



**RIC 2007**

**Nuclear Sector Pandemic Preparedness  
Plans, Initiatives and Posture**

Vijay Nilekani  
Nuclear Energy Institute  
Nuclear Sector Coordinating Council  
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# Introduction and Background

- Characteristics of a Pandemic
  - New Virus based infectious disease
  - Easy human to human transmissibility
  - No human immunity developed
  - Usually no neutralizing medical technology in the near term
- Three notable Pandemics of the last 100 years
  - 1918 (Spanish)
  - 1957 (Asian) and 1968 (Hong Kong)
  - No major outbreaks in the last 40 years

## **Pandemic Scenario's are different from other Catastrophic Threats**

- Simultaneous multiple pathways i.e. not limited to regions or locations
- All sectors of economy degraded
- Multiple waves, protracted duration
- Communities and families impacted
- Long lead times for medical intervention
- Random biological nature and mutation trajectory makes impact unpredictable

## CHALLENGES AND CONSTRAINTS

- Lead time for R & D, commercialization, deployment (Medical interventions)
- Public Health and Care facilities degraded by sickness, fear - seriously challenged
- Policy challenges, school & public place closures – socially very disruptive
- Critical Infrastructures operationally challenged and impacted by rationing,
- Media frenzy, fear, unfounded rumors

## WHY IS THE NUCLEAR SECTOR CRITICAL?

- Electricity consistently ranks as one of the most Critical Infrastructures in the nation
- Nuclear generation comprises over 20% of base load energy on the nation's Grid
- Nuclear is critical to grid reliability and stability (Reactance) by virtue of base load, physical location, effect on VAR's
- Safety and security

## **Government Roles at all levels to meet the Challenge**

- Health and Human Services (HHS) and Department of Homeland Security (DHS) are the designated lead Federal Agencies
- National Infrastructure Advisory Council (NIAC)
- Partnership for Critical Infrastructure Security (PCIS)
- Sector Coordinating Councils (SCC's) and Government Coordinating Councils (GCC's)
- Nuclear Regulatory Commission (NRC)
- Important Role for State and Local Government Public Health entities

## **Private Sector Organizations & Initiatives to meet the Challenge**

- Nuclear Sector Coordinating Council (NSCC)
- North American Electricity Reliability Council (NERC)
- Nuclear Energy Institute (NEI) Initiatives
- Individual Company Business Continuity Plans (BCP's)
- NEI working with NRC through the Licensing Actions Task Force (LATF)



## **NSCC / NEI INITIATIVES**

- NEI Guideline 06-03
- Industry Workshop, Meetings Support
- Outreach and Consulting to Sector
- Participation in NRC Workshop
- Participated on NIAC Pandemic Study Group to enable adequate vaccine quota allocation to CI/KR's
- Industry Preparedness Survey conducted
- Developing Distribution Strategy

