

Telemedicine in Africa: potential, problems, priorities

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Since first starting to work in Africa 27 years ago, I have been fond of the popular maxim "Give a man a fish, he eats for a day; teach a man to fish, he eats for a lifetime." So, not long ago, I chuckled when I saw a t-shirt that said something like "Teach a man to fish, he'll need to buy a fishing rod and reel, a selection of hooks and lines and lures, a tackle box, a boat." I remembered this revision of the old proverb when asked recently what I thought about telemedicine for Africa.

Up and running and paid for, it would be wonderful, of course. One envisages a novel form of continuing education for medical personnel, new possibilities for long-distance consultation with specialists, rapid image-rich exchanges of knowledge and ideas. It is reassuring to know that these frontiers are being explored. But it is frightening to consider how easily the glitter of satellites could divert attention and funds from the grittier problems of health and health care on this continent.

In my own district of over 75 000 mostly very poor people, for whom I am the only doctor, we are still struggling to overcome the lowest of low-technology failures that typify life in this part of the world: the lack of potable water, insufficient access to education and medical care, ignorance and illiteracy, unreliable sources of electricity, pervasive corruption, and woefully underdeveloped systems of transportation and communication.

Several of the larger villages in our district have electricity, although prolonged blackouts occur regularly. When the electricity fails, the pump that brings water from its underground source also fails. Most villagers have no access at any time to running water and fetch it by the bucketful from open wells or boreholes or, during the rains, from rivers and stagnant ponds in which they also bathe, excrete and wash clothes.

There are 20 primary schools in the district, most with only one or 2 teachers. Of those parents who send any of their children to school, most use the rotation system of education: they send one child for a semester or a year and when he — it is almost always a he — is needed in the home or in the fields, they remove him and send the next youngest in his place. Few students ever learn to read or write.

Curative and preventive health efforts must contend with deeply ingrained beliefs and superstitions. It is well known, for example, that malaria enters the body when a person stays too long in cold rain. Pneumonia is caused by the wind, infantile diarrhea by bad breast milk, epilepsy by

the devil. Mastitis and orchitis are the result of beetle bite, and snakes bite people when witches and sorcerers tell them to. Children's uvulas are excised in infancy to cure or prevent vomiting, and their abdomens are scarred with deep cuts to silence borborygmus. Vaccination is rejected by healthy individuals who have been told by their *marabouts* that they have *jaunisse* and, therefore, are not permitted to receive an injection. Young women are forbidden access to prenatal and maternity care, because custom demands that they remain cloistered in the home for the first 12 months of marriage. The practice of female genital mutilation continues unnoticed and unchallenged in several villages.

We have no paved roads, post office or telephone lines. There are telephones in the provincial capital, 100 km away, but getting there is not always easy, and a full day, perseverance and extraordinary patience can be required to make a connection with any other city.

A writer for *The Sunday Times* of London once described the instruments of our computer age as "stupid, unreliable pieces of plastic that can, when the wind is blowing in the right direction, be so incredibly useful that you forgive them almost all their faults on the spot." For telemedicine to work, not only must the wind be blowing in the right direction but the rain must not be falling too hard, and the electricity must be on; people who until now have never seen a computer or used a telephone must be capable of operating, maintaining and repairing the equipment; spare parts, updates and upgrades must be budgeted for and available. The increasing need for thousands of miles of high-speed telephone lines and large bandwidth must be addressed.

The development of costly high-technology solutions should not be an excuse to avoid the simple rolling up of sleeves and the dogged determination that are needed above all. Water sources should be tapped, roads paved and bridges built. Massive droves of teachers, nurses, physicians and surgeons should be trained and induced to serve where they are needed. The corruption that sabotages public services and devastates vital infrastructure should be stopped.

The means to prevent malaria, neonatal tetanus and childhood malnutrition are already known and available. Telemedicine will not be able to save the millions who die every year of preventable, treatable acute respiratory tract infections and diarrheal diseases. It will do nothing to halt the spread of tuberculosis or AIDS. Not one centimetre of fiberoptic cable is needed to improve basic obstetric care

for the thousands of women in remote villages who suffer debility and death from dystocic delivery, hemorrhage and infection related to childbirth.

The solutions to these urgent problems are known and should not be ignored. Teaching a man to fish for trout is surely a good thing. But if he lives on a river filled with carp, let no one be fooled: he and his family will still go hungry.

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