

H1N1 Medical Countermeasure Update

**National Vaccine Advisory Committee
June 2, 2009**

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U.S. Pan Flu MCM Strategic Current & Possible New Policy Goals

Vaccines

- Goal #1: Establish and maintain a dynamic pre-pandemic influenza vaccine stockpile available for 20 M persons (2 doses/person) *or more persons depending on vaccine mfg. capacity & results of dose-sparing adjuvant studies and prime-boost immunization studies: H5N1 vaccine stockpiles*
- Goal #2: Provide pandemic vaccine to all U.S. citizens within 6 months of a pandemic declaration: pandemic vaccine (600 M doses)



H1N1 Response Builds on Pandemic Preparedness

	Vaccines	Antivirals	Diagnostics/ Respiratory Devices
Advanced Development	Cell-based Antigen-sparing Next Generation Recombinant	Peramivir AV MedKits	<u>Diagnostics</u> Point of Care Clinical Lab Simple <u>Ventilators</u> Next Generation
Stockpile Acquisitions	H5N1 Pre-Pandemic Vaccine & Adjuvant Stockpiles	<u>Tamiflu & Relenza</u> Federal Stockpiles State Stockpiles	Masks & Respirators
Infrastructure Building	Retrofit Existing Mfg Facilities Build New Cell-based Mfg Facilities Egg-based Supply Intl. Vaccine Cap.		

