



World Health Organization



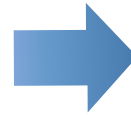
Detects important antigenic variations of influenza virus in humans and animals (especially birds & pigs)



Allows WHO to propose new recommendations for vaccine formulations for each Northern and Southern hemisphere influenza season annual vaccination and pandemics



WHO distributes seed strain to vaccine manufacturers including GSK

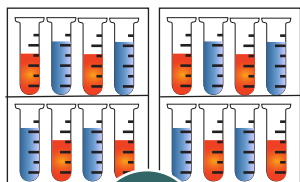


Start of 5-6 month vaccine production process

Month 1

Vaccine composition must match global epidemiological surveillance data, so an updated vaccine formulation is developed each time

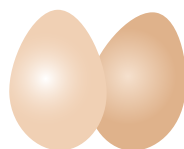
Optimise/ establish working seed bank



Month 2



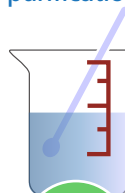
Innoculation of eggs, incubation



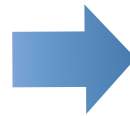
Month 3



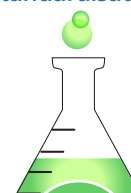
Harvesting, purification



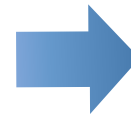
Month 3



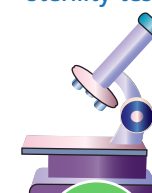
Reagent standardisation



Month 3



Characterisation, sterility testing



Month 3

Filling, safety testing, release



Month 4



Clinical Trial (in Europe)



Month 4



Regulatory agency review and release



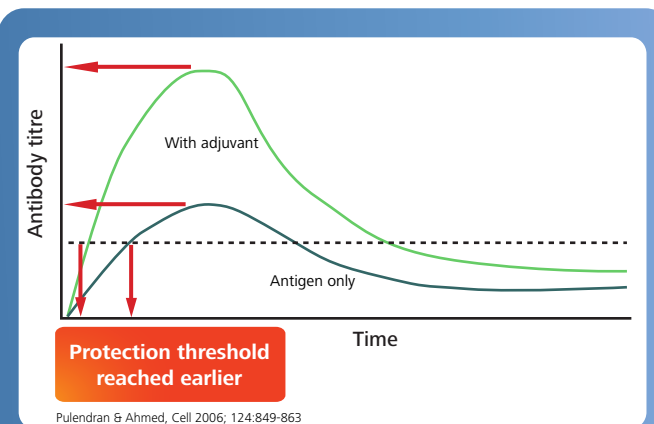
Month 5



Final vaccine = antigen + adjuvant



Month 5



Increased efficiency of vaccines using adjuvant systems

# GSK's flu vaccine development process