

## B8 | PANDEMIC INFLUENZA PREPAREDNESS: IN SEARCH OF A GLOBAL ETHOS

In early 2007, the Indonesian government made a controversial decision to withhold its H<sub>5</sub>N<sub>1</sub> avian flu virus samples from WHO's collaborating centres as leverage for a new global mechanism for virus sharing that had better terms for developing countries.

Indonesia was expressing dissatisfaction with a system that obliged WHO member states to share virus samples with WHO's collaborating centres, but which lacked mechanisms for equitable sharing of benefits, most importantly affordable vaccines developed from these viral source materials (*Jakarta Post*, 17 February 2007).

The Indonesian decision, invoking provisions in the Convention on Biological Diversity (1992) pertaining to sovereign rights over biological resources, aroused indignation and accusations of irresponsibility that supposedly endangered global health. But there were also expressions of support and sympathy, including an editorial in *The Lancet* (2007):

To protect the global population, 6.2 billion doses of pandemic vaccine will be needed, but current manufacturing capacity can only produce 500 million doses. Indonesia fears that vaccines produced from their viruses via the WHO system will not be affordable to them ... In November 2004, a WHO consultation reached the depressing conclusion that most developing countries would have no access to vaccine during the first wave of a pandemic and possibly throughout its duration ... The fairest way forward would be for WHO to seek an international agreement that would ensure that developing countries have equal access to a pandemic vaccine, at an affordable price.

On 29 March 2007, immediately following an interim agreement for Indonesia to resume sending flu virus samples to WHO, the health ministers of 18 Asia-Pacific countries issued the Jakarta Declaration (2007), which called upon WHO

to convene the necessary meetings, initiate the critical processes and obtain the essential commitment of all stakeholders to establish the mechanisms for more open virus and information sharing and accessibility to avian influenza and other potential pandemic influenza vaccines for developing countries.

These proposals were tabled at the 60th World Health Assembly in Geneva (14–23 May 2007) as part of a resolution calling for new mechanisms for

virus sharing and for more equitable access to vaccines developed from these viral source materials.

In the course of the deliberations, it emerged that WHO collaborating centres had not abided by the relevant guidelines on sharing of viruses, which required the consent of donor countries before these collaborating centres could pass on the viruses (other than the vaccine strains) to third parties, such as vaccine manufacturers (WHO 2007). While discouraging the use of material transfer agreements (MTAs) at the point when donor countries transferred their virus samples to WHO, WHO's collaborating centres nonetheless resorted to MTAs when they transferred to third parties vaccine strains containing parts of the viruses supplied by developing countries, such as Indonesia, Vietnam, and China. Indeed, WHO's collaborating centres themselves, as well as third parties, had sought patents covering parts of the source viruses used in developing vaccines and diagnostics (Third World Network 2007). In 2007 the World Health Assembly adopted a resolution mandating WHO to establish an international stockpile of vaccines for H5N1 or other influenza viruses of pandemic potential, and to formulate mechanisms and guidelines for equitable access to affordable pandemic flu vaccines (World Health Assembly 2007). The resolution also requested a WHO working group to draft new Terms of Reference (TORs) for WHO collaborating centres and for its H5 reference laboratories for the sharing of influenza viruses, to be submitted to a special intergovernmental meeting of WHO member states.

### **Global health security or global public health?**

In April 2003, as the SARS pandemic was unfolding, Ilona Kickbusch (2003), professor of global health at Yale University's School of Public Health, lamented the weak enforcement mandate of international agencies such as the WHO for securing the cooperation of member states in safeguarding global health security. She issued a call 'to explore sanctions by the UN Security Council, the WTO and the IMF for countries that do not adhere to global health transparency and their obligations under the IHR'.

Similar sentiments, couched in terms of health security and health policing, re-emerged with Indonesia's refusal to dispatch H5N1 virus samples to the WHO's collaborating centres. In a strongly worded op-ed in the *Washington Post*, Richard Holbrooke and Laurie Garrett (2008) castigated Indonesia's assertion of 'viral sovereignty' as 'dangerous folly' and a 'morally reprehensible' threat, which called for 'very strong action' by political leaders around the world.

