By the book: improving paediatric hospital care in Lao PDR

Hospital care plays an essential role in reducing child deaths and disability; it is estimated that high quality care could reduce child deaths by up to 40% in less developed countries, where health staff often have limited access to appropriate resources and proper training. (Althabe, Bergel et al. 2008; Li, Kelly et al. 2012) To improve the quality of care for children in Lao PDR, paediatricians worked with the Centre for International Child Health (CICH), University of Melbourne and the World Health Organization (WHO) to translate the WHO Pocket Book of Hospital Care for Children: Guidelines for the Management of Common Illnesses with Limited Resources and train staff to use the book. It is the first comprehensive Lao language resource for paediatric hospital care.

The challenge

In Lao PDR, medical and nursing training is offered through one institution, the University of Health Sciences in Vientiane. The Ministry of Health (MoH) estimates that the current number of medical students is three times that needed to ensure adequate access to healthcare. Inflated student numbers and limited teaching capacity mean that ensuring high quality medical training is a challenge. While MoH is addressing these issues, tools and resources are needed to improve the quality of care at all levels of the health system. Amy Gray, CICH, says 'across all levels of care there was a lack of standards for clinical practice, under-scored by a virtual absence of accessible, local language written resources for paediatric care.'

Lao PDR has existing national standard treatment guidelines for hospital care, but these are not specific to children and their availability is limited. In the absence of clinical standards or updated guidelines, case management was instead strongly influenced by senior clinical leaders and the expectations of patients and their families. (Rowe, Savigny et al. 2005)

Improving quality of care

The WHO Pocket Book, developed by WHO and child health experts for health centres and district hospitals in resource-limited settings, is a set of clinical guidelines for common conditions including pneumonia, diarrhoea and neonatal conditions. The Centre for International Child Health is part of the International Child Health Review Collaboration that compiles the evidence behind the guidelines and centre staff have contributed to the development of the WHO Pocket Book and assisted with dissemination and the implementation of the WHO Pocket Book in Papua New Guinea. The English language version of the book had been available to a limited number of clinicians in Lao PDR since 2006.

While the WHO Pocket Book is used in two-thirds of countries with high child deaths, use varies across and within these countries. (Li, Kelly et al. 2012) Common barriers to the use of clinical guidelines and changing health workers' behaviour are well recognised. For example, evidence suggests that distributing written guidelines alone is often ineffective, while supervision and audit with feedback is generally effective. (Rowe, Savigny et al. 2005; Althabe, Bergel et al. 2008) This intervention acknowledged common barriers and adopted multiple strategies to improve quality of care.
A network of paediatricians: a resource for child health

Consensus among the small, but important, network of Lao paediatricians contributed to the success of the intervention. A network for child health in Lao PDR is made up of 60 paediatricians working in every province, with 20 paediatric residents in training at any one time. Lao paediatricians, MoH Lao PDR, the University of Health Sciences, WHO, and CICH were involved in initial discussions on the potential role of the WHO *Pocket Book* and plans for implementation and training activities. The strength of this type of engagement is that the work was more likely to be seen as a true cooperation between colleagues, rather than an intervention imposed by an external organisation.

**Translation**

The translation of the *Pocket Book* and its accompanying training materials into Lao language was coordinated by a senior Lao paediatrician and undertaken by a team of ten Lao paediatricians and other specialists, who had sufficient English language competency for translating medical text. Translation began in December 2009 and was completed with three rounds of editing by June 2010.

Many of the words in the guidelines do not have an agreed Lao translation. This had the potential to limit understanding of the guidelines for some health workers who did not speak English or French. However, evaluations suggest that the Lao translation of the WHO *Pocket Book* was easy to read and understand, with the exception of one provincial hospital where staff felt nurses did not understand the English terms that remained in the text.

Through the translation, child health workers saw the value of the WHO *Pocket Book*, one paediatrician said: ‘I now realise this book has a lot of useful information, I did not understand before.’

**Distribution of the WHO Pocket Book**

During the first year 2000 copies of the Lao translation of the WHO *Pocket Book* were distributed to paediatricians, nurses and health workers. Previously, if hospitals owned any medical textbooks in Thai, English or French language, they were kept under lock and key. A key aim for distribution of the WHO *Pocket Book* is to put a copy in the hand of every medical staff who needed it in their work.

**Training**

The need for an expanded role for the WHO *Pocket Book* in Lao PDR was described during all focus groups and interviews. The first priority for Lao doctors was to expand the training to other health workers, particularly those in provincial and district hospitals. (Amy Gray)

A core group of six Lao paediatricians trained 63 paediatricians in initial workshops during December 2010 and January 2011. This group were responsible for training staff who care for children in three provincial and district hospitals. These workshops were adapted from standard WHO *Pocket Book* training and covered the guidelines and how to use the WHO *Pocket Book* in clinical settings. Training was also adapted to include evidence-based sessions on appropriate drug use and rational antibiotic prescription, safe intravenous fluid use and lumbar puncture for diagnosis of meningitis. In part, information for these sessions was drawn from ETAT+ courses aimed at improving hospital care in Kenya. Since the initial workshops, an additional 400 child health workers have been trained. Each year, 300 medical students use the Lao translation of the WHO *Pocket Book* as a medical text.

