

# Fixing Health Systems

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## Treating the Whole Child

The integrated management of childhood illness tackles high rates of child mortality

*The adoption of IMCI in two districts of Tanzania 5 years ago has contributed to a significant decline in child mortality rates. Use of health facilities by children in these districts has increased greatly during the same period and health workers' performance has improved. The international health community is now tracking with great interest the longer term impact this will have on child survival rates in Tanzania and elsewhere.*



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The purpose of IMCI is to raise the quality of care for children under 5, a group with unacceptably high morbidity and mortality rates throughout the developing world.

In rural Tanzania, health practitioners in many districts have a new weapon to help them treat sick children. In addition to their stethoscopes and thermometers, these front-line health workers can look to brightly coloured, specially prepared chart booklets to help them diagnose their young patients. These chart booklets present new and comprehensive step-by-step procedures or algorithms for assessing the numerous possible causes of a range of signs and symptoms, guiding them in turn to appropriate treatments. They are just one of the innovations associated with a program of care known as the Integrated Management of Childhood Illnesses (IMCI).

The charts exist to help the practitioner take a “syndromic” approach to classifying health problems of young children — to look at the state of the whole child rather than trying to identify only individual conditions as the cause of the child’s illness. This approach is especially helpful in countries, such as Tanzania, where a child is likely to suffer from several illnesses simultaneously. By identifying and treating a range of possible causes of illness, clinicians are less likely to let a serious or underlying condition go untreated.

The use of algorithms is also highly effective in countries where community-level health workers often have little clinical training. The chart booklets reduce the margin for error

by guiding the practitioner from symptom to the probable causes, and to the best treatments. They alert community health workers when they need to refer a patient to a larger, better equipped health centre. They also promote better interaction with childcare givers so that the child can be dealt with more effectively at home. As with other aspects of IMCI, the purpose of this clinical tool is to raise the quality of care for children under 5, a group with unacceptably high morbidity and mortality rates throughout the developing world.

## Moving in the right direction

In Tanzania, there are encouraging signs that IMCI may be doing exactly what its proponents had hoped. IMCI has now been in place for several years in the rural districts of Rufiji and Morogoro, where District Health Management Teams (DHMTs) have used management and planning tools developed by the Tanzania Essential Health Interventions Program (TEHIP) to reassign funds more in line with the local burden of disease. A modest funding top-up of less than US \$1 per capita has enabled them to invest in system-wide capacity building. Both districts have also placed extra emphasis on two sets of health interventions: the treatment and prevention of malaria, and IMCI.

Health officials believe that the adoption of IMCI has been a significant factor in the 55% decline in child mortality rate in the Rufiji between 1998 and 2003 (the 5 years following the start of health reforms in Tanzania) and the 38% decline in child mortality in Morogoro District between 1998 and 2002. Over this same period, use of health facilities by children in these districts increased by about 50%. The belief that IMCI played a key role in these improvements is supported by findings contained in a recent report of the “Multi-Country Evaluation of IMCI Effectiveness, Cost and Impact” (MCE). According to that report, “IMCI case management in combination with health system support is associated with dramatic improvements in the quality of case management in Tanzania.”

For example, researchers found that more than twice as many children requiring oral antibiotics and/or oral anti-malarials were prescribed them correctly in the 2 IMCI-enabled districts than in 2 non-IMCI districts. Districts with IMCI also did considerably better than the comparison districts in respect to practitioners’ verification of vaccination status, feeding practice, and presence of cough, diarrhoea, and fever. These findings for Tanzania corroborate the more general conclusion of MCE research that “IMCI training for health workers managing children in first-level health facilities can lead to rapid and sustained improvement in health workers’ performance.”

Whether that performance continues to improve — and what longer term impact this will have on child survival rates in Tanzania and elsewhere — are matters that the international health community is now tracking with great interest.

## Combating five major killers

Although the child survival rate has improved globally over the past 30 years, it has been stagnant in sub-Saharan Africa since the early 1990s. Some countries even report increased rates of child mortality, due partly to the rise of HIV/AIDS. Each year, more than 10 million children in low- and middle-income countries die before their 5th birthday. Seven in 10 of those deaths are caused by 5 treatable, preventable conditions: diarrhoea, pneumonia, measles, malaria, and malnutrition — a combination of which will often work in concert to destroy a child’s health. (Malnutrition has been estimated to be a factor in over 50% of those child deaths).

IMCI’s goal is to raise the standard of care (by both health personnel and family members) so that more children survive and lead healthy lives. Tanzania was among the first countries to adopt IMCI in 1996, following the first global pretest of this treatment package in Arusha, Tanzania, in 1995. The issue of child survival is of such urgency that 80 countries have since launched IMCI programs.

The MCE — a joint initiative of WHO, various federal ministries of health, and others, with the support of the Bill and Melinda Gates Foundation — is monitoring how effectively the theory of IMCI translates into practice. It is conducting ongoing evaluations of IMCI programs in such diverse countries as Bangladesh, Brazil, Peru, Tanzania, and Uganda. MCE issues a report each year, adding to the cumulative knowledge of where IMCI practice has been successful and where it is deficient.

## The challenge of “scaling up”

Within Tanzania, the perceived link between IMCI implementation and the steep mortality declines in Rufiji and Morogoro has been encouraging. More than 70 of Tanzania’s 123 districts have adopted IMCI and the Ministry of Health is actively promoting it. This “scaling up” would not have occurred, however, were it not for a corollary lesson from the test districts of Rufiji and Morogoro: that IMCI can be a cost-effective program that meets the affordability imperative of cash-strapped developing-world jurisdictions.

