

– DRAFT –

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Simulation Report – Full Version

Influenza Pandemic Simulation

Implications for the United States

Washington, DC
27-28 March, 2006

This document is confidential and is intended solely for the use and information of the client to whom it is addressed.

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Strategic simulations are a proven way to build plans for highly complex issues, such as pandemic influenza

WHAT IT IS

- ▶ Powerful process for thinking about the future which challenges conventional wisdom and allows participants to break with “known truths” and personal assumptions
- ▶ Encourages stakeholders to interact within a dynamic environment
- ▶ Allows analysis of alternatives under fire while compressing the decision making cycle
- ▶ Acts as a catalyst, invoking intuition and creativity to foster innovative strategic approaches to key challenges

HOW IT WORKS

- ▶ Participants are assigned to teams representing key stakeholder groups
- ▶ Each team assesses the environment, develops a strategy, and implements it through specific initiatives and actions
- ▶ Teams interact through a series of activities (“moves”)
- ▶ Teams communicate with each other and learn what is happening as it happens
- ▶ Teams assess their own and other stakeholders’ actions, and work with the control team to determine their likely impact
- ▶ The control team ensures the entire simulation stays on track

WHAT IT PROVIDES

- ▶ Although every simulation is different, there are several things that participants can expect to take away from the experience
- ▶ Their view of the world will change – it will provide intuition for an event outside their experience
- ▶ It will give a view of how the future might evolve and, more important, an understanding of the drivers of that evolution
- ▶ Participants will test their ability to coordinate with – and rely upon – other stakeholders
- ▶ They will be able to test and refine their organization’s preliminary preparedness and response plans

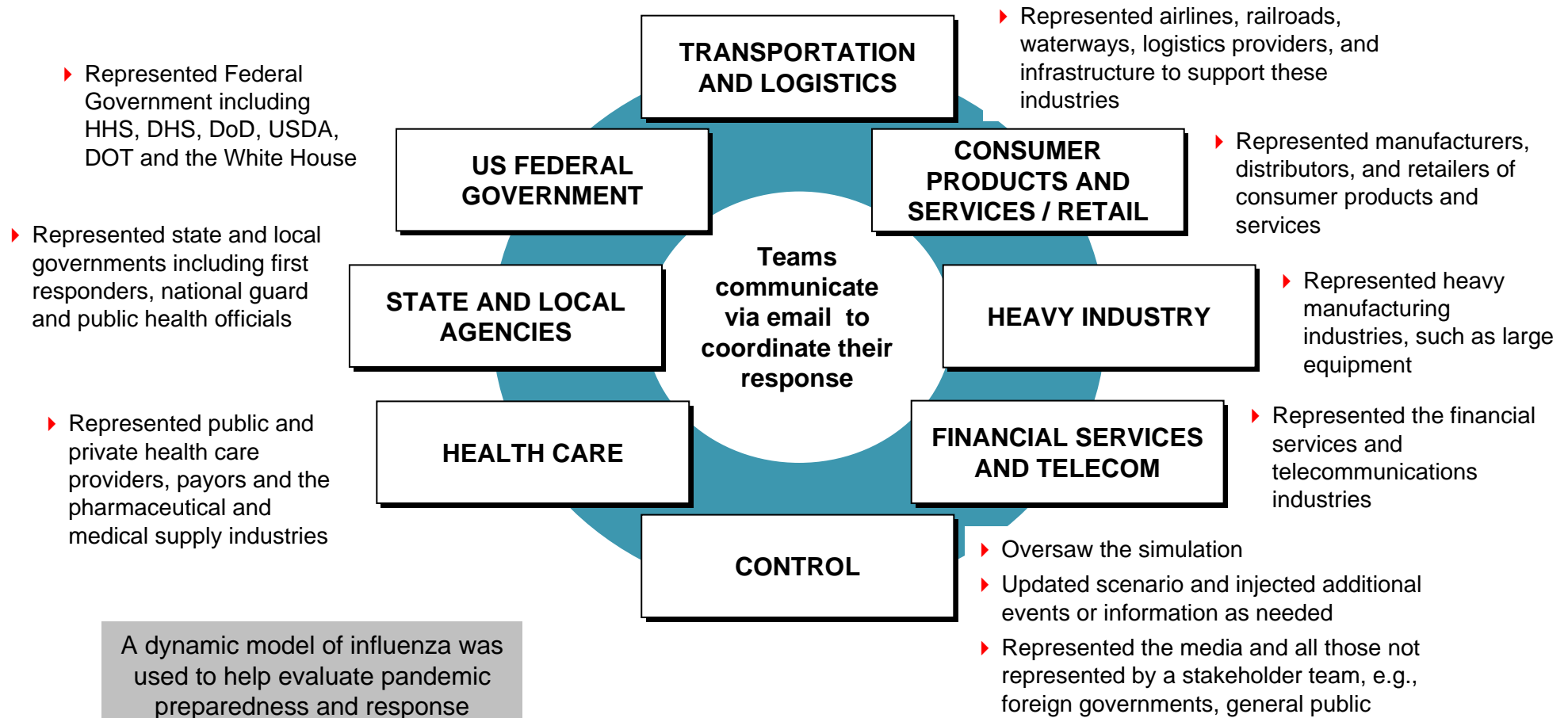
The objective of the Influenza Pandemic Simulation was to improve public-private sector coordination in response to an influenza pandemic

