

localism”⁵ rather than independent organisations who might improve quality for patients through entrepreneurialism and competition. To counter charges of elitism, the Secretary of State indicated that all hospitals could in theory achieve foundation status.

In practice, some of the worries may turn out to be unfounded. Given the impatience of the Government to see results on key modernising policies, such as waiting times, it is likely that foundation hospitals will be held tightly to account, albeit through the new mechanisms. The lessons from the NHS internal market set up in 1991 also point in that direction: NHS Trusts were on a tight regulatory leash held by the Department of Health, despite all the rhetoric at the time of autonomy, and specific freedoms on capital spending and setting local pay. Similarly the freedoms now may be more word than substance—within the framework of a tax-funded NHS, how could things be otherwise?

Foundation hospitals may be most interesting, then, more for what they signify in the mind of new Labour as to how to improve performance in large organisations than for how they will work in practice. Taken together with other policies, such as encouraging private providers to offer services to NHS patients, encouraging hospitals to compete on the basis of quality rather than price,⁶ and encouraging patients’ choice, more rhetoric and policies can be expected in the coming months that introduce market signals into the NHS.

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Resilience or panic? The public and terrorist attack

It is widely believed that one of the most disruptive consequences of a terrorist attack, especially one using chemical, biological or radiological (CBR) weapons, would be public panic. Indeed this is one of the probable goals of the terrorists. But there is a fundamental distinction to be drawn between fear of the unknown or unfamiliar, and panic. There are two issues to consider. First, how can governments prepare the public before an attack without reducing resilience; and second, what should be done to prevent panic in the aftermath?

Clinical psychology literature shows that whilst general reassurance can have a short-term beneficial impact, providing immediate reduction in anxiety, in the long run, if core beliefs and misunderstandings have not been addressed, anxiety remanifests itself at an enhanced level.^{1,2} Repeated reassurance can be counter-productive, increasing sensitivity and anxiety, and impeding rather than promoting habituation. These findings suggest the need for an approach that clarifies people’s values rather than emphasising their vulnerabilities and which asks for vigilance only in specific instances rather than as a general state of alert.

Generality and vagueness merely sensitise people, driving their concerns rather than assuaging them. The examples of the Washington sniper and US responses to the anthrax incidents point to the problems of unclear, over-general, and conflicting messages. Public anxiety appeared to be heightened by inflated risk assessments, linked with ambiguous messages about the need for calm while Congress was partly closed and the Vice-President moved to yet another “secure location”.

Simply asking the public “not to panic” seems more likely to induce the opposite response. The semicoded references to the IRA and its lack of effect on civil society made by UK leaders such as the Chief Medical Officer during the same anthrax fears made the same point more subtly, perhaps by appealing to national stereotypes of resilience. The recent speeches by the Prime Minister in which he shared with the public the near impossibility of accurate prediction, and the necessity not to become prisoners of their fears, seemed to be treating the public as adults by taking them into his confidence. Of course, whether or not such a strategy will survive the inevitable recriminations should an attack actually occur remains to be seen.

Should an attack happen, the common perception of probable public panic is based on scant evidence.³ Research into natural and technological disasters, both historically and including analysis of behaviour on Sept 11, 2001, as well as the 1993 bombing of the World Trade Center, suggests that generally effective and adaptive collective action and coping mechanisms occur.⁴ In Israel, during the Scud-missile attacks in the Gulf War, anxiety and increased use of health-care services was observed after the first missiles, but within days these had subsided as the population habituated to the new realities.⁵ The first use of chemical agents during the First World War produced panic, but subsequent attacks did not. The same is true of the effects of area bombing in the Second World War.⁶

There are exceptions. The particular dread induced by radiation could lead to a surge in demand on health-care services.⁷ Disasters in confined spaces with inadequate exits are associated with panic.⁸ And the absence of any overt panic in the self-evacuation of the World Trade Center might have been because the people concerned largely knew each other beforehand. Furthermore, whilst the population rising to the challenge of an acute emergency remains the most probable outcome, that such resilience and increased community involvement will survive in the longer term is less certain.⁹

To avoid such maladaptive responses governments should seek to incorporate the constructive cooperation of their citizens into emergency plans, rather than excluding them due to their assumed lack of expertise, because disasters, by definition, stretch general provision and resources beyond their intended capabilities. If an attack with chemical, biological or radiological weapons occurs, for instance, large numbers of non-critical and possibly even contaminated casualties could best be dealt with within a familiar environment by capable, if non-expert, carers. Approaching the problem in this way would give purpose to the many civil-society organisations that individuals may need to come to depend on at such times, as well as recognising the myriad inter-linked networks that people belong to and rely on for information and meaning in a crisis situation. Above all, the preparation of such groups needs to identify and prepare mechanisms for accurate and effective dissemination of necessary information through the full range of available media.

