



My Africa

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Will Africa Achieve the Millennium Development Goals?

That poverty is widely but not evenly distributed across the world is beyond question. There are hungry and homeless people in Kivu in the Democratic Republic of Congo (DRC) and Gugulethu in South Africa just as there are the hungry and homeless in London, Madrid, and New York. It is, however, the scale that matters. When one thinks about global poverty and lack of opportunities in life, one thinks of Africa – and rightly so. Africa is the continent where up to 50% of the population of some countries still suffer from “a dollar a day poverty.” Although the purchasing power of one US\$ varies from one place to another, there seem to be not many places anymore where a person’s minimum acceptable daily needs can be met by one dollar. But of course, a dollar in Blantyre, Malawi, can buy you a descent lunch, whereas it will fail to do so in Geneva.

Lately, the global attempts to eliminate or eradicate poverty seem to be gaining momentum, if not in deeds then at least in words. At almost every United Nations General Assembly and G8 meeting, the world is reminded that it is no longer acceptable for some parts of the world to be in the rocket-science

age while others are left behind in the Iron Age. The global initiative leading the battle against poverty is the Millennium Development Goals (1). Its eight Goals include eradication of extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria, and other diseases; ensuring environmental sustainability; and developing a global partnership for development. The Millennium Development project was established in 2002 under the leadership of Prof Jeffrey Sachs, now Director of the Earth Institute, Columbia University, and Special Advisor to Kofi Annan. Although some people have already insinuated that Jeff Sachs is likely to be a Nobel Laureate at some point in this century, not many feel the same about the attainment of Goals, especially in this century. The Goals are not impossible to achieve but require more than financial, political, and democratic accountability as developed countries stipulate. The business-as-usual approach will not lead to the attainment of the Goals.

Achieving the Goals will require serious determination of the interventions that are likely to bear fruits in the particular settings of the individual developing countries. I will use examples of malaria and diarrheal diseases to illustrate this.

In most African countries, diarrheal diseases and malaria continue to be major public health problems, especially among children. While the tropical climate is sometimes held responsible for this state of affairs, the temperatures and rainfall are not the only reasons, and can not be the major reasons after all. Not many centuries ago, malaria was relatively common in parts of mainland Europe. If we accept the fact that the world is warmer today than it was in the past, mainland Europe would have generally been cooler than it is now. The reason, then, responsible for the occurrence of malaria had more to do with human habitations near mosquito breeding grounds and less with lack of communicable diseases physicians or insecticide treated nets. As for diarrheal diseases, lack of drinkable water and poor personal and environmental sanitation were responsible for the high levels of diarrhea (2).

In the past decade or so, the malaria control and prevention discourse has leaned heavily on the availability of prompt treatment and use of insecticide-treated bed nets. Several efficacy studies have shown that the consistent use of insecticide-impregnated bed nets reduced malaria and all-cause morbidity and mortality, especially among children in Africa. Outside the trial areas though, there is paucity of evidence to suggest that community-wide morbidity and mortality from malaria is reducing. One major problem of the insecticide-treated bed nets intervention is that the continued use of this requisite heavily relies on individual or household resources and commitment. Households will use insecticide-treated bed nets if they have access to them. For extremely poor families, the insecticide-treated bed nets may not be the priority over food and other life essentials. Even for those households that have access to heavily subsidized nets, it is difficult for large families (and these are not the exception in Africa) to ensure that all family members have access to the nets. It is also not always the case that people who have the nets actually use them, for variety of reasons. Studies on acceptability of health interventions have taught us that what researchers may perceive as effective intervention within a trial may not be widely accessible and acceptable to the population outside the trial setting (3). Insecticide-treated bed nets for all people in malaria-infested zones seem a sensible solution, but will they be responsible for a significant and sustained reduction

in malaria morbidity and mortality? Perhaps what needs to be done now is to go back to the areas where efficacy studies of malaria prevention using insecticide-treated bed nets had positive results several years ago and determine whether malaria morbidity has reduced. I suspect that the most likely result would be that the trial outcomes were much better than every day public health results. My contention is that interventions that depend heavily on household or individual motivation and resources are more likely to fail than those that are geared toward general widespread community prevention. For example, there would be greater gain at the community level if breeding grounds for mosquitoes were eliminated through insecticide use and draining than it would be by supplying people with insecticide-treated bed nets. This can be achieved in Africa. In fact, the greater part of South Africa has no malaria other than a few pockets up north toward the borders with Zimbabwe and Mozambique.