Objectives

- ▶ Assess impact of pandemic influenza on government and businesses, including supply chain, available work force, and demand
- ▶ Test response plans and underlying assumptions of government and business
- ▶ Identify approaches for stakeholders to improve their preparedness and strategies to include:
 - Resource allocation
 - Balance of preparedness and response
 - Response strategies
 - Stakeholder communication and collaboration

Participants were grouped into teams representing federal, state and local governments, healthcare, and four industry sectors

Conceptual Simulation Design



Participants included senior executives from business and government – with a mix assigned to each team

Three moves over two days were used to simulate an immediate and long-term response, and identify next steps to help stakeholders prepare for a real world pandemic

MOVE 1 : IMMEDIATE RESPONSE

- ▶ Teams briefed on opening scenario.
- ▶ What are your concerns? What are your objectives and priorities?
- ▶ What are the immediate steps that you must take? How prepared are you?
- ▶ What are the near-term consequences of your actions?
- ▶ What other stakeholders must you collaborate with? How?
- ▶ What is your message? How will you communicate it? To whom?

MOVE 2 : RECOVERY

- ▶ What were the projected impacts of choices made by you and other stakeholders?
- ▶ How have your priorities changed? What actions must you now take?
- ▶ How will you maintain or restore operations?
- ▶ What are the risks of taking these additional steps?
- ▶ What are the long-term consequences of your actions?

MOVE 3 : PREVENT / MITIGATE

- ▶ What had the greatest impact on “your team” in the wargame? Why?
- ▶ What next steps does your team need to take to prepare for pandemic flu and mitigate its impacts?
- ▶ What do you need from others, including government, to complete these next steps?
- ▶ What are the barriers to implementation? How might they be overcome?
- ▶ How might government and business better collaborate to prepare for pandemic influenza?

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Questions were posed during each move to focus discussion and structure their briefings at the end of each move - Move 1 focused on initial responses and roles and responsibilities

Move 1 Discussion Agenda

Federal Government Team

- ▶ What is your role in the pandemic response? What are your priorities?
- ▶ How will you contain the pandemic? What steps are you taking?
- ▶ How will you ensure continuity of government and essential services?
- ▶ How will you keep your population informed? What is your message?

State & Local Government Team

- ▶ What is your role in the pandemic response? What are your priorities?
- ▶ How will you contain the pandemic? What steps are you taking?
- ▶ How will you ensure continuity of government and essential services?
- ▶ How will you keep your population informed? What is your message?

Healthcare Team

- ▶ How will you contain the pandemic and protect your workforce?
- ▶ What are your priorities for the care and treatment of pandemic victims (e.g., who, what, how)?
- ▶ How will you sustain operations (e.g., provide treatment, maintain manufacturing capabilities)?
 - Workforce
 - Facilities
 - Supply chain
- ▶ What and how will you communicate to the public?

Business Teams

- ▶ What are the impacts on your business?
- ▶ How will you identify essential operations and employees?
- ▶ What actions will you take to protect employees and sustain operations?
- ▶ How will you keep your employees, vendors, and customers informed? What actionable steps should they take?

In Move 2, teams addressed how they would maintain essential services during the peak of the pandemic

Move 2 Discussion Agenda

Federal Government Team

- ▶ What actions are you taking to maintain government and essential services?
- ▶ What policies are needed to ensure delivery of critical services provided by the private sector (e.g., healthcare, food, utilities)?
- ▶ How are you collaborating with other stakeholders? What support do you provide? What do you need?
- ▶ How will you continue to keep your population informed? What is your message?

State & Local Government Team

- ▶ What actions are you taking to maintain government and essential services?
- ▶ What policies are needed to ensure delivery of critical services provided by the private sector (e.g., healthcare, food, utilities)?
- ▶ How are you collaborating with other stakeholders? What support do you provide? What do you need?
- ▶ How will you continue to keep your population informed? What is your message?

Healthcare Team

- ▶ How will you sustain operations (e.g., provide treatment, maintain manufacturing capabilities)?
 - Workforce
 - Facilities
 - Supply chain
- ▶ What guidance are you providing to the public regarding treatment and care? How do you communicate it?
- ▶ How are you collaborating with other stakeholders? What support do you provide? What do you need?
- ▶ What financial liability issues are you encountering? How do you mitigate?

Business Teams

- ▶ What level of operations can you sustain (e.g., workforce, facilities, supply)? How? Does this differ for essential and non-essential operations?
- ▶ What support and guidance are you providing employees (treatment, flex work arrangements, comp and benefits)?
- ▶ How are you collaborating with other stakeholders? What support do you provide? What do you need?
- ▶ What financial and liability issues are you encountering? How do you mitigate? How does this differ for small, mid and large sized businesses?

