

BIOLOGICAL WEAPONS CONTROL AND DISEASE SURVEILLANCE

Assessing the role of transparency

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Introduction

In a workshop of the Biological Weapons Prevention Project (BWPP) held at the South African Centre for Conflict Resolution in Cape Town on 12 October 2004, a presentation was made by ILIAAD (International Lookout for Infectious Animal & Anthro-zoonotic Disease) entitled 'Animal disease outbreaks as a metaphor for managing biological weapons attacks on human populations'. The presentation explored the crucial role of strict quarantine in the successful containment of the outbreak of an exotic type of foot and mouth disease (FMD) in KwaZulu-Natal province of South Africa in 2000, and argued that strict quarantine could be similarly effective in controlling disease outbreaks caused by the intentional use of pathogens. Thus emerging disease outbreaks were linked with the threat of biological weapons. This commentary will review the origin of that linkage, how it evolved, and what lessons the media and information strategies of that evolution may have for current efforts in preventing the development, production and use of biological weapons.

Establishing a global disease surveillance programme

The linking of concerns about biological weapons (BW) and infectious diseases began in

the wake of a 1992 US Institute of Medicine committee report¹ on the threat of emerging infectious diseases and with a programme called ProMED (Programme for Monitoring Emerging Diseases) that was organised the following year. ProMED was an initiative of the Washington-based Federation of American Scientists (FAS), who had brought together a panel of distinguished US disease researchers, epidemiologists and public health officials to advocate a worldwide infectious disease surveillance programme. The programme proposed technical assistance to countries otherwise lacking the capacity to participate in it, mostly developing countries that spawned diseases like Lassa, Marburg and Ebola haemorrhagic fevers and were being ravaged by HIV/AIDS, tuberculosis and malaria.

ProMED was promoted on one level as a global undertaking to meet the threat of emerging infectious diseases; on another level it was advanced as an incentive for Biological and Toxins Weapons Convention (BTWC) states parties to accept measures for BTWC compliance verification, in particular those states parties who were pressing for access to new technologies, which they contended had been guaranteed by Article X of the BTWC. Article X did not specify what new technologies would be available to treaty members in good standing, but it was initially thought that new-generation high-speed computers,

advanced metallurgy, and nuclear energy generation equipment would be included. Over time, however, the export controls adopted by major industrialised countries and the Australia Group put an end to that notion. By 1993, when the ProMED proposal emerged, the non-aligned group of nations did not know which, if any, new technologies might be available to them under the treaty. They therefore talked more generically about equal rights of nations to purchase whatever technology was needed to improve the welfare of their countries and provide for their defence. They were also well on their way to finding ways around the export regulations, albeit through a tangled trail of transfers from country to country that started out in conformance with regulations and ended up in violations.

While the majority of the ProMED science panel was not to any extent involved in subsequent BTWC protocol negotiations, all members of the group were concerned with the threat that emerging infectious diseases posed to national and international security. They generally accepted the premise that the best chance of success in launching a global disease surveillance network lay with a programme that could be financially supported by states party contributions and dues paid into a BTWC treaty organisation. At the 1993 Geneva conference to introduce ProMED, serious questions emerged about ProMED's role in a treaty protocol. Some of the scientists and public health officials invited to represent countries other than the US balked at tying what they perceived as essentially a public health problem – emerging diseases – to an arms control regime and at being asked to lobby their governments to accept the ProMED incentive as satisfaction of the BTWC's Article X.

In addition, the assertion that infectious disease surveillance would assist in determining if outbreaks were naturally occurring events or biological weapons events was not precisely outlined. The general notions were that, first, a global database of surveillance – reporting, diagnosis and epidemiology – would create a detailed mirror image of normal infectious disease distribution in all regions of the world, a mirror that would make the appearance of a new disease, or reappearance of a disease believed eradicated,

immediately suspect for BW; and second, technological advances in DNA and RNA analysis would provide the genealogy of any pathogenic genome and detect any manipulation of genetic material. After a decade of burgeoning global trade and travel, and some reassessments of DNA/RNA analysis, these notions may appear overly optimistic, but at the time they reflected the current state of affairs, the state of the art, and the state of the collective psyche that was being moulded by an emphasis on chemical and biological weapon threats as more likely than nuclear weapons after the dissolution of the Soviet Union.