“When we were first adapting the IMCI program to fit the Tanzanian context,” recalls Dr Harun Kasale, TEHIP’s Project Coordinator, “it was thought to be very expensive.” Even after Rufiji and Morogoro implemented the program — paying for it with only the minimal per capita funding increases facilitated by TEHIP’s annual contribution to support district health plan activities — other districts that craved to put it into their plans were still afraid that it was very expensive — they didn’t want to commit their funds.”

Those familiar with the Rufiji and Morogoro experience continued to tell the more timid DHMTs that it is possible to spend judiciously on IMCI and still have an effective program. For example, Dr Kasale notes that the districts were

able to leverage extra value from their investments by having trainers train individuals from health centres, who in turn were expected to train their co-workers. This approach is in line with TEHIP's "management cascade" system, which attempts to make health services function better and more synergistically by increasing supervisory capacity and the flow of information between facilities and between district health managers.

According to Dr Conrad Mbuya, TEHIP's Research Coordinator, a WHO/MCE study on IMCI costs in Tanzania addresses the misconception that IMCI is unaffordable. The study found that the cost of the improved quality of IMCI care for under-fives was no more expensive than conventional, lower quality care in districts not offering IMCI. This is possibly explained by the fact that, with IMCI, more children are treated effectively at the less expensive primary care levels of the health system — and thus do not need more costly hospital care — and that drugs are used more rationally.

Dr Kasale points out that the initial extra costs (mostly for training) associated with launching an IMCI program are modest enough that they can be paid for out of the SWAp (sector-wide approach) "basket funds" that are now being provided to every district in Tanzania. Under SWAp, international donors' health-sector contributions are combined with government funding into a single fund, then divided and given to the districts as a lump sum (of comparable size to the TEHIP "top-up" of less than US \$1 that was given to Rufiji and Morogoro). The districts can allocate these funds according to local priorities.

## A new style of care

What can districts expect when they decide to invest in IMCI?

- Improved case management skills of health care staff;
- Improved overall health systems; and
- Improved family and community health practices.

Striving to meet these goals involves a significant change in the way that sick children are addressed by the health system. IMCI demands that both health workers and parents assume new roles and learn new skills.

The new face of child treatment under IMCI is evident as soon as a child arrives at a health centre. Rather than being made to wait in a queue regardless of his or her condition — as was the case before — the child is now assessed on arrival by a health worker. Patients exhibiting danger signs are moved to the front of the line for immediate attendance.

The routine is also very different for health workers who relate to their patients differently than before. Gone is the old "factory-line" method, where practitioners often made a quick guess at what was wrong with the patient and dispensed a standard medication. Encouraged to spend more



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time with the child, the clinician will seek out all symptoms and — guided by their chart booklets — will consider the full range of possible illnesses that may be conspiring to make the child ill.

This "syndromic" outlook has also been accompanied by a shift in the type of medicines available in the facility. Rather than prescribe drug A — which works very well against condition X — or drug B — which works very well against disease Y, the health worker has been taught that it is better to prescribe drug C which does a reasonable job of combating both X and Y.

Another key feature of IMCI is that the parent is closely involved in the child's health care. After the practitioner explains the child's condition to the parent, he or she is asked to repeat those details back to the practitioner. Similarly, the first dose of any medicine is given by the parent at the clinic under the observation of the health worker, to ensure that he or she knows how to use the drug. (Diagrammatic instructions are also sent home with the parent as a reminder of how and when medication is to be administered). The parent is educated about what danger signs to look for, and what to do if the child does not improve. This is part of an attempt to improve awareness and health practices in the home.

## Finding areas for improvement

Although the MCE notes several encouraging results from this new integrated method of treatment, its country-by-country analyses also point to areas where there is substantial room for improvement. For instance, in many IMCI countries under study, the planned community

component — with public information campaigns intended to improve health practices within families — has only recently begun in a small number of districts.

Furthermore, the general inadequacy of some health systems has limited the impact of IMCI in such countries. Among the specific systemic problems noted by the MCE are

- the inability of supervisors to visit health facilities to supervise and improve case management practices;
- a lack of capacity allowing community-level practitioners to refer patients to better equipped facilities; and
- a low level of use of public health facilities by citizens because of a widespread expectation of inadequate care and associated costs.

These problems suggest that IMCI may be most effective when undertaken in association with district health system strengthening as has been promoted and demonstrated by TEHIP in the Tanzanian districts of Rufiji and Morogoro.

Such strengthening places a heavy emphasis on building functional capacity within the health system. The integrated management cascade, for example, aims to improve transportation and communications to bring supervisors in closer contact with facility staff, to increase access to diagnostic laboratory tests, and to improve timely delivery of drugs and supplies.

Finally, it has been difficult to “scale up” IMCI initiatives. While positive results have been documented within the pilot areas, the programs have not yet been broad enough to have a measurable effect on country-level child mortality rates. This is one of several roadblocks that need to be addressed.

*This case study was written by Stephen Dale on behalf of IDRC's Communications Division.*

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## Fixing Health Systems

More information on the capacity building of District Health Management teams in Morogoro and Rufiji can be found in *Fixing Health Systems*, by Don de Savigny, Harun Kasale, Conrad Mbuya, and Graham Reid. The book describes the Tanzania Essential Health Interventions Project – its origins, impact, important lessons, observations, and recommendations for decision-makers and policy analysts. The full text of the book is available on a thematic Web dossier, which leads the reader into a virtual web of resources that explores the TEHIP story:

[www.idrc.ca/tehip](http://www.idrc.ca/tehip).

Further information on IMCI and the Multicountry Evaluation of IMCI can be found at: <http://www.who.int/imci-mce/>



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