In Move 3, participants discussed breakout actions to improve a response to a pandemic

Question 1

- ▶ As your team, describe one breakout action you could take to improve response
 - What would make a difference? What specific actions could you take?
 - Who leads the effort? What stakeholders need to be engaged?
 - What are the obstacles to implementation? How can they be overcome?

Question 2

- ▶ As any team of your choice, describe one breakout action you could take to improve response
 - What would make a difference? What specific actions could you take?
 - Who leads the effort? What stakeholders need to be engaged?
 - What are the obstacles to implementation? How can they be overcome?

Question 3

- ▶ To help Healthcare, describe one breakout action you could take to improve response
 - What would make a difference? What specific actions could you take?
 - Who leads the effort? What stakeholders need to be engaged?
 - What are the obstacles to implementation? How can they be overcome?

Overall several key themes emerged throughout the simulation

- ▶ A pandemic is unlike any other health or non-health related crisis
- ▶ The US healthcare system will be overwhelmed by the first order health challenges of addressing disease
- ▶ The Federal Government must be able and willing to lead and to provide concrete, strong direction
- ▶ All stakeholders will be faced with extremely difficult decisions which must be thought through ahead of time
- ▶ Workforce shortages will affect every sector and supply chains will be unstable or non-existent
- ▶ Targeted staff augmentation efforts across the health sector will be mandatory
- ▶ A “Manhattan Project” model is imperative for the acceleration of new vaccines and vaccine development techniques
- ▶ Mental health issues can and must not be ignored during and after a pandemic event
- ▶ Employers will need to develop, test and coordinate (within and between sectors) workforce/workplace strategies well in advance

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At the start of the simulation, participants were alerted that the WHO raised the Pandemic Alert to Phase 6, the Pandemic Period

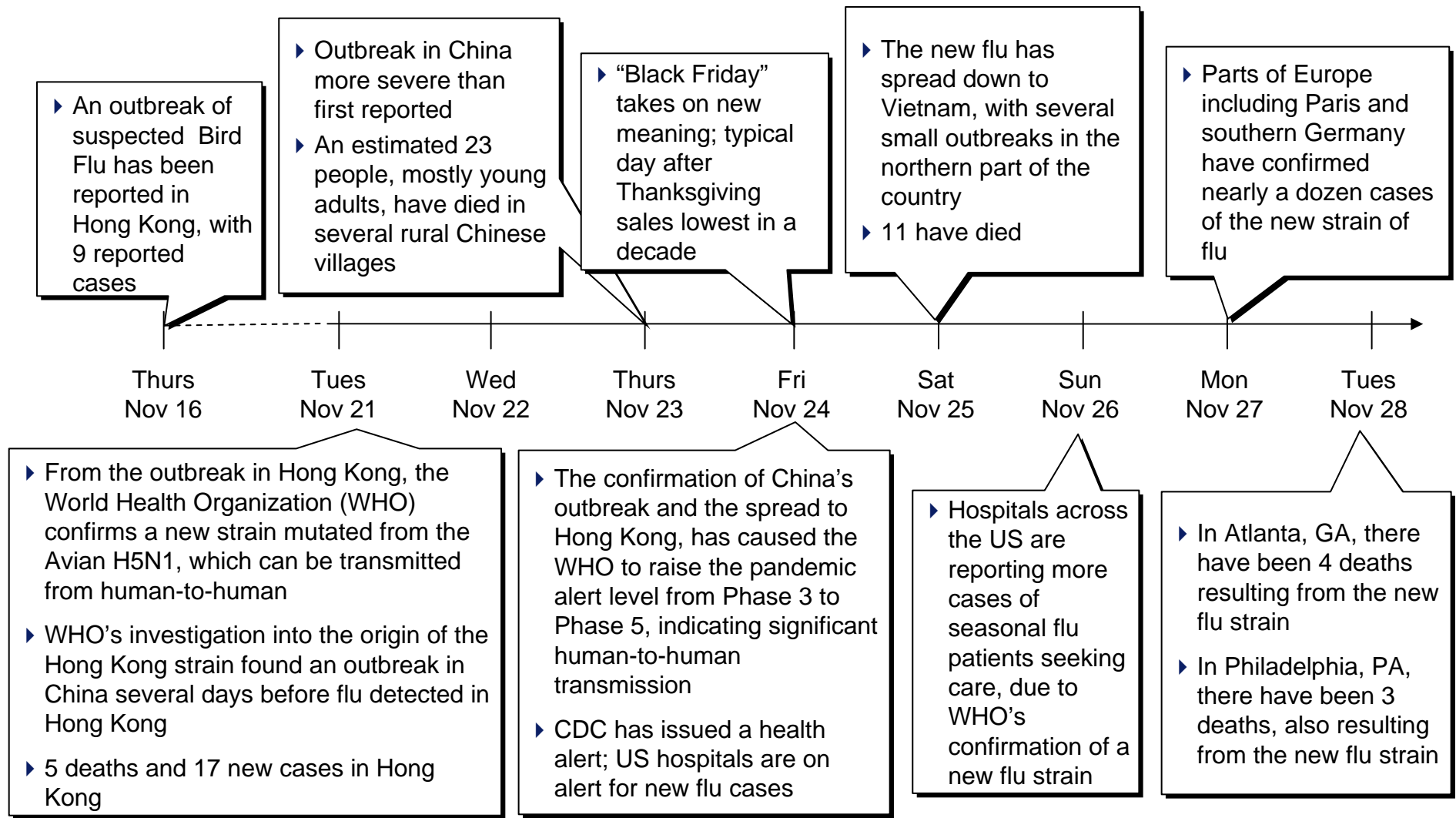
- ▶ Phase 6 of the World Health Organization's Pandemic Alert system, is the Pandemic Period, where there is increased and sustained transmission in the general population
- ▶ WHO has begun to distribute their stockpiles of Tamiflu to Southeast Asia, as those countries do not have their own supply

