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Precautionary measures

Major African campaigns targeting malaria and HIV could help millions, but key concerns over their long-term effects should not be forgotten.

More than one million healthy children in Africa participated in a bold initiative this year when they took antimalarial drugs during the rainy season. The hope is that a few months of preemptive doses could help them to fight off a disease that kills some 600,000 people throughout Africa each year. At the same time, health campaigns in 14 nations in eastern and southern Africa are circumcising millions of men in an attempt to stem the spread of HIV, which infects more than one-quarter of people aged 15–49 in some of those countries. The malaria and HIV efforts have the potential to gain the upper hand on two stubborn health scourges, but only if funders and organizers heed the lessons of past failures.

Nature this week publishes two reports from the ground. They are written by reporters who travelled to Africa to examine the benefits of these health campaigns — as well as concerns that have emerged about them. In the malaria effort (see page 186), one of the biggest worries has been that giving medications to children will promote the spread of resistant forms of the malaria parasite, quickly rendering the drugs ineffective. That happened during the 1950s and 1960s, when doctors performed prevention experiments for malaria in Africa and South America. The current campaign is based on trials that started in 2002 and took steps to avoid spreading resistance to front-line treatments by providing a cocktail of older antimalarial drugs, and only during the rainy season.

The success seen in the clinical trials, however, is not guaranteed as the programme is scaled up to cover possibly more than 20 million children in parts of Africa. Six nations started giving antimalarials this year, but treated just a fraction of their intended recipients because of funding and organization problems. This raises concerns that the programmes will not carry out the ancillary monitoring efforts needed to ensure success. Funding must be provided to track whether the large-scale prevention campaign reduces the number of malaria cases as hoped, and to ensure that resistant forms of the parasite do not spread more quickly than anticipated. The problem is that funders are typically less interested in supporting follow-up studies than in testing ideas and carrying out interventions. And monitoring has long been a weak point for malaria: global surveillance catches just 10% of the estimated global malaria cases each year.

In the circumcision campaign (see page 182), several trials showed that the procedure reduces the risk of HIV transmission from women to men by a substantial 50–60%. That level of protection is so large that international aid organizations, the United Nations and donor countries such as the United States have poured more than US\$100 million into campaigns that seek to circumcise 20 million men in 14 target countries by 2015. But some researchers worry that the massive programmes will not yield the same benefits as the small, intensive trials. A prime concern is the message that men and women are getting about the effectiveness of the procedure. Campaign organizers have mounted major advertising efforts to encourage more acceptance

of circumcision. In Zambia, billboards proclaim that a circumcised individual is ‘a man who cares’. In Tanzania, he is ‘60% more man’.

The advertisements have succeeded in getting millions of men through the clinic doors, but the messages have also generated confusion. Many women in several of the target countries assume incorrectly that circumcision helps to protect them against acquiring HIV, and so they think that condoms are less necessary than they once were. Several studies have shown that men overestimate the amount of protection they gain through circumcision. And in Tanzania, the phrase ‘60% more man’ is taken to mean that a circumcised man has more sexual partners — not the kind of message that will cut down on HIV transmission.

“Funders are typically less interested in supporting follow-up studies.”

During the preliminary trials, clinics took steps to avert confusion by providing substantial counselling about the risks and benefits of circumcision before and after the procedure and in periodic follow-up visits. Men received testing and treatment for HIV and for several other sexually transmitted infections. But in the scaled-up campaign, circumcision providers typically give only one counselling session related to the procedure, and another with an HIV test. Behavioural researchers say that men require more counselling and that campaign organizers should also target information towards women to clear up misconceptions.

Just as with the preventive malaria drugs, there must be sufficient monitoring to track whether circumcision is as effective at reducing HIV transmission as it was during the smaller trials. Early signs are positive, and that is good news for millions of African men and women. ■

Data deadline

Time is running out to comment on the NIH’s plan for sharing genomic data.

A little-noticed proposal promises to have a huge impact on how science is done in the ‘big data’ era. In September, the US National Institutes of Health (NIH) released draft guidelines on the sharing of genomic data. The guidelines, which have been in the works for five years, are a necessary and valuable update to the agency’s stance on how researchers who receive its funds must share data produced by projects that use array-based and high-throughput technologies. They cover a huge swathe of research, including sequencing human and non-human genomes, genes and gene variants, as well as transcriptomic, epigenomic and gene-expression data.

The issues related to collecting and sharing such data are complex,