INSURANCE INCENTIVES FOR REDUCING BIOLOGICAL RISKS

NTI | bio authored this paper informed by discussions held under Chatham House Rule at a meeting organized by NTI | bio, Wellcome Trust, and the World Economic Forum. It contains ideas discussed during that meeting regarding policies for reducing biological risks using insurance models.

Concept: Advances in biological research and technology have outpaced traditional risk reduction approaches, and international experts have been stymied in defining concrete, globally applicable norms and actions to reduce risks associated with advances in biotechnology. This has been particularly true for research involving pathogens that have pandemic potential and within the growing field of synthetic biology. Market-based approaches, including the potential use of insurance incentives, can address growing concerns regarding risks associated with advances in biological research and accelerate the adoption of norms by biological researchers, academic institutions, and companies to reduce these risks. This paper proposes to (1) explore the application of insurance tools to incentivize norms and actions that reduce biological risk, and (2) outline the initial steps required to establish a set of protocols, methodologies, and standards that could be applied to determine facility eligibility for insurance and practices that would affect premiums. Insurers and reinsurers that focus on terrorism risk, including CBRN risk,[1,2] as well as pandemic risk,[3] should be involved in developing such options.

The use of insurance incentives to catalyze norms for reducing biological threats is a relatively new area but could draw from existing efforts to highlight the role of liability and insurance regimes in strengthening radiological security[4] and protecting against material damage and business interruption caused by accidents or by acts of cyber terrorism[5]. Moreover, developing this idea further could have a two-fold benefit: (1) it could incentivize the insurance industry to produce accurate risk assessments for emerging biological research and technology development; and (2) it could incentivize both public and private sector researchers to incorporate safety and security protocols that could reduce their insurance premiums[6].

Urgency: During a meeting of experts in June 2018 in London, representatives from the private sector raised concerns about the lack of such standards. Without a widely agreed standard, implementing requirements to qualify for insurance would likely not occur. Technical standards should be agreed by experts in the field of bio-innovation,

[1] "Pool Re Hails Government Action to Close the Terrorism Insurance Gap," Pool Re insurance, March 22, 2018, , accessed May 09, 2018, https://www.poolre.co.uk/pool-re-hails-government-action-close-terrorism-insurance-gap/.
[2] "Pool Re and the Nuclear Threat Initiative Highlight Radiological Material Security Efforts," Nuclear Threat Initiative, April 5, 2017, http://www.nti.org/newsroom/news/pool-re-and-nuclear-threat-initiative-highlight-radiological-material-security-efforts/.
[3] "Swiss Re Helps Establish the Pandemic Emergency Financing Facility," Swiss Re, accessed May 09, 2018, http://www.swissre.com/global_partnerships/swiss_Re_helps_establish_the_pandemic_emergency_financing_facility.html.
[4] https://www.nonproliferation.org/wp-content/uploads/2014/08/Mind_the_Gap.pdf
[5] https://www.businessinsurance.com/article/00010101/NEWS06/912317495/Pool-Re-to-cover-property-damage-from-cyber-terrorism
[6] https://www.fhi.ox.ac.uk/liability-insurance/

and if consensus is reached these standards can then be assumed by insurers to be reasonable and widely accepted. Alternatively, these could be based on existing international standards, conditional on the verification of those standards within different legal jurisdictions. For countries with weak legal systems, or where corrupt practices are widespread, these standards may need to be adapted or include additional requirements. In addition to the insurance outcome, the potential for responses to risk events to be developed rapidly – (*e.g.*, in the event of a future laboratory accident or intentional biological event) would be strengthened by having a standard in place which includes both a protocol for breaches of the standard and a set of procedures to rapidly bring together the best expertise to decide on a course of action in case of an accident.

Outcome: If successful, the development of specific standards for insurance could result in a requirement for research and academic institutions performing research with potentially catastrophic consequences to develop specific risk mitigation plans in order to be eligible for (or maintain existing) insurance policies and/or to maintain lower premiums, and improve on the existing approach to an adverse event by defining actions to be taken.

Next steps toward the establishment of insurance standards for different areas of research and development in the life sciences: In 2019, we propose that diverse group of stakeholders, to include researchers from the fields of genomics, virology, and synthetic biology, must convene with relevant (re)insurance or insurance representatives to:

1. Consider core requirements to support the concept of insurance standards for research and development in the life sciences and affirm the benefits of successful realization.
2. Form a consensus around existing international standards and specific gaps in risk assessment that scientists and technologists may be able to help quantify.
3. Begin to consider elements that could ultimately make up a standardized methodology to be used by insurers and reinsurers for identifying and assessing potential risks.

Guiding Principle: It is important that recommended insurance protocols or standards for biological risk be widely applicable and consistent across the industry. Therefore, it will be vital to explore biological risk reduction approaches that involve insurance and reinsurance in close partnership with the private sector and broader insurance industry.