	Confirmed Deaths	Confirmed Cases
Hong Kong	13	42
China	36	107
US	7	7
France	2	6
Germany	3	5

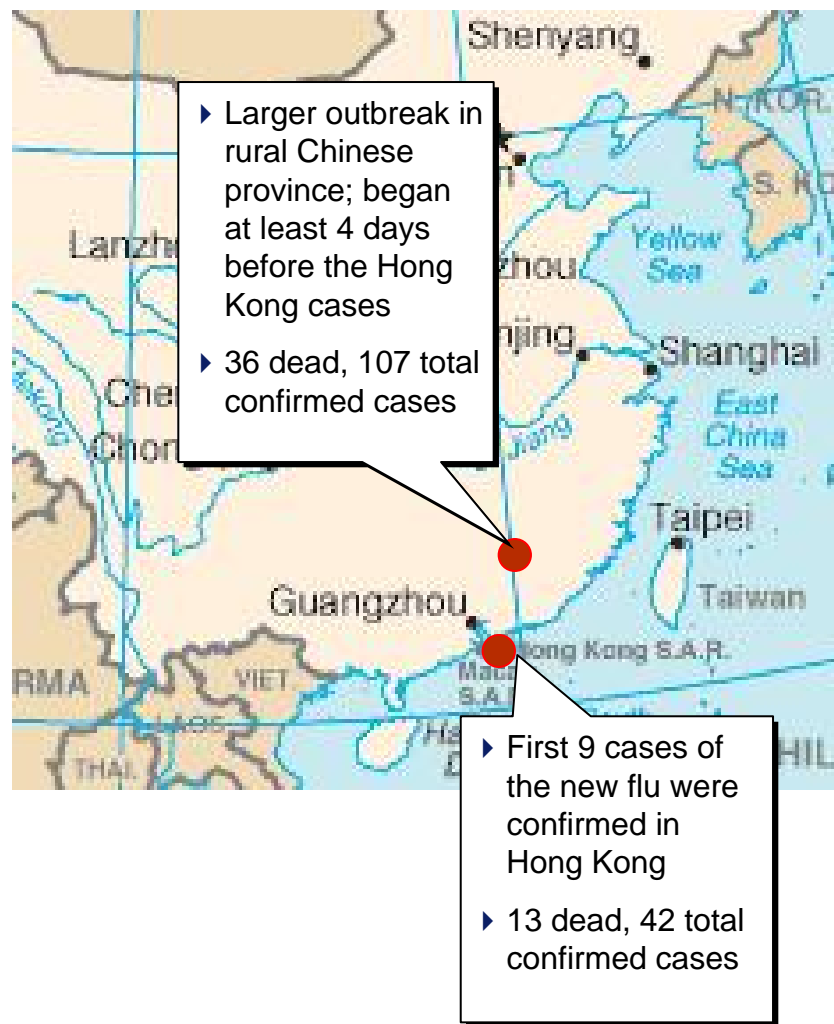
Phase	Definition	Level
Inter-pandemic Phase	Low risk of human cases	1
New virus in animals, no human cases	Higher risks of human cases	2
Pandemic alert New virus causes human cases	No or very limited human-to-human transmission	3
	Increased human-to-human transmission	4
	Significant human-to-human transmission	5
Pandemic	Efficient and sustained human-to-human transmission	6

It is November 28, 2006 – Following an outbreak in Hong Kong, WHO confirmed that avian flu had mutated into a human-to-human transmissible strain

Pandemic Progression



Since the first suspected cases appeared in Hong Kong two weeks ago, an earlier outbreak in China has been discovered, as the flu continues to spread throughout the region



- ▶ Since the initial 9 cases in Hong Kong, the disease has continued to spread through the province and into surrounding Chinese provinces
 - 13 dead, 42 total confirmed cases in Hong Kong
 - 36 dead, 107 total confirmed cases estimated in China
- ▶ The day after the WHO confirmed a new strain had mutated from H5N1, there were reports from rural China of nearly two dozen cases that may also be the new strain of flu
- ▶ The new strain of flu has spread north to Beijing where residents remember SARS
 - Residents have begun wearing masks in public
 - Several hospitals are using armed police for added security as reports of more cases of the new flu strain appear around the world

