

THE SUCCESSES AND CHALLENGES OF THE IMCI TRAINING COURSE IN LAO PDR

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Abstract. The purpose of this article is to explore whether the style and content of the IMCI algorithm and delivery of the training course match the needs and capacities of the Lao health workers. Unlike other IMCI studies that rely on external indicators, this study uses an open-ended qualitative approach to focus on the perspectives of the trainees through observation and trainee interviews. The findings showed that IMCI is a practical tool for health workers, and the interactive course is an effective way to teach it. Health workers responded that learning the algorithm was challenging due to the novel format and guidelines, but easy due to its clarity and straightforwardness. The main problems concerned the adaptability of guidelines and shortage of time. Incorporating in-depth clinical explanations and inviting facilitators with medical knowledge and experience using IMCI may be key to resolving such issues.

INTRODUCTION

The clinical component of Integrated Management of Childhood Illnesses (IMCI), a child health strategy developed by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), is a comprehensive approach to facility-based services (WHO, 1997). Clinical IMCI trains healthcare staff at first-level facilities in the classification and treatment of concurrent diseases as well as the promotion of nutrition and immunization. Studies on various outcome indicators have highlighted its potential in improving child health: the validity of diagnostic criteria (Weber *et al*, 2002; Factor *et al*, 2003; Rimon *et al*, 2003; Sahin *et al*, 2003), appropriateness of treatment guidelines (Horwood *et al*, 2003; Simoes *et al*, 2003), and post-training improvements in the clinical skills of trained

health workers (Luby *et al*, 2002; Anand *et al*, 2004; Arifeen *et al*, 2004; Guows *et al*, 2004; Tanzania IMCI, 2004). Recently, the WHO launched a multi-country evaluation of IMCI to measure the health and economic impacts of IMCI (Bryce *et al*, 2004).

Such outcome research primarily rely on external, pre-set indicators that examine how well the standardized procedures are followed. While these studies are feasibly implemented on a large scale, they only provide a partial measure of the quality of care. This is especially problematic when the quality of the services remains low even after IMCI has been introduced. While the reported performances of trained health workers are in general better than that of untrained health workers, many of the improvements are not seen consistently across health workers, indicators or facilities (Luby *et al*, 2002; Arifeen *et al*, 2004; Guows *et al*, 2004; Tanzania IMCI, 2004). IMCI has not brought about the expected impact on infant survival: infant mortality did not significantly change in India (Anand *et al*, 2004), and has reportedly risen in Uganda (Musinguzi, 2001).

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To achieve better outcomes with IMCI, it is important to first reveal the factors at the levels of the health system, health worker, patient, facility, and community that explain why certain health workers choose not to follow procedures in certain situations. A limitation of previous studies was that they were disengaged from the views of the health workers who use IMCI.

We therefore designed our study as an open-ended examination of the perspectives of the health workers, facilities, and patients. We conducted our study in the Lao People's Democratic Republic (PDR), which adopted the IMCI strategy in 1999 and was implementing one of its first full-scale clinical IMCI training courses at the time of the study (2003-2004). As a first installment, this paper focuses on the health workers who attended the clinical IMCI training course, and examine whether the style and content of the IMCI algorithm and the delivery of the course match the health workers' backgrounds, needs, and expectations. We paid special attention to the appropriateness of IMCI in the sociocultural context of Lao PDR.

MATERIALS AND METHODS

IMCI in Lao PDR

Lao PDR is a country of 5.3 million that ranks among the least developed in the world, with a per capita GNI of US\$310 (World Bank, 2003). In 2001, the infant mortality rate was 82.2 and under-five mortality was 106.9 per 1,000 live births. The five diseases covered by IMCI – diarrhea, pneumonia, malaria, malnutrition, and measles – accounted for 87% of total child deaths (Ministry of Health, 2001). The IMCI materials were adapted by the Lao IMCI-Working Group, under the Ministry of Health, to reflect the health situation in the Lao PDR, translated into the Lao language, and tested in three pilot districts. The content and style of the Lao version remain largely faithful

to the original IMCI protocol (WHO and UNICEF, 1997). Notable changes include the division of malaria classification into three risk zones, and the addition of regular mebendazole treatment. Eleven out of 18 provinces have implemented IMCI at the provincial, district, and health center levels, and training of Medical University faculty began in 2005 as the first step towards developing the pre-service curriculum for medical students.

