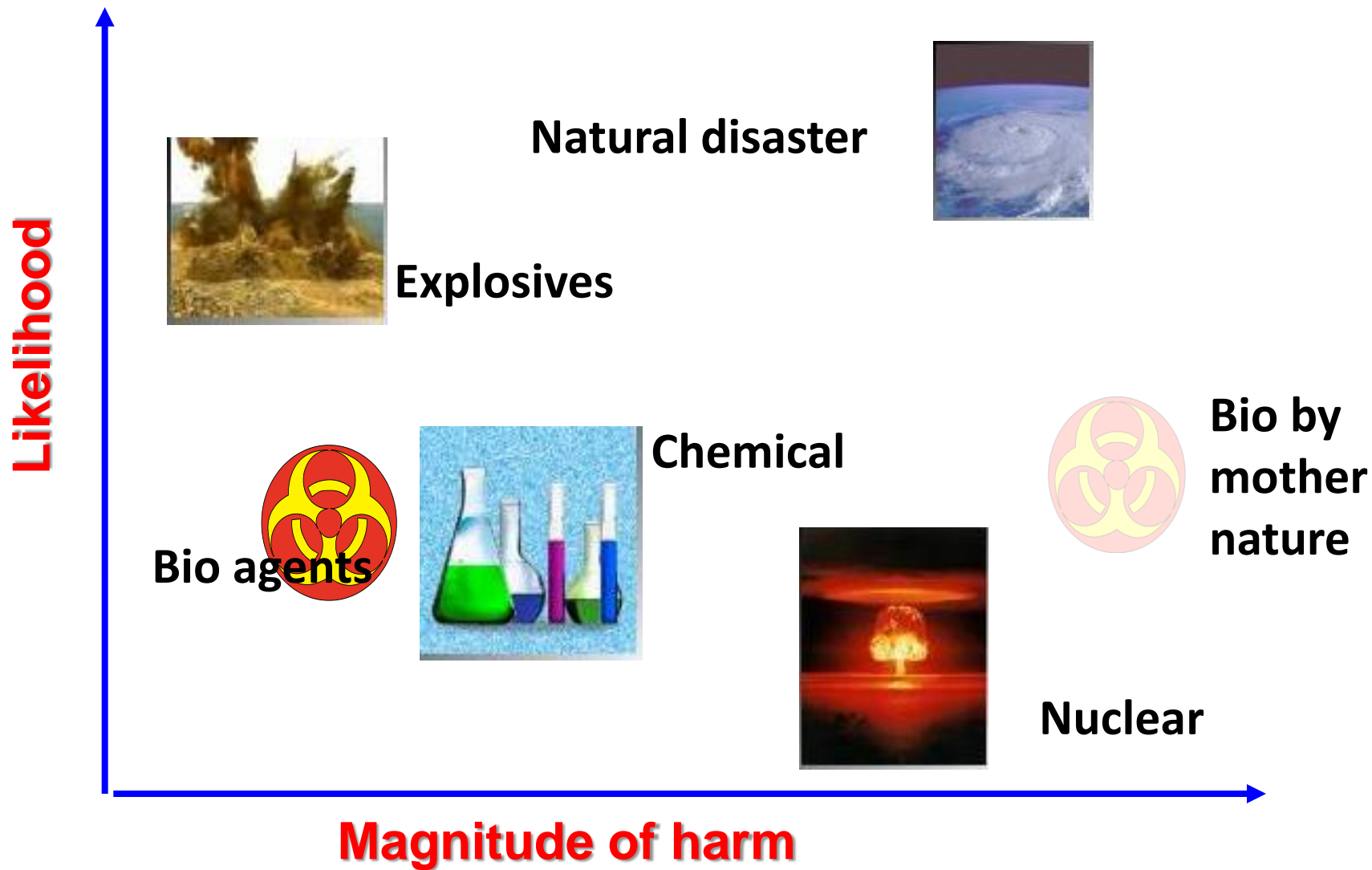
