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Health care in poor countries

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Even a tiny health budget, if spent well, can make a difference

A SMALL Tanzanian child started to shake uncontrollably. Fortunately, she was in a clinic, where the doctor guessed immediately that she was in the grip of malarial convulsions. Unfortunately, her mother believed that the convulsions were caused by evil spirits, and that if the doctor gave her daughter an injection to calm her, those spirits would escape through the needle-hole and possess more victims. So she swept her daughter up in her arms and ran out of the clinic.

The clinic staff were horrified. They knew that, if the child was taken back to her village, she would be subjected to the traditional "cure" for convulsions: she would be placed under a blanket, and made to inhale the smoke from burning elephant dung until she passed out. This would probably not address the underlying cause of her sickness, namely the millions of malarial parasites cavorting in her bloodstream. So they chased after the mother, and persuaded her to return to the clinic by promising that her daughter would not be given an injection. Instead, they gave her a tranquilliser, Valium, via a suppository. When the shaking stopped, they were then able to give her quinine to tackle the parasites, and she was cured.

Delivering medicine to the world's poorest people is a challenge. Hot, poor places such as Tanzania have many microbes but microscopic health budgets. Dangerous myths deter many sick rural folk from seeking medical help. Even if they do seek help, it is often unavailable, for they do not have the money to pay for it, and their government rarely has the money to give it to them free. Because they cannot afford adequate health care, poor people are sick a lot of the time. And because they are sick a lot of the time, they find it hard to put in the long hours of productive labour that might make them less poor—it is hard to weave, sow or haggle when you are shivering

with fever.

Last year, a group called the Commission on Macroeconomics and Health (CMH), which is backed by the World Health Organisation, called for rich nations to donate an extra $27 billion a year towards grappling with poor countries' health problems. It is an excellent idea, but there seems to be little chance that such a vast sum will actually be raised. All hope is not lost, however. A recent experiment in Tanzania has shown that a small health budget can go a long way, provided that the money is spent with care. The results are so striking that they are worth examining in detail.

Poor and sick, but hopeful

By any standards, Tanzania is poor. Last year its 35m citizens divided between them a national income of $9 billion—roughly half what Americans spent on wallpaper. Most breadwinners win bread with their bare hands. On the beach in Dar es Salaam, the main commercial city, women gather shells and grind them with crude pestles to sell as a mixer for chickenfeed. Rural livelihoods are yet more precarious, which is why the Tanzania Essential Health Interventions Project (TEHIP), a joint venture of the Tanzanian health ministry and a Canadian charity called the International Development Research Centre (IDRC), was conducted in the countryside.

Two rural districts were chosen, Morogoro and Rufiji, both to the west of Dar es Salaam, and with a combined population of about 700,000. Typically for rural Tanzania, these areas combine tranquillity and staggering natural beauty with an almost complete absence of cash. Coconut palms glisten in the morning mist, dazzling sunlight plays on green-cloaked mountains and every ten-dollar shack has a million-dollar view. People in Morogoro live much as they have since agriculture first reached Tanzania. They grow starchy vegetables. They eat them. If they produce a couple of surplus sacks, they sell them for a few shillings, which they spend on such luxuries as second-hand flip-flops.

Five years ago, annual health spending in Tanzania was about $8 a head. This figure includes an estimate for the annualised value of trained staff and buildings devoted to health care. In Morogoro and Rufiji, IDRC added $2 a head to the pot, on condition that it was spent rationally. By this, the donors meant that the amount of money spent on battling a particular disease should reflect the burden that disease imposed on the local population.

This may sound obvious, but it is an approach that few health ministries take. In Morogoro and Rufiji, no one had a clue which diseases caused the most trouble, so TEHIP's first task was to find out. The traditional way of gathering health data in Tanzania was to collate records from clinics, but since most Tanzanians die in their homes, this was not terribly accurate. So TEHIP sent researchers on bicycles to carry out a door-to-door survey, asking representative households whether anyone had died or been laid low recently, and if so, with what symptoms.