This study examines three clinical IMCI training courses held November 3-14, 2003, November 17-29, 2003, and June 14-25, 2004 at the Maternal and Child Health Hospital in Vientiane City. The participants were medical doctors, medical assistants, and nurses from provincial hospitals, district hospitals and health centers. The first course invited 18 participants from Oudomxay Province, and the second and third courses each invited 24 participants from Vientiane Province. The facilitators were Lao doctors from Vientiane City and Vientiane Province. The total cost for one training course was approximately US\$5,000.

Data collection and analysis

Data were collected from three sources: training course observations and participation by the first author (ST), participant interviews and supplementary questionnaires, and informal interviews with key informants.

Detailed observations were taken during all three courses and at the facilitator meetings held at the end of each day. In particular, the participants were observed for their reception of the course material, performance during exercises and discussions, and remarks indicating changes in their understanding of clinical case management. Facilitators were observed for the concepts they emphasized in teaching, explanations to clarify concepts, and ways they addressed participants' concerns. During the second training course, the first author joined as a mock participant, and

completed reading materials and exercises in English textbooks, discussed with other trainees, and received individual feedback from the course director.

During the third training course, semi-structured interviews were conducted with 12 trainees in the last two days of the training course. A purposive sampling strategy was used in which the facilitators were asked to select four participants from each of the three groups such that a wide range of responses would be represented. The topic guide for the interview was composed of questions regarding the participants' perception of the clinical content and training course style, level of satisfaction and confidence, challenges encountered, and expected constraints in implementation. Probing questions were used to follow up when appropriate. Informed consent was obtained before each interview, in which participants received a description of the study and were reminded that they were free to decline at any time. In addition, a self-administered questionnaire containing the interview topics was given to the 12 trainees who were not interviewed; these results confirmed the interviewees represented the views of participants as a whole.

Finally, informal interviews with trainees, facilitators, and the course director were collected as field notes during all three training courses. The first author participated in planning and review meetings that involved representatives from various donor agencies to understand the priorities and administrative structure behind Lao IMCI.

Analysis was done by iterative and inductive theme generation. Data were thematically coded, then sorted into emerging categories until four core themes were generated. Data triangulation of sources and methods was used to ensure the reliability of the results (Denzin, 1970). As one goal of the study was to generate recommendations to improve the training courses, analysis was done as fieldwork oc-

curred and the results were discussed with the course director throughout the training course.

Approval of this study was granted by the IMCI Working Group of the Lao MOH and the Japan International Cooperation Agency (JICA) Kidsmile project.

RESULTS

There were four core themes that emerged from the analysis. The tables accompanying each theme present evidence from the data that were used to generate each theme.

Engaging training course style (Table 1)

Many interviewees applauded the effectiveness of the interactive training course style in learning the material compared to the one-way lecture-format education common in Lao PDR (Sub-theme a). They noted that the one-on-one feedback sessions with the facilitator were particularly helpful (theme b). At the feedback sessions, the participants were responsible for explaining verbally, showing the markings on the recording sheet and referring back to the chart booklet. This provides valuable practice to get accustomed to the format as well as recognize points they did not understand.

In addition, the participants noted the positive, enjoyable environment (theme c) in which the facilitators taught communication techniques by example, approaching the participants with friendliness and warmth. The facilitators built the trainees' self-confidence by praising what was done well before suggesting improvements and making encouraging remarks throughout. The participants were encouraged to ask questions and make comments at any time and praised when they did. Further, by the end of the 11-day course, the groups had built a team spirit, and actively engaged in discussion and helped each other in solving exercises. Interviewees reported the training course provided a valuable opportunity to learn from other trainees.

