REPORT

REVIEW OF THE EARLY IMPLEMENTATION OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS (IMCI) AND PLANNING FOR EXPANSION

Mongolia
15 - 19 January 2001
REPORT

REVIEW OF THE EARLY IMPLEMENTATION OF THE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS (IMCI) AND PLANNING FOR EXPANSION

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NOTE

The views expressed in this report are those of the participants in the Review of the Early Implementation of the Integrated Management of Childhood Illness (IMCI) and Planning for Expansion and do not necessarily reflect the policies of the Organization.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for governments of Member States in the Region and for those who participated in the Review of the Early Implementation of the Integrated Management of Childhood Illness (IMCI) and Planning for Expansion, held in Mongolia, from 15 to 19 January 2001.
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## Keywords:

- Child health services
- Child welfare
- Disease management
- Delivery of health care
- Integrated
- Mongolia
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SUMMARY

In order to further reduce infant and under-five mortality and morbidity, and to promote healthy growth and development of children, the WHO in collaboration with the UNICEF has developed the Integrated Management of Childhood Illness (IMCI) strategy composing of three major components:

1. Improving skills of health workers
2. Improving health system
3. Improving family and community practices

Mongolia started discussions on the IMCI strategy in December 1998 and, thereafter, an orientation meeting was conducted in June 1999 followed by a planning meeting in August 1999. The adaptation of IMCI guidelines, modules and chart-booklets was completed in March 2000. The first IMCI course was conducted in April 2000 and, later in the year, a number of training courses were carried out. Participatory Hygiene and Sanitation Transformation (PHAST) was also included in the Community IMCI and was implemented along with the IMCI training in 2000.

It was suggested by the Government of Mongolia that after the completion of the training planned by the end of 2000, a review and planning meeting will be conducted to review the experiences gained and lessons learned during the early implementation phase and to plan for expanding IMCI into new aimags and districts.

The WHO facilitator team composed of Dr Eva Kudlova, Short-term Professional, CAH/HQ, Dr Marianna V. Trias, Medical Officer (planning), and Dr Or Vandine, Short-term Professional, CHD/WPRO and Mr Paul Heinsbroek, Associate Professional Officer, responsible for PHAST, WPRO. Forty-four participants from national, aimag and district levels and representatives from UNICEF, ADB, World Vision International and Norwegian Lutheran Mission attended the IMCI review and planning meeting from 15-19 January 2001 (see Annex 1). The agenda of the meeting is attached in Annex 2.

The objectives of the review meeting were to assess how well Mongolia was able to implement its plan and intentions, to identify the main problems and feasible solutions, to summarize lessons learned in the early implementation in order to identify ways to strengthen and sustain IMCI implementation as a main strategy to improve the quality of care for children in health facilities and at home. The objectives of the planning meeting were to plan how to expand IMCI activities into more districts, expand the range of IMCI activities, and maintain and improve quality. Consensus meeting was held at the end of the exercise, to present the conclusions and recommendations of the review and planning meeting to the high-level officials of the Ministry of Health and representatives from IMCI-related institutions and partners. The outcome of the consensus meeting will be used as a basis for detailed planning of the expansion of the IMCI strategy.

After the opening speech of Dr Natsag Udval (Vice-Minister of Health), a series of plenary sessions and group work followed. For the first three days of the meeting, participants were divided into three groups going through steps described in the IMCI Planning Guide (WHO/CHS/CAH/99.1) to review the IMCI early implementation. They discussed the objectives, activities, achievements, resources, constraints, and recommendations according to each
component of the strategy. During the last two days of the meeting, the participants developed a directional plan for IMCI expansion.

The review and planning meeting concluded that significant progress has been made during the first two years of the IMCI implementation in Mongolia. It was suggested that the IMCI activities should be expanded along with the reactivation and reappointment of members of the IMCI steering committee and adding more staff to the IMCI secretariat to ensure capacity for smooth expansion. The following are the recommendations of the review of IMCI early implementation and planning for expansion:

1. The Ministry of Health should adopt IMCI as a main strategy for child health in the national policy (National Strategy for Children's Development of Mongolia) to facilitate the expansion of IMCI in scope of and geographical coverage.

2. Central level IMCI working group should prepare a comprehensive paper proposing the actions needed by the Ministry of Health for capacity building and gradually increasing the coverage of balanced implementation of all three components. This paper should also include a detailed plan of activities and geographical priority areas for expansion.

3. The Ministry of Health should widely disseminate all endorsed documents/policy related to IMCI implementation for implementers at all levels and partners in child health to guide the implementation.

4. The Ministry of Health should maintain the existing organizational structure of IMCI. However, the Steering Committee and the IMCI working group at all level should be reviewed and members reappointed with clear terms of reference. Job descriptions specifying the involvement in IMCI activities should also be given to health professionals involved in IMCI implementation.

5. Human resources for IMCI expansion should be increased, particularly for the IMCI secretariat, if the pace of expansion is to exceed two aimags and two districts in two years. The Ministry of Health should consider appointing at least two more staff to work at the IMCI secretariat.

6. More emphasis should be given to IMCI pre-service training for cost-effectiveness and sustainability of IMCI. Meanwhile, the in-service training in IMCI should be accelerated to strengthen the skills of health workers already in service.

7. The IMCI drugs in the essential drugs list should be available at all times in health facilities where IMCI is implemented. The Ministry of Health should allow the family doctors to fully apply the IMCI treatment guidelines through endorsed rules and regulations on medicines.

8. An integrated recording/registering mechanism for gathering health data suitable for all ongoing programmes and the health information system should be developed.

9. The Ministry of Health should develop standard materials including handouts, and other IEC materials for training in IMCI of caretaker and their trainers. Radio and television programmes should also be utilized as an avenue for promoting messages on child health.

10. PHAST initiative training should continue in the context of improving family and community practices on child health and should involve local governments and nongovernmental organizations, targeting particularly the poor population with the implementation of IMCI.
11. There is enthusiasm about the IMCI strategy among health professionals and partners in health. The Ministry of Health should put high priority on utilizing the momentum and coordinating the joint efforts with particular emphasis on linking the IMCI strategy with the general health sector development towards the improvement of child health in Mongolia.
PART I:

REVIEW OF THE IMCI EARLY IMPLEMENTATION PHASE

1. INTRODUCTION

Every year 11 million children under five years of age die before their fifth birthday, many during the first year of life, and every day millions of parents seek health care for sick children, taking them to hospitals, health centres, pharmacists, community care providers and traditional healers. Most sick children, particularly in developing countries, present with signs and symptoms related to more than one of the five conditions mainly malnutrition, acute respiratory infections (mostly pneumonia), diarrhoea, measles and malaria, and childhood mortality and morbidity caused by these conditions remain unacceptably high in the Western Pacific Region.

In response to the situation, the WHO in collaboration with UNICEF has developed the Integrated Management of Childhood Illness (IMCI) strategy, and has been working with countries to implement it since 1995. It includes three components:

- Improvements in the case management skills of health workers through the provision of locally adapted guidelines on IMCI and activities to promote their use including in-service and pre-service training in IMCI.
- Improvements in health system required for effective management of childhood illness.
- Improvements in family and community practices.

Mongolia started discussions on IMCI in December 1998 and, thereafter, a national orientation meeting was conducted in June 1999 followed by a planning meeting in August 1999. The adaptation of IMCI guidelines, training modules and chart-booklets was completed in March 2000. The first IMCI course was conducted in April 2000 and later in the year, a number of training courses were carried out. Participatory Hygiene and Sanitation Transformation (PHAST) was also integrated into the IMCI implementation and was implemented along with the IMCI training in 2000.

The introduction and early implementation phase of the IMCI strategy progressed fast due to strong efforts and commitment of the Government and several partner agencies that play an important role in child health in Mongolia. The aims of the early implementation phase was to gain experience in the implementation of the IMCI strategy and build capacity of future expansion. Planned activities in the two selected aimags (Arkhangai and Uvurkhangai) and two districts (Songinokhairhan and Sukhbaatar districts of Ulaanbaatar) were completed in December 2000 (see Annex 3), warranting a review of experiences to guide future expansion.
2. REVIEW PROCESS

2.1 Objectives of the review of IMCI Early Implementation Phase

The objectives of the review were to assess how well Mongolia was able to implement its plan and intentions in the IMCI early implementation phase, to identify the main problems and feasible solutions and to summarize lessons learned in the early implementation in order to identify ways to strengthen and sustain IMCI implementation as a main strategy to improve the quality of care for children in health facilities and in the home.

2.2 Participants and agenda of the meeting

Fourty-four participants from national, aimag and district levels and representatives from UNICEF, ADB, World Vision International and Norwegian Lutheran Mission attended the IMCI review and planning meeting in Ulaanbaatar on 15-19 January 2001. The WHO facilitator team composed of Dr Eva Kudlova, Short-term Professional, CAH/HQ; Dr Marianna V. Trias, Medical Officer and Dr Or Vandine, Short-term Professional, CHD/WPRO and Mr Paul Heinsbroek, Associate Professional Officer, responsible for PHAST, CWS/WPRO. List of participants can be found in Annex 1.

The agenda of the meeting is attached as Annex 2.

2.3 Task completed

On the first day, after the opening speech of Dr Natsag Udval (Vice-Minister of Health) the IMCI focal person presented the objectives and agenda of the review meeting. After presenting experiences of IMCI early implementation phase from other countries by a WHO team member, the IMCI Secretariat presented an overview of activities during the early implementation phase of IMCI in Mongolia. Before starting the group work, a WHO team member introduced and explained the review process, steps and methods to be followed during the first three days of the review meeting. Then, participants divided into three groups (Annex 1) covering the following main activity areas:

- Group 1: Organization and management and improving health system
- Group 2: Improving skills of health workers
- Group 3: Improving family and community practices

Each group selected a chairperson who guided the group discussion and rapporteur who reported the outcome of the discussion. All discussions and subsequent presentations of the group work were conducted in Mongolian with translation for partners and external facilitators. A series of plenary sessions and group work followed as stated in Annex 2 attached to this report. Participants went through steps described in the IMCI Planning Guide (WHO/CHS/CAH/99.1) to review the IMCI early implementation by discussing the objectives, activities, achievements, resources, constraints, and recommendations according to each component of the IMCI strategy.
• Step 1: Assess what has been achieved in the major activity areas, identify constraints, and specify the resources required.

Participants listed the specific objectives and reviewed the status of the IMCI early implementation using the information contained in a background document that had been prepared prior to the review meeting. Participants also identified the resources required to undergo the activities and assessed the achievements and constraints affecting the implementation for each area. The background document can be found as Annex 3 to this report.

• Step 2: Identify feasible solutions for the constraints

Participants discussed in detail and analysed the main constraints affecting the implementation of each area and identified feasible solutions for the constraints. Before starting Step 3, each group presented the summary of the discussion for Step 1 and Step 2 in plenary session. Comments and suggestions from the plenary were incorporated into the concerned area of the group work for Step 3.

• Step 3: Assess how the IMCI strategy should be expanded and develop recommendations for what should be done

Based on Step 1 and Step 2, participants developed recommendations and considered pace for future expansion and preliminary emphasized activities for expansion. They also developed recommendations for what should be done.

For the last two days of the meeting, based on the findings and recommendations of the first three days, participants developed in the plenary a directional plan for expanding the IMCI strategy.

3. SUMMARY OF FINDINGS AND RECOMMENDATIONS

3.1 Organization and management

3.1.1 Objectives:

• To get support from policy makers to establish a National IMCI Steering Committee
• To establish a National IMCI Secretariat and IMCI Working Group to manage, coordinate IMCI implementation and liaise with partners and other health projects
• To set up a system for reporting, monitoring and evaluating the project implementation

3.1.2 Activities:

• Establishment of the Steering Committee at national level headed by State Secretary of Ministry of Health.
• Establishment of the IMCI Secretariat at national level and organization of an office for IMCI management by the Ministry of Health (MOH).
• Establishment of the IMCI Working Group at national level that consisted of two teams: adaptation subgroup and implementation subgroup.

• Appointment of aimag/district coordinators in the selected pilot areas to coordinate with the IMCI Secretariat and be responsible for planning and implementation at aimag/district level.

• Incorporation of the IMCI strategy into the National Plan of Action 2000-2004.

3.1.3 Achievements:

• The Steering Committee was established in August-December 1999 but has been non-functional.

• The IMCI focal person and one assistant to work full-time on IMCI were appointed at the MOH.

• The IMCI Working Group was established at national level.

• The IMCI adaptation group was appointed in August-September 1999 by the Policy and Coordination Department of the MOH. The group worked on the adaptation of the training modules, mother’s card and chart-booklet.

• The IMCI implementation group was also established in August-September 1999 to work on the following activities:
  - Conduct of three facilitators’ training courses
  - Conduct of sixteen standard management training courses
  - Conduct of three follow-up training courses
  - Conduct of two follow-up visits to each aimag and three to each district

• The National IMCI Plan for training was developed and central/aimag/district IMCI trainers and supervisors were oriented and trained.


• The level of support by local authorities varied in the four pilot implementation areas.

• The IMCI strategy was incorporated into the National Plan of Action 2000-2004. It was endorsed by the MOH in September 2000.

3.1.4 Resources:

• Sufficient number of physicians who would have potential to implement IMCI exists in the country. However, only very few of them have been appointed to work on the IMCI. Even they work only on part-time basis.

• During the early implementation phase, four major partners (WHO, UNICEF, World Vision International, Asian Development Bank) supported the IMCI activities both technically and financially.
No specific budget was allocated by the MOH to the implementation of the IMCI except salary of the Ministry staff and public health facilities.

3.1.5 Constraints:

- There are not enough senior staff in the IMCI secretariat. Only the focal person and one assistant work on a full-time basis. These two people cannot cope with the development of the IMCI implementation in the country.

  **Cause:** No appointment or agreement from the MOH to allocate senior staff at this level.

  **Solution:** To appoint two more senior staff to work full-time in the IMCI secretariat and clearly identify the role and responsibility of appointed persons. At least one administrative support staff in addition to the existing assistant of focal person is needed in order to facilitate the implementation process.

- The National Steering Committee is not functional.

  **Cause:** Due to the change of the structure of the MOH after the election in July 2000, chairperson and members of the Steering Committee also changed.

  **Solution:** Reactivate the Steering Committee by appointing new members and clearly identify its role and responsibilities.

- Policy makers do not recognize the importance of the IMCI strategy and, therefore, they do not provide enough support to the IMCI activities.

  **Cause:** They have not been informed about or do not understand the IMCI strategy.

  **Solution:** Leaders of MOH/aimags/districts/soum/bagh who will be involved in the IMCI implementation must be oriented and trained so that they have the understanding of IMCI. To involve inspectors on quality standard to the IMCI training is also essential.

- Mechanism to implement IMCI at aimag/district level is not clear yet.

  **Cause:** Official documents, such as health policy to implement IMCI, have not been disseminated.

  **Solution:** Disseminate the policy and other official documents related to the implementation of IMCI to all levels, relevant programmes and partners.

- Frequent turn-over of health workers who have been trained in IMCI

  **Cause:** Selection of health workers to be trained in IMCI not correctly made by the leaders at aimag and district levels.

  **Solution:** Carefully and correctly select health workers to be trained in IMCI.
• No encouragement and less motivation in implementing the IMCI strategy among trained staff

*Cause:* Limited technical support and low salary for health workers

*Solution:* All trained staff in IMCI should be enabled to apply the IMCI concept in their daily work with clear job descriptions and provision of more support from the central level.

3.1.6 Recommendations:

- The existing structure of the IMCI implementation should be maintained. However, the national IMCI Steering Committee and the IMCI Working Group should be reorganized and reactivated at all levels with clear terms of reference. The MOH should reappoint members of the IMCI Steering Committee and add two more senior staff and one additional administrative assistant to the IMCI secretariat.

- Leaders of national level/aimags/districts/soums/baghs should be trained or oriented on IMCI so that they can understand the IMCI concept and support its implementation.

- The MOH should approve all important documents on IMCI such as the clinical guidelines. The policy decision to implement IMCI should be disseminated to all levels so that they can be guided on the implementation of IMCI.

- The leaders of aimags/districts/soums/baghs should carefully select the health workers to be trained in IMCI in the future training.

- The trainers at the national level should provide more technical support to the health workers who have been trained in IMCI through frequent visits. The MOH should provide the health workers with clear job descriptions that allow them to implement IMCI in their daily work.

3.2 Improving skills of health workers

3.2.1 Objectives

After health workers have completed the clinical IMCI case management course they should have the knowledge and skills to:

- Assess, classify and treat sick children aged from one week up to five years according to the IMCI guidelines

- Administer pre-referral treatment correctly and refer seriously ill children

- Counsel caretakers about home care

- Check children's immunization status routinely and give immunization if needed

- Carry out feeding assessment of children less than two years old or very low weight for age
• Provide caretakers with appropriate nutrition, fluid intake and breast-feeding counseling.

Objectives of follow-up to reinforce skills after training

• To reinforce IMCI skills after training and help trained health workers use those skills in their daily work in their own facilities

• To identify and help solve problems faced by trained health workers when providing care to sick children according to the IMCI guidelines

• To gather information on health workers’ performance and those factors which influence them

3.2.2 Activities

• Adaptation of IMCI materials

• IMCI case management training

• Follow-up training

• Follow-up visits after training

3.2.3 Achievements

Adaptation

The adaptation of clinical guidelines and translation into Mongolian language were completed before the first course. ARI, CDD and EPI programmes were involved in the adaptation.

Local terms and feeding studies were conducted by the Nutrition Research Center, and locally appropriate feeding recommendations were developed. Mother’s card was developed and pre-tested.

In general, the adapted materials worked well during training. However, further editing of the modules is needed due to some printing mistakes and inconsistencies. The adapted guidelines covered a reasonable proportion of the complaints of children.

The health workers could apply most of the IMCI guidelines on return to their health facilities but they could not practise "Providing pre-referral treatment", "providing the first dose of drugs" and "providing whole course of drugs at the health facility" due to the current policy of prescribing, not dispensing, drugs.

IMCI Case Management Training

Three facilitator training courses in which 56 facilitators were trained were conducted as planned. A core team of trainers, consisting of medical school’s lecturers and senior health workers currently active in clinical practice has been established at central level. The team then trained district/aimag level trainers.
Table 1: Trainers trained

<table>
<thead>
<tr>
<th>Area</th>
<th>Directors</th>
<th>Facilitators</th>
<th>Clinical instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central level</td>
<td>6</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Songinokhairhan district</td>
<td>0</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Sukhbaatar district</td>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Uvurkhangai aimag</td>
<td>0</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Arkhangai aimag</td>
<td>0</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>37</td>
<td>7</td>
</tr>
</tbody>
</table>

Seventeen, instead of 11 planned clinical management courses were conducted.

Table 2: Training coverage of target health workers: family doctors, bagh and soum doctors.

