The ghost of pandemics past

Prominent North American and European politicians convened recently for a table-top exercise designed to illustrate the international scope of bioterrorism. Participants were asked to respond to a hypothetical apocalyptic incident, in which the simultaneous release of lyophilised variola in six countries caused 74,000 cases in a single generation. Not surprisingly, such an attack, irrespective of the agent, defied easy control in the exercise. Issues about the manufacture and distribution of massive amounts of smallpox bruising mirror what many of us in the field know and teach, but provide a more concise foundation. Sugar and colleagues’ article in 1999 is often quoted in the field when looking at bruising and developmental level. Maguire warns physicians to interpret bruises within the context of a complete history and physical examination, and to remain conservative on the stand when testifying about what a particular bruise means in regards to child abuse.

In their second paper, Maguire and colleagues reviewed the literature about ageing of bruises. What is clear from the review is that most of the well-worn dogma in medicine about this subject has no scientific basis. After an initial 6831 papers, they found only three that met their strict inclusion criteria. They note that there was little consensus between studies about precise ageing of bruises on the basis of on colouration. Even bruises known to be of the same age can have different colours often associated with bruises of different ages. Their findings support the clinical suspicion that there is not enough solid evidence to age bruises accurately from colour alone. Schwartz and Ricci confirmed this finding in their independent review. Maguire and colleagues also note that there is variation in human colour discrimination. Again, they caution about being clear about what science supports when testifying on the stand in court. These findings are consistent with those of Bariciak and colleagues—ie, that estimates by physicians of bruise ages are very inaccurate. Bariciak et al evaluated accidental bruises of a known age in children with varying levels of experience of medical professionals (physicians, residents, etc) evaluating the bruises for age. This finding is also consistent with current teaching that said “caution should be used in dating bruises”.

These articles come from authors in the UK where a public and legal backlash has emerged against experts testifying in cases of alleged child abuse. The results emphasise the urgent need for more rigorous research. The results offer both support for the theory that non-mobile infants bruise far less, and that pattern, location, and distribution of bruises in abuse differs significantly from accidental injury. A cautionary note is sounded in assessing the age of a bruise by colouration. The medical and subsequently legal determination of child abuse is ultimately based on a comprehensive clinical and developmental history, detailed physical assessment, and analysis of relevant laboratory data and a thorough knowledge of the literature. Maguire and colleagues’ two reviews provide a concise analysis of the current medical literature and support a thorough evaluation of children with bruising in relation to child maltreatment.

*Elaine Cabinum-Foeller, Lori Frasier
Brody School of Medicine at East Carolina University, Greenville, NC 27834, USA (EC-F); TEDI BEAR: Children’s Advocacy Center, Greenville, North Carolina, USA (EC-F); and Center for Safe and Healthy Families Primary Children’s Medical Center, University of Utah School of Medicine, Salt Lake City, Utah, USA (LF)
cabinumfoellere@mail.ecu.edu

We declare that we have no conflict of interest.

1 Maguire S, Mann MK, Sibert J, Kemp A. Are there patterns of bruising in childhood which are diagnostic or suggestive of abuse? A systematic review. Arch Dis Childhood 2005; 90: 182–86.
vaccine dominated the discussion. Three false lessons were conveyed to readers of the ensuing press release, and doubtless to the lay participants: a smallpox pandemic is likely; ordinary methods of public health cannot control person-to-person infections; and vaccine stores are the key to control. Poppycock, poppycock, poppycock!

3 years ago, the Bush policy of vaccination against smallpox on a large scale\(^2,3\) was in part motivated by Dark Winter, a similar table-top exercise, also with questionable assumptions.\(^4\) Sceptics questioned the benefits of mass vaccination, and raised concerns about vaccine complications.\(^5,6\) Doubts about the net benefits of mass vaccination grew after reports of subsequent cardiovascular events,\(^7,8\) and only a few people have been vaccinated.

In the meantime, a different global pandemic attracted attention. A culinary choice in south China led to a fatal infection in Hong Kong, and subsequently to 8000 cases of severe acute respiratory syndrome (SARS), and nearly 1000 deaths in 30 countries on six continents.\(^9,10\) Despite rapid geographical dissemination and much economic angst, clinicians and epidemiologists proved up to the task, and SARS was controlled in all locations after about 3 months. Control was accomplished by well-informed managers\(^11,12\) using the same basic strategy of surveillance for cases and isolation of contacts that had eradicated smallpox 25 years before,\(^10\) augmented only by high-tech record-keeping and communication.

In fact, SARS presented a challenge far more difficult than smallpox. Like smallpox, SARS spread efficiently at the bedside to family members and caregivers\(^5,6\) by means of large droplets. Like smallpox, the coronavirus was capable of wide dissemination from only a small number of individual cases,\(^13\) with the help of favourable air currents and contaminated clothing or linens. However, neither vaccine prophylaxis nor sophisticated diagnostic methods were available to combat SARS. Whereas unvaccinated people with infectious smallpox have a characteristic vesicular rash, which is likely to keep potential contacts at a distance, SARS was disseminated in material or faeces from people with early non-specific symptoms.\(^9\) Control of smallpox, but not SARS, was facilitated by a 2-week period between exposure and infectiousness in which to identify and isolate contacts.

Rights were not granted to include this image in electronic media. Please refer to the printed journal

Had the outbreak been of smallpox instead of SARS, control in Toronto, for example, would have been quickly established by the old-fashioned techniques of public health: surveillance and isolation, identifying the exposed for vaccination, and avoiding mass vaccination to the extent possible politically. On the basis of the early sequence of events in this largely nosocomial outbreak,\(^14\) containment of smallpox probably would have occurred by the appearance of the third disease generation, much sooner than SARS was contained.

SARS will probably reappear, and there is a remote chance that smallpox will be introduced by a terrorist act (but not with 74,000 first-generation cases). An outbreak of either disease would be costly, but experience suggests that control would again be quickly established. Of greater concern are the more virulent strains of influenza. Reconstruction of the DNA of the 1918 Spanish virus is not only possible, but also a reality,\(^15\) and we can only hope it does not escape into the population. Moreover, the number of human cases of avian influenza in Asia has been increasing.\(^16\) The first clear person-to-person transmission of influenza A (H5N1) reported from Thailand\(^17\) was even more limited to family members than
Comment

physicians’ impairment. Kay also points out that research on the effect of self-prescribing legislation on physicians have access to drugs from various sources other than self-prescription.

Addiction is often the main concern when self-prescribing is discussed. Steps taken by authorities to reduce possible impairment should ideally be based on empirical knowledge of risk factors and the course of addiction. However, because impairment is rare.

Should physicians’ self-prescribing be restricted by law?

In Victoria, Australia, governmental regulations prohibit physicians from self-prescribing. These regulations led Margaret Kay and colleagues1 to question recently whether legislation can reduce harm to physicians who prescribe for themselves. Their review reveals the lack of research on the effect of self-prescribing legislation on physicians’ impairment. Kay also points out that


I declare that I have no conflict of interest.

Thomas M Mack
Department of Preventive Medicine, Keck School of Medicine at the University of Southern California, Los Angeles, CA 90089, USA tmack@usc.edu