The new strain of flu has hit the US, with confirmed cases in Philadelphia and Atlanta



- ▶ Concerns about crowded airplanes and airports have Americans more concerned as the flu has crossed the ocean over Thanksgiving weekend
- ▶ None of the flu victims had been to East Asia recently, but 2 of the Atlanta victims and 1 of the Philadelphia victims had been on the West Coast for the holiday, traveling through the Los Angeles airport
- ▶ There has been no confirmation of the new strain of flu on the West Coast, but hospitals across the country are on high alert
- ▶ With the seasonal flu season off to a strong start, hospitals and physicians' offices across the country have been inundated with patients worried about the new strain

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Team Briefings

The Federal Government

Federal Government Team Breakdown

- ▶ The Federal Government Team was made up of 15 representatives from various Federal agencies, military leadership, business executives and others
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion

At the start of Move 1, the Federal Government Team identified their primary role to be a coordinator – helping other stakeholders orchestrate their response

What is your role in the pandemic response? What are your priorities?

- ▶ Orchestrate the Federal response
 - Declaring Incidents of National Significance (INS)
 - Declaration of public health emergency
 - Leverage containment strategies
 - Promote the public health: Response to flu and preparedness for healthcare infrastructure surge
 - Protect the economy and our borders, national security
- ▶ Keep the public informed
- ▶ Work with the States, coordinating the response to the epidemic, using existing plans
- ▶ Share information across the government and with State and Local governments
- ▶ Coordinate with the rest of the world - provide global leadership and response

How will you contain the pandemic? What steps are you taking?

- ▶ At this point, the outbreak is not containable
- ▶ The strategy is to minimize the impact on the nation

To ensure government stability the team decided to enact the Federal Government Continuity of Operations Plan and coordinate strategies with Federal and State agencies

How will you ensure continuity of government and essential services?

- ▶ Activate Federal Government Continuity of Operations Plan (COOP), with implementation appropriate for pandemic disease
- ▶ Implement ways to sustain operations, assuming a long-term reduction in available staff
- ▶ Support and provide guidance to industry to identify essential personnel for critical infrastructure: utilities, communication and transportation
- ▶ Governors will enact the National Guard per State requests to provide additional emergency services; selected use of Reserve and Active Duty assets

How will you keep your population informed? What is your message?

- ▶ Joint communications strategy amongst Federal agencies and State and Local authorities
- ▶ Devote attention to mental health care as people recover and return to the work force
- ▶ Provide a daily briefing to the public
- ▶ Message to the public:
 - Federal government is working to support the health care infrastructure
 - We are secure and our economy is strong
 - The country will weather this crisis

Before beginning Move 2, participants were informed that they were 6 weeks into the pandemic and every continent had been affected

- ▶ The flu has spread across the US
- ▶ EU has not closed borders
 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

Following the Move 1 briefings, the Federal Government Team realized that they needed to engage more closely to ensure healthcare and essential goods and services were available

What actions are you taking to maintain government and essential services?

- ▶ Augmentation of local law enforcement with Federal law enforcement officers
- ▶ Coordinating with critical industries to identify infected/recovered workers and move them where needed
- ▶ Providing regulatory relief to keep industries functioning, to include anti-trust, liquidity and capital requirements
- ▶ Providing the healthcare sector with:
 - Money to continue operations; keep Medicare/Medicaid paying
 - Liability relief
 - Framework for developing priorities in rationing care
- ▶ Invited industry to identify critical goods and services and they responded; coordinating with them to continue to ensure availability of goods and services
- ▶ Coordinate with the private sector to meet public needs

The team further addressed what policies required implementation to ensure delivery of services and the necessary collaboration strategies to provide ongoing support

What policies are needed to ensure delivery of critical services provided by the private sector (e.g., healthcare, food, utilities)?

- ▶ Defense Production Act
- ▶ Timely, accurate information relayed to industry
- ▶ Existing Coordinating Councils linked to the private sector to collect needs
- ▶ For financial services, capital ratios have been lowered, the Fed has modified interest rate policies to increase liquidity
 - We are in continuous dialogue through FSSCC to modify regulations regarding securities trading practices
- ▶ Policy as to whether and when national price controls and rationing are needed
- ▶ The Federal government will provide security around the provisioning of any of these services in response to requests from State and Local governments
- ▶ The Federal Government can negotiate with foreign countries for commerce and recovery measures, including border controls

How are you collaborating with other stakeholders? What support do you provide? What do you need?