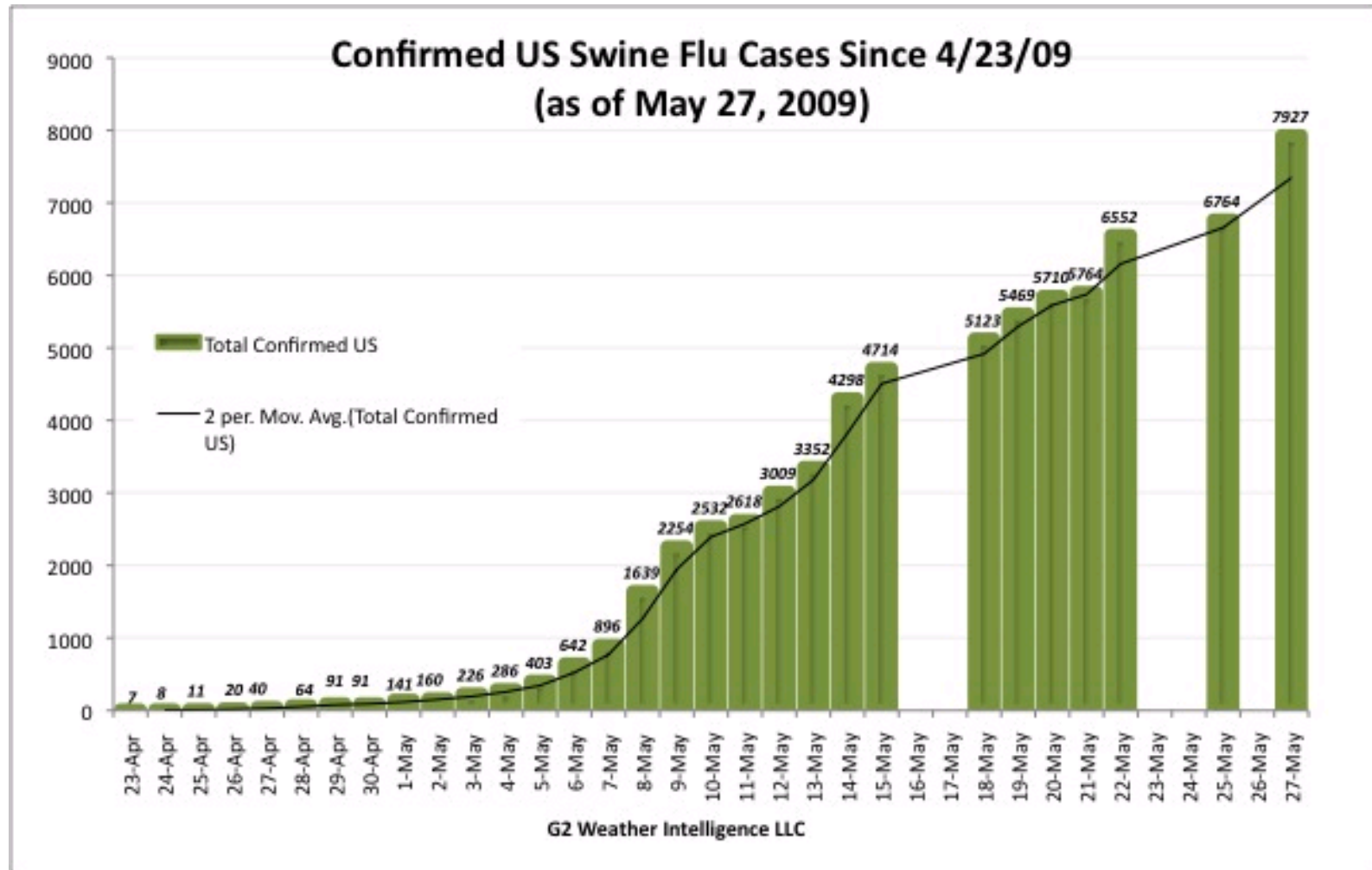