A year later, in July 2009, as the H1N1 pandemic was unfolding, Garrett (Cohen 2009) belatedly acknowledged the essential point about 'viral sovereignty', that it was above all an exercise of sovereign leverage for more equitable access to lifesaving vaccines in a pandemic situation.

Despite appeals to humanitarian solidarity and to enlightened self-interest, almost all of the first billion doses of the H1N1 vaccine produced in 2009

were allotted to 12 wealthy nations that had placed advance orders. Sanofi Pasteur and GlaxoSmithKline (GSK) pledged 120 million doses to the WHO for distribution to poor countries, but even those pledges could only be fulfilled months after the pandemic had waned.

In Mexico, the epicentre of the H1N1 pandemic where health authorities had promptly shared its viruses with the GISN, Health Secretary Jose Angel Cordova revealed that ‘we had to wait in the second line to buy the vaccine, because obviously the first shipments were for the countries that make the vaccine’ (Associated Press, 12 January 2010). With no domestic production capacity at the time, Mexican officials had ordered 30 million doses of the vaccine from Sanofi Pasteur and GlaxoSmithKline, most of which could only be delivered in February or March 2010. Under the circumstances, they made an arrangement to borrow 5 million doses from Canada, as the pandemic waned in the northern hemisphere.

### **Access to pandemic H1N1 vaccines: a worrisome preview**

In September 2009, President Obama’s administration had brokered an agreement with eight other wealthy nations (Australia, Brazil, France, Italy, New Zealand, Norway, Switzerland, and the United Kingdom) to donate 10 per cent of their vaccine supplies to WHO for use in poor countries, on top of the pledges by Sanofi Pasteur and GlaxoSmithKline (White House press release, 17 September 2009). With accumulating evidence that a one-dose injection would be adequate in place of the anticipated two-dose regimen, three additional countries and four more manufacturers eventually came on board, raising the total pledges to 180 million doses of vaccine (WHO 2009a).

As of early February 2010, however, only two of the 95 countries listed by the WHO as having no independent means of obtaining flu vaccines – Azerbaijan and Mongolia – had received any. WHO had earlier planned to deliver vaccines to 14 of these countries by then, and even then shipments were adequate for protecting only 2 per cent of the populations of these countries (*New York Times*, 2 February 2010). Pledges and exhortations aside, few were really surprised that when faced with perceived national emergencies, countries that could afford vaccines prioritised their own nationals first, and only when the worst had passed did they transfer their leftovers to the poor using the WHO as a clearing house.

As it turned out, the H1N1 pandemic peaked in October/November 2009 in the northern hemisphere, and it furthermore remained mild, more comparable in severity to the 1957 and 1968 pandemics than to the feared 1918 pandemic (Presanis et al. 2009). Many nations cut back on their vaccine orders, while others attempted to sell off excess stock or pending deliveries as the threat perception receded and scepticism about the vaccine’s safety resurfaced among the general public.

In the wake of the mild pandemic, WHO’s alert system for influenza pan-



**19** Man with a mask to protect against influenza in a subway in Buenos Aires, June, 2009(© Elultimodeseo | Dreamstime.com)

demics was also subjected to scrutiny and criticism. There were allegations of scaremongering by parties with vested interests in vaccine manufacture and sales, squandering of scarce health resources, and diversion of attention from more urgent priorities in global health. Adding to the unease was WHO's lack of transparency in handling the declared interests of its influential advisers on pandemic alert and response, many of whom had also acted as advisers and consultants for pharmaceutical companies or had investment interests in these companies (Cohen and Carter 2010). The potential for conflict of interest was underscored by the fact that many of the advance purchase contracts for pandemic flu vaccines ('sleeping contracts') had trigger clauses that hinged upon the declaration of a level-six flu pandemic by WHO. Prior to the H1N1 pandemic, other researchers had begun to question the efficacy of seasonal flu vaccines (Jackson et al. 2006; Jefferson 2006).

