Case study example from the 2015 Global Forum on Bioethics in Research meeting on 'emerging epidemic infections and experimental medical treatments'

1. Brief description of the research project

This case study concerns the use of Indonesian H5N1 Avian influenza specimens by commercial organisations for vaccine development. The specimens were provided to the organisations by the World Health Organisation without notification to the Indonesian government and scientists. The study explores a number of ethical issues including vaccine supply for those who contribute to seed stock and the involvement of governments and scientists of less-resourced countries in the research and development of pandemic planning.

2. Background – relevant facts about the host country/community and disease studied

H5N1 Avian influenza was first noted to cause disease in humans in 1997. Since then, there was a fear that H5N1 would be the main pathogen for a global pandemic. Between July 2005 to December 2007, Indonesia reported the highest number of influenza A (H5N1) human cases in the world, with 116 cases and an extremely high fatality rate of 81%. Although the initial cases were diagnosed in Indonesia and confirmed in a regional reference laboratory, there was initially limited capacity to detect H5N1. Indonesia together with many developing and developed countries worldwide has national influenza centers which are part of the global influenza surveillance network. For many years, this has routinely collected clinical samples of influenza from patients in regional collaborative reference laboratories. Under this framework, Indonesia, and in accordance with provisions under the International Health Regulation (IHR), sent specimens to the World Health Organization (WHO) global influenza surveillance network collaborating center in Australia. International aid and assistance from the WHO subsequently helped the country to build capacity to detect the virus. Preparations for pandemic influenza began across the globe, with laboratory results being disseminated in international conferences and specimens being shared with pharmaceutical companies without notification of the Indonesian government and scientists. This issue came to a head when an Australian based company approached the Indonesian government to offer to sell large quantities of vaccine based on an "Indonesian strain" of the virus. It emerged that the company had been given the virus by the WHO collaborating center and allowed to commercially produce the vaccine. Due to the lack of any mechanism to ensure equitable access to vaccines and other benefits from research on influenza viruses, in 2007, Indonesia stopped sharing additional H5N1 specimens with the WHO without a material transfer agreement under the biological agents convention, and would conduct case confirmation within the country. Eventually, the WHO revised its approach to the relationship between countries providing specimens and vaccine manufacturers.

3. Ethical issues

This case highlighted how the global burden of diseases, disparity of resources, and power imbalances contributed to different perspectives and experiences of various stakeholders regarding global public health surveillance, data sharing, and the fair distribution of benefit and burden. Some key challenges included:

- To what extent do countries have to share public health data and biological specimens with the international community? Related to this, to what extent can states retain sovereignty over biological samples ("viral sovereignty") isolated within their territories in the face of a potential pandemic? Should the priority be given to protecting the citizens of the country where the disease first emerges even if it will mean a delay in the production of vaccine and therapeutics. This is likely given the limited resources in many of the countries where these diseases have emerged. Is this right and how can the rights of the citizens of the affected countries be protected while at the same time ensuring timely development of vaccines and therapeutics?

- Who should have access to data and specimens (universities, government scientists, international organizations or pharma industry and which combination of the above), and what are the criteria for granting such access?
- How should governments and scientists of less-resourced countries be involved in the research and development of pandemic planning? How may ownership of research be determined? Should there be international mandates that scientists from countries affected by emerging infectious diseases be trained or embedded in teams either in-country or out of country that are working on vaccines and therapeutics?
- How should multiple states, international agencies, commercial entities collaborate in public health endeavours with the backdrop of global disparity and competing interests? How should various provisions be negotiated?
- If data sharing is for global public health benefit, how should the international community ensure that the benefit is truly global? What are various parties' (e.g., wealthier nations, NGOs, pharmaceutical companies) ethical obligations towards people in poorer regions vis a vis the people in their own countries of domicile?

4. Commentary on the issues, conclusions and/or recommendations for discussion or future research

How these ethical challenges were handled

- International meetings were convened to promote equitable and transparent processes of data and benefit sharing
- Indonesia's attempt to obtain a Material Transfer Agreement (MTA) was denied, and the country responded by refusing to further share specimens
- Eventually in 2011 at the World Health Assembly, a framework was created by which viruses were shared with WHO in return for small amounts of vaccine being reserved for developing countries as well as provisions for compulsory licensing of pandemic vaccines for manufacturers in developing countries. (http://www.npr.org/sections/health-shots/2011/04/18/135519592/who-resolves-impasse-over-sharing-of-flu-viruses-access-to-vaccines)

Key questions unanswered

- With the ongoing global disparity as the backdrop, how may the international community create a systematic framework or global operational guidelines for public health data and sample sharing that will be fair to all stakeholders?
- How do we ensure that discussions about surveillance are not separated from considerations of equitable access to benefits?
- How can the international community reconcile data sharing provisions under the IHR with various principles of international laws that give states sovereignty over biological resources found within their territory?
- Is it ethical to require less-resourced countries to share data and specimens for vaccine production that may disproportionately benefit people in affluent nations that can afford these expensive medicines due to patent provisions?
- Is obligatory benefit sharing in return for specimen sharing ethical defensible and economically feasible? What systemic, ideological, and cultural changes would be required for such paradigm shift? (e.g., humanitarian or charity-based versus justice-based arguments)
- What are various ways to promote more equitable access to production of vaccines and therapeutics?
- How can the international public health and research communities (re)build trust and promote equity in an unequal global context? What mechanisms can help to (re)align the interests of various countries/regions?

Presenter: Voo Teck Chuan, Centre for Biomedical Ethics, National University of Singapore, Yong Loo Lin School of Medicine