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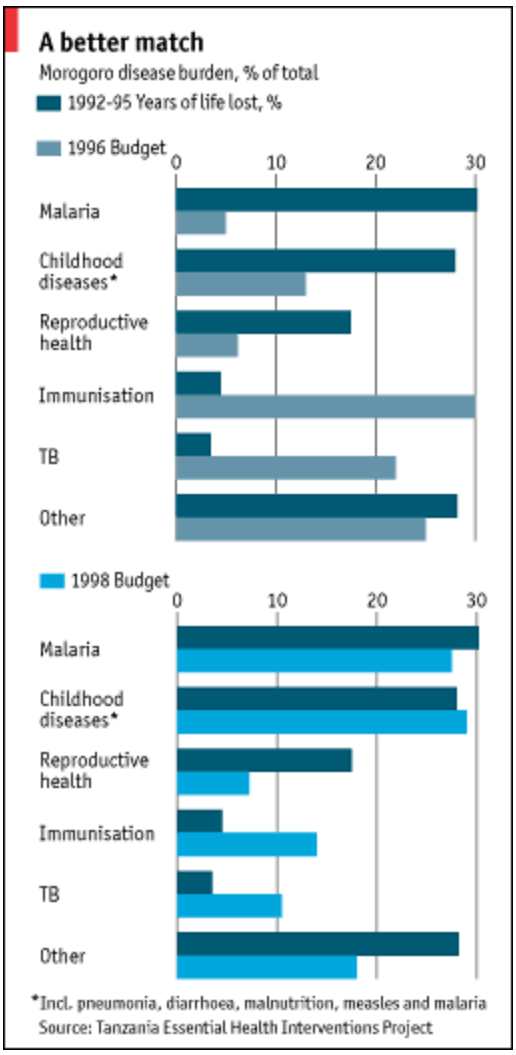
Cutting-edge anti-malaria technology

These raw numbers were then crunched to produce a “burden of disease” profile for the two districts. In other words, researchers sought to measure how many years of life were being lost to each disease, with a weighting to reflect the collateral damage to families when breadwinners die. They found that the amount the local health authorities spent on each disease bore no relation whatsoever to the harm which the disease inflicted on local people. Some diseases were horribly neglected. Malaria, for example, accounted for 30% of the years of life lost in Morogoro, but only 5% of the 1996 health budget. A

cluster of childhood problems, including pneumonia, diarrhoea, malnutrition, measles and malaria, constituted 28% of the disease burden, but received only 13% of the budget.

Other conditions, meanwhile, attracted more than their fair share of cash. Tuberculosis, which accounted for less than 4% of years of life lost, received 22% of the budget. Vaccinations also appeared to be over-emphasised. Vaccine-preventable diseases accounted for only 4% of the total burden, but immunisation swallowed 30% of the budget.

No one wanted to scale back the vaccination programme, of course. The low incidence of vaccine-preventable disease was probably a result of successful vaccination. So there was no call to spend less on jabbing babies, but the survey did at least suggest that there was no need to spend more on jabbing them, either. Additional funds would do more good, the researchers concluded, if spent on neglected diseases for which there were cost-effective treatments or preventive measures. As it turned out, the extra $2 a head was enough to allow the district health authorities to make their spending reflect the disease burden, without trimming any successful programmes (see chart). More than enough, in fact: neither in Morogoro nor in Rufiji was the system able to absorb more than an extra 80 cents or so.



A case of algorithms

This tiny cash infusion smoothed the transition to a more effective approach to health care. Health workers, mostly nurses or paramedics rather than doctors, were given a simple algorithm to show how to treat common symptoms. For example, if a child arrives coughing, and with a running nose and a hot brow, the nurse is instructed to work through a checklist of other symptoms to determine whether it is merely a cold or something worse. If the child is breathing more than 50 times a minute, for example, he is assumed to have pneumonia, given an antibiotic and checked again after two days.

In most cases, the cheapest treatments are offered first. Children with diarrhoea are given oral rehydration salts, which cost a few cents. If the salts don't work, the child is referred to a clinic and put on a drip. For malnutrition, the first treatment offered is advice on breast-feeding. When this is not enough, cheap vitamin-A pills are prescribed. AIDS is tackled through education, condoms and antibiotics to heal open sores caused by other venereal diseases, which present the virus with an open door into a new bloodstream.

Drugs are ordered according to what is needed; previously, the government sent out the same

package of pills to all dispensaries, which meant that popular drugs ran out, while others gathered dust. Non-malarial mountain villages received as many malaria drugs as mosquito-infested lowland ones, and villages where no one had ever suffered from asthma received asthma pills. “We did things blindly,” remembers Peter Nkulila, a doctor.

Perhaps most importantly, health centres in Morogoro encourage people to use bednets impregnated with insecticide, which bash mosquitoes in several ways. If the bug hits the mesh, it dies. If it merely flies close to the bednet, it feels dizzy, and either falls to earth, where it is eaten by ants, or buzzes off to rest and recuperate, which means that it will bite no one that night. A bednet's mosquito-repelling effect stretches for 500m in all directions, so netless villagers gain some protection from their better-equipped neighbours.

