Outreach supervision to improve malaria diagnostics and case management

Luis Benavente MD, MS
Director Improving Malaria Diagnostics

Luanda, August 26, 2009
<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2009</th>
<th>2010 (MOP09)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Assessment of diagnostic capacities</td>
<td>Adapt training materials, Train supervisors</td>
<td>MOP: QC of lab diagnosis</td>
</tr>
<tr>
<td>Benin (IMaD coordinator)</td>
<td>Assessment</td>
<td>Training in supervision, RDT and microscopy</td>
<td>QAQC diagnostics</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>-</td>
<td>Assessment</td>
<td>Support QA schemes</td>
</tr>
<tr>
<td>Ghana (IMaD coordinator)</td>
<td>Assessment, policy</td>
<td>Training in supervision, microscopy</td>
<td>Lab QC, supervision</td>
</tr>
<tr>
<td>Kenya</td>
<td>-</td>
<td>Assessment, policy</td>
<td>QAQC diagnostics</td>
</tr>
<tr>
<td>Liberia (IMaD coordinator)</td>
<td>Assessment</td>
<td>Training</td>
<td>Nat ref lab, lab QA supervision</td>
</tr>
<tr>
<td>Madagascar</td>
<td>Assessment</td>
<td>Suspended: adherence to RDT results at health post level</td>
<td>-</td>
</tr>
<tr>
<td>Mali</td>
<td>Assessment</td>
<td>Training</td>
<td>Training lab diagnosis, QAQC diagnostics</td>
</tr>
<tr>
<td>Malawi (IMaD coordinator)</td>
<td>-</td>
<td>Assessment, training</td>
<td>QAQC of diagnostics, adherence to RDT results</td>
</tr>
<tr>
<td>Zambia (IMaD coordinator)</td>
<td>Assessment</td>
<td>Training</td>
<td>Strengthen diagnosis at health center level</td>
</tr>
</tbody>
</table>
Increase supervision to improve competence in malaria diagnosis and case management

- Training in a central location does not necessarily translate into better competence
- Classic cascade training frequently have had limited success in improving performance
- On-the-job training requires extensive travel
- Frequently provinces lack a skilled supervisor
- Supervision to promote adherence to test results by clinicians
Checklists:
- generated by OS
- initial, 2-3 day visit
- subsequent (1/quarter), 1 day visit
- passed to central admin

National Coordinator/supervisors
- Integral in planning of training OS
- receive completed checklists
- ensure visits are completed as scheduled
- compile results
- work with provincial Supervisors to optimize visit schedules
- work with NMCP, MoH and PMI coordinator to disseminate results of checklists and facilitate corrective actions
## Laboratory Curriculum

