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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Confidence-building Measures in Addressing Allegations of Use of CBRN Terrorist Agents: Laboratory Networks**

Submitted by France

Introduction

1. At a time when the CBRN threat is a known fact and in view of the experiences disclosed since 1991 when alleging the use of anthrax as a terrorist threat, it appears that a very small number of countries possess the technology and methods for addressing such a threat.
It also turns out that addressing all potential threats requires capacities often exceeding national capacities.

2. The allegations of CBRN terrorist weapons use to be addressed appear to currently concern a few countries only, but instances of terrorist acts these past years underscore that this is now a global risk.

Objectives

3. The shortcomings identified are due to the following:

(i) The introduction of medical and law enforcement counter-measures following allegations of use requires confidence in the results provided by the laboratories in charge of analyzing samples. This confidence is necessary both nationally and

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internationally, at a time when modern means of transport help to spread diseases very rapidly, as shown by the recent health alerts worldwide.

(ii) The second requirement is rapid response in order to have the time that is essential to introduce counter-measures.

(iii) The aim is to describe an approach not designed to make up for these shortcomings, but rather to propose a reflection that may help to do so, based on:

- The setting up of an international network of competent laboratories.
- The transfer of technologies and protocols helping to disseminate capacities globally.
- The training of persons competent to address allegations.
- The institution of laboratories' validation methods.
- Transport of contaminated samples.

Laboratory networks

4. Competences in these CBRN areas cannot be those of a single individual or single laboratory. It is vital to have a national laboratory network making it possible to address the risk comprehensively.

5. At international level, it is hardly possible, except in very rare national cases, to have a response capacity enabling anticipation of use of somewhat unconventional or modified agents. It is necessary, therefore, to have a national and international network for the dissemination of knowledge, technologies and protocols, aimed at building the necessary national capacities whose results are accepted by all.

6. Setting up this network calls for the support of countries possessing those technologies in the form of a network of players, technology transfer, training schemes and permanent validation of working methods.

Transfer of technologies and protocols

7. Addressing allegations or threats is based on the three following requirements:

(i) Essential technologies: they can more often than not be purchased off the shelf, yet these technololgies have been evaluated in a few specialized laboratories only that possess the capacities for evaluating these techniques independently of commercial pressure.

(ii) Required reagents: a few commercial reagents are available, often at a prohibitive cost, without any real guarantee of quality. These reagents can be developed at low cost in a suitable research context, at international level.

(iii) Standardized methods of use: possessing the technique and reagents required does not make it possible to build confidence in the results obtained. For results to have indisputable legal value, it is necessary to implement perfectly standardized protocols. Likewise, perfect standards must be worked out for the conditions in which samples are

taken, transported and preserved. These samples of diverse origins (human, animal or environmental) call for special technical conditions with specific competences.

8. This requires devising the application of an accreditation standard for network laboratories. This further requires establishing a real or virtual agency empowered to issue that accreditation.

Training schemes

9. Laboratories cannot qualify on the basis of possible techniques, provision of equipment, and possession of the proper reagents. Accreditation will not be considered unless laboratory staff are thoroughly trained technically (from equipment use to maintenance), as well as in the regulatory areas and in interpreting results. For most of these techniques still fall within the scope of research and are still insufficiently standardized to be widely disseminated to inadequately trained people.

Internal and external validation

10. Validation techniques must be provided for in order to maintain the competences introduced:

(i) Internal validation by providing secure positive markers and regular testing of techniques and protocols. It turns out that current possibilities of obtaining the necessary positive markers are very limited even with the support of international bodies and that requests made to reference laboratories are not followed up. Most research laboratories working on these subjects currently depend on governmental bodies or need to integrate into the publishing system (and are faced with the competition inherent in obtaining funds for research) or rely on the exploitation of their results on an industrial scale.

(ii) External validation by means of random quality controls of samples distributed by perfectly identified international laboratories.

Sample transport

11. One of the objectives in setting up a laboratory network with a view to developing confidence in the results obtained implies that the results obtained by the different laboratories are identical. However, it hardly seems possible to succeed in disseminating all technologies, reagents and protocols aimed at the "fine" and perfect identification of the agents used, this would require, indeed, using an appropriate number of reference laboratories. Samples should be transported rapidly to these laboratories for confirmation.

12. IATA standards for the transport of biological samples are currently in force. However, the CBRN hazard has a special risk value and many refusals of transport are to be expected. It is essential to analyze the conditions to be introduced to ensure that transport of such samples is accepted.

Existing models

13. There are many such models that are the preserve of various national and international institutions:

(i) National models, with national reference laboratories.
(ii) WHO, with the international reference laboratories.
(iii) NATO, with the standardization of sampling conditions and laboratory accreditation.
(iv) UNMOVIC, with laboratory accreditation.

14. However, biologists are not really in the habit of working in networks. Yet it turns out that they are chiefly concerned by all CBRN problems. It is important that the issue of the independence of biology researchers be taken into consideration.

Obstacles

15. There are many obstacles:

(i) Setting up an international laboratory network made up of international reference laboratories, structurally and politically independent from existing research structures, with possibilities of accessing existing biological and chemical resources.
(ii) Developing a transport capacity that would remove misgivings about transport of contaminated samples.
(iii) Providing techniques, reagents and methods too often perceived as encouraging proliferation.
(iv) Training of technicians in methods wrongly regarded as proliferant by scientists.
(v) Dissemination of reagents that might reveal national or international vulnerabilities (but this is in fact more a matter of imagination than of reality).

Conclusions

16. Work is conducted at international level, networks of dedicated international laboratories exist, and work is conducted on proliferation and dual technologies. Possibilities of technology sharing are acceptable in the long run. The need to develop a network of laboratories dedicated to CBRN threats is obvious, but there is no structure to host them.

17. There is a need to formulate the conditions for setting up such a network whose existence is necessary and which is scientifically feasible, without posing major difficulties.

18. The advantages of such a network would be immense: it would help to harmonize methodological capacities, determine confidence-building measures, and create a scientific network in an area where will and international cooperation must be key words in defining suitable counter-measures.

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