### **Pathways to access**

Resolution WHA60.28 ('Pandemic Influenza Preparedness: Sharing of Influenza Viruses and Access to Vaccines and Other Benefits'), which emerged from the 60th World Health Assembly (2007), declared that affordable access

to the benefits of virus sharing in such forms as vaccines, medicines, and diagnostics was the equitable quid pro quo of global virus-sharing arrangements for pandemic alert and response.

Indeed, the WHO Intergovernmental Meeting (IGM) on Pandemic Influenza Preparedness, a process mandated by WHA60.28, included by consensus the following paragraph in the draft framework for reforming the GISN that was tabled at the 62nd World Health Assembly (2009):

Recognise that member states have a commitment to share, on an equal footing, H5N1 and other influenza viruses of human pandemic potential and the benefits, considering these as equally important parts of the collective action for global public health.

In actuality, though, WHA60.28 gave rise to two divergent approaches for achieving these reciprocal goals. Notwithstanding this resolution, developed countries, in particular those heavily invested in pharmaceutical enterprises and associated intellectual property regimes, were opposed to the formal linking of virus sharing with the sharing of benefits, preferring instead ad hoc voluntary arrangements and case-by-case negotiations over technology transfer and contributions in cash or in kind. They were also opposed to any restrictions on patent claims over biological materials or parts thereof received through WHO's GISN system, as well as patent claims over the products developed from the use of these biological materials. Their posture was summed up thus by an observer at the sessions of the IGM on Pandemic Influenza Preparedness: 'We need their virus, they need our vaccine, nobody needs this framework' (Hammond 2009).

Developing countries, on the other hand, insisted on formalising in an explicit and enforceable manner the reciprocal obligations of virus sharing and access to benefits. Their preferred instrument for achieving this was a formal Standard Material Transfer Agreement (SMTA), which would govern the terms of virus sharing as well as any intellectual property claims that may arise from this arrangement.

### **Building national capacities**

In October 2006, WHO invited proposals from vaccine manufacturers in developing countries to establish domestic production capacity for (seasonal) influenza vaccines that could be converted to pandemic vaccine production if the need arose. By late 2008, six developing country manufacturers had received grants of US\$2.0–2.7 million each to establish pilot facilities for the production of influenza vaccines (WHO 2009a) and, as of February 2009, WHO was also processing proposals from five additional establishments.

These modest initiatives will in time augment the existing flu vaccine manufacturing capacity in developing countries. But the gulf between potential need and existing capacity remains daunting.

Since WHO's efforts at brokering new terms of agreement for virus sharing are still bogged down by disagreements over material transfer agreements and intellectual property claims, it may be wise to also consider regional initiatives that could be set in motion without undue delay, within an institutional framework with a functional track record.

### Concluding remarks

In a 2003 report on migration and health, WHO acknowledged that:

investing in improving health in poor countries is not a question of altruism but of long-term self-interest. For example, it has been shown by mathematical modelling for hepatitis B that the resources needed to prevent one carrier in the United Kingdom could prevent 4,000 carriers in Bangladesh of whom, statistically, four might be expected to migrate to the UK. Thus, it would be four times more cost effective for the UK to sponsor a vaccination programme against hepatitis B in Bangladesh than to introduce its own universal vaccination programme. (Citing Gay and Edmunds 1998)

But how does hepatitis B rank as a national health priority within Bangladesh? Bangladesh has been categorised as an intermediate endemic zone for the hepatitis B virus (WHO 2002). In Bangladesh, diarrhoea (in synergy with under-nutrition) is the leading cause of death among children under five (excluding neonates) (WHO 2006), and it topped the list for hospital admissions (WHO/SEARO 1997).

Foreign assistance, therefore, can be skewed towards specific diseases and can be driven by the health priorities of affluent countries rather than those of the recipient countries. Is there a similar potential for donor-driven global surveillance initiatives to distort the national health priorities of aid recipients and possibly weaken national health systems via disease-specific funding mechanisms?