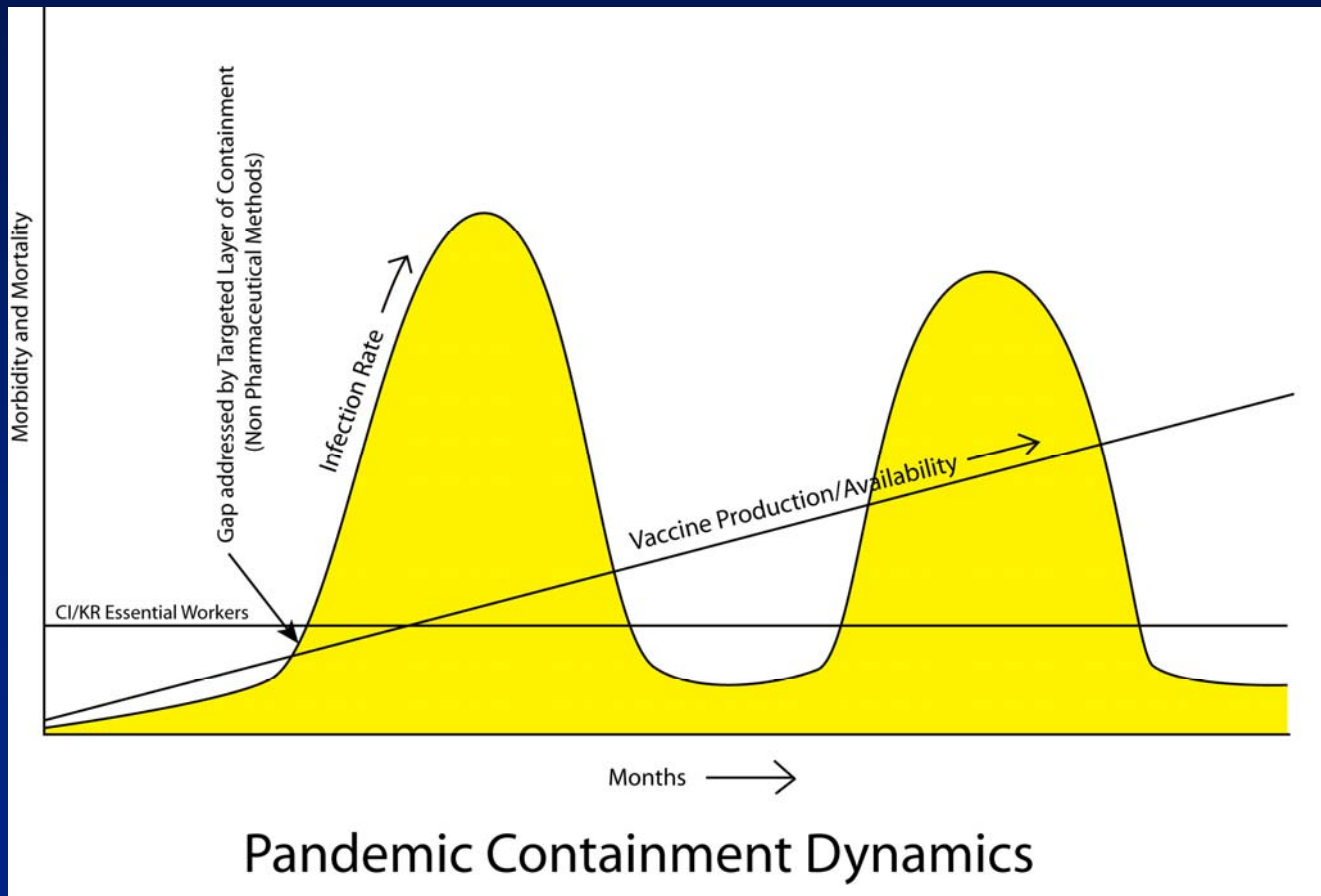
# Key Planning Assumptions

- Timing of Outbreak is uncertain
- When virus mutates to a form that enables human to human transmission, it will result in a rapid worldwide spread in 3-8 weeks
- Infection rates >25%
- Absentee rates 40%
- Mortality rates 0.5 to 2%
- Illness period up to two weeks
- Up to three waves, each 6-8 weeks, 3-5 months apart