From 1994 forward, the ProMED concept underwent various modifications and expansions, as well as several name changes, and by the year 2000 had emerged, without a name, as a coalition of proposed technical assistance in the fields of infectious disease surveillance and research, diagnostic and treatment capacity-building, environmental cleanup and protection, and good manufacturing, good laboratory and biosafety standards certification. Such assistance, it was proposed, would be provided by qualified agencies selected and vetted by a technical secretariat of a BTWC treaty organisation, and supported by a special fund created through contributions from the more financially able states parties. Since this assistance would include access to technologies deemed necessary and appropriate to specific programmes approved by the technical secretariat, its proponents believed that Article X provisions for access to technology by treaty countries in good standing would be satisfied.

ProMED-mail: assessing the advantages of transparency

Despite gaining support, the proposal was abandoned when, in 2001, the US withdrew its support of the protocol and ceased further negotiations in the BTWC context. It has been possible in the aftermath of that debacle to reflect on the original effort to link infectious disease surveillance with BW prevention. Was that linkage legitimate? It can be said that the effort was well-meant expediency – aimed at a speedy and successful conclusion of the protocol negotiations. In addition, had it accomplished its aim

within five years of its introduction, there might well have been a BTWC treaty administration in operation today, which would be steering funds to the World Health Organisation (WHO) to conduct a more efficient global disease surveillance and response programme. But would that programme have a unique capacity to prevent the development and use of biological weapons, or even be the prime resource for identifying an outbreak of disease as a biological weapon event? This is not likely, given the political aspects of the UN, of which it is a part.

While the BW-linked part of ProMED waned, its adjunct e-mail network became larger. When ProMED-mail (adopted to distinguish it from the original proposal) was formed in August 1994, there was some confusion as to how it was to be promoted – as a global emerging disease surveillance network; as a mechanism for disseminating information that would be developed by a proposed global system of laboratories, field scientists and epidemiologists; or as a temporary clearing house for information on disease outbreaks, whatever their source. In the end, it was not promoted as any specific type of service other than electronic, but was allowed to be perceived and to seek its own level as events transpired.

Today, ProMED-mail (since 1999 a function of the International Society for Infectious Diseases based in Cambridge, Massachusetts) is perceived as the pre-eminent publicly accessible record on outbreaks of infectious human, animal and plant diseases reaching every organised nation in the world. Its basic mission is to promote complete transparency in acknowledging and reporting such outbreaks and in establish transparency as a norm that will promote confidence and inform appropriate action. More than any other disease information service it reflects the role played by the media in promoting transparency in reporting disease events.

In the decade of ProMED-mail operations, at least half of its reports have originated with the print and broadcast media. These reports are e-mailed to the network by subscribers – some 30 000 in 150 countries – and edited and investigated by competent moderators. While the media source dominance has prompted

some to dismiss the programme as a media recycler, even the most persistent critics are forced to concede that the extensive searchable ProMED-mail archives put an entire body of pertinent media, as well as the official reports of international agencies and associated scientific data, about every publicly known outbreak, at the fingertips of the world, including those of journalists. In the archives there are examples of total voluntary transparency from the first to the last case of an outbreak. There are also examples of forced transparency – where governments have been backed into a corner by the media or by whistle-blowers among their citizens.

The advantages of transparency are generally recognised, but there can also be undesirable consequences, particularly for less-secure governments and less-developed economies. In all countries, the first report of an outbreak of a serious infectious disease can disrupt travel and exports; in developing countries the impact of lost tourism and markets can be catastrophic. To prevent these impacts, some countries decline to officially acknowledge outbreaks, report fewer than actual cases, or deny press reports. In some instances, citizens of these countries have taken it upon themselves to contradict the government or violate laws aimed at suppressing information. The following two cases illustrate the possible consequences.

In June 1997 a caller who identified himself as a member of the diplomatic community urged ProMED-mail to investigate a large number of dengue fever cases in Cuba. While cases of dengue fever in the Caribbean were normal, the presence of a 'large number' of cases in Cuba, which claimed to have eliminated the two mosquitoes that vector the disease, was of great interest. The next day a second caller directed ProMED-mail to a CubaPress Independent Press Agency (a Cuban expatriate media group) website in Miami and to a report quoting a Cuban doctor that there were 10 000 cases in and around Santiago de Cuba with 30 deaths. The doctor was Dessy Mendoza, president of the Independent Medical College of Santiago de Cuba. One day later the WHO reported that the Cuban Ministry of Health had on 16 June officially reported 826 cases with three deaths, approximately one-tenth the numbers provided by the doctor.