<table>
<thead>
<tr>
<th>Area</th>
<th>No. to train</th>
<th>Trained</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central level</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Songinokhairhan district</td>
<td>114</td>
<td>111</td>
<td>99%</td>
</tr>
<tr>
<td>Sukhbaatar district</td>
<td>62</td>
<td>61</td>
<td>97%</td>
</tr>
<tr>
<td>Uvurkhangai aimag</td>
<td>107</td>
<td>32</td>
<td>30%</td>
</tr>
<tr>
<td>Arkhangai aimag</td>
<td>103</td>
<td>62</td>
<td>60%</td>
</tr>
<tr>
<td>Total</td>
<td>386</td>
<td>266</td>
<td>69%</td>
</tr>
</tbody>
</table>

The training was conducted at five training sites: MCH center in Ulaanbaatar, and one hospital in each aimag/district.

The clinical courses met the quality criteria. The facilitator/trainee ratio was 1:2.6 – 1:4.2; duration of all courses was 11 days; the courses were conducted according to the WHO recommended schedule; therefore, the proportion of clinical/classroom sessions was as recommended. An average number of participant/patient encounters was 11 – 41.5, in all but one course 27 or more; however, the actual number of patients was low in courses conducted during summer months.

Modules and chart-booklets were available in sufficient quantities and each participant was given IMCI chart-booklet and modules to keep. There was a shortage of photo booklets. Participants performed well during training, the methodology was appropriate and the course met their needs. All participants completed all modules.

IMCI training has coordinated with PHAST training for the community component.

IMCI has been included into the pre-service training of family doctors (25 hours).

One abbreviated (7 days) training course was conducted for the standard and quality managers, some of whom have been subsequently trained in the follow-up procedure.
Follow-up

Most of the staff conducting follow-up visits after training were trained in an 11-day course plus facilitation skills, plus follow-up procedures. Only Standard and quality managers were trained in abbreviated version of case management course (7 days) and the follow-up procedures, but no facilitating skills.

Table 3: Staff trained and available to do follow up

<table>
<thead>
<tr>
<th>Area</th>
<th>Staff available for follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central level</td>
<td>27</td>
</tr>
<tr>
<td>Songinokhairhan district</td>
<td>3</td>
</tr>
<tr>
<td>Sukhbaatar district</td>
<td>6</td>
</tr>
<tr>
<td>Arkhangai aimag</td>
<td>12</td>
</tr>
<tr>
<td>Uvurkhangai aimag</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
</tr>
</tbody>
</table>

The follow-up visits were conducted within 4-6 weeks after IMCI course. In order to do so, there were two or three visits in each aimag/district but each of participants followed-up was visited only once.

Table 4: Number of all trained doctors and those followed up

<table>
<thead>
<tr>
<th>District/aimag</th>
<th>Number of trained</th>
<th>No of followed up</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central level</td>
<td>74</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Songinokhairhan district</td>
<td>111</td>
<td>86</td>
<td>77%</td>
</tr>
<tr>
<td>Sukhbaatar district</td>
<td>68</td>
<td>61</td>
<td>90%</td>
</tr>
<tr>
<td>Arkhangai aimag</td>
<td>72</td>
<td>44</td>
<td>61%</td>
</tr>
<tr>
<td>Uvurkhangai aimag</td>
<td>75</td>
<td>67</td>
<td>89%</td>
</tr>
<tr>
<td>Total</td>
<td>326</td>
<td>255</td>
<td>78%</td>
</tr>
</tbody>
</table>

3.2.4 Resources

Budget for IMCI early implementation included funds for

- the conduct and technical assistance for feeding trials and development of feeding recommendations,
- local terms study and pre-testing of mother's card,
- training materials for 56 facilitators, 400 participants of IMCI clinical course and for 60 participants of follow-up training,
- five training sites with adequate space and equipment for clinical outpatient and inpatient sessions, and classroom group work,
- 13 -

- per diem/salary for approximately 1309 man/days (17 courses x 11 days x average 7 trainers),
- per diem/salary 70 man/days for training of future facilitators (2 courses x 5 days x 7 trainers), and
- per diem/salary of supervisors conducting follow-up including logistics support.

Budgetary details can be found in the background report in Annex 3.

3.2.5 Constraints

Adaptation

- There are some printing mistakes and inconsistencies in the training modules.
  
  Solution: Edit modules before next training courses

- Doctors observe that some children, who they assess as malnourished are above the "low weight for age" cut off point. Participants of review meeting pointed out that their "growth curve" is different.
  
  Cause: There are several growth curves used in Mongolia.
  
  Solution: Conduct a workshop with experts involved in the IMCI adaptation and experts who have not participated in the IMCI adaptation to decide whether an adaptation of the growth chart is needed.

- Feeding habits may be different in new aimags and the current feeding recommendations may not be appropriate.
  
  Solution: Gather available information on feeding habits in new IMCI aimags. If they are very different from current IMCI implementation areas, conduct feeding trials and develop recommendations for these aimags.

- Current feeding recommendations are not fully compatible with MOH national nutrition strategy for feeding children.
  
  Cause: Lack of coordination between Nutrition Research Center which developed current recommendations and those responsible for national nutrition strategy.
  
  Solution: Conduct a workshop with experts involved in the adaptation of feeding recommendations and experts responsible for MOH national nutrition strategy to review both sets of recommendations and decide which need revision and what should the revision be.

IMCI case management training

- Course directors from central level also act as facilitators in aimag trainings, which makes it difficult for them to supervise the training
**Cause:** Insufficient number of facilitators for training in aimags

**Solution:** Plan for sufficient number of facilitators in future training courses.

- **Constraint:** Doctors working as facilitators do so in addition to their other full-time duties.
  
  **Cause:** Not including IMCI training in job description of trainers.
  
  **Solution:** Redistribute responsibilities at the trainers' workplace and include IMCI training into the job descriptions of IMCI trainers.

- Six senior paediatricians have been trained as facilitators in each aimag. When they conduct a course, they are absent from their duties for two weeks, which endangers the health care of sick children.
  
  **Cause:** Limited number of doctors who could act as facilitators
  
  **Solution:** Conduct training courses with 1 or 2 groups only, which would require fewer facilitators.

- There were few patients in courses conducted during certain months.
  
  **Cause:** Seasonal morbidity variation
  
  **Solution:** Conduct training courses in April – May and September – October only.

- There were not enough photo booklets for the courses.
  
  **Cause:** Lack of planning and procurement.
  
  **Solution:** Plan needed number and procure materials according to planned number of participants. Re-use the same photobooklets in consecutive training courses in the site.

- IMCI working group had not received feedback after each course, and did not receive full report after training courses.
  
  **Solution:** Emphasize the need for submitting reports after each training course.

**Follow-up**

- Budget allocated to follow up was not sufficient, especially in aimags, where the supervisors need to hire a car and travel extensively to follow-up trained health workers.
  
  **Cause:** Inadequate planning of budget
  
  **Solution:** Plan budget for follow-up based on experiences from early implementation phase.
• Recording forms for "health facility support" are not appropriate for the follow up of bagh doctors.

  **Cause:** Bagh doctors work in their home and not in a health facility.

  **Solution:** Develop an appropriate form to check equipment concerning IMCI needs which the bagh doctors are supposed to have.

• Assessment of health workers during follow up was very different in different areas.

  **Cause:** Misinterpretation of follow-up procedure by some supervisors

  **Solution:** Conduct a session on follow-up procedures for supervisors prior to each follow-up.

• "Providing pre-referral treatment" "providing the first dose of drugs" "providing whole course of drugs at the health facility" cannot be done.

  **Cause:** Doctors do not have IMCI drugs to give because or was not included into local budget.

  **Solution:** Include into annual budget.

• Doctors do not use IMCI guidelines routinely every day and for each child.

  **Cause:** Old routine prevails.

  **Solution:** Ensure frequent supervision.

• Counseling part of the case management and, as a result, mothers' knowledge of home care was weakest area in the management process.

  **Cause:** Old ways of communication with mothers

  **Solution:** Emphasize counseling during training courses.

• Trained health workers had not enough recording forms and mothers' cards for use

  **Cause:** It had not been specified how sufficient number of forms and cards be ensured and funds were not planned for it.

  **Solution:** Specify the responsibility for procuring sufficient number of forms and mother's cards.

• Health reporting data are not recorded in some health facilities.

  **Cause:** Doctors do not have official recording forms.

  **Solution:** In cooperation with MOH, develop reporting/recording forms.
• The data currently recorded about each patient do not suit IMCI needs.
  
  **Cause:** Health workers were not informed what should be recorded concerning IMCI.
  
  **Solution:** Modify the recording system in cooperation with MOH health statistics department.

• Of 400 health workers trained only 255 were followed up.
  
  **Cause:** It was not considered necessary to follow up health workers from the central level and senior health workers in districts/aimags. There were logistical constraints in aimags.
  
  **Solution:** Train number of supervisors proportional to the planned number of participants.

• Classification of rickets is not satisfactory.
  
  **Cause:** Doctors do not have enough practice in the assessment of rickets signs.
  
  **Solution:** More individual practice with detailed explanation of the assessment during clinical practice in training courses.

• Cases classified, as “rickets” do not get either a full course of vitamin D or prescription for it in the health facility.
  
  **Cause:** Although vitamin D was provided free of charge to the country by donors and should be distributed, it is not available in health facilities. There is no need for prescription for vitamin D but the pharmacies do not have it in the form included in IMCI guidelines (50 000 I.U.).
  
  **Solution:** Ensure distribution of vitamin D.

• Doctors frequently forget to ask about “other problems” of a sick child.
  
  **Cause:** Lack of practice.
  
  **Solution:** Emphasize the necessity of assessment of “other problems” in clinical training courses.

3.2.6 Recommendations

**Adaptation**

• The local nutrition adaptation of IMCI including feeding recommendations and the growth chart should be thoroughly reviewed and revisions made, if necessary.

**IMCI case management training**

• Conduct of training courses should continue according to the already accepted quality criteria. They should be conducted in April – May and September – October only to ensure sufficient number of patients.
• Sufficient number of facilitators should be utilized in future training courses, taking also into consideration other duties of facilitators and adjusting the number of participants accordingly. Responsibilities at the trainers' workplace should also be redistributed and IMCI training be included into the job description of IMCI trainers.

• Adequate number of all training materials should be ensured for future trainings. The need to prepare reports after each training should also be emphasized, specified by whom these reports be submitted and within what period of time after a training course.

**Follow-up**

• A follow up visit is an integral part of the case management training for which a budget should be planned based on experiences from the early implementation phase. The visit should be conducted within 4-6 weeks after the training.

• Adequate number of supervisors in new areas should be trained. Supervisors from central level should assist in conducting follow-up visits in the new aimags, supervisors from districts of early implementation should assist in follow-up visits in the new districts.

• Regular supervision conducted by Standard and Quality Team every three months should include IMCI case management follow-up, in order to ensure routine use of IMCI guidelines. The manager and the general paediatrician of the Standard and Quality Team should be trained in IMCI case management and follow-up skills, in addition to the senior paediatricians who also conduct follow-up visits.

• If the newly trained health workers are followed-up in a health facility, which has been visited for the follow-up of previously trained health workers a short time ago (period of time to be specified), there is no need to complete the "health facility support" part of the supervisory forms again.

• A session on follow-up procedures should be conducted for supervisors prior to each follow-up in order to unify the follow-up procedure.

• Adapt the follow-up forms to the conditions of bagh doctors.

• An integrated summary recording form to be used for recording of patients should be developed in cooperation with the MOH statistics department.

• Responsibility for procuring sufficient number of forms and mother's cards for use in the daily work of health workers should be specified.

• IMCI working group should collaborate with the relevant body to modify the current drug policy to enable trained health workers to carry out the whole management procedure including "Proving pre-referral treatment" "proving the first dose of drugs" "providing whole course of drugs at the health facility". Distribution of vitamin D should also be ensured according to the needs of health facilities.

• Emphasize teaching of "Counsel the mothers" module in training courses to improve the health workers performance in counselling mothers. That will increase the mothers' knowledge of home care including administration of vitamin D. More individual practice with detailed verbal explanation and demonstration of the assessment of rickets
sign should also be done during clinical practice in training courses, and the necessity of assessment of "other problems" be emphasized.

3.3 Improving health system

3.3.1 Objectives:

• To ensure the full implementation of IMCI in first level health facilities where staff have been trained in IMCI

• To sustain the availability of essential drugs for the implementation of IMCI.

• To strengthen referral pathways

• To improve the quality of supervision by follow-up visits

3.3.2 Activities:

• Policy formulation to include the IMCI strategy into the health sector reform

• Coordination of provision and distribution of the IMCI essential drugs to selected five soums and baghs in each selected aimag

• Review of the availability of referral and the communication and transportation for referral

• Inclusion of aspects of IMCI into routine supervision visits by the inspectors on quality standard

3.3.3 Achievements:

• The IMCI strategy has been incorporated into the National Plan of Action 2000-2004.

• The IMCI activities implemented in Sukhbaatar district were supported by ADB.

• Essential drugs were provided by UNICEF to the two pilot aimags (Arkhangai and Uvurkhangai).

• 150 drug kits were distributed to bagh doctors. Also, ORS (costing $35 000), ringer lactate (2800 bottles), and Chloramphenicol injections (38 400 bottles costing about $1278) were distributed.

• Twenty (20) inspectors on quality standard were trained on IMCI and they participated in the follow-up visits.

• Follow-up forms were utilized in the supervision.

3.3.4 Resources:

• Financial resource allocated from the State budget (very limited), and local governmental budget were limited. Local nongovernmental organizations and international organization supported the IMCI strategy.
• Medical equipment, drugs and supplies were provided mostly by local and international organizations but they were not enough.

• The capacity of hospitals in terms of infrastructure in aimags/districts/soum/city was enough to serve as referral facilities for IMCI.

3.3.5 Constraints

• Regulations on medicine supplies and health workers were inadequate.

  Cause: Rules and regulations of medicines existed since 1998 but according to these family doctors do not have a right to give medicines to patients. Therefore, they cannot apply the IMCI treatment guidelines such as give first dose of antibiotic and pre-referral treatment, etc.

  Solution: Revise the rules and regulations on medicines to allow family doctors to apply the IMCI treatment guidelines.

• Government does not provide essential equipment, medicines and supplies to be used for the IMCI activities at hospital, bagh and soum levels.

  Cause: Insufficient budget because the government did not pay enough attention to IMCI

  Solution: Request by the MOH to the Ministry of Finance to allocate budget for supporting IMCI implementation. Also, request to the local government of aimags, districts and soum levels to allocate the budget to these levels for supporting the IMCI activities.

• There were not enough recording forms and mother's cards to be used by the health workers. Follow-up visit forms were also not enough.

  Cause: No budget to produce them

  Solution: Plan provision of forms/cards in sufficient numbers.

• Lack of transportation and communication between soum and bagh

  Cause: No budget and no one pays attention

  Solution: Discuss the problem with leader of aimags/districts, involving also national programmes and nongovernmental organizations and the high-level authorities to find a solution.

• It is difficult to collect IMCI data and incorporate them into the existing health information system.

  Cause: The existing HIS contains only the diagnosis, while IMCI guidelines specify classifications.

  Solution: Revise the existing HIS so that it can also be used to collect IMCI data.
3.3.6 Recommendations

• IMCI activities should be included in the aimags/districts annual plan of action.

• The Ministry of Health should request the Ministry of Finance to allocate budget for IMCI implementation. Local health authorities should also request the local government of aimags/soums/districts to allocate budget for supporting IMCI.

• The IMCI drugs that are included in the essential drugs list should be regularly distributed to health facilities where IMCI is implemented.

• The rules and regulations on medicines should be revised and endorsed by the Ministry of Health to allow the family doctors to apply the IMCI treatment guidelines.

• The IMCI recording forms, follow-up forms, chart-booklets, mother's cards, wall charts should be provided regularly to the health facilities where IMCI is implemented.

• IMCI data should be incorporated into the existing health information system.

3.4 Improving family and community practices

3.4.1 Objectives

• To improve the knowledge on childcare

• To improve skills in childcare

• To change attitudes

All three objectives of the improvement of family and community practices aim at:

• Healthy Child:
  - breastfeeding
  - complementary feeding
  - vaccinations
  - vitamin A & D supplements
  - micro-nutrients

• What to do when the child is sick:
  - home care
  - home treatment
  - feeding practices
  - recognition of danger signs
  - follow-up visits

3.4.2 Activities

• Training for caretakers

• Development feeding recommendations and mothers card
• Summer camp in Songinokhairhan

• Inclusion of IMCI in the under- and post-graduate programmes in the Family Doctor’s and Paediatric Department of the Medical University

• Training of PHAST Initiative

• Development of IEC materials for Radio, TV and Printed Media

3.4.3 Achievements

• Uvurkhangai: 150 out of 150 caretakers planned are trained.

• Arkhangai: 520 out of 520 caretakers planned are trained.

• Sukhbaatar: 60 out of 60 caretakers planned are trained.

• MCH: 450 out of 450 caretakers planned are trained.

• Feeding trials were conducted and feeding recommendations and mothers card have been produced.

• Local term study is done.

• Pre-testing of mother card is done.

• A 45-day summer camp for 300 children with malnutrition and/or rickets has been organised.

• IMCI is included in two under- and post-graduate programmes:
  – Family Doctor’s Department: 25 hours of IMCI in the under- and 12 hours in the post-graduate programme
  – Paediatric Department: under-graduate 8 hours in the 4th year and 12 hours in the 6th year; post-graduate, 12 hours

• Central-level PHAST training of trainers has been done and 27 out of 25 participants are trained.

• Arkhangai and Uvurkhangai aimags have four out of 4 PHAST trainings realized with 93 out of 100 participants trained.

• Three TV broadcasts have been made on ORS (1x 10 minutes, 2x 5 minutes).

• Translation and production of a booklet on ORS & diarrhoea has been undertaken in the Kazakh language.

• Publication of short articles on ARI, diarrhoea, newborn care etc. has taken place twice a week in a Mongolian newspaper: Centuries News and the Mongolian Medicine Journal.
3.4.4 Resources

- Enough facilitators, teachers, supervisors, article writers and consultants
- Training materials (IMCI materials, computer, copier, vehicle)
- Five summer camp venues: three kindergarten, one health centre, one home kindergarten
- Three IMCI facilitators in the Family Doctor's and 10 facilitators in the Paediatric Department

3.4.5 Constraints

- There are differences in caretaker training content between the different aimags.
  
  **Cause:** There is no standard training programme according to the IMCI guide, for caretakers.

  **Solution:** Develop a standard programme for caretakers.

- Budget is not enough for the 3rd IMCI component.
  
  **Cause:** IMCI is currently aimed mainly at training health workers in relation to the 1st and 2nd component; therefore, there is little budget left for 3rd component.

  **Solution:** IMCI should be implemented in a balanced way for all three components. They should be included into the budget of WHO, UNICEF, nongovernmental organizations (NGOs), other donors and National and Regional level budget.

- Caretakers forget issues learned during the caretaker training.
  
  **Cause:** There are no handouts for caretakers.

  **Solution:** Develop handout materials.

- Not all caretakers finished the training course.
  
  **Cause:** Time schedule is not appropriate, 1 day of 8 hours is too long.

  **Solution:** Make the duration per day shorter.

- It is difficult to gather participants.
  
  **Cause:** Participants want to be encouraged by incentives to participate. People do not realize the importance of the IMCI training.