- ▶ Critical Infrastructure Coordinating Councils
- ▶ Presidential Advisory Councils
- ▶ Engaging with industry CEOs directly
- ▶ Engaging Community and Faith-based Organizations
- ▶ Governors
- ▶ Homeland Security Advisors
- ▶ Support we provide:
 - Develop and implement a national recovery plan
 - We are a forum for enabling coordination
 - Financial relief
- ▶ We need cooperation and recommendations, not just demand for assistance

Move 2 – Federal Government Team

During Move 3 of the simulation, the Federal Government identified “leadership” as the number one action or characteristic the needed to be addressed by the government

As your team, describe one breakout action you could take to improve response

- ▶ Change the fundamental paradigm from “emergency response” to “emergency leadership”
 - Demonstrate leadership to mitigate catastrophic breakdown of critical social, economic, health and/or security systems.
 - Move from philosophy of responding to state and local agencies and public requests for assistance to proactive federal action, in partnership with others, to communicate, provide guidance, “push out” assistance, and – where needed – direct actions
- ▶ Specific actions
 - Modify current “all hazards” plans to enable rapid top-down action in clearly defined circumstances: i.e. events threatening systemic breakdown; declared by President in consultation with Congress; for fixed period of time
 - Establish leadership mechanisms: national council, designated national-level leader; regional leaders and councils, and new federal authorities
 - Pre-plan initial actions for critical scenarios: playbooks for immediate interventions; plans to push resources to points of greatest need; contingency contracts and expedited procurement
 - Pre-plan messages; communications strategy begins before the event
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Statutory authorities: work with Congress to amend Stafford Act and other legislation
 - State and Local resistance: build consensus around how, when and where the approach would be beneficial
 - Private Sector concerns: assess regulatory, anti-trust, and liability issues; work with private sector to resolve

Move 3 – Federal Government Team

Part of that leadership response would be assisting the healthcare team improve their response and minimize impact on that industry

To help Healthcare, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Launch a global “Manhattan Project” to accelerate vaccine development and production. This would include basic science research on the influenza virus and immune response, technologies to rapidly develop vaccine prototype strains and produce large quantities of safe and effective vaccine either against all influenza viruses or at least before the first pandemic wave.
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Federal Government would initiate this effort (NIH, CDC, FDA) and work collaboratively with other countries. Stakeholders include basic and clinical research institutions, biotechnology companies. Robust surveillance of circulating human and animal strains through international collaboration, e.g. WHO Global Influenza Network and veterinary authorities (FAO), and enhancement and integration of domestic surveillance.
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Basic science and technology challenges – Increase funding, increase recruitment in the sciences
 - Practical ability to translate research into technical manufacturing practice – expand FDA’s Critical Path initiative to include more participation by CDC and NIH
 - Intellectual property and anti-trust issue – Unsure how to address, but at least this a man-made problem
 - Political considerations involved in collecting or obtaining strains from foreign countries - consider a range of solutions from increased funding to foreign countries to diplomatic initiatives
 - Inadequate vaccine production capacity - increase annual vaccine demand during non-pandemic years to ensure a market for manufacturers

Move 3 – Federal Government Team

Key lessons for the Federal Government Team included the need for consistent public information and pre-determined decisions to ensure rapid response

- ▶ Continue pursuit of “playbooks” to include “first 10 plays” to ensure rapid response (including pre-scripted Requests for Assistance)
 - Identify in advance the toolkit of legal and regulatory changes that may be needed, particular to ensure action
- ▶ Understand that the public is looking to the Federal Government for guidance
- ▶ A philosophy of “Act” versus “Respond” – act and adjust rather than wait and respond – is necessary across stakeholders
- ▶ Federal government should endeavor to partner with the national media to support the public
 - Public messaging and communication must be direct, specific and frequent
 - A combination of action and reassurance for the public as necessary to avoid over-reaction and generate confidence
- ▶ Get key leaders across government and private sector together as soon as possible to ensure a collaborative and concerted effort

Federal Government Team



Team Briefings

The State and Local Government

The State and Local Agency Team Breakdown

- ▶ The State and Local Government Team was made up of 12 representatives from various State health departments, hospital health systems, and other health organizations
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion.

During Move 1, the State and Local team identified their role as the primary response coordinator responsible for protecting the lives of all state-wide citizens

What is your role in the pandemic response? What are your priorities?	How will you contain the pandemic? What steps are you taking?
<ul style="list-style-type: none"> ▶ Primary Role <ul style="list-style-type: none"> – Coordinate the entire state’s operations utilizing actionable pre-existing plans ▶ Strategy <ul style="list-style-type: none"> – To control slow and minimize morbidity and mortality and maintain public order ▶ Priorities <ul style="list-style-type: none"> – Maintain Public Order – Communicate – Save lives and minimize suffering 	<ul style="list-style-type: none"> ▶ Epidemiology of existing cases <ul style="list-style-type: none"> – Use medical prophylaxis for contacts ▶ Initial implementation of containment strategies for initial cases <ul style="list-style-type: none"> – Home quarantine the exposed – Isolate and treat the sick people ▶ Begin Social Distancing Policy <ul style="list-style-type: none"> – Communications strategy – Implement plan for school & public gatherings closure – Mass transit is closed (ATL) – Activation of corporate disaster plans ▶ Protect Hospital Assets <ul style="list-style-type: none"> – Phone bank – Triage – Defer elective surgery – Ensure physical security – Maximize home care ▶ Provide Alternative sites for homeless

To ensure essential services were maintained, priority groups would need to be identified prior to antiviral distribution and the media should be used to effectively funnel information

How will you ensure continuity of government and essential services?