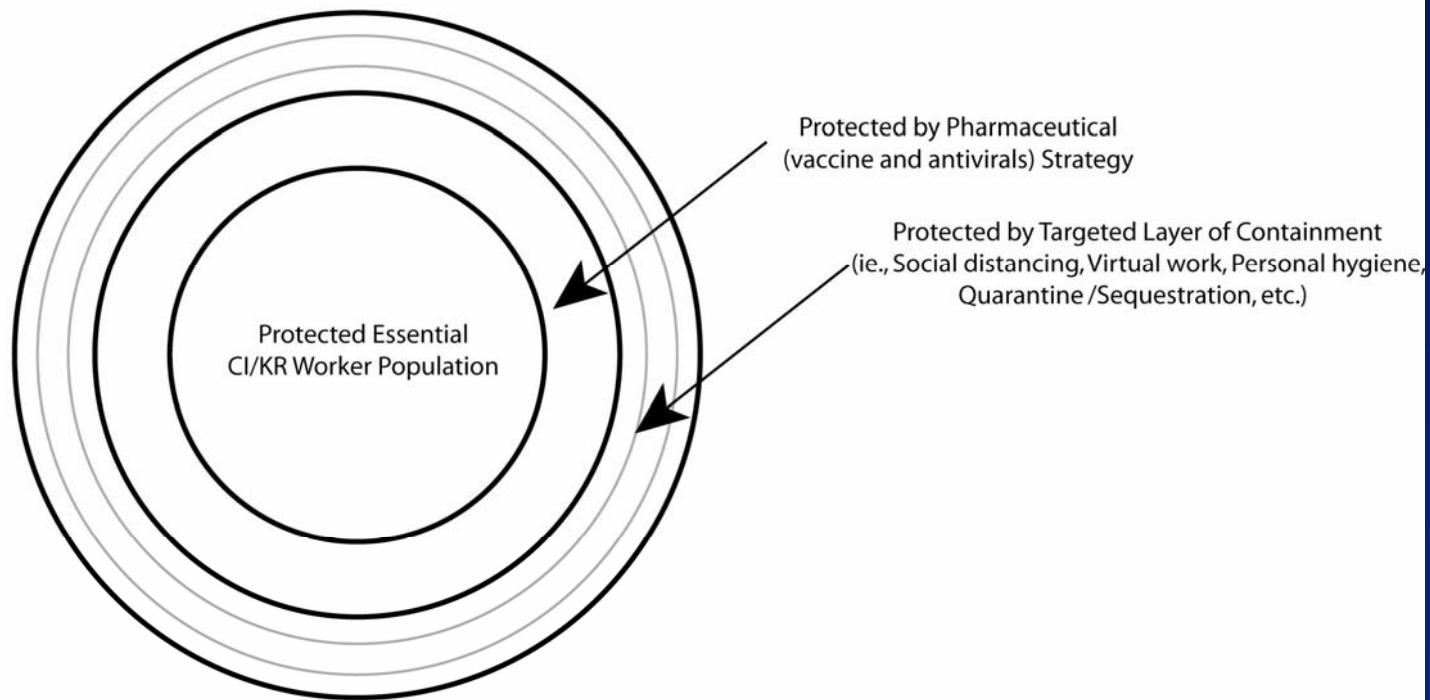
## Key Planning Assumptions, Cont'd

- Family illness will contribute to worker absenteeism
- Typical incubation period of two days but unreliable
- Some people can be infected but show no symptoms
- Infected people likely to develop immunity
- Early availability of Medical intervention unlikely - Rationing
- Early availability of practical and reliable diagnostics unlikely

# PANDEMIC CONTAINMENT



# DEFENSE IN DEPTH STRATEGY



Defense in Depth Strategy

# Preventive Management

- Non medical approaches - Layered Containment
  - - Some useful Metaphors
    - - Swiss cheese
    - - Fighting Forest Fires
    - - Nodal networks
  - Infection Control is the key
    - - Social Distancing
    - - Virtual work/working from home/minimization of travel
    - - Frequent washing of hands with soap, use of disinfectants
    - - Use of surgical masks, N-95 Respirators, etc
    - - Quarantine/Sequestering of work force
    - - Extending best practices to social/family environment
  - Compliance is the challenge

## **NUCLEAR INDUSTRY STRATEGY & POSTURE**

- Behavioral and habit changes need to be reinforced through communications and training
- Family and community outreach
- Use upcoming traditional flu season as practice run
- Vaccination compliance
- Deploy policies early
- Deploy mitigating infrastructure early
- Test Plan for effectiveness – drills & table top exercises
- Stockpile supplies early

## **NUCLEAR INDUSTRY STRATEGY & POSTURE Cont'd**

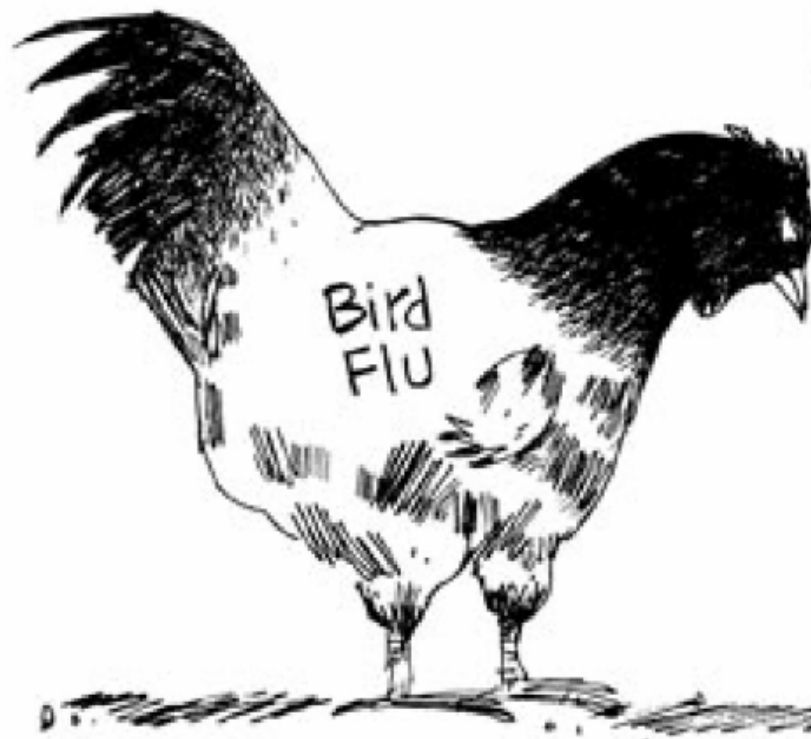
- Develop formal Pandemic/Business Continuity Plans
- Engage all stake-holders
- Monitor the pandemic vector for early deployment
- Keep Regulator and other stake-holders well informed on issues
- Communicate, train, reach out



## PROCESS AND PROCEDURAL ELEMENTS

- Sequestration/Quarantine of critical and backup personnel
- HR & other Policy revisions
  - Leave/absenteeism
  - Travel/telecommuting
  - Liberal healthcare, family support
- Stockpiling of supplies – anti-virals, masks, etc
- Appropriate regulatory relief
- Plan for budget impact/financial implications

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Mad Cow.  
Deer Tick.  
Monkey Pox...  
What's next..?

# QUESTIONS ?

## CONTACT INFORMATION:

Vijay Nilekani

Nuclear Energy Institute

[vxn@nei.org](mailto:vxn@nei.org)

(202) 739-8022