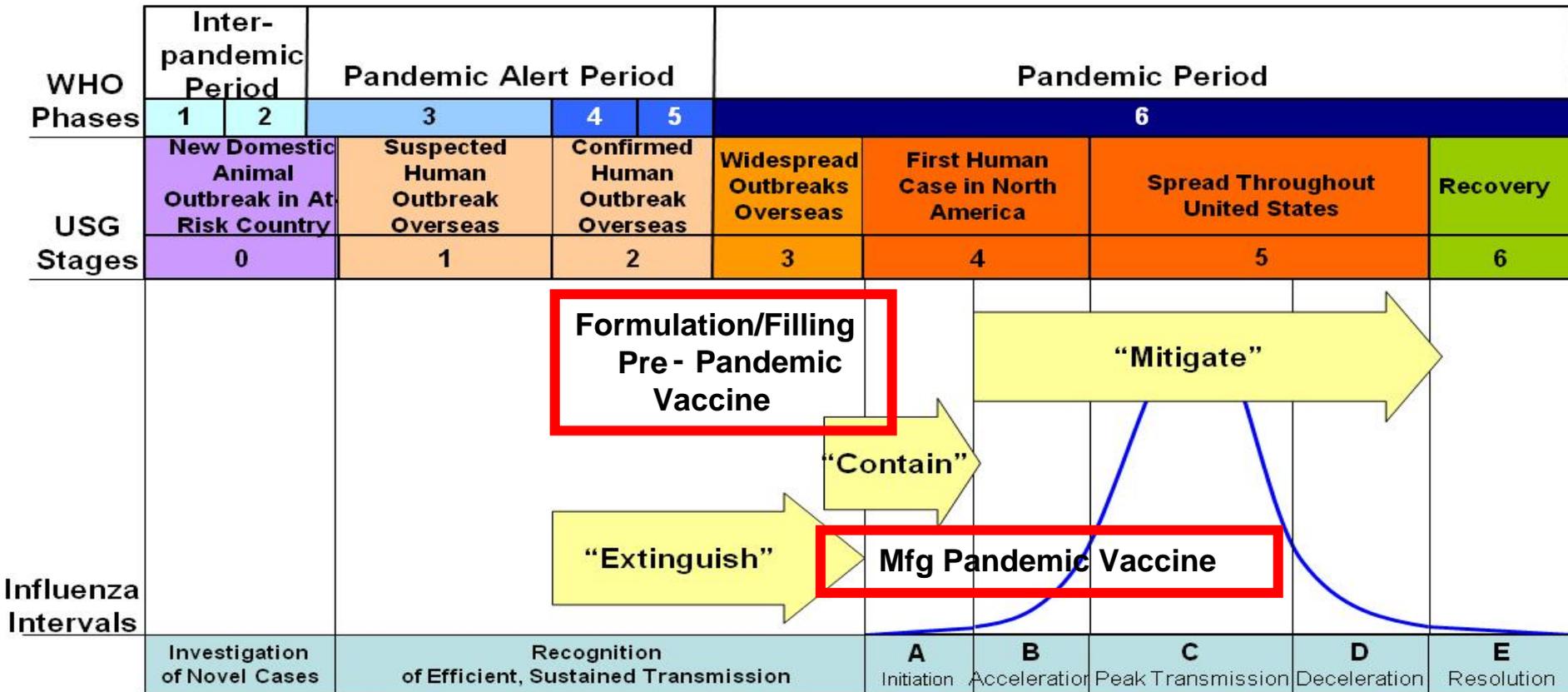


H5N1 Vaccine Stockpile Inventory: 2008

H5N1 Vaccine Strain	Clade	2004	2005	2006	2007	2008	Totals
A/VTN/1203/04	1	0.23	2.86	0.79		1.16	5.04
A/Indo/05/05	2.1			6.25	2.25	0.041	8.54
A/BHG/QL/1A/05	2.2				6.32		6.32
A/Anhui/1/05	2.3				2.56		2.56
Totals Ag-Along Formulation (90 ug/dose)		0.2 M	2.9 M	7.0 M	11.1 M	1.2	22.5* M
Adjuvant	AS03					5.2	5.2 M
Totals Oil-in-Water Adjuvant Formulation (7.5 ug/dose)		2.7 M	34.3 M	84 M	133.2 M	14.4 M	268 M

* Adjusted for usage and potency

Pandemic Influenza Response

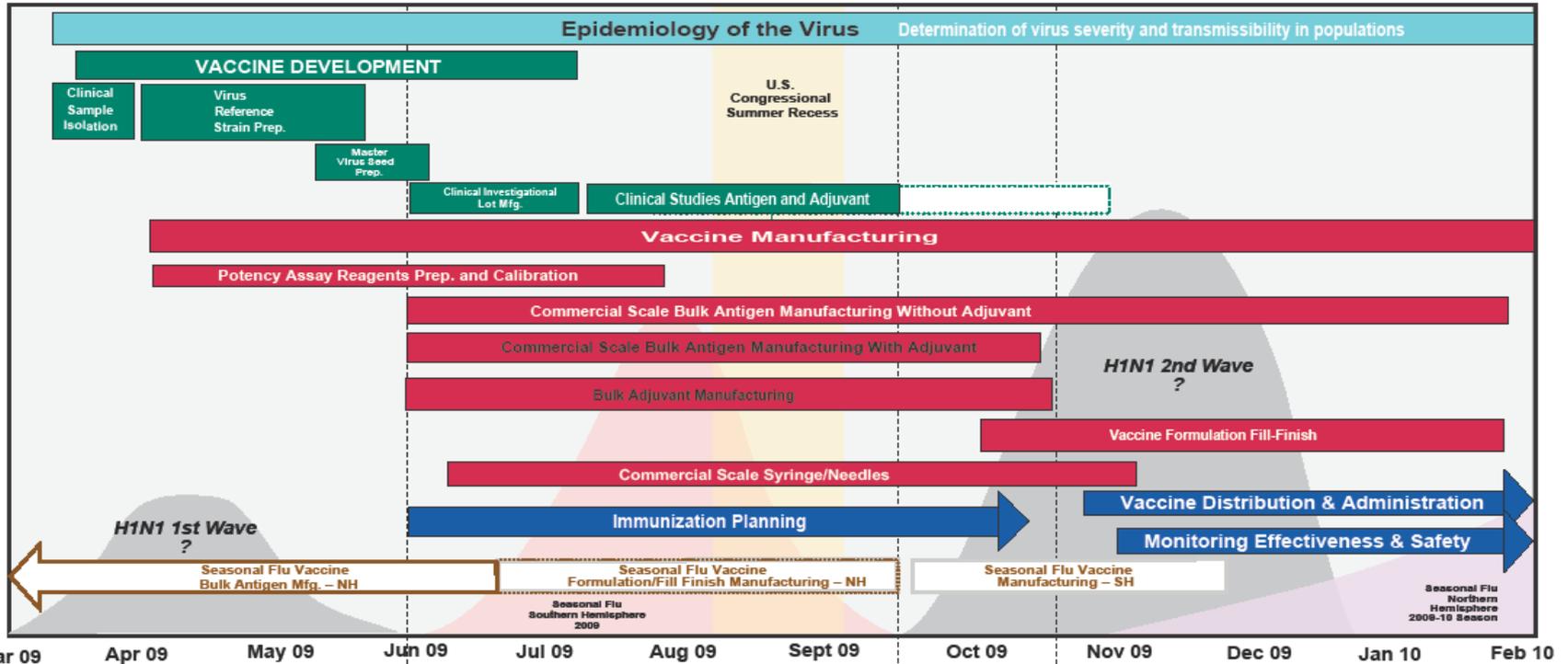


Influenza Intervals

- Allow for better placement of triggers and actions

H1N1 Vaccine Strategy

U.S. 2009-H1N1 Vaccine Strategy



Decision 1 - June 1st

- Decision 1:
- Procurement of bulk adjuvant, bulk antigen, and syringes/needles
 - Letters of intent to manufacturers
 - Phase one of vaccine immunization planning preparatory funds for State immunization planning