  **Solution:** Include incentives (food) into the training. Awareness needs to be raised for the IMCI issues.
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- Some poor people cannot afford recommendations (e.g. feeding, drugs, etc).

  **Cause:** People have not enough means.
  
  **Solution:** Support poor people.

- Insufficient conditions to do the caretaker training.

  **Cause:** Some locations have no training facilities (Uvurkhangai).

  **Solution:** Make training facilities available.

### 3.4.6 Recommendations

- A standard programme for both the training of caretaker trainers and for the training of caretakers (including handouts) should be developed and implemented to support IMCI at home.

- IEC materials, including for radio and television programmes (e.g. development of a promotion campaign) need to be developed.

- PHAST Initiative training should continue as part of IMCI.
  
  - training of PHAST trainers
  
  - training of PHAST

- Local government and NGOs, including other donors and influential persons should be involved to support the poor population with the implementation of IMCI.
PART II:

PLANNING FOR EXPANDING THE IMPLEMENTATION OF IMCI
AND
CONSENSUS ON THE REVIEW AND PLANNING FOR IMCI

1. BACKGROUND

The Review meeting on the early implementation phase of the Integrated Management of Childhood Illness (IMCI) was held to review the experiences gained, to identify lessons learned and to make recommendations for future expansion of IMCI in Mongolia from 15 to 19 January 2001. A comprehensive report of the review meeting constitutes Part 1 of this document.

The review meeting concluded that the IMCI strategy was appropriate for Mongolia and that the expansion was feasible. The findings and recommendations of the IMCI Review meeting were used to develop a directional plan for expansion at the planning meeting conducted on 18 and 19 January 2001. On the last day, a consensus meeting, chaired by the Vice-Minister of Health, was held to agree on the recommendations.

2. PLANNING PROCESS

2.1 Objectives

The objectives of the planning meeting were to plan how to expand IMCI activities into more districts, expand the range of IMCI activities, and maintain and improve quality.

The objectives of the consensus meeting were to present the conclusions and recommendations of the review and planning meeting to the high-level officials of the MOH and the representatives from IMCI-related institutions and partners. The outcome of the consensus meeting will be used as a basis for planning the expansion of the IMCI strategy.

2.2 Participants

The planning meeting was attended by the same participants as the review meeting. In addition, several participants from areas newly suggested for IMCI expansion participated in the planning meeting. The Vice-Minister, Dr Udval, chaired the consensus meeting.

2.3 Tasks completed

The meeting reviewed the recommendations of the first part of the review and planning meeting. Partner agencies present described their current activities/projects in the field of child health and expressed their interest in IMCI implementation. The participants identified specific
growth chart and feeding recommendations. Need for the development of training guidelines for education sessions with mothers was extensively discussed.

The participants identified essential steps of introducing IMCI into new areas, and tackled structural and organizational issues to meet the increased needs for capacity building in the IMCI expansion phase. The criteria for the selection of new aimags and districts were identified and options for inclusion of IMCI into the National policy statement by the MOH were discussed. The meeting decided on the emphasis and selected major activities for the expansion phase covering each component.

3. PROCEEDINGS

3.1 Essential steps to introduce IMCI into new areas

1. Orient the high level authority (Head of Administration and Finance, Head of Health Department, Head of Health Complex, general paediatricians, head of family doctors' team) at the aimag and district levels.
   - Organized by: IMCI Working Group at the central level.

2. Establish an IMCI Working Group at aimag and district levels lead by Head of Health Complex and Head of Health Department.
   - Working Group members: Head of Paediatric department, Chief Paediatrician, Inspectors of Quality standard, Director and Deputy-Director of aimag hospital, Deputy-Director of health complex, IMCI trainers
   - Organized by: Chief paediatrician together with Health Department

3. Train key members of the aimag/district level IMCI Working Group in standard case management.
   - Organized by: IMCI Working Group at the central level (venue: MCH centre)

4. Conduct planning and coordination meeting
   - Working group and head of aimag and district administration, partner agencies operating in that area, a few people from IMCI Working Group at the central level, people from planning department of MOH.
   - Organized by: Head of aimag/district IMCI Working Group and IMCI Working Group at the central level

5. Implement IMCI according to the developed plan in all three components
   - Responsibility: IMCI Working Group at aimag and district levels
6. Monitor activities

- Responsibility: aimag and district levels monitoring team in collaboration with the IMCI Working Group

7. Conduct annual review meeting

- Organized by: IMCI Working Group at central level (venue: Ulaanbaatar)

3.2 Structural and organizational issues

(a) Reorganize the current structure

- IMCI Steering Committee:
  - Vice-Minister of Health (Chairperson)
  - Director of policy implementation and coordination
  - Head of medical services
  - Director of administrative department
  - Officer in charge of child health at the MOH
  - Director of strategic management planning department
  - Chief pediatrician, MOH

- IMCI Secretariat:
  - Role:
    - Plan, organize and coordinate the implementation the IMCI strategy
    - Report to the national MOH Steering Committee
    - Coordinate the work at the IMCI Working Group at central level
    - Monitor IMCI implementation
  - Members (full-time):
    - Officer in charge of child health at the MOH (IMCI focal person)
    - Two assistants to the IMCI focal person

- IMCI Working Group:
  - Role:
    - IMCI implementation and adaptation when necessary
    - Coordination, management and monitoring of progress of implementation
    - Support of capacity building at aimag and district levels
    - Conduct of training courses
    - Report to the IMCI secretariat
Conduct of regular monthly meeting for the core group

Members:
- Head of medical services (Chairperson)
- Core group (7-8 people: child health related programme managers, key paediatricians and IMCI trainers) plus extended working group

• IMCI Working Group at aimag and district levels:
  
  Members:
  - Head of Paediatric department, Chief pediatrician, Inspector of Quality standard, Director and Deputy-director of aimag hospital, Deputy-Director of Health complex, IMCI trainers
  
  Role:
  - IMCI implementation, planning and monitoring

(b) Policy related to the IMCI strategy

• IMCI already included in the National Plan of Action 2000-2004
• The IMCI strategy will be included in Policy for Child Development and Care 2000-2020

3.3 Selection of aimags and districts:

Criteria for selection:
- High child mortality rate
- High birth rate
- Availability of human resources
- Presence of partners
- Local commitment: administrative and financial support

3.4 Emphasis of IMCI implementation

All three components of the IMCI strategy shall be implemented in a balanced way.

Component 1: Improving health worker skills

- Place major emphasis on pre-service training of health professionals (undergraduate medical and nursing degree, post-graduate programmes) for cost-effectiveness and sustainability of IMCI.
- Continue and expand IMCI in-service training.
Component II: Improving health system

- Include IMCI in general health sector development as part of essential child health care.
- Ensure one provision of IMCI drugs to health facilities with trained health workers through allocating the budget to family doctors units and soum hospitals.
- Ensure necessary equipment/job aids at health facilities to enable health workers to manage children according to IMCI through the local health administration, budget and partners.
- Improve referral care.

Component III: Improving family and community practices

- Emphasize promoting good child care practices through sick child visits.
- Enhance mothers' education sessions on child care.
- Expand PHAST training.
- Promote child care through mass media.

4. CONCLUSIONS AND RECOMMENDATIONS

Significant progress has been made during the first two years of the IMCI implementation in Mongolia, and the strategy was found to meet the needs of primary health care professionals on child health care and be feasible to implement. It was proposed that IMCI implementation be expanded along with strengthening the IMCI organizational structure at all levels to ensure smooth capacity building in the expansion phase, and put more emphasis on institutionalising the strategy including policy development and placement in line with general development of the health system. In this way, efforts in child health can be made most sustainable and cost-effective.

The Government has discussed the possibility of support from UNICEF, ADB, WVI and Norwegian Lutheran Mission for aimags and districts where the expansion of IMCI has already been discussed. A more detailed plan for IMCI expansion will be developed; following this meeting.

The recommendations of the review and planning meeting are as follows:

1. The Ministry of Health should adopt IMCI as a main strategy for child health in the national policy (National Strategy for Children's Development of Mongolia) to facilitate the expansion of IMCI in scope of and geographical coverage.

2. Central level IMCI working group should prepare a comprehensive paper proposing the actions needed by the Ministry of Health for capacity building and gradually increasing the coverage of balanced implementation of all three components. This paper should also include a detailed plan of activities and geographical priority areas for expansion.
3. The Ministry of Health should widely disseminate all endorsed document/policy related to IMCI implementation for implementers at all levels and partners in child health to guide the implementation.

4. The Ministry of Health should maintain the existing organizational structure of IMCI. However, the Steering Committee and the IMCI working group at all level should be reviewed and members reappointed with clear terms of reference. Job descriptions specifying the involvement in IMCI activities should also be given to health professionals involved in IMCI implementation.

5. More emphasis should be given to IMCI pre-service training for cost-effectiveness and sustainability of IMCI. Meanwhile, the in-service training in IMCI should be accelerated to strengthen the skills of health workers already in service.

6. Human resources for IMCI expansion should be increased, particularly for the IMCI secretariat, if the pace of expansion is to exceed 2 aimags and 2 districts in two years. The Ministry of Health should consider appointing at least two more staff to work at the IMCI secretariat.

7. The IMCI drugs in the essential drugs list should be available at all times in health facilities where the IMCI is implemented. The Ministry of Health should allow the family doctors to fully apply the IMCI treatment guidelines through endorsed rules and regulations on medicines.

8. An integrated recording/registering mechanism for gathering health data suitable for all ongoing programmes and the health information system should be developed.

9. The Ministry of Health should develop standard materials including handout, and other IEC materials for training in IMCI of caretaker and their trainers. Radio and television programmes should also be utilized as an avenue for promoting messages on child health.

10. PHAST initiative training should continue in the context of improving family and community practices on child health and should involve local governments and nongovernmental organizations, targeting particularly the poor population with the implementation of IMCI.

11. There is enthusiasm about the IMCI strategy among health professionals and partners in health. The Ministry of Health should put high priority on utilizing the momentum and coordinating the joint efforts with particular emphasis on linking the IMCI strategy with the general health sector development towards the improvement of child health in Mongolia.
LIST OF PARTICIPANTS
OF THE IMCI REVIEW AND PLANNING MEETING
MONGOLIA, 15-19 JANUARY 2001

Group 1:

1. G.Soyolgerel  IMCI focal point
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4. P.Batkhuu  Professor of the Pediatric Department, NMUM
5. Ch.Vangan  Officer in charge on Maternal and Child Health
6. Z.Gerelmaa  Lecturer of the Pediatric Department, NMUM
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9. Zolboot  Head of Health Department of Darkhan aimag
10. M.Tuya  Project Officer Health/Nutrition, UNICEF
11. Saran  Project Officer of Norwegian Lutheran Mission
12. Sh.Orosoo  ECCD Programme Manager, World Vision International
13. Or Vandine  WHO/ WPRO Manila

Group 2:

1. D.Malchinkhuu  Chief Pediatrician of MOH, Professor of the Pediatric Department of NMUM
2. G. Narangerel  Lecturer of General Practitioner Department, NMUM
3. D.Batjargal  Chief Pediatrician of Khan-Uul District
4. D.Buniamaa  Head of Pediatric Department of Aimag General Hospital, Uvurkhangai aimag
5. G. Dunshig  Head of Kharhorin soum hospital, Uvirkhangai aimag
6. H. Demid  Chief Pediatrician of Songinokhairhan District
7. D. Galbadrah  Pediatrician, MCH Center
8. Bayaraa  Chief pediatrician of Bayangol District
9. G. Gereltmaa  Family Doctor, Arkhangai aimag
10. D. Battumur  Nutritionist, MOH
11. Tseveendulam  Chief pediatrician of Darhan aimag
12. Ts. Tserendolgor  Head of Pediatric Department of Aimag General Hospital, Arhangai aimag
13. J. Surenchimeg  Head of Pediatric Department, Sukhbaatar district
Annex 1

Group 3:

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6. M. Chimgee  
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7. E. Buyanmandakh  
   Director of Children’s hospital No 3
8. Mendbayar  
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10. Bundjav  
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11. Narangerel  
    Pediatrician, Han-Uul district
12. Rentsenkhand  
    Pediatrician Chingeltei district
13. Paul Heinsbroek  
    WHO/WPRO Manila

Other participants:

1. N. Udval  
   Vice-Minister of MOH (for opening and consensus meeting)
2. G. Choijamts  
   Director of MCH Center (for consensus meeting)
3. B. Orgil  
   Health Sector Reform (for opening, planning and consensus)
4. Mangrhild  
   Norwegian Lutheran Mission (for 5 days meeting)
5. Karen  
   World Vision International (for review meeting)
6. Alimaa  
   World Vision International (for 5 days meeting)
7. Puntsag  
   Head of Bayanzurkh District Health Complex (for consensus meeting)
8. Marianna V. Trias  
   WHO/WPRO Manila (for planning and consensus meeting)
# ANNEX 2

## AGENDA FOR THE REVIEW AND PLANNING MEETING, MONGOLIA

<table>
<thead>
<tr>
<th>Date and Time</th>
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<tbody>
<tr>
<td><strong>Day 1: 15 Jan 01</strong></td>
<td><strong>Review meeting:</strong></td>
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<tr>
<td>0830-0900</td>
<td>Registration</td>
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</table>
| 0900-0930 | - Opening remarks  
- Meeting objectives, agenda and participants | MoH, WHO, UNICEF Plenary session |
| 0930-1015 | - Experiences of IMCI early implementation phase from other countries  
- Overview of activities during the early implementation phase of IMCI in Mongolia | Plenary session |
| 1015-1030 | Tea and coffee break | |
| 1030-1100 | - Introduction of the review process, steps and methods  
- Divide into 3 groups (select chair and rapporteur)  
- Introduction (Step 1) | Plenary session  
Group 1: Organization and management and improving health system  
Group 2: Improving skills of health workers  
Group 3: Improving family & community practices |
| 1100-1230 | Step 1: Assess what has been achieved in the major activity areas, identify constraints, and specify the resources required | Group work |
| 1230-1330 | Lunch break | |
| 1330-1530 | Step 1: Assess what has been achieved (continued) | Group work |
| 1530-1545 | Tea and coffee break | |
| 1545-1700 | Step 1: Assess what has been achieved (continued) | Group work |

*Each group will go through the following steps:*
### Day II: 16 Jan 01

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
</table>
| 0900-1015 | • Introduction (Step 2)  
• Step 2: Identify feasible solutions for the constraints | Plenary session  
Group work |
| 1015-1030 | Tea and coffee break                                                       |            |
| 1030-1230 | Step 2: Identify feasible solutions (continued)                           | Group work |
| 1230-1330 | Lunch break                                                               |            |
| 1330-1530 | • Presentation of group work for Step 1 and Step 2  
• Discussion and introduction (Step 3)  | Plenary session  
Plenary session |
| 1530-1545 | Tea and coffee break                                                       |            |
| 1545-1700 | Step 3: Assess how the IMCI strategy should be expanded and develop recommendations for what should be done | Group work |

### Day III: 17 Jan 01

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>0900-1015</td>
<td>Step 3: Assess how the IMCI strategy should be expanded and develop recommendations for what should be done (continued)</td>
<td>Group work</td>
</tr>
<tr>
<td>1015-1045</td>
<td>Tea and coffee break</td>
<td></td>
</tr>
<tr>
<td>1045-1230</td>
<td>Step 3: Assess how the IMCI strategy should be expanded and develop recommendations for what should be done (continued)</td>
<td>Group work</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td>Location</td>
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<tr>
<td>-----------</td>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>1230-1330</td>
<td>Lunch break</td>
<td>Plenary session</td>
</tr>
<tr>
<td>1330-1530</td>
<td>Presentation of group work for Step 3 and discussion</td>
<td>Plenary session</td>
</tr>
<tr>
<td>1530-1545</td>
<td>Tea and coffee break</td>
<td></td>
</tr>
<tr>
<td>1545-1700</td>
<td>Summarize and compile the review report</td>
<td>Review team, chairperson and rapporteur of 3 groups</td>
</tr>
</tbody>
</table>

**Day IV: 18 Jan 01 Planning meeting:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>0900-0915</td>
<td>Introduction of the objectives of the meeting</td>
<td>Plenary session</td>
</tr>
<tr>
<td>0915-0945</td>
<td>Presentation of the conclusions and recommendations of the review</td>
<td>Plenary session</td>
</tr>
<tr>
<td>0945-1015</td>
<td>Discussion on IMCI with partners in child health</td>
<td>Plenary session</td>
</tr>
<tr>
<td>1015-1030</td>
<td>Tea and coffee break</td>
<td></td>
</tr>
<tr>
<td>1030-1230</td>
<td>Orientation to develop the plan for the expansion phase:</td>
<td>Plenary session</td>
</tr>
<tr>
<td></td>
<td>• Quality adjustments</td>
<td>(Select chairperson and rapporteur)</td>
</tr>
<tr>
<td></td>
<td>• Structural and organisational issues</td>
<td></td>
</tr>
<tr>
<td>1230-1330</td>
<td>Lunch break</td>
<td></td>
</tr>
<tr>
<td>1330-1530</td>
<td>Orientation (continued)</td>
<td>Plenary session</td>
</tr>
<tr>
<td></td>
<td>• Essential Steps</td>
<td></td>
</tr>
<tr>
<td>1530-1545</td>
<td>Tea and coffee break</td>
<td></td>
</tr>
<tr>
<td>1545-1700</td>
<td>Orientation (continued)</td>
<td>Plenary session</td>
</tr>
<tr>
<td></td>
<td>• Essential Steps (continued)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• IMCI strategy and National Health Policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Health sector reform)</td>
<td></td>
</tr>
</tbody>
</table>
Annex 2

<table>
<thead>
<tr>
<th>Day V: 19 Jan 01</th>
<th>Planning meeting (continued):</th>
</tr>
</thead>
<tbody>
<tr>
<td>0900-1015</td>
<td>Orientation (continued)</td>
</tr>
<tr>
<td></td>
<td>• Selection of aimags and districts</td>
</tr>
<tr>
<td></td>
<td>• Selection criteriat</td>
</tr>
<tr>
<td></td>
<td>• Emphasis of activities</td>
</tr>
<tr>
<td>1015-1045</td>
<td>Tea and coffee break</td>
</tr>
<tr>
<td>1045-1230</td>
<td>Preparation for the consensus meeting</td>
</tr>
<tr>
<td></td>
<td>Review team, chairperson and rapporteur</td>
</tr>
<tr>
<td>1230-1330</td>
<td>Lunch break</td>
</tr>
<tr>
<td>1330-1530</td>
<td>Consensus meeting:</td>
</tr>
<tr>
<td></td>
<td>Introduction and objectives of the meeting</td>
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<tr>
<td></td>
<td>Presentation of the major findings, recommendations and conclusions of the review</td>
</tr>
<tr>
<td></td>
<td>Presentation of the plan for expansion</td>
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<tr>
<td></td>
<td>Discussion</td>
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<tr>
<td>1530-1545</td>
<td>Tea and coffee break</td>
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<tr>
<td>1545-1700</td>
<td>Summary</td>
</tr>
<tr>
<td></td>
<td>Closing</td>
</tr>
<tr>
<td></td>
<td>Plenary session</td>
</tr>
</tbody>
</table>

MoH
INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS IN MONGOLIA

EARLY IMPLEMENTATION PHASE REPORT

Background document for IMCI Review and Planning Workshop
January 2001
Annex 3

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1. INTRODUCTION

Every year 11 million children under 5 years of age die in developing countries, many during the first year of life. Seven in ten of these deaths are due to acute respiratory infections (mostly pneumonia), diarrhoea, measles, malaria, or malnutrition, or a combination of these.