**Audit and evaluation**

Hospital audits were conducted in partnership with a paediatrician from each hospital in August – September 2010 and repeated a year later. Paediatric residents examined the hospital records to see whether key steps in case management were performed for four conditions: diarrhoea, pneumonia, low birth-weight infants and febrile encephalopathy, including meningitis. These results were reported to staff during training workshops.

Photo courtesy of: Amy Gray, Centre for International Child Health
Results

Before the introduction of the WHO *Pocket Book*, hospital audits showed that children with pneumonia were prescribed the appropriate treatment for the severity of their illness in less than 50% of cases. Often staff could not specify how they had determined the severity of pneumonia. This is consistent with evidence from other less developed countries which suggests that signs of acute respiratory infections are more difficult to recognise than those of other major childhood diseases. (Seidel 2005) Only one in ten children admitted with diarrhoea received the recommended treatment. Additionally, intravenous (IV) fluid and antibiotics were usually overprescribed to children.

All staff trained to use the *Pocket Book*, from paediatricians to district hospital staff, expressed strong intent to use the guidelines in their clinical practice. More important though is clear evidence of change in practice. The most commonly reported changes in clinical practice after the training were improved antibiotic prescribing in line with WHO recommendations and reduced use of unnecessary intravenous (IV) fluid. There was significant improvement in the case management of pneumonia.

While there was also an improvement in the correct use of IV fluid for diarrhoea, changes in overall management of diarrhoea were less marked than pneumonia. Interviews suggested that the guidelines for diarrhoea were more difficult to follow and there was pressure from parents to prescribe IV fluids. This is consistent with other studies that suggest that patient expectations influence care in resource poor settings. (Seidel 2005)

However, Lao paediatricians also reported using the WHO *Pocket Book* itself to educate parents, by showing them how they assessed their children and the treatment that was recommended: ‘the mother and father don’t understand why they don’t get medicines [for treatment]. So I open this book and show.’ (Provincial hospital staff)

Perhaps most surprising though is the change reported in the culture of reading, one paediatrician says the *Pocket Book*: ‘encourages nurses, doctors and other people to read more... the people want to read more...because they understand. It’s easy to understand and easy to read.’

The next chapter for the *Pocket Book* in Lao PDR

Following the completion of the initial evaluation, the paediatricians themselves have taken ownership of future action. The annual Laos Paediatric Association conference will be held in February 2013 to decide how future editions will be updated and how training will continue.

The Lao Paediatric Association has emphasized the need for greater consistency in practice across the country, with the WHO *Pocket Book* setting the standard. A senior paediatrician says there is a ‘need to focus on one district hospital in each province – make them stronger – and they will be a good example for the others.’ The Laos Paediatric Association will support changes in clinical practice in district hospitals, particularly through feedback on practice and by advocating for the supply of essential equipment and medicines. ‘First we have to evaluate the district hospitals – what they have and what they need in the future – we must support the facilities, for example, [district hospitals must have essential] medical equipment as in the *Pocket Book*. In provincial hospitals the main problems reported with equipment were the cost of oxygen and a lack of equipment for administering oxygen appropriately for children, and work on the *Pocket Book* is occurring alongside a project to implement affordable oxygen systems.

Paediatricians will also work with the Centre for International Child Health, University of Melbourne on patient education materials, particularly focusing on encouraging recognition of symptoms and educating patients about the correct use of IV fluids and how to give oral rehydration solution (ORS). This will assist paediatricians to prescribe IV fluid and ORS according to WHO guidelines. Additionally, the use of the WHO *Pocket Book* will counter perceived poor service quality, which is acknowledged as a factor in low use of Lao public health facilities. (WHO 2012)

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<th>Timeline</th>
<th>2006</th>
<th>Original English version of the WHO <em>Pocket Book</em> available in Lao PDR</th>
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<td>2009</td>
<td>January 2008 – June 2009: Preliminary discussions about the potential role of the WHO <em>Pocket Book</em> in Lao PDR</td>
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<td>December 2009 – June 2010: Lao translation of the WHO <em>Pocket Book</em></td>
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<td>2010</td>
<td>April 2010: Consensus meeting for Lao translation of the WHO <em>Pocket Book</em></td>
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<td>August 2010 – September 2010: Hospital assessments in central hospitals are conducted</td>
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<td>October 2010 – January 2011: Hospital assessments are conducted in provincial and district hospitals</td>
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<td>December 2010 – January 2011: Training central and provincial paediatricians</td>
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<td>September – November 2011: Repeat hospital assessments</td>
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Notes
1. There are differences in paediatric staff numbers and capacity between hospitals at central, provincial and district level.
2. This group of paediatricians was endorsed by the Ministry of Health and WHO.
3. ETAT+ is a WHO course on Emergency Triage Assessment and Treatment.
4. In provincial and district hospitals where fewer staff were trained, there were more challenges reported understanding the book and how it should be used.
5. Interview

References

Key partners
Ministry of Health, Lao PDR
University of Health Sciences, Lao PDR
World Health Organization
International Child Health Review Collaboration

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Compass: Women’s and Children’s Health Knowledge Hub is a partnership between the Burnet Institute, Menzies School of Health Research and the Centre for International Child Health, University of Melbourne. The Knowledge Hubs for Health are an Australian Agency for International Development (AusAID) initiative that aims to build knowledge, evidence and expertise and inform health policy dialogue relevant to Asia and the Pacific.

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This research has been funded by AusAID. The views represented are not necessarily those of AusAID or the Australian Government.