

ALLEGED GoF BENEFITS

Excerpts from RBA Report	Plotkin comments
GoF approaches that alter host range and enhance virulence uniquely enable the development of animal model systems that recapitulate human disease pathogenesis	True for enhancement of animal virulence, but issue is increasing human virulence, which is not the same, and infectiousness is just as important, as shown by high virulence but low spread of avian strains.
GoF approaches that enhance virulence are also uniquely capable of showing that live attenuated vaccines (LAVs) do not recover virulence upon growth <i>in vivo</i>	LAVs are not made that way, they are made with RNA segments of attenuated virus and RNA segments of current virus that give immunogenicity. There is no example of LAV becoming more virulent <i>in vivo</i>
This particular type of experiment simply increases the human health risk of the attenuated strain to approach that of wild type strains	Not true if HA made hypervirulent.
GoF that lead to evasion of therapeutics are critical for the development and regulatory approval of new therapeutics	Nonsense. Resistance to neuraminidase inhibitors has not heeded approval.
Of note, adaptation to a new host typically attenuates virulence in the original host (in the case of SARS and MERS-CoV, humans)	Don't understand this. Adaptation to humans of SARS resulted in more virulence for humans. MERS is more virulent for humans than camels.
GoF can enhance virus production	No relationship to enhancement of virulence
GoF approaches that enhance the infectivity, transmissibility and virulence of influenza viruses inform pandemic risk assessments of circulating influenza viruses	So far this is unproven.
These risk assessments facilitate more rapid initiation of response activities such as pre-pandemic vaccine	Only true if there is natural increase of virulence. In any case, avian flu has high mortality but has yet to become epidemic
GoF approaches also guide selection of viruses used as the basis of pre-pandemic vaccines	No truth to this. Antigenic match is more important than virulence match
GoF approaches that lead to evasion of vaccines are uniquely capable of determining whether viruses can acquire mutations to escape neutralization of candidate broad-spectrum or universal influenza vaccines, a critical aspect of testing the potential field efficacy of vaccines in development	This is tautology. This is the unproven argument for GoF. We do not know if causing evasion in the lab predicts what will happen in nature.
No increase in human health risk is posed by strains that can overcome the protection afforded by universal vaccines because the latter are not available.	Don't understand logic. If a strain evades future vaccines it is perforce a threat to health if it escapes.
GoF approaches that lead to evasion of existing natural or induced immunity have potential to improve the efficacy of seasonal influenza vaccines	I suppose there is that potential, but no proof as yet and danger of escape.