In some countries, three in four episodes of childhood illness are caused by one of these five conditions and most sick children present with signs and symptoms related to more than one of them. This overlap means that a single diagnosis may not be possible or appropriate, and that treatment may be complicated by the need to combine therapy for several conditions. Surveys of the management of sick children reveal that many are not properly assessed and treated and that their parents are poorly advised.

In response to this challenge, WHO and UNICEF developed an Integrated Management of Childhood Illness (IMCI) strategy. Although the major stimulus for IMCI may have come from the needs of curative care, the strategy combines improved management of childhood illness with aspects of nutrition, immunisation, and other important disease prevention and health promotion elements.

The objectives of IMCI are to reduce deaths and the frequency and severity of illness and disability to improved growth and development.

The IMCI strategy includes three main components:

Component I: Improvements in the case management skills of health staff through the provision of locally adapted guidelines on IMCI and through activities to promote their use.

Component II: Improvements in health system required for effective management of childhood illness.

Component III: Improvements in family and community practices.

At the core of the IMCI strategy is integrated case management of the most common childhood problems seen in developing countries with a focus on the most important causes of death. The strategy includes a range of other preventive and curative interventions, which aim to improve practices both in the health facilities and at home.

Implementation of IMCI involves three phases:

The introduction phase: The purpose of the introductory phase is to ensure that key Ministry of Health officials understand the IMCI and its implications. Activities in this phase include initiation and contact to provide information, holding orientation meetings, and building national capacity in IMCI.
Annex 3

The early implementation phase: During this phase Ministry of Health staff plan and prepare for implementation, carry out and monitor IMCI activities in a limited number of districts, to provide the basis for future planning. Activities in this phase include adaptation of generic IMCI clinical guidelines to reflect the epidemiological and cultural characteristics of the country, selection of a limited number of districts for initial implementation, planning for IMCI activities at both national and district levels, building national and district capacity to implement IMCI activities, and monitoring the implementation of the strategy.

The expansion phase: The third phase includes efforts both to increase access to interventions initiated during the early implementation phase and to broaden the range of IMCI interventions. Problems identified during the early implementation phase are addressed, priorities agreed, and strategies for expanding access while maintaining quality are developed.

1.1 Rationale for implementing the IMCI strategy in Mongolia

The IMCI strategy addresses major child health problems in Mongolia, it has a potentially major impact on health status and it improves the equity of provided health care.

Infant and child mortality is still at an unacceptably high level in Mongolia in spite of a good progress achieved during the transition period. Moreover, infant and child mortality rates present major differences by aimags and regions. In the 1996-1998 period child mortality rates were highest in the Western aimags, particularly Hovd, Bayan-Ulgii, Zavkhan, and in the south-central aimags of Bayanhongor and Uverhangai.

Acute respiratory infections, especially pneumonia (ARI) are the major cause of mortality and morbidity in children under 5. They were responsible for more than half of the deaths of children in this age group until 1996 and for 38 % of deaths in 1997/98 period. Eighty one per cent of the ARI deaths were related to pneumonia. ARI is the cause of 25 - 39 % of visits of the health facilities and of 32.6 % of hospitalisation. The second most important cause of death (about 9 -10 %) is diarrhoea. Chronic malnutrition affects about a quarter of young children under five. According to the latest survey, the proportion of underweight children is about one-eighth and acute malnutrition affects 3.4 % of young children. One third of children under 5 have at least one sign of rickets (vitamin D deficiency), and 48.5 % are anaemic.

1 Survey on Mortality in Children Under Five: Causes and Influencing Factors, Malchinkhuu, D., Ministry of Health & UNICEF, 2000
2 Report on the Second National Child and Nutrition Survey, Mongolia 1999, Yongyout Kachondham, MD, MPH, Associate Professor, Institute of Nutrition and Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Thailand
IMCI responds to the demands and promotes prevention as well as cure.

In many households the major issue is a failure to prevent or identify acute infections early on and undertake the necessary treatment. Most of the young children who die from ARI, or diarrhoea, failed to have their sickness addressed early enough at home. According to the 2000 survey on child mortality 21.8% of all under-five child deaths during 1996-1998 occurred at home without any medical assistance.

IMCI promotes costs saving and is cost effective

With the economic reforms inequalities and disparities became pronounced and are reflected also in the health system, which struggles, among other issues, is the lack of drugs including essential drugs. Therefore appropriate management of childhood illness and use of essential drugs will prevent wasting scarce resources and it will result in cost saving.

1.2 Rationale for conducting the review of IMCI Early Implementation Phase

IMCI, regarded as a high priority strategy, was first introduced to Mongolia in June 1999. The introduction and early implementation phase progressed fast due to strong effort and commitment of the Government and of several partners that play an important role in child health. Planned activities were carried out thanks to a great dedication, enthusiasm and diligence of the professionals involved in IMCI. At present, a valuable experience has been gained and it needs to be summarized, evaluated and analysed in order to prepare future plans.

1.3 Objectives and expected outcomes of the review of IMCI Early Implementation Phase

The objectives of the review are to assess how well Mongolia was able to implement its plan and intentions, to identify the main problems and feasible solutions, to summarize lessons learned in the early implementation in order to identify ways to strengthen and sustain IMCI implementation as a main strategy to improve the quality of care for children in health facilities and in the home, based on a review of previous experiences.

The expected outcomes of the review are a detailed set of recommendations describing the scope, pace, the scope, pace and emphasis of expansion and a draft report summarizing the findings on which the recommendations are based.
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2. ORGANIZATION AND MANAGEMENT

2.1 IMCI management structure

<table>
<thead>
<tr>
<th>IMCI HIGH LEVEL STEERING COMMITTEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members: State Secretary, Directors General of Departments: Public Administration and International Cooperation; Strategic Management Planning; Policy Implementation Coordination, Information, Monitoring and Evaluation</td>
</tr>
<tr>
<td>Reviews and approves the proposals submitted by the IMCI Working Group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMCI SECRETARIAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible for planning and implementation of the IMCI strategy</td>
</tr>
<tr>
<td>Reports to the national MOH Steering Committee</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMCI WORKING GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-ordinated by Director General, Department for Policy Implementation Co-ordination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADAPTATION SUBGROUP</th>
<th>IMPLEMENTATION SUBGROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible for adaptation of IMCI clinical guidelines and home care messages</td>
<td>Responsible for the implementation issues of the strategy</td>
</tr>
<tr>
<td>Regular flow of information between the subgroups</td>
<td>Submit output of their work to the IMCI Secretariat</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIMAG, DISTRICT COORDINATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief paediatricians of aimags and districts (1)</td>
</tr>
<tr>
<td>Responsible for planning and implementation at aimag/district level</td>
</tr>
<tr>
<td>Co-ordinate with IMCI Secretariat</td>
</tr>
</tbody>
</table>

(1) Aimag/district coordinators are also members of IMCI Working Group
The IMCI secretariat consisted of 2 full time doctors of medicine and the IMCI focal person in 1999 and until September 2000. Since then the only full time IMCI staff is one doctor of medicine. The IMCI focal person, MOH staff, has also a number of other time consuming responsibilities as the MOH director of child and health department.

In 1999, the IMCI secretariat was allocated a separate small, office near the MOH, equipped with two computers and a copying machine. In the autumn 2000 an IMCI training centre was established in the MCH centre. It is one newly furnished rather large room. It would be adequate to accommodate two working groups of 7-8 persons with facilitators, however the groups might disturb each other.

2.2 Policies in support of IMCI

Mongolia is party to 30 international human rights conventions, including the Convention on the Rights of the Child In 1992, as a follow-up to the 1990 World Summit for Children (WSC); the Mongolian Government developed a National Programme of Action for the Development of Children (NPA). The NPA contains goals to be achieved by the year 2000.

The establishment of IMCI working groups and high-level steering committee has been officially endorsed by the MOHSW, however the IMCI strategy has not been officially endorsed as the national strategy by a ministerial decree.

Extended programme for immunisation has been officially endorsed as a national programme by a ministerial decree. CDD and ARI programmes, successfully implemented in Mongolia have not been officially endorsed as national programmes.

2.3 Relation of IMCI to health sector reform

Health sector reform is under way in Mongolia. The Ministry of Health and Social Welfare (MOHSW) has been reformed into Ministry of Health in 2000.

The health insurance scheme was conceived with the aim to preserve equitable access to good quality health care. Children under 16 are among the categories that enjoy compulsory and free coverage by the insurance. They still face hardship as for example access to essential drugs, should they belong to herders, migrant, or families of unemployed.

Asian Development Bank is supporting health sector reform development from 1998 up to 2003. One of the components is to improve primary care by family doctor's practices. This includes the support of IMCI in Sukhbaatar districts.

2.4 Collaboration with partners in child health

Several international organizations expressed their interest in supporting the implementation of IMCI in Mongolia and the representatives of UNICEF, KOICA, JICA, Asian Development Bank; World Vision International participated in the orientation meeting.

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2.5. Orientation and planning at national level

June 1999: upon the invitation from the Ministry of Health and Social Welfare, Mongolia, a WHO/WPRO/CDR team conducted a two-day orientation meeting. This orientation meeting introduced IMCI to key MCH (Department of Maternal and Child Health)/Ministry of Health and Social Welfare staff, senior health workers at central level and in two aimags (Arkhangai and Uvurkhangai) and representatives of international agencies and NGOs (UNICEF, KOICA, JICA, Asian Development Bank, World Vision International).

August 1999: the Ministry of Health and Social Welfare conducted an IMCI National Planning and Adaptation workshop with the objectives a) to develop a written National Plan for the Early Implementation of IMCI addressing the three components of IMCI, b) to develop a shared understanding of IMCI among the IMCI Working Group and partners and full commitment to follow the plan of early implementation and c) to initiate the adaptation process and develop a plan for adaptation. Members of Steering Committee and the IMCI Working Group as well as representatives from aimags, UNICEF and World Vision Mongolia (WVM) attended the workshop.

August - December 1999: The establishment of high level IMCI Steering Committee and IMCI Working Group were endorsed by the MOHSW. The ARI/CDD programme manager, Dr. Enkhjin Bavuu, was assigned the responsibility of IMCI focal person. National Plan for the Early Implementation of IMCI has been developed. (See Annex 1).

August 2000: Dr. Soyolgerel has been appointed the IMCI focal person instead of Dr. Enkhjin Bavuu.

2.6 Orientation and planning at aimag/district level

Based on the criteria agreed upon at the orientation meeting, two rural areas (Arkhangai, Uvurkhangai aimags) and two urban areas (Songinokhairhan and Sukhbaatar districts of Ulaanbaatar) were selected for the early implementation phase.

The representatives of all the selected areas participated in the major events from the very beginning of the IMCI Introduction Phase, namely in the orientation meeting in June 1999 and the IMCI National Planning and Adaptation workshop in August 1999.

The representatives of districts and aimags participated in the orientation, planning and adaptation workshops. The head paediatricians of IMCI early implementation areas are members of IMCI working group.
3. IMPROVING SKILLS OF HEALTH WORKERS

3.1 Adaptation process

The adaptation process was initiated in August 1999 at the IMCI National Planning and Adaptation workshop. A series of informal meetings of the members of the Adaptation subgroup was followed by a plenary workshop of the Adaptation subgroup assisted by an external consultant in December 1999. The workshop identified the need to conduct household feeding trials in order to develop feeding recommendations. Household feeding trials were conducted and feeding recommendations developed in February 2000. IMCI Working Group conducted a study to identify and validate local terms, developed and pre-tested Mothers Card.

A Consensus meeting was held on 2 and 3 March 2000. IMCI guidelines were presented and discussed and the final draft has been agreed upon.

The adapted and translated materials were tested during the first Facilitators' training and Model IMCI clinical course in April 2000. Due to the outstanding work of the IMCI secretariat and members of IMCI Working Group responsible for the adaptation and translation of training materials, minimal editing of the training materials was needed. The editing was done after the first training course.

3.2 Main adaptations of IMCI clinical guidelines in addition to essential and recommended adaptations:

Fever: As there is no malaria in Mongolia, all sections concerning malaria were deleted from the guidelines.

Rickets: Management of rickets was incorporated into the IMCI guidelines. Rickets is considered a serious public health problem in Mongolia. Although various assessment models were applied in several surveys, all of them indicate high prevalence of rickets ranging from 32.1% up to 90.9% (in 7-12 months age group in one study) in children less than 5 years of age. Although rickets in itself is not a fatal disease, it may lead to permanent bone deformity, and it is associated with impaired growth and development and a reduction in immune response to infection. Infections such as pneumonia (main cause of deaths in Mongolian children under 5 years of age), tuberculosis, and diarrhoea are more likely to cause death in rachitic children. Considering the magnitude of the problem in Mongolia, rickets may increase the risk of death and decreases the quality of life of a substantial proportion of Mongolian children. An additional reason to include “rickets guidelines” is that clear and safe prevention and treatment guidelines should be provided to health workers at primary health care level, as cases of vitamin D overdose are not rare.

Technical background to adapting the IMCI guidelines to the disease and health services conditions in Mongolia see in Annex 2.
Annex 3

3.3 Training plan and status of implementation

The plan was to train 100% of family doctors and 30% of soum and bag doctors, and 100% and 60% of doctors in Sukhbaatar and Songinokhaikhan district respectively, who are in charge of child care.

To achieve this, two training courses were planned to be conducted in each aimag and three courses in each district. This was accomplished (Only 2 courses were conducted in Songinokhairhan district, but the doctors from this district participated in 2 courses in MCH centre, UB).

Since family nurses are always working with family doctors, even though their responsibility is limited, it was planned that the IMCI implementation group should consider to develop small training sessions for them to support family doctors.

According to the National IMCI Early Implementation Plan, three Facilitators' training courses and 11 IMCI clinical training courses were planned. Three facilitators' courses were conducted as planned. A total of 56 facilitators have been trained. Nine facilitators have been trained during the first facilitators training. The participants in each of the two subsequent trainings worked in 3 groups and thus the high number of facilitators trained was achieved. Altogether 17 11-day clinical courses were conducted from 14 April to 1 October 2000 (see table below).

Venues of training:

1. MCH Centre, Ulaanbaatar, together with a nearby Policlinic No 7 The MCH center is the largest paediatric health facility in the country and its facilities are suitable and the patient caseload is sufficient for conducting training courses with up to 24 participants (3 groups), provided that the Policlinic No 7 is used for conducting part of the out-patients sessions.
2. Sukhbaatar district, Children hospital No 2
3. Songinokhairhan district, Children hospital No 3
4. Arhangai aimag, aimag general hospital
5. Uvurkhangai aimag, aimag general hospital
Capacity building: training of health workers in 11day clinical training courses

Table: Clinical courses conducted

<table>
<thead>
<tr>
<th>Venue</th>
<th>Dates</th>
<th>No of participants</th>
<th>No of facilitators</th>
<th>Facilitator/Participant ratio</th>
<th>Average No of participant/patient encounters per participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCH centre</td>
<td>17-28 Apr</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>41.5</td>
</tr>
<tr>
<td>Sukhbaatar</td>
<td>22 May-3 June</td>
<td>23</td>
<td>6</td>
<td>1:3.8</td>
<td>37</td>
</tr>
<tr>
<td>MCH centre</td>
<td>28 Aug-3 Sept</td>
<td>18</td>
<td>6</td>
<td>1:3</td>
<td>11</td>
</tr>
<tr>
<td>Sukhbaatar</td>
<td>12-23 June</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>37</td>
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<tr>
<td>Sukhbaatar</td>
<td>26 June-7 July</td>
<td>21</td>
<td>6</td>
<td>1:3.5</td>
<td>29</td>
</tr>
<tr>
<td>Sukhbaatar</td>
<td>17-28 July</td>
<td>23</td>
<td>6</td>
<td>1:3.8</td>
<td>28</td>
</tr>
<tr>
<td>Songinokhairhan</td>
<td>12-23 June</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>33.9</td>
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<tr>
<td>Songinokhairhan</td>
<td>17-28 July</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>27</td>
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<tr>
<td>Songinokhairhan</td>
<td>14-25 August</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>35</td>
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<tr>
<td>Songinokhairhan</td>
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<td>6</td>
<td>1:4</td>
<td>32</td>
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<tr>
<td>Songinokhairhan</td>
<td>13-24 Nov</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>29</td>
</tr>
<tr>
<td>Arkhangai</td>
<td>19-30 June</td>
<td>24</td>
<td>8</td>
<td>1:3</td>
<td>28</td>
</tr>
<tr>
<td>Arkhangai</td>
<td>24 July-4 Aug</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>25.5</td>
</tr>
<tr>
<td>Arkhangai</td>
<td>25 Sept-6 Oct</td>
<td>24</td>
<td>6</td>
<td>1:4</td>
<td>36</td>
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<tr>
<td>Uvurkhangai</td>
<td>12-23 June</td>
<td>24</td>
<td>9</td>
<td>1:2.6</td>
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<td>Uvurkhangai</td>
<td>17-28 July</td>
<td>26</td>
<td>6</td>
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<td>25 Sept-6 Oct</td>
<td>25</td>
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<td>Total number of trained (*)</td>
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</table>

Includes trainees, who were subsequently trained in facilitators, clinical instructor and follow-up.
Annex 3

Summary: Clinical Training Courses

List of Course Directors and Facilitators:

Course directors:

1. Dr D. Malchinkhuu, General Paediatrician, MOHSW, Lecturer of GP Dept. MNMU.
2. Dr. D. Agvaandorj, General Paediatrician of UB, Lecturer, Paediatrics Dept, MNMU
3. Dr P. Batkhuu, Lecturer of Paediatric Department, MNMU
4. Dr G. Narangerel, Lecturer of GP Department, MNMU
5. Dr Ts. Naransetseg, WVO, Local development coordinator
6. Dr J. Surenchimeg, Executive Director, Sukhbaatar Health Complex
7. Dr D. Gerelmaa, Paediatrician, State Research Centre of Mothernity and Child Health

Clinical instructors:

1. Dr D. Malchinkhuu, General Paediatrician, MOHSW, Lecturer of GP Dept. MNMU.
2. Dr D. Agvaandorj, General Paediatrician of UB, Lecturer, Paediatrics Dept, MNMU
3. Dr Ts. Tserendolgor, Head of Paediatrics Ward, Aimag General Hospital, Arkhangai aimag
4. Dr D. Buniamaa, Head of Paediatrics Ward, Aimag General Hospital Uvurkhangai aimag
5. Dr D. Mendbayar, Paediatrician, Children's Hospital No 2
6. Dr G. Tseyen, Paediatrician, Children's Hospital No 3
7. Dr O. Enkhtuya, Executive director, Children's Hospital No 3