- ▶ Implement Continuity of Operations Plans
- ▶ Use of PPE for prioritized personnel (law enforcement & healthcare)
- ▶ Antivirals for priority groups
- ▶ Alternate sites for day care and services
- ▶ Activate National Guard – Title 32 status
- ▶ Working Groups for each critical industry
- ▶ Release plan kits and use industry specific plans

How will you keep your population informed? What is your message?

- ▶ Distribute e-health alerts to health care systems
- ▶ Activate toll-free numbers
- ▶ Implement media strategy
- ▶ “Use appropriate measures to protect yourself” – Stay home if you’re sick!
 - Hand washing
 - Social distancing
 - Respiratory etiquette
 - Masks needed in high-contact situations
 - Civic duty
 - Long-term

Prior to beginning Move 2, participants were informed they were 6 weeks into the pandemic and every continent had been affected

- ▶ The flu has spread across the US
- ▶ EU has not closed borders
 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

With the pandemic underway, the state and local government team chose to shift state personnel to cover essential services and increase communication to the public

What actions are you taking to maintain government and essential services?

- ▶ Daily briefings
- ▶ Redeploy the recovered into essential positions
- ▶ Instituting necessary security measures
- ▶ State employees transitioned to essential services (from non-essential)
- ▶ Working under Incident Command System
- ▶ Instituting telecommuting and alternate work arrangements
- ▶ Provide source of coordination of stakeholders

How will you continue to keep your population informed? What is your message?

- ▶ Utilize the same channels – daily broadcasts
- ▶ Key Messages
 - Respect for Law & Order
 - Partners visibly together
- ▶ Constant flow of information
- ▶ Volunteers
- ▶ Planning must include media & journalists
- ▶ Overall Key Take-Aways
 - Become more of a coordinator
 - Need a tremendous amount of information
 - Need to be credible voice of expertise and leadership
 - Determine points of failure early and mitigate up front
 - Need reps from other sectors early in the process to communicate issues on a real-time basis
 - Health component ramped up quickly but government needed to address all of the social agencies (e.g., Law, Food, Transportation, etc)

The state and local government team considered implementing curfews, food-sharing policies, and infrastructure control – but specifically requested stronger collaboration with the Federal government

What policies are needed to ensure delivery of critical services provided by the private sector (e.g., healthcare, food, utilities)?

- ▶ Guidance on food sharing
- ▶ Curfews
- ▶ Requested from Federal Government:
 - CMS
 - VA/MHS
 - Update on recommended standards of care – best practices
 - Transfer energy to East Coast
 - Guarantee of payment
 - Interstate commerce relaxation
 - Funded debit cards
- ▶ National Guard deployed in law enforcement roles to protect supply chains
- ▶ Policies were focused on infrastructure control

How are you collaborating with other stakeholders? What support do you provide? What do you need?

- ▶ Regular liaison with Federal Government
- ▶ Requested policy changes from Federal Government
- ▶ Regular communications with hospitals & providers in healthcare
- ▶ Federal Government did not take the expected responsibility/was not sufficiently proactive
- ▶ Resources were used by Federal Government up front and they had little to offer in Move 2
- ▶ Need stronger private industry and business to integrate them into planning
- ▶ Could use relaxation of access to existing programs (e.g., Food Stamps, etc)

The team concluded at the end of the simulation, that individual education, preparedness and accountability were essential to improving response at the local level

As your team, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Individual Education, Preparedness, & Accountability (not just Avian Flu centered)
 - “Day After”-like Television event
 - Use all channels (e.g., Town Halls, PSAs, Businesses, Media, etc.)
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Governor
 - State & Local Government, National Guard
 - PUBLIC! (business, faith-based, schools, celebrities, media, etc.)
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Public expectations & attitudes
 - Government attitudes
 - Broad stakeholder buy-in

Acting as the consumer and products team, the team identified the need for a national plan for production and distribution – to ensure continuity of essential supplies

As any team of your choice (Consumer Products & Services), describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - National plan for the production and distribution of key/essential products with pre-coordination with manufacturing industry
 - National
 - Individual
 - Identify essential products, establish government financial mechanisms/ incentives, establish formalized agreements, establish communication plan and public support, and develop PR approach/strategy
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Lead: President of the US/Executive Branch
 - Stakeholders: Cabinet Level Departments, Manufacturing & Transportation Industries
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Public, Industry, and Legal resistance/skepticism to government intrusion and credibility
 - Funding

The Healthcare team would require pre-determining the changes that the system would need to undertake, strong leadership from all levels of government, specific training and increased funding

To help Healthcare, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Development of a system containing pre-determined, multi-level, continuous triage and disposition criteria for medicine/care:
 - Home, Home Poor Prognosis, Hospital, Alternate Care Site
 - Consideration around:
 - Alternate care sites established in advance
 - Staffing (incl. non-traditional)
 - Establishment of resource base
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Need Federal/State/Local coordination of meeting(s) to determine criteria (example participants include HHS, DHS, IOM, AMA, AHA, ANA, JCAHO, ASTHO, FBOs, Ethicist?)
 - Multi-tiered national guidelines with state/regional customization
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Training and mobilization of the community and resources
 - Insufficient funding and operational capacity for training, preparedness, logistics, etc.
 - Legal/Regulatory/Liability obstacles
 - Public resistance – Open process (e.g., CSPAN, town hall, etc.)