Table 1
Engaging training course style.

Themes	Evidence
a) Overall	"The teaching method is very good. I expected a lecture-style training course, but the actual training was different." (I)
b) Feed-back sessions	"We have many facilitators and opportunities for one-on-one feedback, which makes the concepts clear and easy to understand." (I) Course director to facilitator at a facilitator meeting: "Even if the participant's answer is correct, have them show you the steps. Have them say the same things over and over to make sure they will remember." (O)
c) Positive environment	"The facilitators are friendly and encouraging in addition to being knowledgeable." (I)
Facilitators as role models	Course director to participants: "you should explain to the mother as the facilitators explain to the participants." (O) Facilitator complements the participants: "all doctors are excellent, and are ready to move to the next lesson." (O) Facilitator to another facilitator, discussing a participant who speaks too softly: "We shouldn't say, 'you speak too soft,' (because it will embarrass the participant). We should tell the class, 'Doctors should speak loudly.'" (O)"
Learning from each other	Facilitator invites a struggling student to solve an exercise on the board, and asks other participants to help her. (O) "The doctors came from different backgrounds and had different knowledge and experiences. We discussed about cases we saw back home, and how we solved problems at our facilities." (I)

(I) = interview, (O) = observation.

Improving communication skills (Table 2)

Both trainees and facilitators reported learning communication techniques (Sub-theme a) was equal to if not more valuable than learning the IMCI case management process. The trainees were first taught to recognize that establishing a good two-way communication with the caretaker was critical for getting the information needed for assessment, and then instructing the caretaker on home care and follow-up. The trainees were taught to be polite and friendly by initiating casual conversation to make the caretaker

comfortable, or sympathizing with the mother's situation and thank her for bringing the child (Sub-theme b). While the facilitators instructed the trainees in greeting the caretakers, this appeared to be challenging because many felt shy. Another point that was emphasized was praising the caretaker for her knowledge and avoiding comments that could cause her to lose confidence or feel embarrassed, even if she is doing something incorrectly. The health worker needed to complement her for what she was doing correctly before giving counseling.

Table 2
Improving communication with the caretaker.

Sub-theme	Evidence
a) Concept	"I like the training course because it taught me specific skills to improve communication with the caretaker." (I) "Since it is difficult to communicate directly with the child, the physician must observe carefully and communicate effectively with the mother to get information on the child's problems." (I)
b) Friendly and polite attitude	Facilitator to participants: "The mother will be afraid of you if you are not (polite) like that." (O)
Greeting	Every day, the course director reminds the participants to say "hello" and "thank you". (O)
Complement the caretaker	Facilitator to participants: "Do not say anything that makes the caretaker feel bad. If she is giving the baby sugar water, complement her first (for feeding the baby) before correcting." (O)
c) Overcoming socioeconomic/ cultural barriers	Facilitator to participants: "If the mother does not understand morning and evening, tell her, before and after working in the field." (O)
Harmful practices	Participant: "What should be done if the mother believes that the child should not eat anything but boiled rice (during illness)?" Facilitator: "You should explain to her that the rice soup cannot help the child get better because the child needs nutrients." (O)

(I) = interview, (O) = observation.

In the past, many trainees had encountered problems communicating with patients from different socioeconomic and cultural backgrounds. They were eager to engage in discussion and get advice regarding this (Sub-theme c). Popular topics were how to counsel ethnic people who do not speak the national (lowland) Lao language, or caretakers who believed in feeding practices that were harmful to a child's health.

Acquiring the IMCI case management procedure (Table 3)

All interviewees acknowledged that the primary purpose of the training was to learn the procedure for assessing, classifying and treating major child diseases in one consultation (Sub-theme a). Facilitators reported that

some health workers were quick to learn, while those older and more experienced tended to require more time (Sub-theme b). When trainees in the third training course were asked to rate their level of confidence in using IMCI, the average was 77.5% (range 50-95); when asked why, the most frequent response was that it would take practice to get accustomed to using IMCI. All four health workers from health centers in the third training course stated that IMCI was appropriate for their level of practice, although one commented that it may be difficult for some staff.