Facilitators:

Ulaanbaatar:

1. Dr P. Batkhuu, Lecturer of Paediatric Department, MNMU
2. Dr E. Buyanmandakh, Head of Children's Hospital No 3
3. Dr G. Narangerel, Lecturer, GP Department, MNMU
4. Dr S. Bayarkhuu, Paediatrician, Children's Hospital No 2
5. Dr D. Gerelmaa, Paediatrician, State Research Centre of Mothernity and Child Health
6. Dr I. Jargalmaa, Paediatrician, Children's Hospital No 2
7. Dr J. Surenchimeg, Executive Director, Sukhbaatar Health Complex
8. Dr M. Chimgee, General Paediatrician, Sukhbaatar Health Complex
9. Dr S. Javzandulam, Paediatrician
10. Dr S. Buyamaa, Family Doctor, HC No 8, Songino-Khairkhan District
11. Dr Kh. Demid, General Paediatrician, Songino-Khairkhan Health Complex
12. Dr D. Odontuya, Head of GP Department, MNMU
13. Dr O. Enkhtuya, Executive director, Children’s Hospital No 3
14. Dr B. Bazarragchaa, Head of Public Health Department, Health Complex
15. Dr N. Dulamsuren, General Paediatrician, HC No 5 Songino-Khairkhan District
16. Dr Ya. Khaltar, General paediatrician, HC No 6, Bayangol District
17. Dr D. Natsagmaa, General Paediatrician, HC No 2, Chingeltei-Uul District
18. Dr B. Narantsogt, General Paediatrician, HC No 15, Bayanzurkh District
19. Dr N. Tuya, General Paediatrician, HC No 16
20. Dr M. Erdenechimeg, Methodologist, Health Complex
21. Dr G. Ouyunchimeg, Paediatrician, Children’s Hospital No 2
22. Dr Ts. Altantsetseg, Paediatrician, Children’s Hospital No 2
23. Dr Z. Gerelmaa, Lecturer, Paediatrics Dept. MNMU
24. Dr Sh. Ouyunkhuu, Lecturer, GP Dept. MNMU
25. Dr N. Radnaakhand

Arkhangai aimag:
1. Dr E. Batarkhuu, General Paediatrician, Arkhangai aimag
2. Dr Narantuya, Paediatrician, Aimag General Hospital
3. Dr T. Ishjams, Family Doctor
4. Dr G. Gereltmaa, Family Doctor
5. Dr Erdenebaatar, Head of Family Doctors Unit
6. Dr Ts. Tserendolgor, Head of Paediatrics Ward, Aimag General Hospital

Uvurkhangai aimag:
1. Dr Ch. Banzar, General Paediatrician, Uvurkhangai aimag
2. Dr G. Dunshig, Head of Soum Hospital, Khar-Khorin soum
3. Dr D. Buniamaa, Head of Paediatrics Ward, Aimag General Hospital
4. Dr J. Bundjav, Family Doctor, Arvaikheer soum
5. Dr. R. Narantsogt, Head of Family Doctor Unit, Arvaikheer soum
6. Dr. A. Myagmar, Paediatrician, Paediatrics Ward, Aimag General Hospital
### Annex 3

**Summary of clinical signs seen - Sick Child age 2 months up to 5 years**

<table>
<thead>
<tr>
<th>Venue of training</th>
<th>Central level</th>
<th>Sanganin Khair Khan District</th>
<th>Sakti-Badar District</th>
<th>Arkhangai</th>
<th>Ulmangai</th>
<th>Mean</th>
<th>Total</th>
<th>Mean</th>
<th>Total</th>
<th>Mean</th>
<th>Total</th>
<th>Mean</th>
<th>Total</th>
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<td>97</td>
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<tr>
<td>Vomits everything</td>
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<td>102</td>
<td>66</td>
<td>83</td>
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<td>History of convulsions</td>
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<td>165</td>
<td>83</td>
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<tr>
<td>Lethargic or unconscious</td>
<td>84</td>
<td>118</td>
<td>73</td>
<td>72</td>
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</tr>
<tr>
<td>Fast breathing</td>
<td>263</td>
<td>1056</td>
<td>634</td>
<td>238</td>
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<td>Chest indrawing</td>
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<td>477</td>
<td>700</td>
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<tr>
<td>Stridor in calm child</td>
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<td>43</td>
<td>72</td>
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<td>Restless and irritable</td>
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<td>407</td>
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<tr>
<td>Sunken eyes</td>
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<td>557</td>
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<tr>
<td>Drinking poorly</td>
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<td>158</td>
<td>272</td>
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<tr>
<td>Drinking eagerly, thirsty</td>
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<td>119</td>
<td>179</td>
<td>227</td>
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<tr>
<td>Very slow skin pinch</td>
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<td>179</td>
<td>227</td>
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<tr>
<td>Slow skin pinch</td>
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<td>295</td>
<td>279</td>
<td>178</td>
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<tr>
<td>Stiff neck</td>
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<td>Runny nose</td>
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<td>186</td>
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<td>Mouth ulcers</td>
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<tr>
<td>Deep and extensive mouth ulcers</td>
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<td>108</td>
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<td>Clouding of cornea</td>
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<tr>
<td>Pus draining from ear</td>
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<td>323</td>
<td>338</td>
<td>156</td>
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<tr>
<td>Tender swelling behind ear</td>
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<td>32</td>
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<tr>
<td>Visible severe wasting</td>
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<td>139</td>
<td>128</td>
<td>117</td>
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<td>Severe palmar pallor</td>
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<td>180</td>
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<tr>
<td>Some palmar pallor</td>
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<td>723</td>
<td>393</td>
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<td>Oedema of both feet</td>
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<tr>
<td>Soft occipital bone</td>
<td>212</td>
<td>400</td>
<td>509</td>
<td>209</td>
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<tr>
<td>Beaded ribs</td>
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<td>1157</td>
<td>686</td>
<td>381</td>
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<td>Low tonus of muscles</td>
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<td>623</td>
<td>582</td>
<td>255</td>
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<tr>
<td>Excessive sweating</td>
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<td>1262</td>
<td>746</td>
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* Per participant
### Annex 3

#### Summary of clinical signs seen - Additional signs in Young infant

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<th>Venue of training</th>
<th>Total</th>
<th>Mean</th>
<th>Total</th>
<th>Mean</th>
<th>Total</th>
<th>Mean</th>
<th>Total</th>
<th>Mean</th>
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<tr>
<td>Mild chest indrawing in young infant</td>
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<td>152</td>
<td>1,3</td>
<td>136</td>
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<td>31</td>
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<tr>
<td>Fast breathing in young infant</td>
<td>69</td>
<td>1</td>
<td>96</td>
<td>0,8</td>
<td>113</td>
<td>1,7</td>
<td>43</td>
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<tr>
<td>Severe chest indrawing in young infant</td>
<td>8</td>
<td>0,1</td>
<td>56</td>
<td>0,7</td>
<td>100</td>
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<tr>
<td>Nasal flaring</td>
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<td>48</td>
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<td>115</td>
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<tr>
<td>Grunting</td>
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<td>16</td>
<td>0,1</td>
<td>46</td>
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<td>31</td>
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<td>Bulging fontanelle</td>
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<td>16</td>
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<td>31</td>
<td>0,5</td>
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<tr>
<td>Umbilical redness extending to the skin</td>
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<td>8</td>
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<tr>
<td>Red umbilicus or draining pus</td>
<td>35</td>
<td>0,5</td>
<td>56</td>
<td>0,7</td>
<td>16</td>
<td>0,2</td>
<td>32</td>
<td>0,4</td>
<td>84</td>
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<tr>
<td>Many or severe skin pustules</td>
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<tr>
<td>Skin pustules</td>
<td>55</td>
<td>0,3</td>
<td>40</td>
<td>0,3</td>
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<td></td>
<td>104</td>
<td>1,4</td>
<td>100</td>
<td>1,3</td>
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<tr>
<td>Lethargic or unconscious young infant</td>
<td>24</td>
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<tr>
<td>Less than normal movements</td>
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<td>0,06</td>
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<td>Not well attached to breast</td>
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<td>72</td>
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<td>85</td>
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<td>84</td>
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<tr>
<td>Good attachment</td>
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<td>256</td>
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<td>126</td>
<td>1,75</td>
<td>79</td>
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<tr>
<td>Not suckling at all</td>
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<td>0,2</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Not suckling effectively</td>
<td>56</td>
<td>0,8</td>
<td>56</td>
<td>0,7</td>
<td>29</td>
<td>0,4</td>
<td>93</td>
<td>1,3</td>
<td>58</td>
<td>0,8</td>
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<tr>
<td>Suckling effectively</td>
<td>119</td>
<td>1,8</td>
<td>264</td>
<td>2,2</td>
<td>135</td>
<td>2,0</td>
<td>126</td>
<td>1,75</td>
<td>79</td>
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<td>Thrush</td>
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<td>0,6</td>
<td>100</td>
<td>1,3</td>
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</table>

*Per participant*
Annex 3

Evaluation of the 11 days training courses by participants

Table: MCH Centre first model training 24 participants

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Somewhat Useful</th>
<th>Useless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>14 (58.3%)</td>
<td>10 (41.7%)</td>
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<td></td>
</tr>
<tr>
<td>Assess and Classify the Sick Child Age 2 Months up to 5 Years</td>
<td>22 (91.7%)</td>
<td>2 (8.3%)</td>
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<td></td>
</tr>
<tr>
<td>Identify Treatment</td>
<td>22 (91.7%)</td>
<td>2 (8.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treat the Child</td>
<td>21 (87.5%)</td>
<td>3 (12.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counsel the Mother</td>
<td>20 (83.3%)</td>
<td>4 (16.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of the Sick Young Infant</td>
<td>21 (87.5%)</td>
<td>3 (12.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-Up</td>
<td>22 (91.7%)</td>
<td>2 (8.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatient Sessions</td>
<td>23 (95.8%)</td>
<td>1 (4.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpatient Ward Sessions</td>
<td>21 (87.5%)</td>
<td>2 (8.3%)</td>
<td>1 (4.2%)</td>
<td></td>
</tr>
<tr>
<td>Videos</td>
<td>23 (95.8%)</td>
<td>1 (4.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photograph examples and exercises</td>
<td>22 (91.7%)</td>
<td>2 (8.3%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Too Short</th>
<th>Adequate</th>
<th>Too Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written exercises followed by individual discussions of your work with a facilitator</td>
<td></td>
<td>22 (91.7%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Photo Exercises</td>
<td>1 (4.2%)</td>
<td>22 (91.7%)</td>
<td>1 (4.2%)</td>
</tr>
<tr>
<td>Video Exercises</td>
<td></td>
<td>24 (100%)</td>
<td></td>
</tr>
<tr>
<td>Role plays</td>
<td>1 (4.2%)</td>
<td>21 (87.5%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Group discussions</td>
<td></td>
<td>24 (100%)</td>
<td></td>
</tr>
<tr>
<td>Oral drills</td>
<td>2 (8.3%)</td>
<td>20 (83.3%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Outpatient sessions</td>
<td>1 (4.2%)</td>
<td>20 (83.3%)</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Inpatient sessions</td>
<td>1 (4.2%)</td>
<td>23 (95.7%)</td>
<td></td>
</tr>
<tr>
<td>Entire course</td>
<td></td>
<td>21 (87.5%)</td>
<td>3 (12.5%)</td>
</tr>
</tbody>
</table>
Table: Sukhbaatar district: results of 3 courses, 68 participants

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Somewhat Useful</th>
<th>Useless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>34 (50%)</td>
<td>28(42.6%) 0</td>
<td>5(7.4%)</td>
<td></td>
</tr>
<tr>
<td>Assess and Classify the Sick Child Age 2 Months up to 5 Years</td>
<td>40(58.8%)</td>
<td>25(46.8%) 0</td>
<td>3(4.4%)</td>
<td></td>
</tr>
<tr>
<td>Identify Treatment</td>
<td>42(61.8%)</td>
<td>21 (30.9%) 0</td>
<td>5(7.3%)</td>
<td></td>
</tr>
<tr>
<td>Treat the Child</td>
<td>39(57.4%)</td>
<td>24(35.3%) 0</td>
<td>5(7.3%)</td>
<td></td>
</tr>
<tr>
<td>Counsel the Mother</td>
<td>42(61.8%)</td>
<td>23(33.8%) 0</td>
<td>3(4.4%)</td>
<td></td>
</tr>
<tr>
<td>Management of the Sick Young Infant</td>
<td>38(55.9%)</td>
<td>25(36.8%) 0</td>
<td>5(7.3%)</td>
<td></td>
</tr>
<tr>
<td>Follow-Up</td>
<td>29(42.7%)</td>
<td>30(44.1%) 0</td>
<td>9(13.2%)</td>
<td></td>
</tr>
<tr>
<td>Outpatient Sessions</td>
<td>31(45.6%)</td>
<td>28(41.2%) 0</td>
<td>9(13.2%)</td>
<td></td>
</tr>
<tr>
<td>Inpatient Ward Sessions</td>
<td>38(56.9%)</td>
<td>25(36.8%) 0</td>
<td>5(7.3%)</td>
<td></td>
</tr>
<tr>
<td>Videos</td>
<td>36(53.3%)</td>
<td>30(44.1%) 0</td>
<td>2(2.9%)</td>
<td></td>
</tr>
<tr>
<td>Photograph examples and exercises</td>
<td>34(50%)</td>
<td>33(48.5%) 0</td>
<td>1(1.5%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Too Short</th>
<th>Adequate</th>
<th>Too Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written exercises followed by individual discussions of your work with a facilitator</td>
<td>17(25%)</td>
<td>45(66.2%)</td>
<td>6(8.8%)</td>
</tr>
<tr>
<td>Photo Exercises</td>
<td>1(1.5%)</td>
<td>64(94.1%)</td>
<td>3(4.4%)</td>
</tr>
<tr>
<td>Video Exercises</td>
<td>13(19.1%)</td>
<td>50(63.5%)</td>
<td>5(7.4%)</td>
</tr>
<tr>
<td>Role plays</td>
<td>22(32.3%)</td>
<td>42(61.8%)</td>
<td>5(7.4%)</td>
</tr>
<tr>
<td>Group discussions</td>
<td>20(29.4%)</td>
<td>44(64.7%)</td>
<td>4(5.9%)</td>
</tr>
<tr>
<td>Oral drills</td>
<td>6(8.8%)</td>
<td>47(69.1%)</td>
<td>15(22.1%)</td>
</tr>
<tr>
<td>Outpatient sessions</td>
<td>0</td>
<td>50(73.5%)</td>
<td>18(26.5%)</td>
</tr>
<tr>
<td>Inpatient sessions</td>
<td>16(23.5%)</td>
<td>52(76.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Entire course</td>
<td>3(4.4%)</td>
<td>49(72.1%)</td>
<td>16(23.5%)</td>
</tr>
</tbody>
</table>
Annex 3

Table: Songinokhairkan district: results of 2 courses, 48 participants

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Somewhat Useful</th>
<th>Useless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>10</td>
<td>33</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Assess and Classify the Sick Child</td>
<td>22</td>
<td>25</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Age 2 Months up to 5 Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify Treatment</td>
<td>20</td>
<td>25</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Treat the Child</td>
<td>25</td>
<td>23</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Counsel the Mother</td>
<td>23</td>
<td>23</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Management of the Sick Young Infant</td>
<td>16</td>
<td>31</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Follow-Up</td>
<td>16</td>
<td>31</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Outpatient Sessions</td>
<td>22</td>
<td>26</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Inpatient Ward Sessions</td>
<td>15</td>
<td>33</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Videos</td>
<td>25</td>
<td>23</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Photograph examples and exercises</td>
<td>25</td>
<td>23</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Written exercises followed by individual discussions of your work with a facilitator</th>
<th>Too Short</th>
<th>Adequate</th>
<th>Too Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo Exercises</td>
<td>0</td>
<td>38</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Video Exercises</td>
<td>0</td>
<td>48</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Role plays</td>
<td>0</td>
<td>44</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Group discussions</td>
<td>0</td>
<td>43</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Oral drills</td>
<td>0</td>
<td>46</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Inpatient sessions</td>
<td>0</td>
<td>40</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Entire course</td>
<td>0</td>
<td>32</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>
3.4 Follow-up plan and status of implementation

Follow-up of trained health workers has been conducted in all IMCI implemented areas. Each of the districts was visited 2 or 3 times in order to follow-up health workers eligible for follow-up at that time (4-6 weeks after training). Each health worker was followed-up once only, therefore the data on performance of health workers were aggregated. Health facility support was assessed each time - these data from each visit had not been compiled.

The health workers trained (75) in Uvurkhangai aimag were mainly from the aimag centre and 5 pilot soums. These health workers were followed up. In Arkhangai aimag, 72 health workers from all soums were trained but only health workers from the aimag centre and 5 pilot soums were followed up. This is the reason for the lower proportion of followed-up health workers in this aimag.

Performance of health workers trained in IMCI

The majority of health workers performed well during the follow-up visit. The IMCI trained health workers were managing children, using the IMCI job aids (chart booklet, recording forms and mother’s card).

<table>
<thead>
<tr>
<th>Aimag/district</th>
<th>Range (minutes) *</th>
<th>Average (minutes) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sukhbaatar</td>
<td>10 - 45</td>
<td>27, 25.48</td>
</tr>
<tr>
<td>Songinokhairhan</td>
<td>12 - 47</td>
<td>24.64, 25.63, 22.69</td>
</tr>
<tr>
<td>Arkhangai</td>
<td>12 - 45</td>
<td>25.58, 27.88</td>
</tr>
<tr>
<td>Uvurkhangai</td>
<td>15 - 55</td>
<td>30.66, 26.71</td>
</tr>
</tbody>
</table>

* The range was aggregated from the 2 or 3 occasions on which the follow-up visits were conducted, averages are recorded as written in the records from separate visits.

Too long time spent for the management of a patient may mean that the health worker does not use the IMCI guidelines routinely.

All children with severe illnesses were identified and referred. The issue is more frequently over-referral (symptom/sign for referral is thought to be present when it is not) than under-referral. The main symptoms were mostly checked for, some doctors did not check for other problems.

The most common mistakes in assessing the signs/symptoms were: danger signs not assessed correctly (not able to drink, vomits everything indicated, when in fact not present), chest in drawing over-emphasised, thirst, stiff neck not correctly assessed. A number of mistakes and omissions occurred in the assessment of nutritional status. Also, feeding assessments was not always performed or performed completely.

