

## Missing the essentials?

Children can be saved if they are more carefully examined



This brief is based on data collected in 2007 in all nine rural districts in Dodoma and Morogoro regions, Tanzania.

126 randomly selected health facilities were enrolled, including 11 hospitals, 25 health centers and 90 dispensaries. 80 of the facilities were owned by the government, 46 by voluntary agencies. 159 health workers were randomly selected for inclusion.

More than 3500 outpatient consultations were directly observed. Interviews were conducted with all health workers, all patients/caretakers, and with the in-charge of all facilities.

The research team is grateful to district officials and health workers in all the nine study districts, who participated in the study, discussed the results with the research team, and assisted in the interpretations.

Thousands of children die every year from diseases that are easy to diagnose and treat. A study from rural Tanzania shows that health workers usually don't do those investigations that are required to identify some of these deadly illnesses. The likely consequence is mismanagement and unnecessary deaths.

Under-five mortality has declined rapidly in Tanzania. The number of deaths per 1000 live births is down from 143 in 1996-2000 to 81 in 2006-2010. According to the Tanzania Demographic and Health Survey 2010, one out of 12 Tanzanian children born dies before their fifth birthday. This is more than 130,000 children every year.

Behind these figures are stories of avoidable death and sorrow for children and their families. Below, we tell one of these stories, about a four months old girl who died from severe dehydration, a condition that is easy to detect and simple to treat.

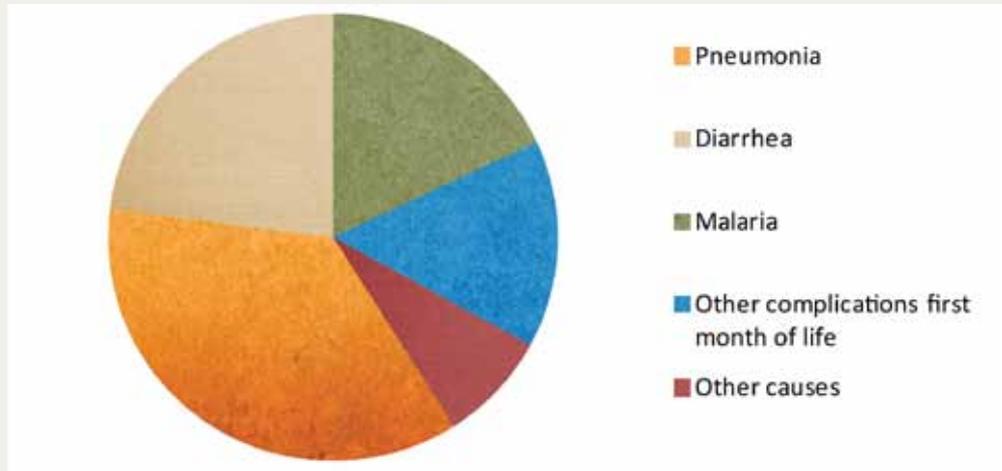
Worldwide, more than 40% of child deaths before the age of five are caused by pneumonia, diarrhea, or malaria. These illnesses are relatively straightforward to diagnose and treat. The same is true for most of the other complications that cause many child deaths during the first month of life (Figure 1).

Pneumonia, diarrhea and malaria are usually not life-threatening conditions. But proper diagnosis determined by careful examination of patients is nevertheless important to distinguish serious from less serious cases, and to ensure that less serious cases are managed in a way that prevents them from developing into more serious ones. It is therefore crucial that health workers possess the skills and make the efforts needed to make a proper diagnosis of these children.