Calain (2007) concludes from his review of disease surveillance experiences in Uganda, India, Laos, and Cambodia that among the attributes of a successful surveillance system in developing countries are simplicity, community participation, ownership, feedback and timely interventions, and personal relationships with field surveillance agents. On the other hand, donor-driven, poorly coordinated, and redundant surveillance networks that siphon off scarce human resources from already fragile health systems can further fragment and distort the national health capacities of developing countries. In such circumstances, 'global surveillance strategies seem bound to benefit mainly the most industrially developed nations through the provision of early warning information or scientific data'.

There is clearly an asymmetry in the global system for pandemic influenza alert and response, which asserts a global *need* for surveillance, information exchanges, and virus sharing (essential 'global public goods' to be made

available via enforceable international regimes), but accepts a *demand-based* allocation of key elements of pandemic response (such as vaccines, antivirals, and protective equipment), with all the inequities that this entails.

In the absence of reciprocal benefits, the International Health Regulations (2005), for instance, which impose mandatory disease-reporting obligations on signatory member states, could reduce poorer front-line states to the role of pandemic ‘canaries’ in an early warning system for emergent flu pandemics (Chan and de Wildt 2008).

## References

- Associated Press (2010). ‘Mexico still waiting for most swine flu vaccines’. 12 January.
- Barry, J. M. (2004). ‘The site of origin of the 1918 influenza pandemic and its public health implications’. *Journal of Translational Medicine*, 2(3). doi: 10.1186/1479-5876-2-3. www.ncbi.nlm.nih.gov/pmc/articles/PMC340389/.
- Calain, P. (2007). ‘From the field side of the binoculars: a different view on global public health surveillance’. *Health Policy and Planning*, 22(1): 13–20.
- Chan, C. K. and G. de Wildt (2008). ‘Developing countries, donor leverage, and access to bird flu vaccines’. *Development in Practice*, 18(1): 100–109.
- Cohen, C. (2009). ‘Laurie Garrett interview: U.S. global health leader MIA on swine flu’. *ScienceInsider*, 28 July. news.sciencemag.org/scienceinsider/2009/07/laurie-garrett.html (accessed 30 August 2009).
- Cohen, D. and P. Carter (2010). ‘WHO and the pandemic flu “conspiracies”’. *British Medical Journal* (clinical research edn), 340(7759): 1274–9.
- Gay, N. J. and W. J. Edmunds (1998). ‘Developed countries could pay for hepatitis B vaccination in developing countries’. *British Medical Journal*, 316(7142): 1457.
- Graham, J. P. et al. (2008). ‘The animal–human interface and infectious disease in industrial food animal production: rethinking biosecurity and biocontainment’. *Public Health Reports*, 123(3): 282–99.
- Hammond, E. (2009). ‘Indonesia fights to change WHO rules on flu vaccines’. *Grain*, April. www.grain.org/seedling/?id=593 (accessed 6 July 2010).
- Holbrooke, R. and L. Garrett (2008). ‘“Sovereignty” that risks global health’. *Washington Post*, 10 August, p. B07. www.washingtonpost.com/wp-dyn/content/article/2008/08/08/AR2008080802919.html.
- Jackson, L. A. et al. (2006). ‘Evidence of bias in estimates of influenza vaccine effectiveness in seniors’. *International Journal of Epidemiology*, 35(2): 337–44.
- Jakarta Declaration on responsible practices for sharing avian influenza viruses and resulting benefits (2007). www.indonesia-ottawa.org/information/details.php?type=press\_releases&id=122 (accessed 11 May 2007).
- Jakarta Post (2007). ‘RI “will not share” flu samples’. 17 February. www.thejakartapost.com/news/2007/02/17/ri-o39will-not-share039-flu-samples.html.
- Jefferson, T. (2006). ‘Influenza vaccination: policy versus evidence’. *British Medical Journal* (clinical research edn), 333(7574): 912–15.
- Kickbusch, I. (2003). ‘SARS: wake-up call for a strong global health policy: epidemics affect the global community and demand global cooperation’.
- Yale Global Online, 25 April. yaleglobal.yale.edu/content/sars-wake-call-strong-global-health-policy (accessed 28 December 2009).
- Lancet (2007). ‘Global solidarity needed in preparing for pandemic influenza’. Editorial. *The Lancet*, 369(9561): 532. 20070217/23.
- Mara, K. (2010). ‘Possible WHO–industry conflict of interest on pandemic flu under investigation’. *Intellectual Property Watch*, 7 June 2010. www.ip-watch.org/weblog/2010/06/07/possible-who-industry-conflict-on-pandemic-flu-under-investigation/ (accessed 14 July 2010).
- Oxford, J. S. et al. (2002). ‘World War I may have allowed the emergence of “Spanish”