Conservative types at first shunned bednets in favour of the *mtuti*, a hot itchy traditional sleeping bag woven of palm leaves. But with a bit of urging from nurses, they discovered that cotton bednets are softer on the skin and better at beating back bugs. Despite the cost—about $3 for a locally-made net, with the insecticide somewhat subsidised—the nets are popular. Village shops sell them. Peasants hang them in *shamba* huts on stilts in their rice-fields, where they sleep during harvest season, so as to be at hand to scare off crop-munching hippos. In Morogoro, even the Masai, a fiercely conservative tribe of nomadic cattle-herders, when sleeping under trees, have started draping themselves in insecticide-soaked bednets.

The results of all this were stunning. In Rufiji, infant mortality fell by 28% between 1999 and 2000, from 100 deaths per 1,000 live births to 72. The proportion of children dying before their fifth birthdays dropped by 14%, from 140 per 1,000 to 120. The figures for Morogoro are thought to be equally good, although TEHIP is still trying to confirm their accuracy. In nearby districts, and in Tanzania as a whole, there is no evidence of a similar improvement over the same period. And anecdotal evidence suggests that better health has made Morogoro and Rufiji less poor.

Fewer bugs, more bikes

Rain falls in booming cascades on Melela, a village near Morogoro. Pedestrians hold big palm leaves over their heads to keep the water off. When the downpour stops, puddles stagnate and become hatcheries for mosquitoes. As Jeffrey Sachs of Columbia University has noted, where malaria prospers, people usually do not. In Tanzania, 94% of people are at risk of catching the disease. Roughly half the population does catch it each year, and 100,000 die of it. While in the parasite's grip, people are often too weak to work. Some of their relatives must down hoes to nurse them, and spare cash in the family biscuit tin must be spent on anti-malarial drugs. “When you have a sick child in the family, you are all sick,” notes Hamza Mfaume, chairman of the Morogoro district council. Mr Sachs estimates that countries like Tanzania would be twice as wealthy without malaria. Whatever the actual figure, the people of Morogoro are sure they are better off now that the disease is being rolled back.

Mustapha Dangeni, a young peasant, recalls that his two children used to be smitten with fever almost every month before he got a bednet. Now, he says, they have been healthy for a whole year. Mr Dangeni and his wife have been able to spend more time tending their fields, so they have produced more spare maize and millet at a time when their expenditure on anti-malarial drugs is at an all-time low. With the extra cash, they have bought a radio, a bicycle and some furniture. “Things are continually improving,” says Mr Dangeni, smiling as he leans against a sack of charcoal.

A lesson for others

Could this success be repeated elsewhere? The Tanzanian government is keen that the lessons learned in Morogoro and Rufiji be applied in other parts of the country. So keen, in fact, that it is pushing TEHIP's cautious, methodical organisers to move faster than they would prefer.

Tanzania is probably one of the easiest poor countries in which to put ideas like this into practice: the country is peaceful, stable, and has a government that takes health care seriously. Almost as important, it has been steadily moving away from the highly centralised health-care system that was put in place during the country's socialist phase, which ended in the 1980s. Local people have assumed greater responsibility: in the old days, if a clinic roof blew off, they would wait for the central government to fix it, which it rarely did. Now, the nearby villages are more likely to pool their spare cash, buy some sheets of corrugated iron, and fix it themselves. In Morogoro and Rufiji, they have gone one step further, and are building their own dispensaries. This is expensive in the short term, but having a health facility nearby means that they don't have to take so many costly bus trips into town.

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Discovering what hurts, and what works

In other countries, the lessons of Morogoro and Rufiji may be harder to apply. Neighbouring Congo and Burundi, for instance, are too preoccupied with civil war to fuss over making their health budgets more rational. Some governments have bizarre priorities: Zambia, for example, budgeted half as much money for tackling AIDS last year as for building villas for visiting heads of state. Waste is common: one study found that for every $100 of African tax revenue spent on drugs, patients received $12 of benefits. (The rest was lost through non-competitive procurement, poor storage and bad prescriptions.)

Corruption is another common hurdle, but need not be an insuperable one. It helps that the sums involved are small—less tempting to powerful crooks than larger amounts would be.

Tanzania has its share of piratical politicians, but there are no reports of TEHIP funds vanishing. It probably helps that the scheme is locally run, involves the active participation of the people who are supposed to benefit and is led by organisers, such as clinic managers, who are much more accessible, and therefore accountable, than politicians in the far-off capital city. If the head of a clinic in Morogoro filched from his budget to buy a flashy car, the locals would notice and doubtless make him regret it.

More countries should copy the Morogoro model. And donors should pay heed that, while more money is certainly needed to tackle poor countries' health problems, how it is spent is more important than how much is spent.