

# Framework for Assessing the Risks and Benefits of Communicating Dual Use Information That May Have Biosecurity Implications

<b>General Overview of Information</b>	
<p>What information is provided and to what extent is it novel?</p>	<p>This paper shows that Influenza A virus H5 N1 (“Avian influenza”) can be adapted by a combination of classical virology and molecular biology to become transmission-competent in mammals. The novelty of this discovery lies in the fact that mammal to mammal (and by implication human to human) transmission of this virus has previously been unknown.</p>
<b>Risk Analysis</b>	
<p>Are there potential risks to public health from application or utilization of this information? If so, <u>please describe</u>.</p> <ul style="list-style-type: none"> <li>- e.g., is novel scientific information provided that could be intentionally misused to threaten public health?</li> <li>- e.g., does the information point out a vulnerability in public health preparedness?</li> </ul>	<p>There is no doubt that this information could be used by an exceptionally competent laboratory to provide the foundation for a programme to develop a pandemic strain of this virus. There is no evidence that this reassortant virus would be fully pathogenic in humans.</p> <p>The work does not point out a vulnerability in preparedness – the WHO and other organizations are fully aware of the pandemic potential of avian influenza, and that a naturally competent reassortant may occur.</p>
<p>Could this information be intentionally misused to pose a threat to national security (other than public health)? If so, <u>please describe</u>.</p> <ul style="list-style-type: none"> <li>- e.g., is novel scientific information provided that could be intentionally misused to threaten plant or animal health?</li> <li>- e.g., does the information point out a vulnerability in national security?</li> </ul>	<p>I do not believe that this information poses a threat to plant or animal health, or, thus, to national security in these areas. Influenza is not phytopathogenic, and the work would need to be replicated in any agricultural target species, since ferrets are not of any agricultural significance</p>
<p>If a risk has been identified, in what time frame (e.g., immediate, near future, years from now) might this information be used to pose a threat to public health, national security or the scientific community?</p>	<p>A highly competent laboratory could exploit this information immediately, although as pointed out above, this paper does not provide sufficient information to produce fully competent dangerous pathogen</p>
<p>If the information were to be broadly communicated “as is,” what is the potential for:</p> <ol style="list-style-type: none"> <li>1. Public misunderstanding <ul style="list-style-type: none"> <li>- What might be the implications of such misunderstandings, e.g., psychological, social, health/dietary decisions, economic, commercial etc.?</li> </ul> </li> <li>2. Sensationalism <ul style="list-style-type: none"> <li>- In what way might it result in widespread concern or even panic about public health or other safety/security issues?</li> </ul> </li> </ol>	<p>This information could be misrepresented by a wilful media, in the absence of a knowledgeable public</p>
<p><b>If no risk has been identified, no further communication review is necessary. If a risk has been identified, please complete the benefit analysis below.</b></p>	

## Benefit Analysis

<p>Are there potential benefits to public health from application or utilization of this information? If so, <u>please describe</u>.</p>	<p>It is vital that science gains an understanding of the potential for emergent influenza viruses to cause pandemics – this information is an essential part of building such an understanding.</p>
<p>Are there potential benefits of the information for national security? If so, <u>please describe</u>.</p> <ul style="list-style-type: none"> <li>- e.g., what potential solution does it offer to an identified problem or vulnerability?</li> </ul>	<p>There are real national security benefits – the work will enable those of us in the CB security community to understand the limitations and possibilities of the risks posed by the deliberate manipulation of the causative agents of emergent disease.</p>
<p>Will this information be useful to the scientific community? If so, how?</p>	<p>It represents a building block in the construction of an effective vaccine, in anticipation of the emergence of a fully competent natural variant.</p>
<p>If a benefit has been identified, in what time frame (e.g., immediate, near future, years from now) might this information be used to benefit public health, national security or the scientific community?</p>	<p>It will enable an understanding of those characteristics essential to an effective influenza vaccine, with immediate effect.</p>

## Risk vs. Benefit Assessment

<p>Based on the risks and benefits identified, and considering the time frame in which these might be realized:</p> <ul style="list-style-type: none"> <li>- Do the benefits of communicating the information outweigh the risks?</li> <li>- Do the risks outweigh the benefits?</li> </ul>	<p>The risk benefit calculation is complex. This information could be used by an aggressor, and shows one of the building blocks for the development of a potential BW weapon. The aggressor, however, would need to be in possession of an advanced molecular biology capability and the ability to passage, and evaluate, pathogenic material in animals. This latter is a demanding capability, probably beyond the capacity of the majority of those groupings of concern. On the other hand, not publishing this information would slow, or even block, the development of a vaccine against a virus that still has the potential to mutate <b>naturally</b> to a pandemic form, which could cause huge numbers of fatalities world-wide. The greater risk of non-disclosure, in my opinion, however, lies in the potential of such an act to discourage scientists from working in this field. Many studies, within defence and more generally, have revealed that the majority of life scientists fear the emergence of diseases for which we have no medical countermeasures, and pushing the best scientists towards blander areas in which they can more easily publish must increase our vulnerability to such entities.</p> <p>On the balance of probabilities, the risks of publication do not outweigh the benefits.</p>
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## Formulation of Recommendation Regarding Communication

<p>What are the recommendations with respect to the content, timing and extent of distribution of the information? See table below for possible options.</p>	<p>I believe the paper should be published in its entirety, but should be accompanied by a concurrent, concerted programme of public information, Health-led, to educate the public of the reasons for such publication. I cannot see what “clearly defined and agreed-upon endpoint” can be reached.</p>
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## Options for the Communication of Dual Use Research Information

Recommendation should include content, timing and extent of distribution of the information

<b>Content</b>	Communicate as is.
	Communicate with addition of appropriate contextual information. For example, it may be important to address: <ul style="list-style-type: none"><li>▪ The public health significance of the research findings</li><li>▪ How the new information or technology will be useful to the scientific community</li><li>▪ The biosafety measures in place as the research was carried out</li><li>▪ The dual use aspects of the information</li><li>▪ The careful consideration that was given to the biosecurity concerns in the decision to publish</li></ul>
	Recommend communicating a modified version of the product.  For example, is it possible to “de-couple” the material that poses security concerns from some or all of the potentially useful scientific information, or should specific data be removed?
<b>Timing</b>	Communicate immediately.
	Recommend that communication be deferred until a clearly defined and agreed-upon endpoint is reached (e.g. a condition is met such that communication no longer poses the same degree of risk).
<b>Distribution</b>	No limit on distribution
	Limit access to selected individuals on a “need to know” basis. It will be necessary to identify categories of individuals who should have access and under what circumstances.
	Recommend that the product not be published or otherwise made accessible to the public.