

Open Government Status:
Fully Open

ACDP/83/P7

ADVISORY COMMITTEE ON DANGEROUS PATHOGENS

Laboratory containment of wild poliovirus and potentially infected material after global eradication of poliomyelitis.

Issue

1. Update on progress with UK implementation of the World Health Organization's (WHO) Global Polio Eradication Initiative and its Global Action Plan for Laboratory Containment of Wild Polioviruses.

Status

For information at this stage.

Background

2. ACDP discussed the WHO's Global Action Plan for Laboratory Containment of Wild Polioviruses in March 2001 and September 2002. The aim of the plan is to eradicate polio throughout the world. Currently only 4 countries are still polio-endemic: Nigeria, India, Pakistan and Afghanistan. Egypt reported its last poliovirus in an environmental sample in January 2005, and Niger's cases in 2005 were all importations from Nigeria. In addition to the endemic countries, five countries have reported polio cases in 2006 due to importations (Somalia, Yemen, Indonesia, Bangladesh, Ethiopia)¹.

3. Once polio has been eradicated, those laboratories holding the virus will be the only remaining source. This presents a threat to public health, by the potential reintroduction of wild poliovirus once human transmission has ceased and with major health consequences in the future with the possible cessation of polio immunisation.

4. The second edition of the WHO's Global Action Plan for Laboratory Containment of Wild Polioviruses was published in 2004 (see <http://www.polioeradication.org/content/publications/WHO-VB-03-729.pdf> and annex 1) and replaces the December 1999 edition. In summary, the second edition incorporates lessons learned from biomedical surveys and inventories, and describes two phases of activities leading to containment - the laboratory

¹ Monthly situation reported at http://www.polioeradication.org/content/general/current_monthly_sitrep.asp

and inventory phase and the global certification phase. There are no formal proposals for the post global certification phase but an examination of the implications of post certification immunisation policies on poliovirus biosafety requirements.

5. The two phases are:

Laboratory survey and inventory

The laboratory survey and inventory phase covers the period when wild polioviruses continue to circulate. Countries will:

- i) Survey all their biomedical laboratories to identify those with wild poliovirus infectious material or potentially infectious material, and encourage the destruction of all unneeded material.
- ii) Develop an inventory of laboratories that have wild poliovirus infectious materials or potentially infectious materials.
- iii) Instruct laboratories retaining wild poliovirus infectious material or potentially infectious material, to institute enhanced biosafety level-2 (BSL-2/polio) measures for safe handling.
- iv) Plan for implementation of biosafety requirements for global certification.

Global Certification

The Global Certification phase begins one year after detection of the last wild poliovirus anywhere in the world, at which time the probability is high that all human transmission has ceased. Countries will:

- i) Notify all their biomedical laboratories that wild poliovirus transmission has been interrupted.
- ii) Instruct laboratories on national inventories to choose one of the following options:
 - Render such materials non-infectious, or destroy them, under appropriate conditions.
 - Transfer wild poliovirus infectious and potentially infectious materials to laboratories capable of meeting the required biosafety standards.
 - Implement biosafety measures appropriate to the laboratory procedures being performed (BSL-2/polio or BSL-3/polio).
- iii) Document the fulfilment of all containment requirements for global certification.

6. The WHO specified global certification biosafety requirements are as shown in the table below.

Category of material	Laboratory Activity	Biosafety level
Wild poliovirus infectious material	All activities including storage	BSL-3/polio
Potential wild poliovirus infectious material	Activities involving poliovirus-permissive cells or animals	BSL-3/polio
	Other activities	BSL-2/polio

UK Update

7. The UK has now completed its inventory and there are 106 laboratories either holding wild poliovirus, wild poliovirus infected material or material which may potentially contain wild poliovirus. The Health Protection Agency (HPA) and HSE will review the quality and currency of the information on the inventory. HSE will shortly start auditing laboratories, as part of HSE's routine inspection programme. HSE inspectors will assess listed laboratories' compliance with the current WHO biosafety requirements (BSL2/polio) and report their findings to the UK's National Containment Co-ordinator at the HPA.

8. HSE, HPA and the Department of Health will also consider other means of raising awareness of this issue with those responsible for laboratory containment of poliovirus. The education/information function of the HSE audits is obviously important. HSE has also recently highlighted polio at biological agents roadshows in Birmingham and Newcastle, and it has been suggested that a slot at the forthcoming meeting of European virologists would also be another opportunity for raising awareness.

9. As agreed at the ACDP meeting in 2002 any proposal to reclassify poliovirus from hazard group 2 to hazard group 3 should be discussed at a future meeting supported by the relevant risk assessment, and implications for laboratories, and preferably co-ordinated at an EU level. HSE would produce a paper for a future meeting.

Conclusion

10. Any comments ACDP members which to make will be considered for future ACDP papers and where relevant passed to the UK Working Party for Laboratory Containment of Poliovirus.