The extent of diarrheal diseases in Africa is a manifestation of poverty. The fear of diarrhea and malnutrition is the reason why HIV-infected African mothers are still advised to continue breast feeding their babies, who may thus get infected with HIV through breast milk, to prevent diarrhea. It is known that the availability of safe water is problematic and food hygiene a rarity among most African mothers. Preparing and serving alternative feeds (other than breast milk) for children is tantamount to certain diarrhea and death. In such situations, avoidance of breast feeding is considered

worse than exposing babies to breast milk from their HIV-infected mothers. The alternative, which is how to help mothers in developing world prepare feeds safely, is not being discussed. This is considered unfeasible and unrealistic.

There have been significant gains at low cost in the treatment of diarrhea in developing countries through the use of oral rehydration solutions. This is a medical intervention spearheaded by United Nations Children's Fund and the World Health Organization that has saved millions of lives in Africa, southeast Asia, and many other parts of the world. However, oral rehydration salts do not tackle the source of diarrhea. Lack of safe water and poor sanitation are the reasons why Africa experiences such high levels of morbidity and mortality. Water can be contaminated with diarrhea-causing organisms at the source, during transportation from the source to the home, during storage, and through cups and dippers. Many people in Africa do not have piped water in their homes but rather get water from rivers and streams, wells, boreholes, and open lakes. This water then is transported in buckets and stored at home for use when needed. Water-borne and water-washed diseases are thus common on the continent.

The sad situation experienced by inhabitants of the southern gulf states of the United States, especially citizens of New Orleans, during hurricane Katrina illustrates the difficult reality of what happens when environmental sanitation breaks down. When hurricane Katrina struck Louisiana and

Mississippi, sewerage facilities and safe water supplies were disrupted. Many evacuees were congregated in the crowded Superdome. Within a few days, diarrheal diseases including cholera and dysentery were common among the displaced persons. Many Africans constantly live in an overcrowded environment, without safe sewerage system and available drinking water, so it is no surprise that diarrheal diseases are common and persistent.

There continues to be a load of various *innovations* aimed at reducing the burden of diarrhea by ensuring safe water supplies in Africa. In medical journals we mostly read about the interventions that are heavily dependent on household resources and commitment. These interventions include household flocculation, disinfection of water, use of solar power to reduce bacterial content of water (4), and use of cloth to sieve off particulate matter (2,5). The developed world that has removed childhood diarrheal diseases from the top five causes of infant death did not achieve it by using household water purification systems. They achieved it by industrial-scale water treatment. The water closet is responsible for diarrheal reduction more than any medical intervention ever suggested. Technologies that the world already knows must be made available to the disenfranchised people of Africa (6). Household and individual water purification and treatment interventions are good for emergencies, such as those after Tsunamis, hurricanes, earthquakes, or wars, but not in peace time as a long-term solution. Sadly though, despite the avail-

ability of enormous natural sources of fresh water bodies in Africa, we, the physicians, seem to be promoting household water treatment for Africa when this should be an opportunity for us to team up with water engineers, so that African towns and villages start getting treated water from large industrial installations rather than to rely on small-scale household water treatment. It should also not come as a surprise that detoxification of most of the African waters will not be much of a hassle as with low level of industrialization, most of the water sources in Africa are likely to be artificially contaminated with heavy metals from industry. Gravity fed water systems can be a reality in Africa. The water from Mount Kilimanjaro would not need any electricity to pump to any area in Africa.

Just imagine if inhabitants of New York or Paris were told to stock bottles of sodium hypochlorite (bleach) to treat their own water (7). Would cases of diarrhea be prevented in this way? I guess they would not, not as they are prevented today in western cities where people do not even have to think about the quality of water received in their homes. I believe this should be the approach that the world needs to consider seriously if we are to reduce malaria and diarrhea in Africa. Insecticide-treated bed nets are likely to eradicate malaria just as much as small bottles of sodium hypochlorite are likely to stop diarrhea from being a top child killer in Africa. Newer drugs are important in the control of malaria (8), but let us rather focus on the eradication of breeding grounds for the Anopheles

mosquito. Although scientists and politicians have called for increased financial resources and spending for Africa, we need to be careful in identifying on what we should be spending in Africa (9).

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