

Raising Biopreparedness Levels in Europe—Experts' Report Towards an all-hazards approach?



John-Erik Stig Hansen, Director of Denmark's Centre for Biosecurity and Biopreparedness, underlines the importance of recognising the differences between intentional versus natural biohazards, especially pertaining to prevention efforts.

If an attack with a biological weapon occurred in one or more places anywhere in the European Union, the consequences could be grave. The immediate effects in terms of direct casualties could be very significant even if the agent used did not initiate an epidemic, and the indirect effects in terms of economic and social disturbances would quickly have an impact throughout the Union and affect all Member States. These indirect consequences would be quite different from what would ensue following a natural disease outbreak. Depending on the identity of the perpetrating organisation, political, ethnic or religious groups or certain segments of the European population could be threatened by public action and civil unrest. Indeed, a biological attack anywhere in the world would to some extent have negative consequences for all nations. It is therefore in the national security interest of every nation that biological attacks do not occur anywhere at all, and if an attack should occur it is in the national security interest of every nation to make sure that the preparedness and response system in the nation under attack is sufficient to contain both the direct and the indirect consequences as much as possible.

There is currently a tendency to focus on the commonalities between the preparedness systems necessary to counter biological hazards regardless of their origin, whether natural or man-made. This is obviously a sound strategy when optimising the resources allocated to certain aspects of mitigation or medical countermeasures like surge capacity in hospitals or stockpiling of antibiotics. However, it is very dangerous to neglect the specific nature of each type of hazard as prevention of intentional bioattacks requires an entirely different strategy than prevention of natural outbreaks of infectious diseases.

The first step in preventing or preparing for an attack is to have realistic assessments of the actual threats. A key difficulty is that in this area the threat not only contains

technical and material parameters like the biological agents, their delivery devices and the medical countermeasures available, but equally important also contains the issue of enemy intentions.

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While the major parts of the public health response to biological incidents are the same whether they are of intentional, accidental or natural origin, it is important to realise that preventive efforts are very different and require completely different interventions by different actors. While the risk of a natural outbreak of disease can be assessed as the product of probability and consequence, the threat of a biological attack requires an assessment also of enemy intention. The threat therefore is best described in a semi-quantitative manner as the product of intention and risk, where risk in this context is a product of feasibility of attack and its consequences. This presents other possibilities for intervention, e.g. reducing the availability of dual-use components through implementation of biosecurity measures. It is also evident that while the risk-parameters of a given hazard are technical and quantifiable this is not the case with the intention part of a threat assessment. Enemy intentions and the utility of a biological attack are not easy to characterise although this is critical to the entire preparedness system against bioterrorism. If nobody has any intention of conducting a

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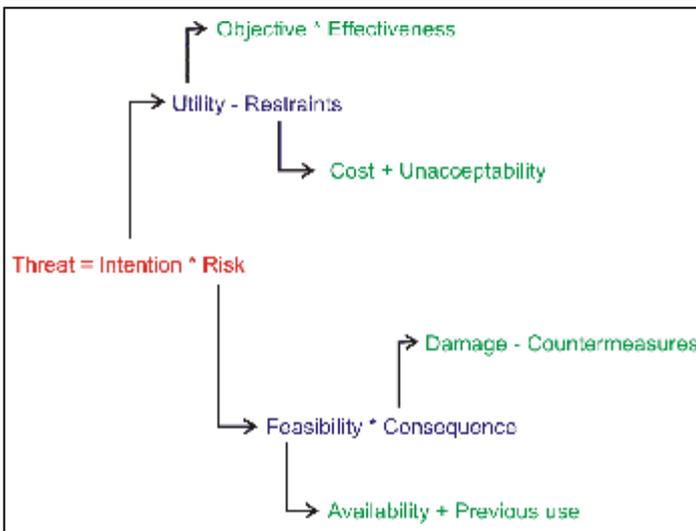


Figure 1. Threat assessment algorithm of the Centre for Biosecurity and Biopreparedness, Denmark. The algorithm subdivides the parameters into categories that may be assessed or computed individually. This algorithm differs from risk assessment of natural hazards, where human intention is absent and the risk is a product of probability and consequence.

specific biological campaign e.g. because it does not achieve any worthwhile purposes, then there is no reason to waste resources on public health preparedness and stockpiling of medical countermeasures against that specific threat. While assessment of enemy intentions and the utility of biological weapons may present a particularly difficult challenge, this dimension also offers an additional way of reducing the threat, e.g. by increasing the perceived public relations cost of an attack, by enhancing the ethical and religious taboos against biological weapons or by other efforts in the socio-political domain. A critical factor for this strategy to have any impact is to have a fairly accurate understanding of the potential enemies who might resort to biological weapons. Importantly, such an understanding requires a multidisciplinary task force with contributions from very diverse fields – microbiology, political science, sociology, military etc. – and additionally it will continuously need updating.

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Like risk assessment for natural hazards, threat assessment for man-made hazards is not static. New technologies continuously change the possibilities for weapons production and deployment, and political, economic, ethnic and religious factors constantly make the security situation highly fluid and difficult to predict. At the same time, specific countermeasures, e.g. vaccines, may take a long time to develop, and threat projection capabilities that reach several years into the future are therefore required if specific countermeasures are to be developed in time to be in place when needed.

Such capabilities for assessment of threats and development of countermeasures exceed the resources of all but the largest nations. At the same time the security of all depends to some extent on the prevention and preparedness capacity of even the smallest nation. This is especially true when dealing with the threat from biological weapons as these may be developed within a relatively primitive infrastructure and deployed from even the poorest state. It is therefore not sufficient to have a preparedness system in your own country that may be able to contain an outbreak before it becomes an epidemic if your neighbouring country has no containment capacity to contain an attack or biosecurity measures to safeguard against clandestine procurement or even weapons production.

For the European Union this means that the motivation for a concerted effort to establish a common understanding of the biological security threat, its specific characteristics and the possibilities of intervention should be of the highest order. The use of biological weapons against European targets constitutes a grave threat with potential to disrupt societies and foment civil unrest. The need to establish a common and comprehensive approach to threat reduction initiatives and response capabilities is therefore very real and completely independent of the need to maintain a public health capacity to respond to natural disease outbreaks.

Specific recommendations:

- Develop a common threat assessment methodology (Europol?)
- Establish a European forum for national biosecurity agencies (Council?)
- Coordinate role specialisation of EU Member State response capabilities (Commission?)