Third World Network
Issue Brief – May 2014

Smallpox Destruction: Key Issues and Recommendations for the 67th WHA

Research Program: Complete

By any reasonable measure, all elements of the World Health Assembly's (WHA) authorized research program requiring variola (smallpox) virus are complete.

- Sequencing: More than ample strains sequenced.
- Diagnostics: Multiple validated tests exist.
- Vaccines: Multiple new generation vaccines licensed and stockpiled.
- Animal Model: Experiments failed.
- Antiviral Drugs: Two antiviral drugs proven *in vitro*, both in advanced human trials.

The Advisory Group of Independent Experts to review the smallpox research programme (AGIES) has concluded that no public health reason remains for the continued retention of smallpox virus.[1]

The Advisory Committee on Variola Virus Research has concluded that all uses for smallpox virus under the WHO-authorized research program are complete, except for further development of antiviral drugs.[2] On this latter point, the committee voted for retention in a bare majority.

The US FDA has however stated that live variola virus is not needed for the approval of the two drugs in question.

It is also worth noting that United States representatives constituted 25% of the voting membership of the ACVVR at the meeting.

Thus, even considering the unbalanced nature of voting membership of the ACVVR committee, its bare majority vote on this item can only be considered a contingency in the event of failure to achieve approval of one of the drugs (which is not anticipated). As the drugs are nearing approval, even if the shaky rationale of the retention vote is accepted, it should not stand as an impediment to fixing a date for destruction of the virus stocks.

US and Russian Positions

The US and Russia remain determined to keep the smallpox samples they hold at the two WHO Repositories. More than any other reason, the two countries' positions relate to a history of mutual suspicion related to biological weapons, and not to any lack of completion of the WHA-authorized research program.

The US and Russia, particularly the former, are in a difficult position, however, because the completion of the research program was to enable consensus on a destruction date. Instead, although the research program is now effectively complete, the US and Russia still wish to retain the virus. As a result, they are looking for new excuses to do so, in order to lend their position political legitimacy.

Prospects for Fixing a Destruction Date

For a number of years, the US and, to a lesser extent, Russia, have actively lobbied WHO Member States to postpone destruction and permit them to retain the viruses. Although a consensus to eventually destroy the virus still theoretically exists, and developing countries have historically been strong supporters of this consensus, some countries have been convinced to support the retention position.

In the event, however, that sizable support for fixing a destruction date emerges at the WHA, a destruction date of within two years should be proposed. Ensuring (witnessing of) destruction can be entrusted to the Director-General.

Slippery Slope: "New Threats" – Biotechnology and Synthetic Biology

The US is now proffering the idea that "new threats" from smallpox may exist. These it says relate to biotechnology and, more specifically, synthetic biology. By promoting this discussion, the US and Russia appear to be seeking pretext on which to keep the virus. The Secretariat has now proposed to convene a group of experts on implications of technologies for biological synthesis to provide an up-to-date assessment of those technologies and their potential impact on smallpox preparedness and countermeasure development.

However, linking retention of smallpox virus to vague biotechnology-related "threats" may open the Pandora's Box of genetic engineering of smallpox, with a likely scenario of US and Russian scientists putting forward new proposals to manipulate the virus to unsafe ends, including experiments to synthesize large pieces of it, or whole virus, as a perverted "proof of principle".

WHO has existing rules on synthesis, possession, and use of smallpox DNA that can already effectively control any biotechnology-related risk.[3]

Among others, these recommendations state clearly that:

- Any research using live Variola virus has to be performed in the maximum containment laboratories of the WHO Collaborating Centres in the US and Russia where the remaining virus stocks are held, and requires permission from WHO. **Genetic engineering of Variola virus and attempts to produce live virus from DNA are strictly prohibited**.
- On synthesizing variola virus DNA the recommendations state: **Attempts to synthesize full-length Variola virus genomes or infectious variola viruses from smaller DNA fragments are strictly forbidden.**
- No laboratory (except the International repositories) shall be permitted to hold clones representing more than 20% of the variola virus genome at any one time.
- Any request for variola virus DNA fragments has to go through the WHO/Headquarters. Any laboratory that receives DNA (which in any case cannot exceed 20% of the variola virus genome) cannot distribute to third parties unless WHO authorization is obtained.
- An annual report on the status of the variola virus DNA will be made to the international repository and to WHO.

The clear limits outlined by WHO on what can and cannot be done in relation to variola virus suggest that concerns over implications of genetic engineering and biological synthesis may be unfounded especially if the International repositories and the WHO are strictly abiding by these recommendations.

Against this background, it is important not to allow vague assertions of "new threats" related to biotechnology to provide the US and Russia with any new pretext upon which to base their refusal to destroy the virus stocks, nor lead to the weakening of the existing rules.

Recommended Outcomes

1. Fixing a destruction date (if possible)

It may no longer be argued that there are any serious technical impediments to the fixing of a destruction date. If support exists, it should be done. A destruction date should be within two years (to report to the 69th WHA), and may be left in the hands of the Director General to arrange. (The main function of WHO in the process would be to witness the destruction – done by autoclaving[4] remaining samples – and reporting back to the WHA.)

2. No extension or expansion of the research programme

After more than a decade of experiments, the end of WHA-authorized research program is at hand. The objectives of research for public health purposes have been met. The WHA should not allow any extension or expansion of the program, as this will only further delay destruction. If a destruction date cannot be set, it is preferable for the remaining smallpox samples to sit in freezers unused, rather than be manipulated in experiments that have no compelling public health purpose.

3. No expert group on "new threats" or, if an expert group is formed, very tight terms of reference

From the US perspective, discussion of "new threats" is mainly about deflecting pressure to destroy the virus and generating pretext for its retention. Considering that existing WHO rules cover synthetic smallpox DNA and a 2007 WHA decision prohibits smallpox genetic engineering experiments, it is preferable not to form an expert group to study smallpox and biotechnology/ synthetic biology at all.

If such an expert group cannot be avoided, then its terms of reference should be limited to review and strengthening of existing WHO prohibitions on synthetic smallpox DNA and to make recommendations for how these rules should be managed upon destruction of the virus samples.

4. Reiterate WHA's 2007 decision to ban genetic engineering experiments

Particularly if the prospective WHA decision were to allow for a WHO expert group to consider "new threats" (although hopefully it will not), it is desirable for the WHA to recall and reiterate its 2007 decision to ban genetic engineering experiments with smallpox virus.

---

[1] See Paragraph 13 of A67/37.
[2] See Paragraphs 9 and 10 of A67/37.
[3] WHO Recommendations concerning the distribution, handling and synthesis of Variola virus DNA, May 2008; available at http://www.who.int/csr/disease/smallpox/SummaryrecommendationsMay08.pdf
[4] Destroying through use of high pressure saturated steam at high temperatures.