Policy Briefing:

Beyond Malaria: Diagnosing Fever in Cameroon

Overview:

This policy briefing synthesizes key insights from the Cameroon Townhall for Healthcare Professionals meeting held on July 29, 2023 (80th edition), focusing on the theme "Diagnostic Dilemmas: Fevers in the Tropics," presented by Dr. Obadia Mfuh Kenji, laboratory director.

Context:

Most febrile patients in Cameroon are still treated for malaria whether or not they test positive. In a study in four cities, 92% of febrile participants were clinically diagnosed with malaria, while PCR found it in 54%, and 38% of those treated had fever from other causes, mainly respiratory infections and typhoid.

Key Issues:

1. **Presumptive malaria treatment:** Negative tests are often ignored. In Bamenda, about 5% had malaria by PCR but 77% received antimalarials.
2. **Missed bacterial infections:** Malaria negative febrile patients have higher mortality, often from sepsis and pneumonia, and cultures are rarely requested in adults.
3. **Antibiotic misuse:** Antimalarials and broad spectrum antibiotics are given together by default, eroding drugs such as ciprofloxacin and ceftriaxone.
4. **Weak laboratory capacity:** Laboratories receive little investment, tests are run one at a time, and RDTs on the market are not always evaluated.
5. **Cost and protocols:** Patients' limited means and the lack of adapted clinical protocols push clinicians toward empirical treatment.

Discussion Highlights:

- Withholding antimalarials from RDT negative febrile children is safe, provided other causes are sought.
- Syndromic multiplex panels reduce turnaround and antibiotic use; COVID-19 era thermocyclers can be repurposed.
- HRP2/3 deletions require RDTs with additional targets where prevalence exceeds 5%.

- Paediatric practice in Cameroon shows the model of cultures and inflammatory markers that adult medicine should follow.
- Training, clinician and laboratory collaboration, and public awareness are needed alongside new tools.

Recommendations:

- **Enforce test, then treat:** MINSANTE and the National Malaria Control Programme should reinforce guidance that a negative RDT means no antimalarials and a search for other causes, through supervision and prescription audits in regional and district hospitals. First step: a short national circular and job aid for outpatient and paediatric units.
- **Adopt a national fever and sepsis algorithm:** MINSANTE, with university hospitals and diaspora specialists, should issue a fever algorithm adapted to Cameroon's epidemiology: RDT first, then sepsis criteria, blood culture before antibiotics where available, and referral where it is not.
- **Repurpose COVID-19 laboratory capacity:** MINSANTE and laboratory partners should use thermocyclers and staff trained during COVID-19 for respiratory and febrile illness panels. First step: an inventory of existing PCR platforms and a pilot respiratory panel in two regional hospitals.
- **Regulate rapid tests and monitor HRP2/3 deletions:** The national regulatory authority and reference laboratories should evaluate RDTs before market entry and map HRP2/3 deletion prevalence by region, switching to multi-target RDTs where it exceeds 5%.
- **Strengthen antimicrobial stewardship and training:** Medical, nursing and laboratory schools should teach non-malaria fever, cultures and stewardship, and hospitals should track culture requests and antibiotic resistance, starting with typhoid and Gram negative bacteria.
- **Support point of care innovation:** Researchers in Cameroon and the diaspora, with partners, should develop and validate affordable multi-pathogen point of care tests (for example malaria with procalcitonin) and a clinical decision app built on local data.

Next Steps: Laboratory scientists in Cameroon and the diaspora proposed a subgroup on repurposing COVID-19 equipment. Dr. Kenji offered to collaborate on point of care tests and to share his article on laboratory capacity and supply chains in Africa. The Chair proposed a follow up session on sepsis and antimicrobial stewardship.

Conclusion: Fever in Cameroon is no longer mostly malaria, especially outside highly endemic areas and in young children. Participants agreed that trusting negative

malaria tests, investing in laboratories and syndromic testing, and adopting adapted protocols would save lives and protect antibiotics.

Prepared by the Co-Moderators, Cameroon Townhall for Healthcare Professionals, from the session of July 29, 2023. Recording: https://www.youtube.com/watch?v=hupG8bEPIM8