### Weak adherence to clinical guidelines

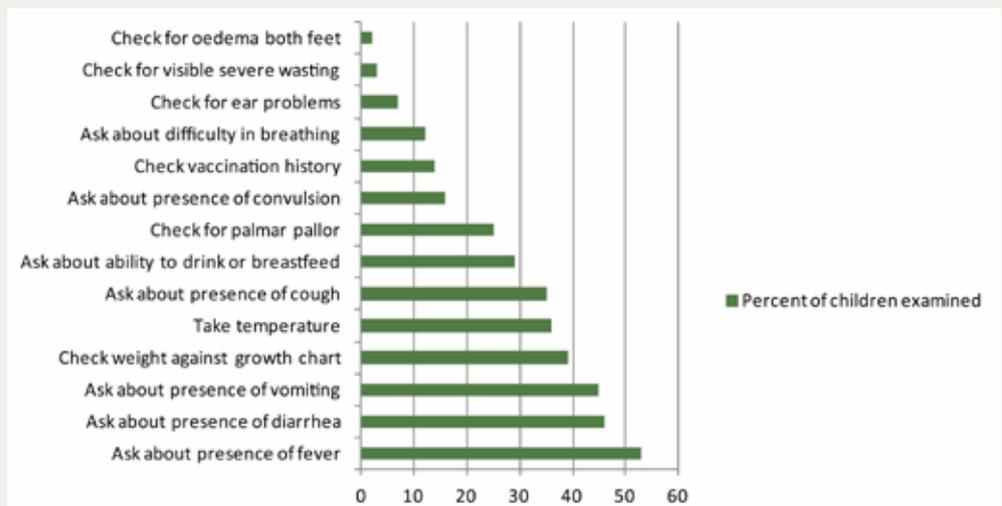
Health workers in Tanzania are supposed to follow the WHO guideline for Integrated Management of Childhood Illnesses (IMCI) in outpatient consultations with children less than five years of age. These guidelines are designed to make it easy to discover the most common causes of childhood illness and to identify appropriate treatment in poorly-resourced contexts.

Figure 1: Causes of child deaths, all countries.



Source: Black et al. (2010), The Lancet.

Figure 2: Percent of children examined with core IMCI assessment tasks.



Our study from rural Morogoro and Dodoma shows that the average health worker performs 25% of the core items required by the IMCI guidelines. This score is obtained while being observed by a peer in the consultation room. One may suspect that the normal level of adherence is even lower.

Figure 2 reports the share of children that were examined with each of the core IMCI assessment tasks. There is only a 53% probability that the doctor will ask the caretaker whether the child has fever (when this symptom is not mentioned by the caretaker). For all others signs and symptoms, the probability that the doctor would ask or check is less than 50%. Some IMCI procedures are hardly ever performed.

**Signs of serious illness not checked**

A trained clinician may be able to discover serious illness without performing every single

IMCI assessment task. However, there seems to be a systematic pattern that even some of the most important signs and symptoms of serious diseases are not assessed.

Most children attending an outpatient department present with fever. The level of fever is an important sign of the severity of the disease, but only 45 per cent of children with fever get their temperature measured (Figure 3).

Malaria is one likely cause of fever. To rule out cases of complicated malaria, which is more likely to cause death, the doctor should inquire about presence of convulsions and check for anemia (for example by checking for paleness of the palms). Very few doctors perform these tasks (20 per cent and 28 per cent, respectively) (Figure 3). However, many doctors said that it is not necessary to

ask about convulsions, because any caretaker with a convulsing child would immediately tell the doctor. While this may be true in most cases, one should nevertheless ask whether it is satisfactory that doctors work on this assumption.

Pneumonia is another potential killer disease that may present with fever. To check for this possibility, the doctor should simply ask about presence of cough, but this question is asked in less than 50% of the cases (Figure 3).

This suggests that signs of serious disease are systematically overlooked in patients with fever.

Most children presenting with cough or diarrhea are also not examined for some of the most important signs and symptoms of serious illness. To diagnose severe pneumonia in children with cough, the doctor should count the respiratory rate and check for chest wall in-drawing. Only 14 and 18 per cent of the children are examined for these symptoms.

Also, very few doctors auscultate the chest of a child with cough, even if most doctors have a stethoscope.

For children with diarrhea, it is vital to check whether they are dehydrated or not. The preferred method is to pinch the abdominal skin and assess whether the skin goes back more slowly than usual. Only one in four children with diarrhea is examined for signs of dehydration (Figure 5).

**More careful diagnosis can save lives**

The figures above suggest that children in rural Tanzania systematically are receiving health services below required and desired levels. The main problem is not that clinicians do not adhere 100 per cent to the IMCI guidelines, but that important signs of severity and potentially deadly conditions are missed out.

