

Ethical challenges in biodefense and bioterrorism

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The delay in publishing methods for genetically bioengineered H5N1 avian influenza is based upon the bioethical challenge of balancing scientific openness (autonomy and freedom of the press) with censorship and homeland security issues. This dilemma of dual use has recent origins in nuclear physics and bacterial genetics. Historically, it remains unclear whether deliberately publishing false methodologies in nuclear physics delayed the Russians and Chinese from nuclear bomb development. In contrast, it appears that research self-regulation adopted at the Asilomar conferences in the 1970s successfully prevented the release of genetically modified bacteria containing human oncogenes into the environment. We believe that even information revealed in the recent open debates themselves about whether to publish critical methods for genetically modifying the H5N1 virus may have the potential for varied implications. First, these debates establish that setting up a highly sophisticated laboratory to genetically modify this virus is time-consuming and costly. Second, terrorists may realize from these debates that our capacity to develop effective vaccines against influenza renders this virus as a less desirable candidate for a bioweapon. Finally, any global outbreak would more likely have a higher mortality rate in underdeveloped countries where terrorists reside than in western countries. Thus, while the issue of dual use - balancing scientific openness and homeland security is conceptually important, it should not be the only concern in biodefense analysis. Instead, prudent strategies and funding in biodefense should focus on research that promotes pre-emptive viral surveillance and detection, and vaccine development.

Biography

Loike is the Co-Director for Graduate Studies in the Department of Physiology Cellular Biophysics and Director of Special Programs in the Center for Bioethics at Columbia University College of Physicians and Surgeons. He serves as course instructor for Frontiers in Bioethics, Ethics for Biomedical Engineers, and Stem Cells: Biology, Ethics, and Applications, at Columbia College. He is director of BioCEP (Bioethical Cross-cultural Educational Program), that is an educational enrichment summer workshop for students and faculty to explore contemporary and contentious bioethical issues in developing countries. His scientific research focuses on how human white blood cells combat infections and cancer.

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