IMPROVISED INFECTIOUS DEVICES (IID): The Next Generation Terrorist Threat?

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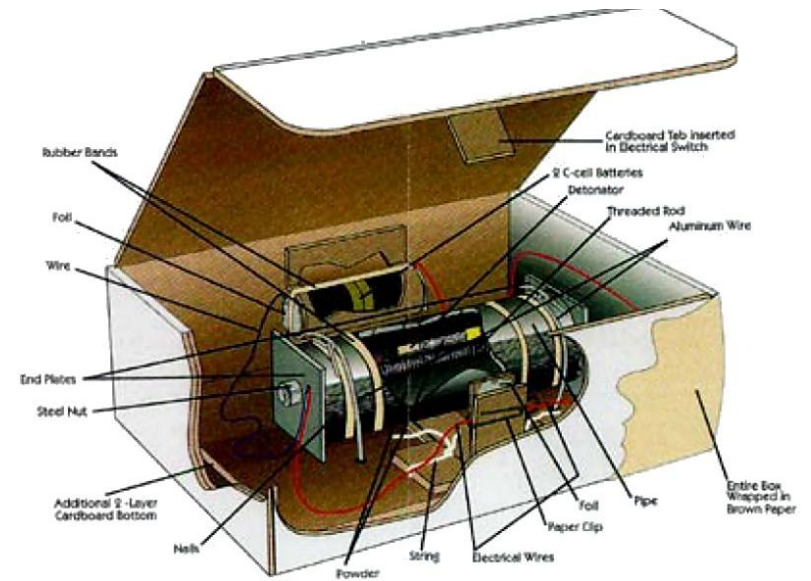


An Influenza “Explosion”





IMPROVISED *EXPLOSIVE* DEVICES (IED)

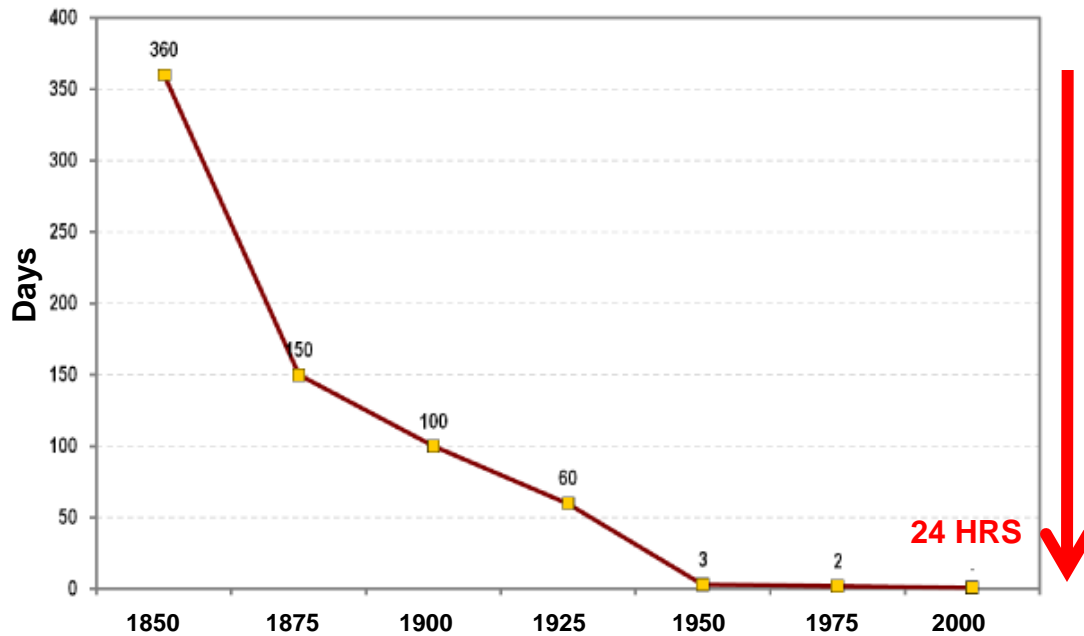


What is an Improvised *Infectious* Device?

- An **Improvised Infectious Device (IID)** is a person who “weaponizes” his body by willfully infecting him/herself with a highly communicable infectious disease, and then knowingly infects other people, with the intent of causing mass *mortality, morbidity* and *panic*.

Typical Flu Disease Features

- Incubation period 1-4 days (average = 2 days)
- Period of illness 3-7 days
- Infectious period (virus able to spread person to person)
 - **1-2 days prior to developing symptoms**
 - 3-5 days after developing symptoms (adults)

