

**MEETING OF THE STATES PARTIES TO
THE CONVENTION ON THE PROHIBITION
OF THE DEVELOPMENT, PRODUCTION
AND STOCKPILING OF
BACTERIOLOGICAL (BIOLOGICAL) AND
TOXIN WEAPONS AND ON THEIR
DESTRUCTION**

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**Consideration of the content, promulgation, and
adoption of codes of conduct for scientists**

INFECTIOUS DISEASES, BIOSAFETY AND BIOSECURITY

Prepared by Germany

Current situation

1. According to new data from the World Health Organization (WHO), infectious diseases still represent a major cause of death worldwide. Particular types of infectious diseases, such as the AIDS pandemics, malaria, tuberculosis and others cause more than 30% of cases of death per year. In the occurrence of new pathogens, such as the SARS-virus or new types of influenza-viruses illustrate the fact that infectious diseases will also be a future burden for the human society. After the attacks of 9-11 and the ensuing anthrax attacks, great attention has been focussed on biosafety and biosecurity aspects of infectious diseases. Furthermore, the new methods of “synthetic biology” attract major attention as it is suggested that pathogens can be synthesized in the laboratory. Therefore, it is necessary to focus on the particularly urgent aspects of infectious diseases, biosafety and biosecurity. From the viewpoint of the German Research Foundation, in the future the following points should be taken into consideration:

Future challenges

Basic research on infectious diseases

2. In order to successfully combat infectious diseases, it is necessary to increase the capacity of basic research on the mechanisms of infectious agents, host reactions, the development of new animal models as well as on the molecular mechanisms of antibiotic resistance. These research projects should also include infectious agents, which potentially can be used as biological weapons, e.g. anthrax, plague, hemorrhagic viruses etc.

New diagnostic tools, therapeutics and vaccines

3. A major challenge for biomedical research will be the development of new diagnostic tools, novel anti-microbial agents as well as vaccines against major infectious agents. Especially, new techniques in molecular biology as well as data gained from genome sequencing projects open new possibilities for the development of useful products. These products should include also new tools, therapeutics and vaccines against infectious agents of potential bio-weapons including small pox.

Development of infrastructure

4. The public health service should be further developed on a national as well as international level. This should also include the institutions involved in the analysis of pathogens in veterinary medicine. In addition, containment systems, which should include laboratories of high security infrastructure (P3/P4; S3/S4) should be further developed.

Education, teaching activities

5. It is necessary to educate students, physicians as well public health workers on aspects of infectious diseases including biosafety and biosecurity aspects. This is especially true for pathogens, which have been eradicated, such as smallpox, however, which may still represent a danger for the society, because of their potential misuse as bioweapons.

Contact of scientists

6. It is necessary to strengthen the international contacts of scientists working in the field of infectious disease research. Despite the fact that the new situation regarding biosafety and biosecurity makes it necessary to control persons working at least with category-A-infectious agents, the international contact between scientists should be strengthened rather than being restricted.

Exchange of material

7. For scientific use, it is necessary to exchange scientific material including bacteria, viruses, recombinant DNA etc. It is necessary to control exchange of material, which includes pathogens of high-pathogenic potency. This is especially true for the methods of weaponization. A quick and unbureaucratic exchange of material across borders, however, is still necessary.

Publications

8. Publications, also those concerning infectious disease research should continue to be open to the public. There is, however, a very minor fraction of the so-called "dangerous information" regarding pathogens of high-pathogenic potency and weaponization. This situation represents a specific challenge for editors and publishers, which should develop specific rules for this type of information. In general, the exchange of ideas including publications should continue to be open on the national as well as on the international level, taking the aspects of misuse into account.

International dialogue

9. The new challenges on infectious diseases including biosafety and biosecurity aspects make it necessary to integrate the national programmes and to discuss these projects on the international level. Therefore, it is necessary to further develop the “Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic Weapons and on their Destruction”. An international framework, probably under the umbrella of the UN, should develop regulations for activities in the field of infectious agents research including biosafety and biosecurity.

Conclusions

10. Infectious diseases represent a major threat of the 21st century. Specific aspects are the misuse of information as well as of use of materials for bioterrorist attacks. This should be taken into consideration and should lead to the formulation of new regulations that control the dissemination of information and materials concerning pathogens of high pathogenic potency. On the other hand, there is a continued need for research on infectious diseases and for the exchange of scientists, ideas and publications. This is necessary also in the light of the development of new diagnostic tools, therapeutic and vaccines. The new situation should stimulate international contacts on infectious disease research and should create a fruitful atmosphere for dialogue of scientists, public health workers and policy makers.