- influenza'. *Lancet Infectious Diseases*, 2(2): 111–14.
- Presanis, A. M. et al. (2009). 'The severity of pandemic H1N1 influenza in the United States, from April to July 2009: a Bayesian analysis'. *PLoS Medicine*, 6(12): 1353–64. e1000207. doi: 10.1371/journal.pmed.1000207.
- Reuters (2007). 'WHO says studying bird flu vaccine insurance policy'. 13 June. www.reuters.com/article/2007/06/14/birdflu-insurance-idUSN1340947720070614.
- Third World Network (2007). 'WHO admits patents taken on avian flu virus'. TWN Information Service on Health Issues, 22 May. www.twinside.org.sg/title2/health.info/twninfohealth09o.htm (accessed 23 May 2007).
- Third World Network (2009). 'Urgent need to ensure developing countries have fair access to influenza anti-virals and vaccines'. Press statement, 4 May. groups.google.com/group/misc.activism.progressive/browse\_thread/thread/5doe38aod331decc?pli=1.
- Third World Network (2010). 'WHO: virus-benefit sharing working group set up, pandemic flu response to be reviewed'. 26 January. www.twinside.org.sg/title2/health.info/2010/health20100103.htm.
- White House (2009). 'President announces plan to expand fight against global H1N1 pandemic'. Press release, 17 September. www.whitehouse.gov/the\_press\_office/President-Announces-Plan-to-Expand-Fight-Against-Global-H1N1-Pandemic/.
- WHO (2002). *Hepatitis B*. WHO/CDS/CSR/LYO/2002.2:Hepatitis B. Geneva, WHO.
- WHO (2003). *International migration, health and human rights*. Geneva, WHO.
- WHO (2006). *Mortality country fact sheet 2006: Bangladesh*. www.who.int/whosis/mort/profiles/mort\_searo\_bgd\_bangladesh.pdf (accessed 9 July 2010).
- WHO (2007). *Avian and pandemic influenza: developments, response and follow-up, and application of the International Health Regulations (2005) – Best practice for sharing influenza viruses and sequence data*. EB120/INF.DOC./3, 11 January. WHO Executive Board, 120th session.
- WHO (2009a). Transcript of virtual press conference with Dr Keiji Fukuda, Special Adviser to the Director-General on Pandemic Influenza. WHO, 17 December.
- WHO (2009b). *Pandemic influenza preparedness: Sharing of influenza viruses and access to vaccines and other benefits*. Report by the Director-General. A/PIP/IGM/13, 30 April. Appendix 2: 'Increasing vaccine production capacity and technology transfer'. Geneva, WHO.
- WHO (2010). *Pandemic influenza preparedness: Sharing of influenza viruses and access to vaccines and other benefits. Outcome of the process to finalize remaining elements ...* Report by the Secretariat. Provisional agenda item 4.1, 10 December. Executive Board, 126th Session, 18–23 January. Geneva, WHO.
- WHO/SEARO (1997). *Country health system profile: Bangladesh: Mortality*. www.searo.who.int/en/Section313/Section1515\_6121.htm (accessed 9 July 2010).
- World Health Assembly (2007). Resolution 60.28, 'Pandemic influenza preparedness: sharing of influenza viruses and access to vaccines and other benefits'. Geneva, 23 May.
- World Health Assembly (2009). *Pandemic influenza preparedness: sharing of influenza viruses and access to vaccines and other benefits*. Document A62/5 Add.1, Provisional agenda item 12.1 (18 May 2009), 62nd World Health Assembly, Geneva.