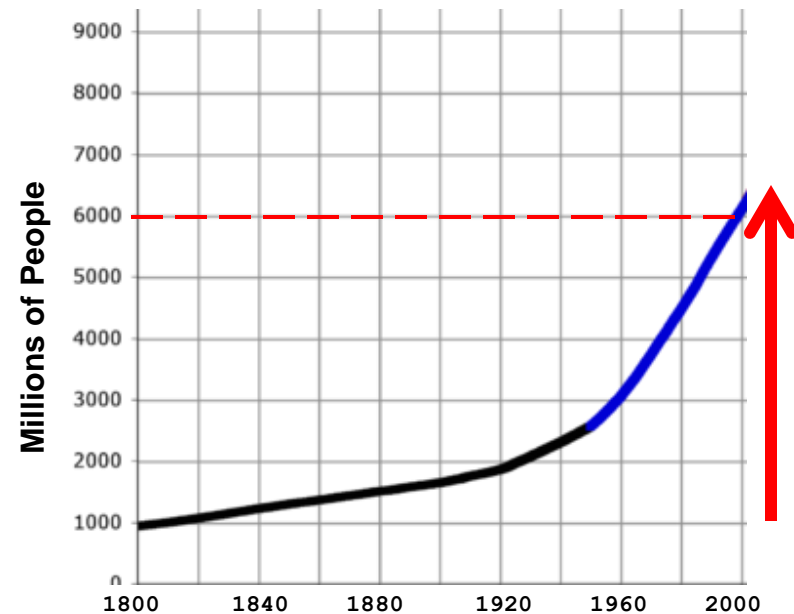


Days Required to Circumnavigate the Globe.

Rodrigue, J. (2009) The Geography of Transport Systems

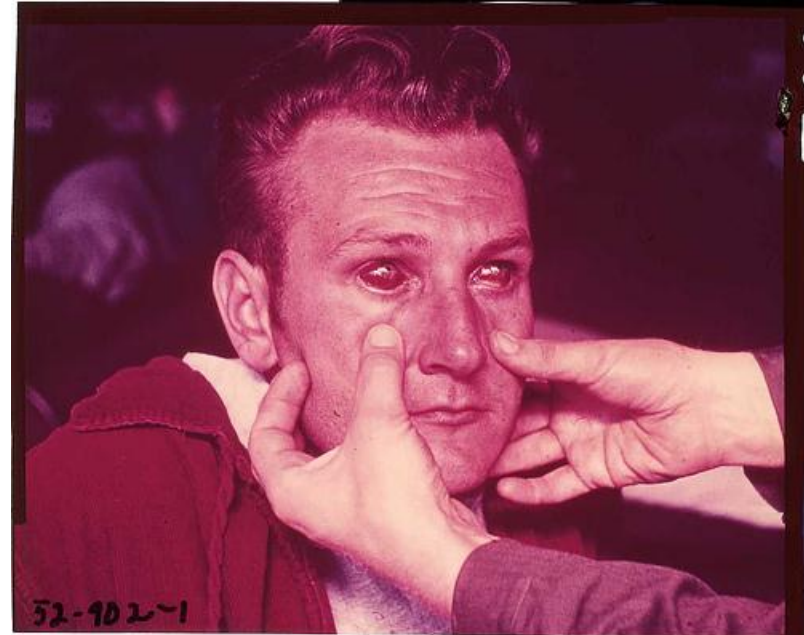
World Population Increase.

Wikipedia (2011)



Plausible Improvised Infectious Device Threats

| ORGANISM | DISEASE | CASE FATALITY RATE (%) | PRE-PATENT PERIOD (DAYS) | PERIOD OF INFECTIVITY | R ₀ | MODE OF INFECTION |
|------------------------|-----------------------------------|------------------------|--------------------------|-----------------------|----------------|----------------------------|
| Variola virus | smallpox | 40 | 10-14 | 7-10 days | 20 | respiratory droplets |
| <i>Yersinia pestis</i> | plague | 50-100 | 1-3 | 18-48 hrs | 1.3-4.4 | respiratory droplets |
| SARS virus | severe acute respiratory syndrome | 15 | 2-10 | 8-24 days | 3 | respiratory droplets |
| H5N1 virus | avian influenza | >50 | 1-5 | 2-10 days | unk | respiratory droplets |
| Ebola, Marburg virus | hemorrhagic fever | 25-90 | 2-21 | 1-3 weeks | var. | blood or mucous secretions |







IID?



“Take-Home Points”

- Emerging infectious diseases, including bioterrorism, are **transnational**, and threaten global health security
- **Weak public health surveillance** and **poor information sharing** jeopardize global health security
- **Transparency** is essential in responding to public health emergencies of international concern
- **Multilateral, multisectoral cooperation** is mandatory
- **Education, education, education!**

*“By framing infectious diseases as a matter of **national security**, governments and their people would be better prepared to handle sudden outbreaks that endanger human lives and threaten the existence and survival of nation-states”*

-Caballero-Anthony, 2005

QUESTIONS?