Interviews revealed the opposing yet inextricably linked experiences of learning IMCI: it is challenging because they are required to master a process that is entirely new to them

Table 3
Acquiring the IMCI procedure.

Sub-themes	Evidence
a) Concept	"IMCI taught me not only to focus on the main symptom, but on all possible illnesses. We used to learn how to assess individual diseases." (I)
b) Using IMCI	"Using IMCI is quite difficult, but at the same time, quite easy" (I) Facilitator at a facilitator meeting reports that some participants are quick to learn, and some are struggling. (O) "It will be challenging to use in the beginning. But I will be able to do it perfectly once I review the lessons at home and get practice." (I)
c) Format	"IMCI is very detailed, and can be followed step-by-step."
Recording sheet	Participants forget where to tick and where to circle on the recording sheet (O) Participant misclassifies because she did not follow the classification boxes from most severe to mild (O) "It is challenging to always follow the chart booklet." (I)
Chart booklet	"Everything is in the chart booklet. Before, I needed to refer to several books." (I)
d) Guideline	Facilitator at a facilitator meeting: "Some participants are confusing the IMCI guidelines with what they used to do at home." (O)
Assessment and classification	"Classification of pneumonia is made easier by counting breaths and looking for stridor." (I) Participants express dissatisfaction using breathing count. (O) Participants ask the significance of malaria risk regions and how they are determined. They ask why there are no risk regions for measles. (O) Classification of diarrhea is confused because there are three categories to be assessed: dehydration, dysentery, and persistence. (O)
Treatment	"Referral guidelines for severe cases and pre-referral treatment were useful." (I) A participant says that she wants to treat all the symptoms before referral. (O)

(I) = interview, (O) = observation.

in a very short period of time, yet it is easy because IMCI is simpler and clearer than previous clinical methods. To discuss the challenges, first, the trainees found the checklist and flowchart format awkward because it presented a procedural logic that was not intuitive

to them (Sub-theme c). Common mistakes were that trainees would skip assessment of diseases for which there was no prominent symptom, or not follow the classification boxes in order. At first, trainees appeared to find reading off the recording sheet and chart

Table 4
Adapting IMCI to facility and patient.

Sub-themes	Evidence
a) Accessing and classifying	
Time-consuming	Participants express concern that the form is too long and the IMCI process takes too long. The facilitator answers: "it won't matter as much when you are faster." (O)
Other assessment tools	Course director to participants: "In real work, we can draw blood (to diagnose for malaria) or use the stethoscope, do whatever is necessary and available." (O)
Facilitator response	Course director to participants: "The IMCI guidelines are important to know, but they can be adapted. It is OK to modify the form to fit your facilities." (O)
b) Counseling the caretaker	
Time-consuming	Participant during discussion: "We have many patients, and demonstrating and explaining takes too much time. We may need another person to be responsible for counseling." (O)"
Unnecessary	Participant to facilitator: "It isn't necessary to explain (so thoroughly) to parents who have a good educational background. If we ask the mothers to show us how to give antibiotics, we would be wasting valuable medicines." (O)
Facilitator response	Facilitator to participants: "The entire process (of explaining) is important because the doctor can make sure that the mother understands." (O) Facilitator to participants: "If the doctor makes it clear the first time she explains, it is not necessary to do it again. IMCI gives guidelines for clarity, but the decision is up to the doctor." (O)

(I) = interview, (O) = observation.

booklet tedious, and were occasionally admonished for trying to work from memory. Hence, the facilitators allotted a significant portion of the training course to get accustomed to using these tools correctly through repetition. Second, the clinical guideline defined in IMCI was different from those that trainees had used before (Sub-theme d). Many were not aware that the guideline was designed to utilize a combination of signs that are measurable at first-level facilities that gave reasonable sensitivity and specificity, and could be mastered by health workers in two weeks. The trainees responded with skepticism towards assessment signs such as ma-

laria risk regions and breathing count in place of blood testing and stethoscope, and inquired about the meaning of those signs. Finally, the concept of urgent referral and pre-referral treatment caused dissatisfaction, and one doctor commented that she wished to treat all symptoms, not just the urgent ones, before referring.

