Gain of Function Research simplified decision model

valued outcomes

(pandemic) morbidity, mortality

economic losses

new virology / public health science, tools

political outcomes

research sustainability

by demographics, regions

knowledge base

biosafety models, data

biosecurity models, data

GOFR designs, alternatives expertise

comparative history

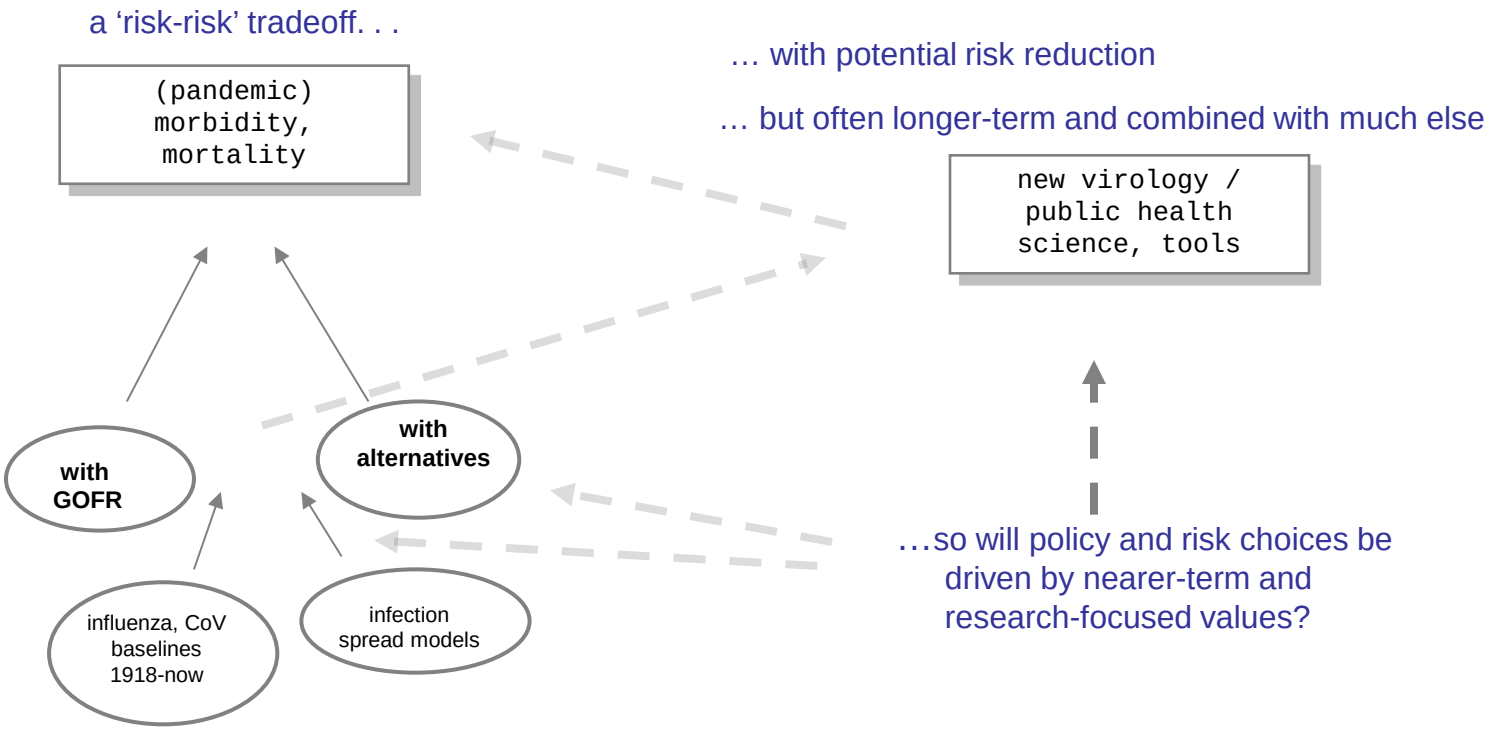
influenza, CoV baselines 1918-now

viral spread models

policy / research options

virus type(s)	GOF / alt design	BSL design	total num labs	outbreak readiness	international coordination	editorial filters	. . .		
existing practices, guidelines, pause									

GOFR as public health 'means' and science 'end'



Various risk / measurement criteria address these interactions

E.g.

- GOFR 'of concern'
- 'uniquely capable' research

… a study that could generate a pathogen <u>with all of the following attributes</u>…

. . . highly transmissible in a relevant mammalian model

. . . highly virulent in a relevant mammalian model

. . . likely resistant to control measures or more capable of being spread.

(+ detail…. *NSABB draft* p.39)

GOFR risk management: complementary approaches

… a study that could generate a pathogen <u>with all of the following attributes</u>…

GOFR of concern
- . . . highly transmissible in a relevant mammalian model
- . . . highly virulent in a relevant mammalian model
- . . . likely resistant to control measures or more capable of being spread.

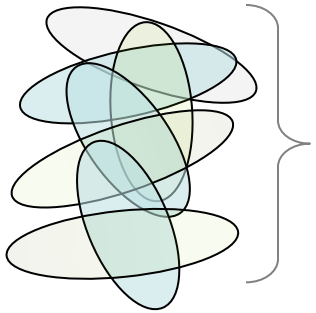
(+ detail…. *NSABB draft* p.39)

virology research risk model: virus source + event(s) → transmission / pathways → exposure / spread population outcomes

---

safety culture of research practice

- BSL standards, oversight, training, communication norms, management style, Select Agent Program, DURC criteria, HHS/NIH vetting, publication, etc.…



'safety' supported by redundancy and many mutually reinforcing risk reduction practices

---

'adaptive' risk management process:

GOFR criteria → GOFR research decisions → research outcomes, changed epi / virus context, stakeholder views…