Rickets is considered a major problem in Mongolia and as such, rickets assessment, management and prevention was included into IMCI guidelines. According to follow-up visits, assessment of rickets was a problem in some areas. This may be due to a printing error in the chart booklet. Vitamin D should be given/prescribed for the treatment of rickets or for its prevention (except for June, July and August – this may apply to some follow up visits). This was not done in some cases. Vitamin D was provided to the country by UNICEF and is expected to be distributed to the health facilities and given free of charge, see section 4.1 of this document. A relatively low proportion of mothers in most areas knew how to administer vitamin D. This is a complex problem that needs to be addressed.
Annex 3

Table: Rickets: assessment, giving/prescription of vitamin D and caretakers knowledge of administering vitamin D (in percents)

<table>
<thead>
<tr>
<th></th>
<th>Sukhbaatar</th>
<th>Songinokhairhan</th>
<th>Arkhangai</th>
<th>Uvurkhangai</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Cases whose rickets was correctly assessed</td>
<td>88</td>
<td>73</td>
<td>100</td>
<td>77</td>
</tr>
<tr>
<td>13. Cases received a full course of vitamin D or a prescription for vitamin D</td>
<td>75</td>
<td>60</td>
<td>78</td>
<td>95</td>
</tr>
<tr>
<td>23. Caretakers of children who are given vitamin D who know how much, how long to give it</td>
<td>63</td>
<td>64</td>
<td>57</td>
<td>95</td>
</tr>
</tbody>
</table>

Follow-up reports suggest that counselling part of the management, and, as the result, the mothers’ knowledge was the weakest area in the management process. The table below suggests that there were shortcomings in all parts of the counselling (administration of an antimicrobial, ORS, feeding and fluids advice and when to come back), however the result of caretakers’ knowledge concerning administration of an antimicrobial and/or ORS were better than the knowledge of the 3 rules of home care.
Table: Counselling of caretakers and caretakers’ knowledge (in percents)

<table>
<thead>
<tr>
<th></th>
<th>Sukhbaatar</th>
<th>Songinokhairhan</th>
<th>Arkhangai</th>
<th>Uvurkhangai</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Caretakers advised on giving extra fluids and continue feeding and at least 2 signs when to seek care</td>
<td>65 80</td>
<td>76 100</td>
<td>68 85 100</td>
<td>83 100 100</td>
</tr>
<tr>
<td>19. Caretakers of children &lt; 2 years asked about breastfeeding and complementary foods who were assessed and whose caretakers were counseled on feeding problems</td>
<td>73 75</td>
<td>95 90</td>
<td>79 100 100</td>
<td>88 63 63</td>
</tr>
<tr>
<td>20. Caretakers of children given an antimicrobial who know: how much to give, times per day and number of days</td>
<td>75 80</td>
<td>100 75 83</td>
<td>100 100 100</td>
<td>88 89 89</td>
</tr>
<tr>
<td>21. Caretakers of children with diarrhoea given ORS who know: to give ORS, mix ORS and amount of ORS to give</td>
<td>100 75 50</td>
<td>67 100</td>
<td>100 100 00</td>
<td>100 100 00</td>
</tr>
<tr>
<td>22 caretakers of children who are given an antimicrobial and/or ORS know how to give treatment</td>
<td>80 75 57 100</td>
<td>86 100</td>
<td>83 89 100</td>
<td>83 89 89</td>
</tr>
<tr>
<td>24. Caretakers who know all 3 rules of home care (fluid, food, when to return)</td>
<td>70 78 64 84</td>
<td>71 100</td>
<td>77 100 63</td>
<td>77 63 77</td>
</tr>
</tbody>
</table>

Comment on one follow-up visit: 100% performance of doctors and caretakers in all but 2 tasks may suggest misinterpretation of the follow-up procedure.

4. IMPROVING THE HEALTH SYSTEM

4.1 Activities to improve drug availability

It was planned that the IMCI working group reviews the essential drug list and checks that all the IMCI drugs are on the list. If not, they initiate discussions with the national drug programme on modifying the essential drug list to ensure that the IMCI drugs are included.

The current drug situation is considered the major constraint in successful implementation of IMCI. Arkhangai aimag’s follow up report states: “Providing pre-referral treatment” “providing the first dose of drugs” “providing whole course of drugs at the health facility” cannot be done due to the current policy of prescribing, not dispensing drugs. The MOH may consider changing the pharmacy law.}>.
Despite this, the follow-up report data from Arkhangai aimag indicate that 100% of followed-up health workers did perform the tasks mentioned above. The report also mentions that IMCI kits were provided to the health facility by the follow-up team. It needs to be clarified if this was practised also during follow-up visits in other areas.

Prescribed drugs can be bought in the nearest pharmacy, which is usually within the health centre or nearby. However, the pharmacies usually do not have all the 13 IMCI drugs. Also this practice does not ensure that children from poor families get proper treatment. The opinion of a follow-up debriefing meeting was that this situation could improve if the health centres are allowed to buy IMCI drugs and sell them at non-profit basis to the families.

The Nutrition Research Centre (NRC) is responsible for the distribution of Vitamin A, Vitamin D and iron, donated by UNICEF, to health facilities. The drugs are distributed through a six tiers system, and at present, the needs of the health facilities do not seem to be well identified. As a result, these drugs are not provided in sufficient amounts.

4.2 Activities to improve referral pathways and services

Since the referral from soum hospital to aimag hospital is sometimes difficult, once the referral guidelines will be available, it is important to train the soum doctors on the referral care.

4.3 Supervision

It was agreed that the current supervision should be continued during the early implementation phase and the quality of treatment inspectors and quality control manager should be involved in the follow-up visits. The IMCI implementation group planned to develop a supervision form for the regular supervision following the IMCI follow-up visit.

At soum level, all bag feldshers visit soum hospital once a month to report their activities. These visits could be used to reinforce health worker’s skills.

4.4 IMCI and Health Information System (HIS)

The issue of IMCI and HIS classification discrepancies has not been addressed during the early implementation phase.

4.5 Documentation of the Early Implementation Phase

Reports on all training courses conducted document the quality of IMCI training. Reports from follow-up visits document performance of doctors after training, quality of health system, and caretakers’ knowledge and satisfaction. A number of reports document activities on community level.

5. IMPROVING FAMILY AND COMMUNITY PRACTICES

In general it is the care practices in Mongolian households, which are now seen to have the greatest influence on determining the child’s survival, growth, development, and protection prospects. In the 1990s the Government suspended support to nursery schools and thus such institutions do not constitute a part of the formal framework that a child might rely on during the period 0-2 years. Instead emphasis is placed on parents and other home-based caregivers to provide for the essential needs of their children. Despite continuing high levels of literacy parents are often lacking in the appropriate guidance in how to raise their children and to meet their special needs during this formative period of development. Preschools and kindergartens
which attend to children from 3 years until primary school-age are important centres to promote child care, including nutrition, health, learning and socialization. There remains, however, a limited coverage of children in this age group and preschools are largely concentrated in urban areas. During the daytime the majority of small children remain in the home under the care of parents, older siblings, or members of their extended family.

WHO and UNICEF identified 12 key family practices (Annex 4) to improve child survival and child health. Health workers trained in IMCI promote many of them during the sick child visits.

It was agreed that during the early implementation phase, essential activities will be adaptation of the feeding recommendations, identification of local terms for signs of illness, and development of a mother’s card that can be easily understood by caretakers. In addition, the IMCI implementation group has responsibility to ensure the existing health education messages are compatible with IMCI guidelines. UNICEF and WVM will continue their own community activities to improve family and community practices in collaboration with the IMCI implementation group.

Effective communication of health workers with caretakers, and consequently effective case management and home care depend on the health worker using the terms, which mothers can understand. In order to achieve this, a study to identify local terms was conducted during the adaptation period.

Promotion of sound feeding practices in health and in disease including breastfeeding and recommendation of energy and nutrient rich complementary foods, requires feeding recommendations appropriate for the local culture, needs and means. Nutritional guidelines for infants and young children developed by the Nutrition Research Centre were reviewed, revised and tested in Ulaanbaatar and Uvurkhangai aimag in February 2000.

Mother’s card, using the identified local terms and newly developed and tested feeding recommendations, was designed to facilitate the communication of health workers and caretakers and to remind the caretakers of the major points in the home care. The mother’s card was pre-tested during the adaptation period.

**PHAST as a part of IMCI community component**

Participatory Hygiene and Sanitation Transformation (PHAST) Initiative developed by WHO was first introduced to Mongolia in 1998. The development of the PHAST Initiative in Mongolia later became one of the activities of WASH 21. WASH-21 is a programme for the “Development of National Water, Sanitation and Hygiene Education for the 21st Century” funded by UNDP, AUSAID and SIDA. The planned period of action of WASH-21 programme in Mongolia was from 1997 – 2000. WASH-21 combined the original PHAST with more recent documentation to reintroduce this approach in their areas of work with the objective to strengthen participatory hygiene education approaches and women development in community based water and sanitation services in Mongolia. WASH-21 has conducted training of trainers in PHAST since 1998.
Annex 3

During the second half of 2000 the MOH decided to support PHAST Initiative as a means to reinforce and further develop the IMCI community component. The IMCI focal person is responsible for PHAST/IMCI in the MOH.

The objectives of the PHAST initiative are:

(a) to improve hygiene and sanitation practices

(b) to prevent the spread of infectious diseases

(c) to support the initiative of local people to improve hygiene and sanitation of water supplies and latrines.

In 5 days PHAST training of trainers conducted from 30 October till 3 November 2000 in Ulaanbaatar 27 participants, 4 facilitators from WASH 21 trained future facilitators. The participants were doctors, secondary school teachers and hygienists. During the first 3 days of training the participants, working in 3 groups, completed the full PHAST course that has 7 steps. Each of these steps has 1 – 4 active exercises. During the last 2 days of training the participants practiced teaching all exercises. All future facilitators received Mongolian version of PHAST teaching guidebook and toolkits. These new facilitators then conducted altogether 4 training, two in each, Arkhangai and Uvurkhangai aimags. Participants in aimags were some of the doctors trained in IMCI, primary and secondary schoolteachers, caretakers in kindergartens, district inspectors for hygiene and sanitation from aimags, and heads of bags’ administration. Altogether 93 persons were trained in PHAST until the end of 2000. WHO supported this activity.

Training of mothers

One day training of mothers about childcare including feeding is another implemented activity that has not been included in the original National IMCI plan for early implementation. In Ulaanbaatar, the training was conducted for pregnant mothers in MCH centre maternity ward and for mothers of children in 2 kindergartens. Further trainings were conducted in pilot soums in Arkhangai and Uvurkhangai aimags. Altogether about 450 mothers participated in the training during which IMCI Mother’s cards were distributed. UNICEF supported this activity.

Summer camps

Songinokhairhan district organized summer camps for children with feeding problems or rickets 0-3 years old from 16 June to 16 August. During this period, mothers with children spent each day from 9 a.m. till 4 p.m. at one of 5 selected places, where the children were sunbathed outdoors, played and received nutritious food. Mothers were given lectures on childcare (see report).
### Annex 3

6. **BUDGET REQUIRED TO COMPLETE THE ACTIVITIES AND SOURCES OF FUNDING**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Planned (USD)</th>
<th>Actual (MNT)</th>
<th>Supported by</th>
</tr>
</thead>
<tbody>
<tr>
<td>First facilitators course*</td>
<td>500</td>
<td>499 800</td>
<td>WHO</td>
</tr>
<tr>
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NATIONAL PLAN FOR THE EARLY IMCI IMPLEMENTATION IN MONGOLIA
IMPROVEMENT OF SKILLS OF HEALTH WORKERS

1. Improvement of health worker skills

1.1 IMCI training courses for first-level health workers

1.1.1 Target group of training

The training will target bag feldshers, soum hospital doctors and family doctors in aimags, family doctors in districts. Two training courses will be conducted in each aimag and three courses in each district. It covers 100% of family doctors and 30% of soum and bag doctors, and 100% and 60% of doctors in Sukhbaatar and Songinokhaikhan district respectively, who are in charge of child care.

Since family nurses are always working with family doctors, even though their responsibility is limited, it was agreed that the IMCI implementation group should consider to develop small training sessions for them to support family doctors.

1.1.2 Quality standards for IMCI training

Quality standards for training proposed by WHO were agreed as follows:

- 1 facilitator: 4 participants;
- duration: 11 days (minimum 80 hours);
- proportion of time in clinical sessions: 30%;
- average number of cases seen per participants: at least 20;
- number of course participants: no more than 24;
- all training modules completed at the end of the course;
- each participant receives his/her own copy of the chart booklet;
- one follow-up visit conducted within 4 to 6 weeks after training.

It was decided to add half day on the 12th day to discuss how to apply the IMCI skills to their work and how to translate the IMCI classification into HIS terms for reporting.

1.1.3 Facilitators

The implementation group agreed on the following criteria for facilitators and the format of five-day facilitators' training:

- active clinical care;
- previous training experience, if possible;
- previously trained in IMCI and facilitation skills'
- speak language of participants;
- available for future courses
Annex 3

Facilitators will be selected from MCH Centre, Children's hospitals, Medical University, aimag hospitals. When organising the training course, it is recommended that some facilitators should be already trained at BFC training course.

1.1.4 Training sites

The implementation group agreed on the following criteria for training sites:

- sufficient case load;
- access to outpatient and inpatient departments;
- acceptable quality of care;
- directors and staff interested and able to conduct courses.

However, there is no other hospital except aimag hospitals in aimag level. In districts, Children’s Hospital No.2 and No.3 with Health Centre No.4 were selected.

The venue for training courses at central level has been decided to be Children's Hospital No.3, Health Centre No.4 and MCH Centre.

1.1.5 Sequence of training

It was agreed that one facilitators’ course for staff trained in another countries, one model 11-day course, one facilitators’ course and 11-day course for future facilitators from central, aimags and districts, another facilitators’ courses for facilitators from aimags and districts, and then 11-day courses, training for follow-up visits, follow-up visits in each aimag and district (two 11-day courses in each aimag and three in each district) will be conducted. Almost 36 facilitators will be available before aimag and district level courses start.

It was agreed that the first model course’s objectives are to test the adapted materials to identify any adjustments needed, before the materials are printed in quantity and to train staff from the IMCI working group, aimags and districts, so that they will be better informed about the IMCI strategy and work as future facilitators.

It was also agreed that a detailed plan for each aimag and district will be developed later at each planning workshop.

1.1.6 Follow-up visits after training

It was agreed that two follow-up visit should be conducted within four to six weeks and six months after training, with the objective of reinforcing doctors’ skills, identifying and solving problems they are facing and to gather information on the performance of health workers and the conditions influencing their performance. The first follow-up visits should be carried with support from the central level. However, the follow-up visits after the second course should be done by aimag staff.

It was agreed that supervisors need to be trained during an 11-day course, a five-day facilitators’ course and training for the follow-up visit. In principal, Aimag and district level have responsibility to conduct follow-up visits with the support from the central. For the follow-up for bag feldshers, soum doctors trained on 11-day course will accompany this follow-up team to give guidance. In addition, quality treatment inspector and quality control managers in each aimag and district, who is in charge of regular supervision, should be trained at the above-mentioned training to join this follow-up visit.
Annex 3

The first training for follow-up should be conducted at the central level for central level staff and district staff. Additional two trainings should be conducted in each aimag with support from the central staff.

All the information collected during the follow-up visits should be forwarded to the IMCI focal person.

It was agreed that the following activities are conducted during a follow-up visit:

- Observe case management and reinforce skills
- Review facility supports
- Facilitate problem solving with the staff
- Caretaker interview
- Review of patient recording forms
- Practice Exercises
- Complete a summary report of the visit

The implementation group should review the guidelines for follow-up, revise and translate into Mongolian before training course starts.

1.1.7. Improving skills of referral-level health workers

It was confirmed that two aimag hospitals, Health Centre No.4 and MCH Centre are BFH and chief paediatrician and nutritionists of 2 aimag hospitals were already trained on BFC training courses supported by UNICEF. One third of doctors in Children’s Hospital No.2 and 3 were trained.

2. Improvement of health system to deliver IMCI

2.1 Ongoing health sector reforms

ADB is supporting health sector development from 1998 up to 2003. One of the component is to improve primary care by family doctor’s practices. The training materials are in the process of development and training will start soon. Therefore, key national members in this project are invited into the IMCI working group. One district was selected for IMCI early implementation.

2.2 Availability of drugs

The group realised the importance of availability of drugs for doctors to implement the IMCI case management guidelines.

The IMCI working group should review the essential drug list and check all the IMCI drugs should be in this list. If not, they initiate discussions with the national drug programme on modifying the essential drug list to ensure that the IMCI drugs are included.

In two aimags, UNICEF support all essential drugs. The IMCI working group should co-ordinate that sounds doctors and family doctors should have some amount of the IMCI drugs to be used for counselling mothers by free. In addition, since family doctors have no drugs in principal and caretakers need to buy drugs from the drug store, the IMCI working group should find the solution.
Annex 3

At bag and soum levels, vaccines are available and doctors are able to provide immunisation on the spot if they find a child who missed immunisation.

The IMCI working group should seek the possibility to make all the IMCI drugs to be free with the national drug programme.

2.3 Improvement of referral pathway

Since the referral from soum hospital to aimag hospital is sometimes difficult, once the referral guidelines have been available, it is important to train the soum doctors on the referral care. There is no problem to refer cases from bag to soum level.

2.4 Supervision

It was agreed that the current supervision should be continued during the early implementation phase and quality of treatment inspectors and quality control manager should be involved in the follow-up visits. The IMCI implementation group will develop the supervision form for their regular supervision following the IMCI follow-up visit.

In soum level, all bag feldshers visit soum hospital once a month to report their activities. The IMCI implementation group should discuss how to use this visit to reinforce health worker’s skills.

2.5 Linking IMCI classifications and the HIS

It was agreed that IMCI classification should be translated into HIS terms for reporting and the IMCI implementation group should develop the table. In addition, on the 12th day of the training course, facilitators should explain to participants how to use this table.

3. Improvement in family and community practices

It was agreed that during the early implementation phase, essential activities are adaptation of the feeding recommendations, identification of local terms for signs of illness, and development of a mother’s card that can be easily understood by caretakers. In addition, the IMCI implementation group has responsibility to ensure the existing health education messages are compatible with IMCI guidelines. UNICEF and WVM will continue their own community activities to improve family and community practices in collaboration with the IMCI implementation group.

4. Documentation of early implementation

It was agreed that the objective and importance of documentation is to obtain information for improving the current situation for the IMCI implementation and to gain experience implementing the IMCI strategy as a basis for planning future expansion.

Information on the following should be collected:

- organisation and management at central and aimag level;
- quality of adaptation on IMCI guidelines;
- quality of IMCI training;
- performance of doctors after training;
- quality of health system, such as drug availability, supervision;
- caretakers’ satisfaction and improvement in community practice.

The IMCI implementation group should review tools available in “Planning Guide” and discuss how to assign each responsibility among members and detailed plan for documentation will be developed later.
5. **Selection of aimags and districts for early implementation**

The group agreed on the following criteria on the selection of aimags and districts:

- Good physical access to central-level staff
- Committed staff in the aimags and districts to do planning and management
- Availability of a suitable training site
- Availability of drugs need for implementation of IMCI in health facilities
- Ability to refer severely ill children from first-level facilities for acceptable care
- Availability of other resources to support the IMCI strategy

Arhangai aimag, Uburhahgai aimag (UNICEF supported), Songinokhairhan district (WVM supported), Sukhbaatar district (ADB supported) in Ulaanbaatar are selected for early implementation phase.