Decision 2 - est. Sept 15th

- Decision 2:
- Initiate vaccine formulation, start fill and finish
 - Acquisition of additional adjuvants

Decision 3 - est. Oct 15th

- Decision 3:
- Fund immunization program
 - Initiate immunization program

Decisions informed by clinical studies, epidemiological data (risk & severity), and efficacy

Allows sufficient production time and capacity for fall campaign

- Prior Decisions:
- Vaccine Development Production of clinical investigational vaccine lots, clinical studies, and potency assay reagent production
 - Commercial Scale Up

- *National Strategy for Pandemic Influenza* (Nov. 2005) goal is to provide vaccine to everyone in U.S. within 6 months of pandemic onset
- H1N1 Vaccine Strategy follows HHS pandemic playbook for vaccine development, production, and administration with multiple decisions and on/off ramps
- Clinical studies will inform vaccine formulation and safety profile (# doses, immunogenicity, amt. antigen, antigen-sparing effect, prime-boost effect)
- Vaccine manufacturing conducted by manufacturers of US-licensed seasonal influenza vaccines
- Key decision issues:
 - Impact of disease severity and virus transmissibility on vaccine type & vaccination program
 - Vaccine type (Inactivated vaccine): risk-benefit analysis for adjuvants
 - Vaccine distribution & administration plans
 - Post-immunization adverse event safety monitoring

- Vaccine type (Inactivated vaccine): risk-benefit analysis for adjuvants
 - Plan A– w/o adjuvant
 - ❖ Licensed product
 - ❖ Safety profile may be similar to seasonal vaccine
 - ❖ Less expensive product
 - ❖ Vaccine availability later
 - ❖ Simpler distribution & administration
 - ❖ Uses more of global vaccine antigen manufacturing capacity
 - ❖ Mild pandemic alignment
 - Plan B – w/ adjuvant
 - ❖ EUA
 - ❖ Limited safety profile with new oil-in-water emulsion adjuvants in all age groups
 - ❖ More expensive product
 - ❖ Vaccine available sooner
 - ❖ More complex distribution & administration
 - ❖ Uses less global vaccine antigen manufacturing capacity
 - ❖ Severe pandemic alignment
- Multidose vials & syringes for selected populations

H1N1 Vaccine Development

- May 22 HHS Secretary Sebelius announced support for H1N1 vaccine development with NIAID as the lead agency with FDA/CBER, BARDA, and CDC partners
- Clinical investigational lots will be produced by manufacturers of U.S.-licensed inactivated & live, attenuated influenza vaccines using BARDA contracts for industry-sponsored and NIH clinical studies
- Key clinical study objectives: timing of peak immunity, # doses, immunogenicity → amt. antigen, adjuvants → antigen-sparing effect & prime-boost effect
- Major clinical study programs
 - Manufacturer-sponsored clinical studies: safety and immunogenicity dose-ranging studies of their own products including adjuvant, as needed
 - NIH-sponsored clinical studies: safety & immunogenicity dose-ranging studies of manufacturers vaccine products including adjuvant
 - Manufacturer-sponsored clinical studies: large long term safety studies (N= 50,000+) in selected populations starting this summer and continuing into fall 2009 with follow up years later
- Key decision issue: develop vaccine candidates → vaccine formulation & immunization schedule

H1N1 Vaccine Manufacturing

- May 22 HHS Secretary Sebelius announced support for commercial scale manufacturing of H1N1 vaccine with BARDA as lead with FDA, NIH, and CDC partners
- HHS is buying vaccine manufacturing capacity
- Commercial scale lots of bulk H1N1 antigen (or virus) and adjuvants produced by five (5) manufacturers of U.S.-licensed seasonal vaccines using BARDA contracts
- Deliberate & measured vaccine manufacturing based on scientific data, need & availability of funds
- Key decision issues
 - Establishment of pre-pandemic H1N1 vaccine stockpile
 - Timing of procurements due to limited vaccine manufacturing availability
 - Timing of vaccine formulation/filling based on clinical studies and disease severity & transmissibility
 - Vaccine distribution from multiple vaccine manufacturing & distribution sites to States



BARDA:

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- Upcoming Events
- PHEMCE Strategy and Implementation Plan
- Pandemic Influenza Program
- CBRN MCM Program



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