In times of disaster, it is the actions of emergency managers and their support workers that may determine the extent and duration of context-sensitive concerns among the

wider population. One primary role is to fill the information vacuum before rumours, myths, misinformation, and ultimately hoaxes can take their course. Rapid, timely, clear, and repeated facts and data need to be at hand and presented by trusted sources, appropriate to relevant communities. Much of this can be prepared in advance but needs to be specific and robust rather than general or vague.

The release of inaccurate, confusing, or contradictory information has the potential to increase levels of demoralisation as well as discrediting the authorities concerned. Such failures of communication can create misunderstanding, suspicion, and resistance to future warnings that ultimately inhibit relief efforts. Government warnings and actions, as well as those of businesses and non-governmental organisations, send important signals to their domestic populations. Our excessive risk-aversion, as witnessed through a series of scares and bungled risk communications from bovine spongiform encephalopathy to measles, mumps, and rubella vaccination could easily become the key asymmetry exploited by terrorists to compensate for their relative lack of power and resources.¹⁰ The public can become victims of their fears—terrorising themselves far better than terrorists can.¹¹

Yet, developed societies and their systems remain more resilient than is given credit through the risk-obsessed world-view that continuously seeks to catalogue people's vulnerabilities, irrespective of how implausible or improbable certain scenarios may turn out to be. Accordingly the oft-cited precautionary principle may only exacerbate matters by demanding worst-case hypotheses rather than realistic evidence.¹² If the best form of defence is offence, it is time societies moved on to promoting what is known and what they are for rather than fearing the unknown and what they are against.

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Cholera and climate—the evidence grows

One UK clothing retailer noted a fall in sales in September, 2002, blamed on the unusually sunny weather. However, the impact of climate change, global warming included, on disease is usually less immediate and more controversial—and a lot more important. Since factors such as rainfall, air and water temperatures, and humidity affect the biology of microorganisms and the life-cycles of parasites and their vectors, much medical climate research has focused on communicable diseases, notably malaria and cholera. The messages so far have been tentative, lacking the certainty of “climate change has led to an increase in . . .” or “we can confidently predict from this month's climate variables a rise in . . .”.

Jonathan Patz, from the Johns Hopkins Bloomberg School of Public Health, glimpses a breach in this uncertainty. We may now have “the first piece of evidence that warming trends over the last century are affecting human disease”.¹ The disease is cholera and the evidence comes from Mercedes Pascual's group.² The biological basis for a link, via zooplankton and algae, between *Vibrio cholerae* and sea surface temperature has been well explored previously.³

There are records on cholera for Dhaka, Bangladesh going back to 1893, albeit not continuously. Rodó and colleagues² have used mortality data from 1893 to 1940 and frequencies for cholera diagnoses in patients not selected for diarrhoea but seen at the International Center for Diarrheal Disease Research hospital between 1980 and 2001. The other variable is the Southern Oscillation Index, a measure of the climate feature known as the El Niño Southern Oscillation (ENSO). Chronological data such as these can be highly misleading when merely eyeballed. At first sight the raw Dhaka numbers show very little. However, time-series analyses of increasing complexity reveal an intensification of ENSO and clearer associations between this climate pattern and cholera. For the post-1980 cholera series and “during specific time intervals corresponding to local maxima in ENSO” more than 70% of the variation in cholera can be accounted for by ENSO, Rodó and colleagues claim.

ENSO is part natural and part, probably, anthropogenic. The relative contributions remain controversial, and neither Rodó and colleagues² nor Patz¹ are saying that the greenhouse gas emissions of industrialised countries are causing cholera in less fortunate parts of the world. In the climate change and health debate uncertainty has to be acknowledged⁴ but without giving politicians an excuse for inertia. With the recent cholera paper² we do seem closer to evidence for a true effect. How unfortunate, then, that the language (singular spectrum and maximum entropy analyses, eigenvalues, transient couplings) is so complex.

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