On the other hand, the interviewees stated that IMCI was easy to use because they could conduct the entire consultation by following the instructions step by step. The assessment of general danger signs and other symptoms to classify severe disease and need for referral was noted to be particularly use-

ful. Many mentioned that having a compact reference containing major illnesses for children was convenient compared to having the information spread in several books.

Adapting IMCI to the facility and patient (Table 4)

There were often questions regarding how rigorous IMCI had to be followed and how open it was to adaptation. Concerning the assessment process, trainees asked whether they could skip some sections because examining all categories took too long. In response, one facilitator asserted the importance of assessing all symptoms, and said the process would become faster with practice. On the other hand, in regards to the use of additional tools, such as blood testing, the course director responded that the guidelines were for reference and could be adapted to suit the health facility.

Another concern was that IMCI-style counseling, which involves explanation, demonstration, and questions to check understanding, takes more time than they can afford; others said that it was redundant for the population they were serving (Sub-theme b). The facilitators responded that the process is important to make sure the caretaker understands, but if the health worker decides that she has made it clear the first time and the caretaker seems to understand, it may not be necessary to explain again.

DISCUSSION

This study highlights the success of qualitative methods in revealing the concerns of trainees regarding IMCI and the challenges they faced acquiring it during the training course. These help generate practical solutions that may improve the training course and prevent poor performance at the facility.

Overall, the clinical IMCI training course was positively endorsed by the health workers, who said it taught useful, practical skills,

and expected it to bring positive changes to their facilities. While studies have shown that improved knowledge is not always a sufficient pre-condition for improving case management practices (Brugha and Zwi, 1998), the enthusiasm and positive image delivered with the IMCI algorithm can become an important incentive for the participants to practice IMCI at their facilities. Further, effective communication may bring other benefits. Detailed counseling can allow early detection of incorrect feeding in rural and ethnic populations, and the friendly attitude may encourage those in urban areas to return to public hospitals, which have become a second choice to private providers because of poor staff attitudes and otherwise perceived low quality (Paphassarang *et al*, 2002).

The straightforward IMCI procedure allows health workers to acquire it in a short period and practice it correctly without extensive medical knowledge or tools. At the same time, the minimal guidelines failed to inform the extent to which the guidelines can be adjusted to suit facility capacity and patient needs, and also account for the user's clinical judgment.

One recurrent concern was time: the IMCI procedures took more time than health workers were accustomed to, or were comfortable spending. Although health workers are expected to become more efficient with use, there is the danger that they will skip critical IMCI procedures to save time. A study in Niger reported the nutrition section of the recording sheet was often not completed (Tawfik *et al*, 2001) and a facility-based evaluation in Lao PDR showed that over three-fourths of the recording sheets were incomplete, mostly in the assessment of the last four sections (vitamin A, mebendazole, immunization, and feeding) (Takada, unpublished data). Those health workers reported that they do not have the opportunity to refine their techniques because the patient load is extremely low, and are con-

cerned of the caretaker losing patience or other patients waiting.

Because clinical IMCI is an in-service curriculum, its implementers may consider incorporating more in-depth clinical explanations into the guidelines would allow trainees to make more informed decisions on how to adjust the procedure. While it is difficult to balance between teaching too much and too little information, in this case, the trainees would benefit from integrating IMCI into the larger body of knowledge built from prior guidelines, training courses, and clinical experience. Because the facilitators are the main source for practical advice in using and adapting IMCI, one solution may be to invite facilitators with extensive medical knowledge as well as experience using IMCI at the health facility who can effectively address such concerns.

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