More careful examination of children can save lives. One tragic example encountered by our research team was a four months old baby who died from severe

“... signs of serious disease are systematically overlooked in patients with fever.”

Figure 3: Per cent of children with fever assessed for important signs of serious illness.

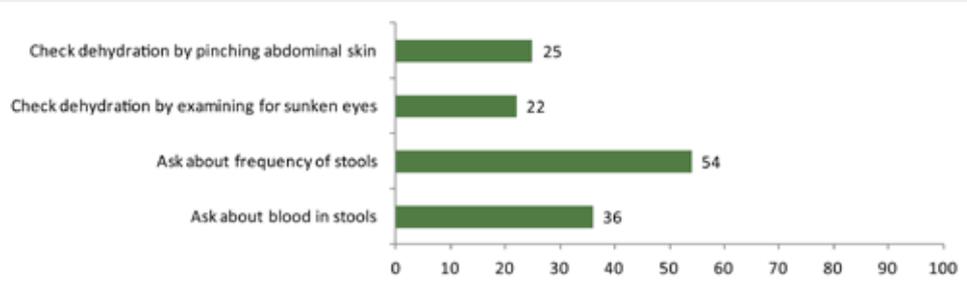


Figure 4: Per cent of children with cough checked for signs of serious illness

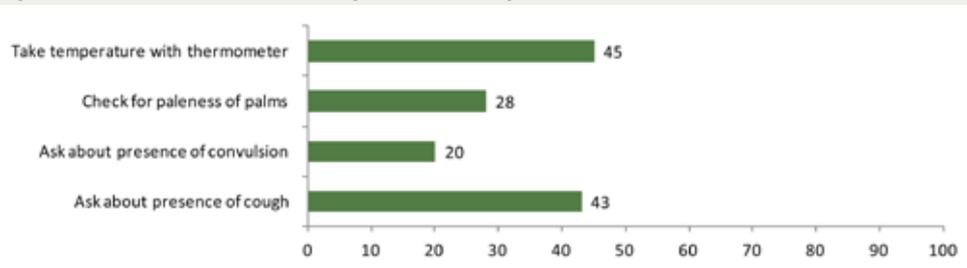
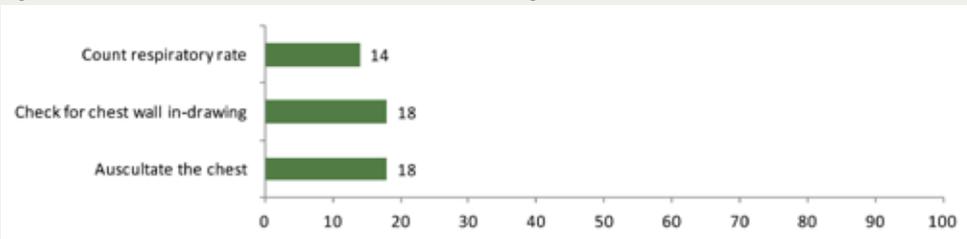


Figure 5: Per cent of children with diarrhea checked for signs of serious illness



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dehydration on the fourth day after she presented at a dispensary with diarrhea and vomiting. During these four days, the little girl was managed with four antibiotics, one antimalarial and only one packet of oral rehydration fluid. If the child had been properly examined and categorized for dehydration – and appropriate treatment with enough fluids had been given – her life would have been saved.

**Policy questions**

Why do health workers offer poor quality services? Don't they know what they

are supposed to do? Or do they have too many patients, effectively forcing them to make a quick diagnosis without thorough examinations? Or do they just simply not want to do it?

Results from the MAP project suggest that neither lack of knowledge nor lack of time is the constraining factor for clinicians in rural Tanzania.

These findings are presented in CMI Brief Vol 10 no. 2, entitled *Huge potential for improved health service quality*.

The MAP project (Health Worker Motivation, Availability, and Performance) is a collaboration between NIMR (National Institute of Medical Research), CMI (Chr Michelsen Institute), University of Bergen, REPOA (Research on Poverty Alleviation), and Bergen University College.



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