

Enhanced Case Detection and Skin NTDs

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| Session Date & Time: | Tuesday, November 19; 1:00 PM to 4:00 PM |
| Session Location: | Mandalay Bay |
| Session Description: | The question explored in this session is how best to utilize a feature shared by many neglected tropical diseases (NTDs) – clinical (visual) presentation in the skin - to ensure accurate case detection. This is set against a background where other skin diseases are very common, local expertise deficient and few diagnostic tests are available. |
| Session Chairs: | Kingsley Asiedu and Roderick Hay |
| Session Rapporteur: | Rie Yotsu, Nagasaki University |

KEY DISCUSSION POINTS

Presentations were made on a range of studies / good practices in conducting case detection for skin NTDs and common skin diseases in different regions to understand the status quo:

Liberia: Buruli ulcer, yaws, leprosy, and other skin diseases

- *Disease burden and epidemiology of skin-presenting NTDs in Liberia: an integrated cluster-randomised active case search. (Michael Marks, London School of Hygiene and Tropical Medicine, UK)*

Benin: Buruli ulcer, yaws, and leprosy

- *Integrated approach to the control of neglected tropical diseases with skin manifestations in Benin. (Yves Baragui, Ministry of Health, Benin)*

Mexico: fungal NTDs including mycetoma

- *Case detection of fungal NTDs in a community dermatology programme in Mexico. (Roderick Hay on behalf of Guadalupe Estrada, Dermatologia Comunitaria, Mexico)*

Scabies was added to the WHO list of NTDs in 2017, and development of guidelines is underway to accelerate its disease control.

- *Standardization of scabies diagnosis: opportunities for mapping and integration. (Daniel Engelman, The Royal Children's Hospital Melbourne, Australia)*

The group discussions were performed around the following topics:

1. The best methods of carrying out training of front-line health care workers (HCWs) on skin NTDs and basic dermatology

- Best practice depends on the purpose of the training. Training methods should be developed for identifiable purposes, e.g., building capacity in communities, mapping skin NTDs, and also by target population.
- Care needs to be taken as not all aspects can be integrated. *Logical integration* is needed: number of diseases to cover, prioritizing diseases, characteristics of diseases (e.g., leprosy is a challenging disease by itself), duration of training, etc.
- For front-line health care workers, the skills to suspect rather than to make a specific diagnosis may be more valuable. Providing a scheme for identifying warning signs ('red flag' signs) for skin NTDs would highlight potential clues for HCWs without skin training.
- Use of digital health/tele dermatology for triage of 'red flag' cases. For use of tele dermatology, there need to be reliable access to expert opinion to review referred cases.
- Comparison of different methods of training, e.g., face-to-face, distance, web-based
- Other discussion points: sustainability and maintaining quality, motivating the team, community participation.

2. The best methods of carrying out case detection at community level

- Community health workers (CHWs; sometimes referred also as village volunteers) form a vital link between the community and health system. They form the basis of the strong community-based surveillance system. They should be effectively involved in carrying out case detection at community level.
- The anticipated role of CHWs: to detect/suspect and report skin diseases and skin NTDs to the primary health care facilities for diagnosis and treatment; report people with disabilities in their villages; and follow-up with cases which have returned to their villages after treatment and report on any complications.
- Combining the Skin NTDs programme with other schemes for community health provision, e.g., maternal and child, immunizations, etc.
- Need for strong primary health care: For community level case detection to be effective, the HCWs at the primary health care level should be trained to manage referred cases and have the essential tools to do so.
- Need for training: training modules, on-the-spot training during community case detection activities, etc.

- Use of IT (e.g., photos via WhatsApp) may not be possible for all CHWs but access to mobile technology is increasing rapidly. There are possibilities of maximizing the use of mobile technology between health facility staff and specialists/senior doctors.

3. The current availability and needs for simple test procedures to improve case verification

- All agree that the needs are there but also present a big challenge.
- Even looking optimistically, the mean time for developing and assessing a new point-of-care or lab-based test is between 3-5 years. Therefore, although finding new user-friendly tests for skin NTDs is a key long term goal, these will not be available until at least half way into the WHO 2030 goal period. However, it is possible to use novel detector systems to provide results at point-of-care or at least peripheral hospital level. At present, technology has begun to address multiple pathogens so using a single platform for multiple NTDs is potentially possible.
- A quicker potential solution is to reskill workforce in simple lab-based methods, e.g., microscopy – by providing training in simple microscopy and staining techniques through handbook or on-line.
- Development of algorithms combining existing methods: e.g., using the example of mycetoma such as the 1-3 β glucan assay with a simple algorithm using observed signs; or yaws using treponema rapid diagnostic tests and observed signs. These might be delivered by a simple calculation or score or, if more, complex through an App using an AI approach.
- For some skin NTDs, identifying a network of regional reference laboratories would be very useful.

KNOWLEDGE GAPS IDENTIFIED

- **'Basic pictorial tool / algorithm'** for screening and diagnosing skin NTDs and common skin diseases (guide and simple training module), and 'red flag' signs. Possible use of digital health/teledermatology.
- **'Essential care package'** would be needed with simple definitions and characteristics of the relevant disabilities and complications, tools for assessment and guidance on management/treatment. Treatment cost of skin diseases need to be assessed.
- **'Traditional and novel diagnostic tools'** both would be needed. For skin NTDs amenable to MDA, diagnostic tools with wider margins of sensitivity or specificity will be generally acceptable --- International Alliance for the Control of Scabies (IASC) criteria for scabies provide a good example.

RECOMMENDED NEXT STEPS

Operational research will include:

- How best to validate different training materials/strategies and their impact on case detection and/or management?
- How to optimize the use of CHWs to improve early case detection of skin NTDs to achieve the best results?
- Which algorithm combining existing methods work best in diagnosing skin NTDs?

There is an urgent need to take an inventory of available guides/aids/tools on skin diseases to allow the development of a consolidated training document/tools that can be universally used or adapted regionally to support the work of CHWs, HCWs, lab technicians, etc. Logical integration, health promotion on skin health, and access to treatment for all skin diseases are essential for success in enhanced case detection and management of skin NTDs.