

## Not a drop to drink in the Aral Sea

Sir—One disaster resulting in water scarcity requiring urgent international attention, but neglected by almost everyone, including by you in your Sept 29 editorial,<sup>1</sup> is the shrinking of the Aral Sea.

The Aral Sea disaster has evolved over decades through irresponsible Soviet exploitation of desert rivers in Central Asia to increase cotton and rice production. The slow course of events has not helped to publicise the plight of the local population, and has resulted in a gradual disengagement by the few international agencies working on one of the largest environmental disasters in the world.

Central Asia has been affected by acute drought for more than 2 years. In the region immediately surrounding the Aral Sea, half the grain and fodder crop, and all the rice failed in 2000. According to the United Nations, 100 000 farming families in western Uzbekistan have no stable source of income because of failed harvest, loss of productive assets, and inability to plant through lack of water. Anecdotal evidence suggests accelerated economic out-migration.

The current drought has been accentuated by political wrangling between countries sharing water resources of the two main rivers that fed the Aral Sea, which have now run dry.

Drinking water in the region is inadequate. Piped water is rare in rural areas, and intermittent at best. Alternative water sources include open canals, which may harbour chemical contamination (river salt, pesticides and fertilisers) and pathogenic microbes from uncontrolled sewage disposal. In 2000, WHO reported an increased frequency of diarrhoeal disease in Muynak, once a peninsula town, now 120 km from the receding sea, as well as the potential for more serious illness such as cholera.<sup>2</sup>

Hand pumps are the standard response of government and developmental agencies, whereas more sustainable solutions such as desalinators powered by renewable energy sources are ignored. However, these solutions are far from satisfactory. Water from shallow aquifers (extracted by hand pumps) reaches salinities of 3–5 g/L, three times the WHO accepted limit.<sup>3</sup> Consumers have little possibility of desalinating such water. In one area, a third of bore holes tested by Médecins Sans Frontières (MSF) within 2 years of their construction were far short of their projected depth because of mismanagement or early silting. 19%

were abandoned, mostly because of mechanical failure or the delivery of unpalatable water.<sup>4</sup>

Serious health issues have emerged in the area, probably because of socioeconomic upheaval. The incidence of infectious diseases such as tuberculosis, hepatitis, and respiratory and diarrhoeal disease are among the highest in the former Soviet Union.<sup>5</sup>

Through environmental-health research, MSF is advocating for increased sustainable investment.<sup>5</sup> The need for meaningful action after years of talk is evident. There is a common saying in the region that if every expert brought a bucket of water, the Aral Sea would be filled again. After years of international presence and millions of dollars reportedly spent to bolster water security in the area, many of the 4 million people living in the region still lack safe and palatable water.

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## Outcomes that matter to patients in tombstone trials

Sir—In his thoughtful Aug 18 commentary on the art and science of clinical decision-making, David Naylor<sup>1</sup> asserts that many of the outcomes that matter to patients are subjective and expensive to measure in the large, simple, so-called tombstone trials that have been designed to obtain reliable evidence on the effects of treatments on mortality. Although all patients are likely to be interested in how treatment may affect their chances of survival, most are also interested in other effects of

treatment, which might impact on the quality of their lives.

The simplicity of many large trials has contributed to their success in obtaining statistically reliable estimates of the effects of treatments on important rare outcomes (eg, death), and within prespecified clinically relevant subgroups of patients (eg, older people). The challenge is, therefore, to obtain reliable data on other outcomes likely to be important to patients without compromising the success of trials in obtaining reliable information about the effects of treatment on the risks of death.

We believe that this challenge could be met far more frequently than it has been through the collection of information on more detailed or difficult to measure outcomes in subsamples of the participants in large simple trials. For example, basic information from 68 000 mothers who participated in a randomised study of counting routine, compared with selective, fetal movement during pregnancy detected no reduction in stillbirth rate associated with the more active policy. More detailed information and subjective outcomes—maternal anxiety and feelings of being in control and confident—collected from a subsample of mothers in the trial provided data on the effects of the policies on further prenatal testing, admission to hospital, and elective delivery.<sup>2</sup> This success illustrates a point made by Hill<sup>3</sup> that, as long as studies have been appropriately designed to control biases, subjective impressions can be given full weight in analyses of controlled trials.

Greater partnership in the design of trials among patients, their representatives, and researchers should help to identify outcomes that are important to patients, and reveal how information about these can be obtained without compromising the ability of trials to assess reliably those important outcomes, such as death, for which very large numbers of participants are required.<sup>4</sup>

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