On 25 June Dr Mendoza was arrested for providing information to foreign journalists and was imprisoned. The charge against him at trial was 'using the mass media to spread enemy propaganda', the sentence was eight years in prison. Efforts by Amnesty International and Physicians for Human Rights, in conjunction with Pope John Paul's visit in 1999, resulted in Mendoza's release after two years, but his health had been broken by prison life. This case was complicated by factors other than just the numbers of cases and death Mendoza had provided to the independent Cuban press. After his arrest, other doctors provided similar numbers and reported that the outbreak included cases of the dreaded dengue haemorrhagic fever. Before the epidemic began, Mendoza had been identified as a vocal critic of certain government policies. He had told reporters moments before his arrest that 'they are looking for me so that I don't keep revealing to the national and international public the true magnitude of the dengue epidemic in Santiago, but I will keep doing this as long as I am free'.

The Mendoza case has elements in common with that of Yang Jianli, the military surgeon who blew the whistle on China's suppression of information on the 2003 SARS (severe acute respiratory syndrome) outbreak a month after he wrote a letter to China's leaders denouncing the 1989 Tiananmen Square crackdown. Dr Yang, too, was imprisoned and later released. The problem in both cases is that it is not possible for one not privy to the prosecution to say which action – political dissent or providing information in the interest of public health – by the doctors was the offence leading to arrest and imprisonment. The circumstantial evidence in both cases, however, indicates that they were punished for reporting information on the outbreaks to foreign media: neither doctor was arrested in a contiguous time frame with his expression of purely political dissent. And both were in the advance guard campaigning for a free press in their countries.

While ProMED-mail does not encourage such open action by individuals, it does from time to time issue RFIs (requests for information) based on anonymous tips or information gleaned from sources kept confidential. These RFIs not only generate media inquiries to

health officials, they also put the governments on notice that the word is out, so to speak, and have on occasion led international health organisations to start their own investigations. ProMED-mail unequivocally supports the free exchange of information relating to outbreaks of infectious diseases. In an addendum to a 18 June 2003 report on Chinese information policing efforts associated with SARS, published first in the New Zealand *Herald*, the ProMED-mail editor-in-chief wrote: 'It is now evident that China's suppression of news about SARS in south China helped fuel a global epidemic that could have been controlled more quickly, with fewer fatalities and much less economic damage, if news of that outbreak had been reported rapidly and fully to the world. The principle, that rapid dissemination of accurate information on emerging diseases and outbreaks will lead to better public health, is the basis of ProMED-mail's existence.' Thus ProMED-mail is not an inappropriate explication of the value of a free press and open societies, through which transparency of information can only be achieved, and the need for proactive education of the media to ensure accurate reporting.

Full and accurate communications are essential to public understanding and cooperation. One has only to examine the attempts by the Chinese government in 2003 to suppress information about the true nature and extent of the initial outbreak and spread of SARS and the results of that suppression to realise the value of transparency in addressing epidemics. The absence of a free press in China and the unwillingness of the government to inform its controlled press led to the leaking of information to the foreign press working in the country, and to countless others through e-mail. As the news spread, the government was forced to acknowledge the highly contagious nature of the disease. And as the disease spread, the government attempted to restrict movement of the population. Not an imprudent decision, but one that, in the absence of full disclosure at the start, served only to engender more popular distrust of the government and prompt charges of civil rights violations.

Had China developed a history of transparency in announcing disease events, and had it used the media as an aide-de-camp, the

SARS epidemic might have been contained. SARS appeared first in Guangdong Province as a respiratory infection, perhaps a pneumonia that behaved atypically. Guangdong is where the H5N1 virus that jumped directly from birds to humans in 1997 is thought to have originated. According to reports at the time, there had been an outbreak of influenza in poultry in Guangdong shortly before the species-jumping H5N1 virus caused the first human disease in Hong Kong. (Hong Kong imports a significant amount of poultry from Guangdong Province.) According to the same reports, Chinese authorities had covered up the poultry outbreak. This suggests the possibility that when SARS appeared in Guangdong, the province continued its policy of suppressing information. Then, when diagnostics showed that the disease was caused by a previously unrecognised coronavirus, the central government stuck with the policy. The emergence of two new highly contagious and fatal viruses from the same province within six years would have been a significant embarrassment, yet less embarrassing than the worldwide epidemic.