6. **Budget and time schedule**

### Adaptation

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### Central-level training courses

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INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS

TECHNICAL BACKGROUND TO ADAPTING THE IMCI GUIDELINES TO THE DISEASE AND HEALTH SERVICES CONDITIONS IN MONGOLIA

BACKGROUND SITUATION

Acute respiratory infections (ARI) are the major cause of mortality and morbidity in children in Mongolia. They were responsible for more than half of the deaths of children in this age group until 1996 and for 38% of deaths in 1997/98 period. Eighty one per cent of the ARI deaths were related to pneumonia. ARI is the cause of 25 - 39% of visits of the health facilities and of 32.6% of hospitalization.

The second most important cause of death (about 9 -10%) is diarrhoeal diseases. Diarrhoeal morbidity is not well documented as most cases are treated at home and are not registered by the health information system. The main cause of bloody diarrhoea is Shigella, identified as the etiological cause in 7.6% of diarrhoea cases. Imported cholera cases among adults occurred in 1996, but otherwise cholera has not been reported in the country.

Malaria, borreliosis and dengue haemorrhagic fever are not problems and will not be included in the current adaptation.

Measles is very infrequent, complicated cases are not seen and deaths have not been reported in recent years. Seven out of 8 cases referred as measles to the central level hospital were later diagnosed as rubella in 1998. Measles immunization coverage increased from 89% in 1996 to 92.1% in 1998. No cases of Polio have been reported after 1993. Pertussis cases are rare. Cases of neonatal tetanus have not been reported during recent years. DPT immunization coverage increased from 89.6% in 1996 to 93.4% in 1998.

Malnutrition. Available data suggest that there is a problem of chronic malnutrition and that acute malnutrition is not a problem at this point. According to the Nutrition and Food Security Survey conducted by Nutrition Research Center (NRC) and World Vision (WV) in 1997 which used WHO/NCHS standard, 22% of children under 5 were stunted (below -2SD of normal height for age), 10% underweight (below -2SD of normal weight for age) and 1.8% wasted (below -2SD of normal weight for height). Stunting is most prevalent in the 6 - 24 month age group. These findings suggest a problem of malnutrition associated with weaning, especially as there is no high proportion of low birth weight infants. According to NRC data stunting increased in 1998 to 29.4% but wasting decreased to 1.0%. A nutrition study conducted by NRC in collaboration with UNICEF has been conducted in 1999 but its results are not yet available.

Breastfeeding (BF) There has been a very successful programme to promote breast-feeding with over 90% of mothers initiating and an average duration of breast-feeding of 5.4 months. However further clarification of duration of exclusive breast-feeding is needed as 15% of mothers in the NRC/WV survey reported that they exclusively breast-fed for 7-12 months. Extended period of exclusive breast-feeding may be one of the reasons for chronic undernutrition and anaemia seen in the children in the 6 - 12 month age group.
Complementary feeding. Majority of mothers introduces complementary foods, which appear nutritionally adequate between 4 and 6 months. However, the number of meals offered per day is inadequate according to the NRC/WVM survey. Children under 12 months of age are fed only 2.1 times a day on average. Only 26% of children are fed 3 and more times a day.

Anaemia: Despite a diet apparently high in protein and bioavailable iron, anaemia is a major problem. Using the WHO altitude adjusted criteria, 40.7% children under 5 years of age were found to be anaemic. This level of anaemia is classified as "high public health significance according to WHO classification. The prevalence of anaemia varies significantly in different age groups, begins early in infancy and peaks at 12 - 18 months. The most common cause of anaemia is considered to be iron deficiency. Considering the usual Mongolian diet, folate deficiency may also contribute to anaemia.

Rickets: Rickets is considered a serious public health problem in Mongolia. Although various assessment models were applied in several surveys, all of them indicate high prevalence of rickets in children less than 5 years of age. Detailed description of the situation see in a separate part below.

Vitamin A deficiency. Data available are conflicting - prevalence of Bitot's spots was 0.8% according to 1992 survey, other sources report higher incidences of vitamin A deficiency but criteria are somewhat unclear. Considering the usual Mongolian diet it may be assumed that vitamin A is sub-clinically deficient. NRC is currently developing a set of strategies to confirm the existence of vitamin A deficiency and to prevent it.

IMCI GUIDELINES

SICK CHILD AGED 2 MONTHS UP TO 5 YEARS

GENERAL DANGER SIGNS

General danger signs were reviewed and found acceptable.

COUGH AND DIFFICULT BREATHING

The assessment and classification of a child with cough or difficult breathing were reviewed accepted.

Antibiotic treatment of pneumonia, acute ear infection or very severe disease (Essential adaptation).

Cotrimoxazole will be the first line and amoxycillin the second line antimicrobial for the treatment of pneumonia. Intramuscular chloramphenicol is to be given with half the daily dose to children who cannot take oral antibiotic before urgent referral (severe pneumonia, very severe disease, mastoiditis or very severe febrile disease).

This choice of antibiotics is based on the well-established finding that most childhood pneumonia of bacterial origin is due to Streptococcus pneumoniae or Haemophilus influenzae. Cotrimoxazole, amoxycillin and chloramphenicol are usually effective treatment for these two bacteria.
Significant resistance of bacteria to these antimicrobials has not been reported in Mongolia.

Cotrimoxazole and amoxycillin are among the antimicrobials currently recommended by the ARI programme for the treatment of pneumonia in Mongolia. According to the preliminary results of a recent ARI health facility survey, cotrimoxazole is the antimicrobial most widely used for the treatment of non-severe pneumonia, followed by ampicillin. Amoxycillin is prescribed much more rarely and is not regularly available in 77% of facilities (or pharmacies nearest the health facility surveyed).

Amoxycillin is much preferred to ampicillin, which has erratic absorption and is more expensive than amoxycillin.

Safe soothing remedy for a young child with cough (Essential adaptation)

Cranberry juice, cranberry leaves tea, milk with honey, “chicatusin” and breast milk for exclusively breast fed children will be recommended as safe soothing remedies for children with cough. These are traditional, widely used remedies, already recommended by ARI programme. Breast milk alone is a good soothing remedy and no additional remedy should be given to an exclusively breastfed infant.

Health workers will warn mothers against remedies containing codeine, ephedrine, antihistamines (especially Dimedrol), Urotropin and Atigrip.

There is no evidence that commercial cough and cold remedies which are safe are any more effective that simple home remedies in relieving cough or soothing a sore throat. Suppression of cough is not desirable because cough is a physiological reflex to eliminate lower respiratory tract secretion.

Wheezing

Wheezing will not be included into the IMCI clinical guidelines.

ARI training materials for first-level health facility health workers include the management of wheezing with oral salbutamol and a rapid-acting bronchodilator. The generic IMCI guidelines do not include the management of wheezing. The reasons for this are to simplify training, to concentrate on the conditions contributing substantially to mortality, and because experience to date with ARI implementation suggests that wheezing management has not played an important role in reducing mortality.

According to the preliminary results of the ARI health facility survey conducted in October 1999 in Mongolia, 21 (7%) of the 300 children enrolled into the survey were found to have wheezing. These results suggest that wheezing, although not uncommon, is not a major problem.

WHO ARI guidelines have been taught in medical school in Mongolia since 1992 and a substantial number of health workers have also been trained in ARI courses.

The adaptation group decided not to include the management of wheezing into the IMCI guidelines in order to simplify training and to concentrate on the conditions contributing substantially to mortality. Health workers are expected to treat wheezing according to what they have learned previously. To emphasize that the treatment of wheezing has not been abandoned a remark reading “if the child has wheezing treat according to previous training” will be added into the “cough box”.
Annex 3

Diarrhoea

Review of the revised CDD algorithm incorporated into the IMCI guidelines was found acceptable.

Home fluids for diarrhoea (Essential adaptation)

The following fluids will be recommended for the home treatment of diarrhoea: ORS, clear soup (bouillon), rice water, yoghurt drinks, boiled water with milk and boiled water.

These fluids are already recommended by the national CDD programme. They are safe when given in large amounts, available, easy to prepare and acceptable.

In Plan A, the statement “give ____ ml after each loose stool” will be changed to “give ____ ml between stools” to emphasize that the child should be given frequent small sips, not forced to drink the whole amount at once.

Dysentery

Children aged 2 months up to 5 years with blood in stool will be treated with a first line antimicrobial. If there is no improvement after 2 days of treatment (i.e. less fever, less pain, less faecal blood and fewer loose stools), the child will be referred to a hospital.

All children aged 1 week up to 2 months presenting with blood in stool will be referred urgently to hospital.

Referral of dysentery

According to generic IMCI guidelines a child with dysentery (blood in stool) is treated for 5 days with the first-line antimicrobial. There should be a substantial improvement after 2 days of treatment (less fever, less pain, less faecal blood and fewer loose stools). If this does not occur, the antimicrobial should be stopped and a different one (second line antimicrobial) used. If there is no improvement after 2 days of treatment with the second line antimicrobial, it should be stopped. The patient may be either referred to hospital or treated for possible amoebiasis.

Generic IMCI guidelines for the management of dysentery are substantially different from the current practice that is to refer all children with bloody diarrhoea urgently to hospital. In order to obtain a broad consensus, the group suggests referring dysentery cases to hospital after the first treatment failure.

All young infants (age less than 2 months) with blood in stool will be referred urgently to hospital because dysentery is uncommon in young infants and blood in the stool is more likely to be the sign of a surgical problem. (Recommended adaptation)

Antimicrobial treatment of shigellosis (Essential adaptation)

Early treatment of shigellosis with an appropriate antibiotic shortens the duration of illness and reduces the risk of serious complications and death.

Cotrimoxazole will be the first line antimicrobial for the treatment of shigella. The second line antimicrobial is not included as in case of first treatment failure the child will be referred to a hospital.
Cotrimoxazole is recommended by CDD programme and currently used for the treatment of bloody diarrhoea. There are no reports on the resistance of shigella to cotrimoxazole. It can be effectively given by mouth, is affordable and readily available.

According to the adaptation subgroup, amoebiasis is a rare cause of bloody diarrhoea in under five, therefore treatment with metronidazole after two treatment failures for Shigella would not be justified and it should not be recommended. (Also, as the child will be referred after first treatment failure, it does not belong to IMCI guidelines)

Cholera

The generic guidelines recommend antimicrobial treatment for children with suspected cholera. This recommendation was found acceptable. Tetracycline or cotrimoxazole will be the first line and erythromycin the second-line antibiotic for the treatment of cholera.

The only epidemic of cholera in Mongolia occurred among foreign workers in 1996. However, the adaptation group suggested that the generic version should be accepted as there is cholera in the neighboring countries and there may be other cases in the future.

Selection of antimicrobials for the treatment of cholera should be based on the sensitivity patterns of strains of V. cholerae isolated in the area. Considering the above, such sensitivity pattern is not available, therefore the usually effective antimicrobials were selected.

Multivitamins and minerals in the treatment of children with persistent diarrhoea (Recommended adaptation)

All children with persistent diarrhoea will receive supplementary multivitamins and minerals each day for 2 weeks. Locally available multivitamin and mineral mixture “Duovit” was tentatively selected as the recommended mixture.

Micronutrient deficiencies are common in malnourished children and are exacerbated by losses from diarrhoea. This is why micronutrient supplementation plays an important role in the therapy of persistent diarrhoea. In the recent multicentre study, compliance with multivitamin/mineral supplements was significantly associated with resolution of the persistent diarrhoea. Due to this new information on the role of micronutrients in the therapy for persistent diarrhoea, WHO strongly recommends making this adaptation in order to update generic guidelines.

The composition of available mixtures Duovit, Pikovit, Pangamin bifi plus, Kalcenova and Oligovit was compared with the recommended daily allowances (RDA) according to the WHO Adaptation manual, Section C, Technical Basis, p. 45. Suitable mixture should not contain less than 1 RDA of key ingredients (vitamin A, folic acid, magnesium, zinc and copper). Duovit, which contains sufficient amounts vitamin A, folic acid, magnesium and copper but lower than desirable amount of zinc (3 mg while 1 RDA = 10 mg) was found the most acceptable for the treatment of children with persistent diarrhoea. The cost of 1 package (40 tbl.) is 3000 - 3500 Tg (approx. 3 USD), the wholesale price is 1800 Tg. This is rather expensive and the price may be a constraint of the use of Duovit in IMCI.
Annex 3

Action to be taken:

a) explore the feasibility of obtaining another vitamin/mineral mixture, which would contain all the key ingredients in adequate quantities at an affordable price.

b) explore the feasibility of recommending Duovit considering its price - including exploring the possibilities of providing it free of charge or at an affordable price.

Fever

Children with a stiff neck or a general danger sign may have meningitis or another "VERY SEVERE FEBRILE DISEASE" and will be referred urgently to hospital. Children without these signs will be classified as fever and given symptomatic treatment.

It is taken into consideration that a child can have several classifications. For example, a child classified as "pneumonia" and "fever" will receive appropriate treatment for both conditions, therefore there is no need to include other possible conditions causing fever.

Children with fever every day for more than 5 days will be referred for assessment (not after more than 7 days as in the generic guidelines). Fever tends to frighten the caretakers who require an action from the physician. Formerly, children with fever were either given antimicrobials or referred very early in the course of the disease, therefore it is felt that the requirement to wait for 7 days before next step is taken may be too long to be acceptable for the parents as well as health workers.

Two types of thermometers are available at various health facilities at present. One, requiring measuring temperature for 1 minute, and an older type requiring measuring temperature for 5 minutes. A picture of both types with the time needed for measuring the temperature will be added into the module.

Malaria

Major part of the generic fever management guidelines deals with the treatment of malaria. As there is no malaria in Mongolia, all sections concerning malaria will be deleted from the guidelines.

Measles

Generic guidelines of measles were found acceptable.

Measles is life-threatening disease that is among the five major childhood killers of children under five in the world. This is the reason why the adaptation group decided to accept the generic guidelines concerning measles despite the fact that measles incidence has been low in Mongolia during recent years due to the high vaccination coverage.

Sore throat

Sore throat will not be included into IMCI guidelines.

The WHO ARI guidelines include management of sore throat. In the generic IMCI course, however, sore throat would be treated as an “other problem".
The main justification for treating streptococcal sore throat with penicillin is to prevent rheumatic fever and thereby contribute to the prevention of chronic rheumatic heart disease. Streptococcal sore throat and rheumatic fever are predominantly a problem of school age children (5-15 years old), with a small percentage of cases of rheumatic fever occurring in children under 5 years of age. Data summarizing age distribution of the onset of rheumatic fever in 7 developing countries (Ulaanbaatar, Mongolia among them) in early 1970s show that only 4.6% were less than 5 years of age with almost all cases in 3-4 years old (only 0.6% were children less than 3 years of age).

Prevention of rheumatic heart fever and heart disease.

Secondary prevention, which is regular use of benzathine penicillin in children who have rheumatic fever, can successfully prevent progressive heart disease and is the main strategy advocated by WHO to control rheumatic heart disease.

Primary prevention, that is treatment of streptococcal sore throat, should concentrate on school children. However, in younger children, primary prevention of rheumatic fever through the treatment of pharyngitis has limitations.

Clinical signs alone, without throat culture, discriminate poorly between viral pharyngitis and streptococcal pharyngitis in young children. Of all pharyngitis episodes, only 15-20% are due to streptococci. Although exudate is common in children under 3 years of age, it is usually not due to infection with Group A streptococci. One study found that only 1 of 27 children under 3 years of age had a rise in ASOT titre with exudative pharyngitis. In infants, the clinical presentation of streptococcal infection can be non-specific with fever and crusted lesions around the nose, rather than pharyngitis. In addition, 30-50% of rheumatic fever cases follow clinically unapparent streptococcal throat infection. There is also some evidence that streptococcal skin infection can be a significant contributor to acute rheumatic fever in some settings.

Because of the poor performance of clinical signs in discriminating streptococcal pharyngitis and the low incidence of rheumatic fever following streptococcal pharyngitis, a very large number of cases of pharyngitis need to be treated in order to prevent a case of rheumatic fever, and even more to prevent a case of severe chronic rheumatic heart disease. Many cases of rheumatic fever will continue to occur despite primary treatment of sore throat.

Low specificity of guidelines for the management of sore throat could result in a high rate of use of penicillin, which would promote penicillin resistance in the pneumococcus, given the substantial rate of nasopharyngeal carriage in young children.

According to the preliminary results of the recent ARI health facility survey a sore throat problem was reported by caretakers only in 7 (less than 2%) of cases of the children with cough enrolled in the survey. Surveyors reported tonsillitis in a total of 5% of cases. However, 11 of the 14 diagnoses of tonsillitis came from the same surveyor and this figure is therefore unreliable. Only 1 case (of the 7 cases reported by caretakers and 14 cases diagnosed by the surveyors) was a child less than 3 years old. Only 2 of the 14 cases had fever (more than 37.4°C). Therefore, although children had to have cough to be enrolled into the survey, tonsillitis/pharyngitis did not appear to be common in young children and seem to be rare in children less than 3 years old in Mongolia.
Annex 3

Further action: The adaptation group agreed that a study of the etiology of sore throat in children under 5 years of age will be conducted in Ulaanbaatar as, despite the general agreement not to include sore throat into IMCI guidelines, some members of the adaptation group expressed their concern that streptococcal sore throat may be more frequent among children under 5 in Mongolia than the global data suggest. According to the results of this study the issue of not including sore throat into IMCI guidelines may be reconsidered.

Ear infection

Generic guidelines for the management of mastoiditis and acute ear infection were found acceptable.

Chronic ear infection will be treated by wicking the ear for 5 days. At the follow up visit, either the mother will be advised to continue wicking of the ear or, if possible, the child will be referred to an otorhinolaryngologist.

The current practice is to refer children with chronic ear infection to an otorhinolaryngologist in areas where it is possible. However, in some areas this is not possible, therefore both options will be included.

Green row “NO EAR INFECTION” will be deleted.

Immunization

Immunization schedule

Immunization schedule was adapted to that of national EPI programme.

<table>
<thead>
<tr>
<th>Vaccine generic+ national</th>
<th>in addition National</th>
<th>Age - generic</th>
<th>Age - National</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG, OPV 0</td>
<td>Hep B 1</td>
<td>birth</td>
<td>Birth</td>
</tr>
<tr>
<td>DPT1, OPV1</td>
<td>Hep B2</td>
<td>6 weeks</td>
<td>2 months</td>
</tr>
<tr>
<td>DPT2, OPV 2</td>
<td></td>
<td>10 weeks</td>
<td>3 months</td>
</tr>
<tr>
<td>DPT3, OPV3</td>
<td></td>
<td>14 weeks</td>
<td>4 months</td>
</tr>
<tr>
<td>Measles</td>
<td>Hep B3</td>
<td>9 months</td>
<td>8-11 months</td>
</tr>
<tr>
<td></td>
<td>Measles 2</td>
<td></td>
<td>1 year 2-6 months</td>
</tr>
<tr>
<td></td>
<td>DPT, OPV</td>
<td></td>
<td>2 years</td>
</tr>
</tbody>
</table>

Contraindications to immunization

The adaptation group agreed to accept generic version of the contraindications to vaccinations.

