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Ebola: the hidden toll

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Graphical Abstract

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The first anniversary of the west African Ebola epidemic has just passed. In Guinea, Liberia, and Sierra Leone, Ebola virus disease has resulted in more than 10 000 reported deaths while the virtual collapse of the countries' health-care systems has contributed to countless more. In *The Lancet Infectious Diseases*, Patrick Walker and colleagues¹ describe a mathematical model to estimate the effect of the ongoing Ebola disease epidemic on a less exotic and more familiar killer— malaria. The estimates are sobering, if not surprising: up to 10 900 additional malaria deaths in these three countries in 2014 can be attributed to the disruption of health-care services, with another 3900 attributed to lapses in the delivery of insecticide-treated bednets. The investigators predicted continued excess malaria mortality in 2015 and a rise in malaria transmission if immediate emergency strategies to control malaria are not implemented.

During the past decade, renewed commitment from donors, ministries of health, and international agencies has led to the scale-up of malaria interventions across sub-Saharan Africa, with a corresponding reduction in child malaria mortality of 50%.² The continuous delivery of those life-saving interventions—prompt effective treatment, routine distribution of insecticide-treated bednets, indoor residual spraying, and intermittent preventive treatment of malaria in pregnancy—depends on a reliable, functioning health-care system. Large-scale challenges to already fragile health-care systems, as has occurred with Ebola virus disease, can result in disruption of programmes, which in turn could threaten or reverse the gains achieved in malaria control. Walker and colleagues have shown how quickly and extensively that reversal can occur.

Although many countries in Africa have had major success in the reduction of malaria, many west African countries continue to suffer a comparatively high malaria burden. The 2014 World Malaria Report documents that seven of the ten highest malaria parasite prevalences are in west African countries.² Political strife and conflict have further impaired health and health-care development in the three countries affected by Ebola virus disease. Renewed attention and resources are urgently needed to scale-up malaria interventions in these countries.

Walker and colleagues model the effect of two interventions designed to reduce malaria fevers, illness, and deaths: monthly mass antimalarial drug administration, and a mass insecticide-treated bednet distribution campaign. The benefit of these measures is predicted to be substantial.¹ However, these intervention campaigns are costly, both financially and in material and human resources—particularly when deployed during an emergency response such as for Ebola virus disease when capacity might be focused on Ebola response activities. Additionally, the campaigns could introduce a risk of exposure to Ebola virus for people delivering the interventions in the community and for those presenting to a distribution site to receive the interventions. But few effective alternatives are available to reduce malaria morbidity in low-functioning health-care systems. There are numerous examples of successful mass bednet distribution campaigns, but experience with mass drug administration has been more limited. An effort in Sierra Leone resulted in successful mass drug administration for more than 2 million people.³ Until service delivery systems are restored, these extraordinary measures, delivered after careful planning and with due attention to safety, are warranted.

Because quality routine surveillance data are not available, it is primarily through modelling that the broader indirect health effects of the Ebola epidemic (in this case malaria) can be understood. However, models cannot replace high quality surveillance data. The establishment and maintenance of accurate, timely disease surveillance systems is essential to obtain real-time actionable information to assess effects, provide alerts, and direct programme resources.⁴

During the past year, the consequence of the global communities' lack of investment in health-care systems in west Africa has become strikingly evident. We have an opportunity to address this shortcoming now, with the recent multinational commitment to the Global Health Security Agenda.⁴ The agenda has ambitious objectives, including support to

strengthen real-time surveillance systems and to train and deploy an effective disease surveillance workforce. If implemented well, health-care systems will be strengthened so that the next global health threat will be detected, reported, and contained quickly. But just as importantly, these systems should also accurately measure and report on fluctuations in serious established diseases, including malaria, to enable an effective programmatic response.

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