What is most interesting in all the contagious disease events mentioned so far is that all of them were addressed within the context of emerging diseases – new disease (SARS), reappearing disease (dengue haemorrhagic fever), new strain of a known disease (species-jumping H5N1 influenza), new geographic location of a known disease (Type O FMD in South Africa) – and none of them raised serious concern that they might have resulted from biological weapons. The same is true with other outbreaks – West Nile virus, malaria and monkeypox in the US, cases of Ebola in Japan, sleeping sickness in Great Britain, mad cow disease (bovine spongiform encephalopathy) in Canada. Even the concern in the non-contagious anthrax situation was short lived: as soon as the genetic sequencing of the spores identified them as a highly refined US military research strain, the perpetrator profile became that of a disgruntled scientist with access to the strain and devoid of any rectitude. At least a portion of the constraint evident in those situations is due to an enlarged base of knowledge within the media, governments and populations at large.

The role of the media

In an analysis done by the South African veterinary services after the exotic FMD outbreak in KwaZulu-Natal and two other outbreaks of native FMD strains that same year, one of the lessons learned was that more effective media communications are needed. The veterinarians concluded that press statements and Internet sites aimed at telling the public why animals first had to be quarantined, then destroyed, followed by later vaccination of herds, were not enough to gain public understanding and cooperation. They noted that those communications strategies must be supplemented by a transparent and continuous rapport with the media. In short, crisis communications required a dedicated proactive approach in which the door was always open to reporters for purposes of education, as well as transparency.

But not only in crisis communications is this approach to the media essential. The same approach is required to ensure informed media in all events related to epidemics. It would seem that education and continuous rapport are functions of government and, indeed, the public health and veterinary agencies of many nations and international bodies do a creditable job in responding to direct media inquiries and making possible indirect self-education through Internet access. Generally speaking, however, it is the media that originate the flow of information: the media ask; the agencies answer. This is not a proactive approach.

During the 2001 anthrax attacks in the US, public policy spokespersons learned that most reporters assigned to the story were seeking 'sound bites' that could easily be reported without understanding what they meant. Few of the callers had any background in bacteriology or laboratory techniques. And whether due to deadlines or to a decided lack of curiosity, only a few reporters appeared interested in consulting Internet sites on basic elements of the pathogen and modes of transmission. This experience identified a need for educating the media in advance of a crisis. It also identified the value of a free and open press whose persistence undoubtedly accelerated the release of diagnostic information on the weapons-grade nature and the military research source of the anthrax spores used in the attack.

If full and accurate information timely conveyed to the public by sufficiently informed reporters is an essential factor in containment of outbreaks of naturally occurring infectious disease, as was noted in the South African experience with FMD, is it an equally essential factor in containing disease resulting from the use of biological weapons? The answer, quite certainly, is yes. Can, then, transparency in communications help prevent the development, production and use of biological weapons? While the answer is less certain, a determined effort by governments to establish a norm of transparent communications about naturally occurring diseases would engender public trust and promote compliance with quarantine measures in the event of a biological attack. If the norm were globally established, mutual trust and cooperation between nations in such an event would be enhanced.

The arms control community has always talked of norms – how to create those norms through treaties, how to reinforce the generally felt repugnance against weapons of mass destruction. It does not always recognise the role of the media in creating repugnance, especially by photojournalism and television. The shadows of vaporised citizens in Hiroshima, the blistered bodies of Allied soldiers in World War I trenches, the blood-filled eyes of Ebola victims in Congo are etched into our collective conscience. We do not always remember that most of the world population gets 99% of its information about weapons threats from the media. We fault the media for inaccurate reports but do not often take the initiative to correct them in a timely fashion. We write for other members of our community more often than we conduct media workshops or press conferences. And while we build websites resplendent

in their scope, we more often than not depend on search engines to get them noticed.

The proactive element missing from the South African veterinary approach to informing the media – and through it the affected populations – as to why certain actions were necessary to control the FMD outbreak is also missing from the approaches of BW prevention advocates to informing the media – and through it the world population – why it is imperative that, in the absence of an enforcement mechanism in the BTWC, certain voluntary actions are necessary. Among these are:

- vigorous efforts by elected officials and bio-weapons experts to carefully monitor their assertions as to the lethal power of specific pathogens and to provide the media with only scientifically supportable information;
- efforts by governments to make an inventory of their biological defence research programmes and discontinue those that have the potential to create new pathogens or increase the virulence of known pathogens against which no defence is available;
- action by university bio-research departments and private and commercial culture collections to increase security within their facilities; and
- efforts by the international community to find a way of tracking every transfer of product and process technology that has the capacity for dual use and of ensuring that it remains in the facility and is used for the purposes for which it was obtained.

Notes

- 1 J Lederberg, R Shope & S Oaks (eds), *Emerging infections: microbial threats to health in the United States*, National Academy Human Press, Washington, DC, 1992.