<table>
<thead>
<tr>
<th>Time</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00-8.30</td>
<td>Introductions Joint</td>
<td>Recap</td>
<td>Recap</td>
<td>Recap</td>
<td>Recap</td>
<td>Recap</td>
</tr>
<tr>
<td>8.30-9.30</td>
<td>Ground rules</td>
<td>Module 3</td>
<td>Module J2</td>
<td>Module 10</td>
<td>Module J3</td>
<td>Module J4</td>
</tr>
<tr>
<td></td>
<td>Expectations Joint session</td>
<td>Management of Lab Chemicals, Reagents &amp; Supplies</td>
<td>Malaria: Programmatic Issues Joint session</td>
<td>Rapid Diagnostic Tests (RDTs): use &amp; interpretation</td>
<td>Sources of Errors in Patient Diagnosis Joint session</td>
<td></td>
</tr>
<tr>
<td>9.30-10.30</td>
<td>Module J1</td>
<td>Module 4</td>
<td>Module J2</td>
<td>Module 10</td>
<td>Module J3</td>
<td>Module J4</td>
</tr>
<tr>
<td></td>
<td>Essential Health Facility Management Joint session</td>
<td>Preparation of stains for blood films</td>
<td>Malaria: Programmatic Issues Joint session</td>
<td>Rapid Diagnostic Tests (RDTs): use &amp; interpretation</td>
<td>Sources of Errors in Patient Diagnosis Joint session</td>
<td></td>
</tr>
<tr>
<td>10.30 – 11.00</td>
<td>Tea Break</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.00-12.00</td>
<td>Module 1</td>
<td>Module 5</td>
<td>Module 7</td>
<td>Module 11</td>
<td>Module J3</td>
<td>Post - test Joint session</td>
</tr>
<tr>
<td></td>
<td>Standards of Laboratory Practice</td>
<td>Blood film preparation, staining &amp; examination</td>
<td>Cleaning, Disinfec Sterilisation, Disposal &amp; Safety</td>
<td>Principles and concepts of QA/QC</td>
<td>Training/supervisory visit to a health facility Joint session</td>
<td></td>
</tr>
<tr>
<td>12.00-1.00</td>
<td>Module 2</td>
<td>Module 5</td>
<td>Module 8</td>
<td>Module 12</td>
<td>Module J3</td>
<td>Post - test Joint session</td>
</tr>
<tr>
<td></td>
<td>Medical Laboratory Equipment</td>
<td>Blood film preparation, staining &amp; examination</td>
<td>Laboratory Management Information Systems</td>
<td>QA/QC for malaria diagnosis</td>
<td>Training/supervisory visit to a health facility Joint session</td>
<td></td>
</tr>
<tr>
<td>1.00-2.00</td>
<td>Lunch Break</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.00-3.00</td>
<td>Pre-test Joint session</td>
<td>Module 6</td>
<td>Module 9</td>
<td>Module 13</td>
<td>Module 14</td>
<td>Way Forward Plan of action Joint session</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blood film examination: species identification</td>
<td>Blood film examination: parasite quantification</td>
<td>Principles; development and use of checklists</td>
<td>Feedback from visit to a health facility</td>
<td></td>
</tr>
<tr>
<td>3.00-4.00</td>
<td>Pre-test Joint session</td>
<td>Module 6</td>
<td>Module 9</td>
<td>Module 13</td>
<td>Module 14</td>
<td>Wrap up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blood film examination: species identification</td>
<td>Blood film examination: parasite quantification</td>
<td>Principles; development and use of checklists</td>
<td>Feedback from visit to a health facility</td>
<td></td>
</tr>
<tr>
<td>4.00 – 5.00</td>
<td>Pre-test Joint session</td>
<td>Module 6</td>
<td>Module 9</td>
<td>Module 13</td>
<td>Module 14</td>
<td>Closing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blood film examination: species identification</td>
<td>Blood film examination: parasite quantification</td>
<td>Principles; and use of checklists</td>
<td>Feedback from visit to a health facility</td>
<td></td>
</tr>
</tbody>
</table>
Microscopy QC Component

• Slide review
  – Not designed to affect individual patient diagnosis
  – Some reviewed on site, by OS, remainder returned to Regional Base for review
  – Select 5 low density pos and 5 neg / facility for each month
  – 120 slides/year target

• Results are analysed as:
  – Number of slides in agreement, i.e. percentage of positive and negative slides correctly identified
  – False positive rate, False negative rate
  – Labelling of each slide
  – Quality of staining
  – Counting of malaria parasites

• Remedial action
  – Further laboratory supervision and/or
  – Laboratory refresher training
RDT QC Component

• Observe adherence to manufacturer’s instructions
  – RDT storage
  – Adherence to standard operating procedure
  – Biosafety
  – Interpretation of result
  – Registers

• Observe adherence to RDT results (if RDT-s are not treated)
  – Identify the proportion of febrile cases, RDT- that are treated anyway
  – Identify the causes: long turnaround time? Lack of confidence on RDT results?

• Remedial action
  – Further laboratory supervision and/or
  – Laboratory refresher training
Laboratory Checklist (Initial)

Tool One. Laboratory Outreach Training: Initial Visit
Identification:  1L—2008—08—12—Ashanti—Kumasi

1. Laboratory, location and contact
2. Laboratory structure and facilities
3. Major laboratory equipment
4. Minor equipment
5. Supplies, consumables
6. Safety, disinfection, sterilization
7. Quality assurance
   A. Internal QC, B. External QA, C. Reference materials
8. Documentation
9. Laboratory staffing
10. Continuing Professional Development (CPD), training, and supervision
11. Tests and techniques
12. Specimen referrals
13. Laboratory data and workload
14. Clinical information (if there is no clinical counterpart present)

Summary of work done during the visit
State and mission facilities surveyed in the 2009 Needs Assessment, Republic of Kenya

Legend
- State Hospitals
- Mission Hospitals
- State Health Centres
- Mission Health Centres
- State Dispensaries
- Mission Dispensaries