rightarrow \) ORS
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Private sector

• Need to be addressed (important source of care in many, not all, settings)

• Factors: source of care, skills levels, disease etiology, coverage with public sector facilities/agents (CHWs etc)

• Not uniform, needs to be segmented (e.g. drug peddlers, retail shops, non registered drug shops, registered drug shops, private clinics (by level), not-for-profits etc)

  → for strategizing research, review and interventions

• Different approaches for different segments

  → e.g: positive incentives (knowledge/training, profits, social marketing, organization into societies etc)

  → to come up with an appropriate “mix” (in each context, segment)

• Do not introduce malaria RDTs alone (e.g. blanket advise for referring RDT-

  → TOGETHER WITH (diagnostics &) treatment for common conditions in that context (e.g. RR timers and (prepackaged) antibiotics; ORS+Zinc)

• Supervision, Quality Measurement and Quality Assurance of care and products:

  → Methods and mechanisms need to be elaborated and evaluated
Section IV - Experiences of community case management of fevers

Private sector

- Surveillance methods need to be elaborated
e.g. for RDT positivity rate, conditions treated, drug use
  → to integrate information into health management systems

- Empower Demand side (knowledge and purchasing/entitlement-enabled consumers)
  → important factor in improving care-seeking and quality of care
  → e.g. “branding” or social franchising drug shops/clinics/individuals
  but ALSO criteria of good quality care (e.g. child examined, diagnostic test applied, treatment upon result).

- Need for further understanding of:
  - microeconomics of running private sector outlets,
  - construction of (financial) incentive mechanisms that promote desired behaviours (such as profit margins from testing, different treatment combinations etc)