Malnutrition and anaemia

The generic guidelines for the assessment and classification of malnutrition and anaemia were found acceptable.
National weight for age chart will be used in IMCI guidelines. The median of the national weight for age chart corresponds well to that of WHO/NCHS standard. -3SD values of the national standard correspond reasonably to -2SD of NCHS/WHO standard. -3SD values of the national standard will be used as a cut-off point for the classification of children, who, considering the values of the international standard, will be classified as LOW WEIGHT not VERY LOW WEIGHT.

According to national nutritional studies the prevalence of underweight (weight for age below -2SD) in children under 5 years of age using NCHS standard is 10%. Thus using -3SD threshold of the national standard would identify a manageable percentage of children for feeding assessment and follow up.

Iron in the treatment of anaemia

Only iron without folate is currently available in Mongolia. Considering the usual Mongolian diet, the deficit of folic acid may contribute to a high prevalence of anaemia, therefore iron with folate is preferable for the treatment of anaemia. Essential Drug Programme agreed that iron folate will be included into the Essential Drug List.

Mebendazole in the treatment of anaemia

Mebendazole will not be used in the treatment of anaemia as hookworm and whipworm are not considered to be a problem in the country.

Feeding recommendations, feeding problems

The Nutrition Research Center prepared nutritional guidelines for infants and young children recently and the NRC members of the subgroup presented them in the IMCI format at the adaptation meeting in August 1999. However information confirming the feasibility of these recommendations in the areas of IMCI early implementation has not been presented.

For successful application of the feeding recommendations and mother counseling in IMCI the following is necessary:

- to obtain caretakers’ responses to the recommendations for improving child feeding,
- to determine which of the recommendations are most feasible and acceptable and thus should be included into the Counsel the Mother chart
- to investigate constraints on caretakers’ willingness to change feeding patterns, and their motivations for trying and sustaining new practices,
- and to identify common feeding problems and caretakers’ responses to them

Further action needed: As the above information is not available, household trial on feeding recommendations is urgently needed in order to finalize the adaptation of the IMCI guidelines.
Assess other problems

A note "tell mother when to come back" will be added to this box to remind health workers to explain mothers the general recommendations for any sick child when s/he should be taken to a health worker even in case that the reason for the initial visit was "other problem" and not one of those included in IMCI guidelines.

Sick young infant

Background information

Perinatal mortality is the third major cause of death in children after ARI and diarrhoeal diseases in the country. The management of perinatal problems is not included in the generic WHO/UNICEF IMCI guidelines. The group agreed that since most of these deaths are caused by conditions surrounding delivery, perinatal problems (i.e. 0-7 days) should not be addressed during the adaptation process. The current guidelines should be followed.

POSSIBLE BACTERIAL INFECTION IN THE YOUNG INFANT

Generic guidelines for possible bacterial infection were found acceptable.

Antimicrobials for local bacterial infection (Essential adaptation)

The generic guidelines recommend cotrimoxazole as the first line and amoxycillin as the second line antimicrobials in the treatment of local infection in young infant.

Adaptation group suggests reversed order, i.e. amoxycillin will be the first line antimicrobial and cotrimoxazole the second line antimicrobial. The reason for this is to simplify decisions concerning possible contraindications of cotrimoxazole (should be avoided in infants less than 1 month of age who are premature or jaundiced) at the primary health care level.

Diarrhoea in the young infant

The generic guidelines were found acceptable for the assessment, classification and treatment of dehydration and severe persistent diarrhoea.

The classification of SEVERE PERSISTENT DIARRHOEA will be changed to PERSISTENT DIARRHOEA. When translated into Mongolian, severe persistent diarrhoea would imply that also "non-severe" persistent diarrhoea exists. This is not desirable as every persistent diarrhoea in young infants is considered severe.

Young infant with blood in stool will be referred urgently to hospital (see above in section "referral of dysentery – recommended adaptation) and the classification will be changed from dysentery to a word meaning "bloody stool".

FEEDING PROBLEM OR LOW WEIGHT IN THE YOUNG INFANT

The generic guidelines for Feeding problem or low weight in the young infant were found acceptable.

The same threshold for "low weight", i.e. -3SD of national weight for age standard will be used as for older children – justification see in section “malnutrition”. 
Prevention of hypoglycaemia

In addition to prevention of hypoglycaemia in children with VERY SEVERE FEBRILE DISEASE and young infants with POSSIBLE SERIOUS BACTERIAL INFECTION in generic guidelines, the prevention of hypoglycaemia will be extended to pre-referral treatment of SEVERE PNEUMONIA OR VERY SEVERE DISEASE and SEVERE MALNUTRITION OR SEVERE ANAEMIA. (Recommended adaptation)

Hypoglycaemia can occur in any sick child who has not been fed for 4 - 6 hours, as often happens during travel to the health center. Children with VERY SEVERE FEBRILE DISEASE and young infants with POSSIBLE SERIOUS BACTERIAL INFECTION are at risk of developing hypoglycaemia. Children with SEVERE PNEUMONIA OR VERY SEVERE DISEASE may have a systemic infection and are also at increased risk of developing hypoglycaemia. Children with SEVERE MALNUTRITION are also at risk of developing hypoglycaemia, which is an important cause of death during the first two days of treatment of severe malnutrition. Children with MASTOIDITIS without another severe classification often have a localized infection and therefore may not need pre-referral treatment to prevent hypoglycaemia.

Where referral is difficult or impossible (Annex E).

The adaptation group found the generic guidelines acceptable.
Annex 3

SUGGESTED GUIDELINES FOR THE MANAGEMENT OF VITAMIN D DEFICIENCY

IMCI generic guidelines do not include management of rickets and, at present, there are no WHO guidelines for the management of rickets.

Although rickets in itself is not a fatal disease, it may lead to permanent bone deformity, and it is associated with impaired growth and development and a reduction in immune response to infection. Infections such as pneumonia (main cause of deaths in Mongolian children under 5 years of age), tuberculosis, and diarrhoea are more likely to cause death in rachitic children. Considering the magnitude of the problem in Mongolia, rickets increases the risk of death and decreases the quality of life of a substantial proportion of Mongolian children.

Considering the above, the IMCI adaptation group feels very strongly that treatment as well as prevention of rickets should be included into the IMCI guidelines.

An additional reason to include “rickets guidelines” is that clear and safe prevention and treatment guidelines should be provided to health workers at primary health care level, as cases of vitamin D overdose are not rare.

Situation in Mongolia

Rickets is considered a serious public health problem in Mongolia. Although various assessment models were applied in several surveys, all of them indicate high prevalence of rickets in children less than 5 years of age.

UNICEF/MOHHSW 1992 nutrition survey using the presence of craniotabes, and/or bowed legs or knocked knees indicated 44.7% prevalence of rickets.

A regionally representative 1997 survey (2 provinces, capital Ulaanbaatar, 454 children) conducted by the Nutrition Research Centre (NRC) and World Vision Mongolia (WVM) in Mongolia found at least one of three signs (rachitic rosary, Harrison’s groove or enlarged size of fontanel) in 68.3% children under 5, 58.7% in children under 6 months 90.9% in the age group 7-12 months and 84.4% in the age group 13-24 months (32).

Performing chemical and roentgenographic examination, and therefore confirming the activity of rickets is not feasible at primary health care level in Mongolia.

The high prevalence of rickets in Mongolia is ascribed to the northern latitude that limits exposure to UV-B rays during the winter months, cold weather for the majority of the year limiting the skin exposure and swaddling of children.

According to the analysis of some plasma samples from Mongolian rachitic children, the concentration of 25OHD indicates vitamin D deficiency (6).
There is considerable evidence of low calcium intakes throughout Mongolia in children of five years and older. On the other hand, in a more limited geographical region, the mean Ca intakes of children between 0 and 5 years appear to be close to the recommended daily intakes. It is reported that there is a diminished supply of milk in cities in winter.

There is no vitamin D food fortification in Mongolia.

Before 1993, the national vitamin D supplementation program was based upon daily doses of 400 - 800 IU but the parent compliance was low and this regimen was rarely followed. A programme for preventive and treatment tossthery began in 1993. The program strategy was to distribute supplements (50 000 IU) to children from birth to 2 years of age once or twice during this period. Supplies to health centres were inconsistent. The 1997 survey showed that 66 % of children received vitamin D during the six months before survey.

The proposal for a study on rickets and vitamin D/calcium deficiencies, and on ways of dealing with the problem, prepared by the Mongolian Nutrition Centre has been approved and will be supported by WHO/WPRO in 2000. However, the adaptation of IMCI materials for the early implementation phase should be finalised by January 2000 when the results of this study will not yet be available. The results of this study, and of possible other studies concerning rickets, can be incorporated into IMCI guidelines during the review of early implementation phase which will be conducted before the expansion phase.

**Suggested Guidelines**

All children under 2 years of age will be examined for the presence of craniotabes, ribs beading, hypotonus and excessive perspiration. The presence of at least one of the signs craniotabes, ribs beading AND at least one of the signs hypotonus, excessive perspiration indicates “RICKETS” (yellow row) requiring treatment. The absence of any of these signs indicates “NO RICKETS” (green row) and requires preventive measures.

“Rickets”, according to Mongolian classification means “active rickets”. If the rickets is not active the expression “rickets sequelae” is used, therefore classification “active rickets” is not considered appropriate.

Treatment of rickets will be the daily administration of 3 drops of vitamin D, spirit solution (4000 I.U./drop, i.e. 12 000 I.U. daily, 360 000 I.U. per month) for 30 days and an advise to mothers to expose the child to sun, if possible.

Prevention of rickets will be the daily administration of vitamin D, water solution (500 I.U./drop), starting from the age of 1 month in term newborns and 14 days in pre-term newborns up till the age of 2 years. An alternative for children 2 months up to 2 years old will be a monthly administration (except for 3 summer months) of 50 000 I.U. vitamin D capsules. Sun exposure will be also recommended.

**Dietary measures aimed at the improvement of vitamin D and calcium intake will be included in feeding recommendations.**
Annex 3

Follow up visit will be scheduled after 30 days. The child will be reassessed for signs of rickets - if they will have disappeared (hypotonus and/or excessive sweating) the administration of treatment doses will be changed to prevention doses. If they will not have disappeared, the treatment doses will be continued for another 30 days.

Rickets management guidelines will be included as a section under a dotted line at the bottom of the below the “LOOK” column under "THEN CHECK FOR MALNURITON AND ANAEMIA": “If the child is less than 2 years old, also ask, look and feel for “...

Rickets prevention schedule for the “Young infant 1 week up to 2 months” will be included next to the immunization box.

Technical background

Signs and classification

IMCI guidelines require:

(a) a minimal number of clinical signs and symptoms to effectively classify and treat the child,

(b) selected signs should be those that health workers can learn in a relatively brief period of time and then use reliably and

(c) safe and effective guidelines need balancing sensitivity, specificity and positive predictive value of the signs and symptoms.

Data on the sensitivity, specificity and positive predictive value of clinical rickets signs are not available at present in Mongolia. Therefore, based on the extensive clinical experience of Mongolian clinicians, available literature overview and discussions with resource persons, four signs have been selected for the classification of active rickets in children under 2 years of age: craniotabes, ribs beading, excessive sweating and hypotonus of muscles.

These signs were divided into two groups:

(1) Craniotabes and ribs beading are considered to be the most constant signs of rickets but do not differentiate well between active a non-active rickets.

(2) Excessive perspiration and hypotonus are considered to be signs of active rickets, although their specificity is considered to be lower than that of the bone changes.

The child classified as rickets (active) should have at least one sign from each group.

A potential low sensitivity of signs is acceptable, as rickets is not in itself a fatal disease, and preventive measures will be recommended for all children under 2 years of age. Therefore even the status of those with unidentified active rickets will improve, albeit more slowly.
A potential low specificity of signs that would result in an over-treatment is also acceptable. Considering the situation in the country, the vitamin D status of the majority of children is presumably low and the treatment dose per month remains within the range of single doses recommended for prevention of rickets in some countries, therefore an over-treatment is not expected to have harmful effects.

Prevention

Considering the extent of the problem, preventive interventions are the major issue. General prevention of rickets is beyond the scope of IMCI clinical management guidelines that are designed for sick children seeking medical assistance at primary health care level. IMCI task force should therefore co-ordinate with responsible authorities and explore the possibility of establishing functional rickets prevention programme according to the national policy in the areas of IMCI early implementation. IMCI guidelines are meant to support preventive measures - missed opportunities for vitamin D supplementation, recommend sun exposure, give feeding recommendations.

Daily administration of oral vitamin D supplements is the usual strategy used in a number of countries for the prevention of rickets. The dose 500 I.U. (content of 1 drop of vitamin D water solution) recommended in Mongolia is not substantially different from 400 I.U. which is the dose most widely recommended and used (1, 3, 11, 20, 22, 24, 25, 28) even for premature infants (24,26).

The role of family physicians in new health care system in Mongolia includes monthly visits of all children less than 1 year of age and several visits of children between 1 and 2 years of age. These visits will serve also for the supervision of vitamin D administration. This should improve the previously reported low compliance of mothers with the daily administration of vitamin D.

An alternative will be the administration of 50 000 I.U. capsules once a month, with the exception of 3 summer months, to children that are unsuitable for daily vitamin D supplementation.

A single large or intermittent dose prevention strategy is also recommended by some experts, used in a number of countries and evaluated in studies (4, 7, 12, 18, 21, 22, 35). The intervals between the doses and the doses differ from every 3 - 6 months to once before winter, and from 100 000 to 600 000 I.U. per dose. The doses calculated per month range from 33 000 to 150 000 I.U.

Pietrek et al. (23) found that a single dose of 300,000 IU of vitamin D assures a sufficient 25-OH-D concentration in serum for as many as 190 days.

Elevated serum concentrations of vitamin D metabolites after the administration of large doses of vitamin D were described in several studies (7, 12, 18, 23), therefore it was suggested that high intermittent oral doses of vitamin D give an effective protection against rickets but at the risk of hypervitaminosis D in some healthy infants.
Annex 3

The 50 000 I.U. per month dose suggested in Mongolia, is nearer the lower range of the single/intermittent dose therapy used elsewhere, and monthly administration, in comparison with larger doses given less frequently, may be advantageous as well, considering the possible impact of large doses of vitamin D on metabolism.

Sun exposure, which is an acceptable traditional practice in Mongolia, is one of the preventive measures. However due to the cold climate, the northern latitude which limits exposure to UV-B rays during the winter months, and traditional practice of swaddling of infants it is not considered as sufficient for the prevention of rickets throughout the year.

The community component of IMCI plans to further support rickets prevention by organizing “summer camps” with the cooperation of the local health authorities. This means gathering of all children under two (with their mothers) in a given community every day for several morning hours during two summer months at a selected place. Sunbathing will be organized at these gatherings and children who are not exclusively breastfed will receive milk and milk products. This should improve vitamin D status of the children as well as their calcium intake, which according to some reports, is low. These gatherings may also serve as breastfeeding peer support groups, exchange of other child rearing experience and for health education.

Treatment

The suggested daily treatment dose of vitamin D in Mongolia (12 000 I.U. for 30 days, i.e. total of 360 000 I.U.) is higher than the doses found to be recommended in the literature, which vary from 1000 I.U (plus 1000 – 1500 mg Ca) for 10 weeks to 9 600 I.U. for 18 days (10, 18, 20).

However, large single or repeated doses of vitamin D ranging from 100 000 I.U. per week for one month to a single dose of 600 000 I.U. are also recommended and used without significant adverse effects (3, 6, 10, 16, 21, 24, 30, 32) therefore the suggested dose remains within the range of doses used elsewhere.

Follow up

Follow up visit will be scheduled after 30 days. The child will be reassessed for signs of rickets.

It is expected that the signs hypotonus and/or excessive sweating signs will resolve within one month of treatment. Therefore, although it is expected that the bone sign/s will stay, the child will not be further classified as “rickets” (active). The administration of treatment doses will be then changed to preventive doses.

Should the signs “hypotonus and/or excessive perspiration not disappear after one month of treatment, the treatment doses will be continued for another 30 days.
SUGGESTED IMCI GUIDELINES FOR RICKETS

THEN CHECK FOR MALNUTRITION, ANAEMIA AND RICKETS

Under dotted line of the "Look and feel" part

If the child is less than 2 years of age also ask, look and feel:

- ask the mother if the child is sweating excessively (this may be also looked for when the child is breastfeeding)
- feel for the occipital bones: are they soft?
- look and feel at ribs where they connect to the breastbone: are they thickened (beaded)?
- feel for the muscle tonus: is it low?

Classify rickets:

| * soft occipital bones OR * ribs beading AND * low muscle tonus OR * excessive sweating | RICKETS | * Give treatment doses of vitamin D for 30 days * Take child out to sun, if possible (1) * Follow up in 30 days |
| If there is not at least one sign from each group | NO RICKETS | * Give preventive doses of vitamin D up to 2 years of age * Take child out to sun, if possible |

(1) It will be explained in the module that the mother should take the child out to sun for at least one hour but even shorter period is acceptable.

Drug chart:

Treatment: Give 3 drops of vitamin D spirit solution daily for 30 days (1 drop = 4000 I.U.)

Prevention: Give 1 drop of vitamin D water solution daily (1 drop = 500 I.U.) or give 1 capsule (50 000 I.U.) once a month except for summer months (June, July, August) till the age of 2 years
Annex 3

Follow-up:
After 30 days:

Check whether the child received treatment doses of vitamin D, praise the mother (???)

Reassess the child for signs of rickets

- If the child is classified as “NO RICKETS” give prevention doses of vitamin D.

- If the child is classified as “RICKETS” continue the treatment for another 30 days.

Young infant: Next to the immunization box
Prevention of rickets: Give 1 drop of vitamin D water solution daily (1 drop = 500 I.U.)
premature infants: start at the age of 14 days
mature infants: start at the age of 1 month
REFERENCES FOR THE VITAMIN D DEFICIENCY GUIDELINES

5. Fischer, P.R.: Personal communication.
6. Fraser, D.: Personal communication.
Annex 3

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Drugs</th>
<th>Form/s available</th>
<th>On essential drug list?</th>
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<td>Benzathine penicillin</td>
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</table>
THE 12 KEY FAMILY PRACTICES

1. Breastfeed infants exclusively for at least four months, and, if possible, up to six months;
2. Starting at about six months of age, feed children freshly prepared energy and nutrient-rich complementary foods, while continuing to breastfeed up to two years or longer;
3. Ensure that children receive adequate amounts of micronutrients (vitamin A, iodine and iron, in particular), either in their diet or through supplementation;
4. Dispose of feces, including children's feces safely; and wash hands after defecation, before preparing meals and before feeding children;
5. Take children as scheduled to complete a full course of immunizations (BCG, DPT, OPV and measles) before their first birthday;
6. Protect children in malaria endemic area, by ensuring that they sleep under insecticide-treated bed-nets;
7. Promote mental and social development by responding to a child's needs for care, and through talking, playing and providing a stimulating environment;
8. Continue to feed and offer more fluids, including breast milk, to children when they are sick;
9. Give children appropriate treatment for infections;
10. Recognize when sick children need treatment outside the home and seek care from appropriate providers;
11. Follow the health worker's advice about treatment, follow up and referral;
12. Ensure that every pregnant woman has adequate antenatal care.