The state and local government team identified “the public” as their main responsibility and that pre-planning and coordination would be needed to meet citizens expectations and needs

- ▶ State and Local governments will be responsible for anticipating and managing Public expectations and needs
- ▶ Need for holistic, actionable plan with representation from other sectors early in the planning process (NOW) to communicate issues
- ▶ Determine points of failure early and mitigate up front
- ▶ Become more of a coordinator
- ▶ State and Local governments will work with other sectors to attain full spectrum information
 - Need to be credible voice of expertise and leadership
- ▶ Health component ramped up quickly but government needed to address all of the social agencies (e.g., Law, Food, Transportation, etc)



Team Briefings

Healthcare

The Healthcare Team Breakdown

- ▶ The Healthcare Team was made up of 15 representatives from various medical associations, pharmaceutical companies, health agencies, etc.
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion.

The Healthcare team identified containment within their facilities, protection of workers, and maximizing limited resources for patients with high survival rates as key priorities

How will you contain the pandemic and protect your workforce?

- ▶ Objective is for containment within our facility – that is what we can control
- ▶ Activate hospital's emergency plan
- ▶ Educate and screen the staff ("Are you well?")
- ▶ Provide adequate PPE for staff
- ▶ Establish sick policy regarding staying at home during pandemic
- ▶ Establish daycare for family members
- ▶ Ongoing internal communications
- ▶ Establish mechanism for essential workers and provide transportation when transportation and/or accommodations has broken down
- ▶ Prophylaxis for front line triage?

What are your priorities for the care and treatment of pandemic victims (e.g., who, what, how)?

- ▶ Develop national, ethical and legal guidance
- ▶ Critically ill patients with markers of poor prognosis may have care suspended?
- ▶ Maximize limited resources for those that have a good chance of survival?
- ▶ Societal function should not be a factor

To sustain healthcare operations, reallocation of staff and working around a failed supply chain would be required

How will you sustain operations (e.g., provide treatment, maintain manufacturing capabilities)? Workforce? Facilities? Supply chain?

- ▶ Re-allocation of staff and credentialing of staff to work across functions
- ▶ Trained professionals/volunteers can re-enter workforce once symptom free
- ▶ Early reach-back to suppliers
- ▶ “Stimulate” demand to create additional production capability for supplies?
- ▶ Realization – supply chain will fail - Must mitigate around this. Alternative approaches

What and how will you communicate to the public?

- ▶ Coordinate all communication through local health department
- ▶ Ensure coordination of communication
- ▶ Must have accurate internal communication with employees and patients
- ▶ Internal communication via website, call trees, call centers, recorded messages

Prior to beginning Move 2, participants were informed they were 6 weeks into the pandemic and every continent had been affected

- ▶ The flu has spread across the US
- ▶ EU has not closed borders
 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

At the start of Move 2, the healthcare team decided hospitals should be more involved with planning and that surge capacity should be at least 30 percent for institutions

Recommendations for Collaboration

- ▶ County, state and possibly regional table top exercises should be required to give emergency planning its due justice
- ▶ Hospitals should be involved in regional planning In terms of emergency planning, stakeholder collaboration should occur at all levels
 - Federal
 - State
 - Local Government
 - Providers
 - Payors
 - Suppliers
- ▶ Table-top exercises for emergency planning will be effective, but emphasis should be on touch points with external stakeholders (e.g., “How will my plan integrate with a state plan?”)

Capacity Needs

- ▶ Target for surge capacity should be 30%
- ▶ Oxygen will be critical – stockpiles are necessary
- ▶ Surge may include changing the standard of care (e.g., nursing ratios)
- ▶ Invest in C-PAP
- ▶ Use of medically trained personnel not currently practicing
- ▶ Need for rapid testing capabilities

Additional funding for preparation will be critical and staff will need training to make difficult ethical considerations around allocation of medical resources

Financial and Legal Considerations

- ▶ One third of hospitals do not make money –a system needs to be in place to reimburse hospitals for extraordinary losses during pandemic flu
- ▶ Substantial cost of preparedness
 - Planning
 - Drilling
 - Training
 - Stockpiling
- ▶ Criminal and civil indemnification around credentialing and triage decisions

Allocations for Scarce Medical Resources

- ▶ Patients with relatively poor prognosis should not have ventilator and resource-intensive services
- ▶ Need liability protection

In Move 3, the healthcare team identified a just in time training framework to cross-train individuals at alternative care sites in the event that hospitals go beyond surge capacity

As your team, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Develop Just in Time Training Framework for supervised lay-supportive care at alternative sites (e.g., oxygen, hydration, food, supportive care in hotels for instance)
 - Identify resource pool
 - Develop training curriculum (must be multilingual)
 - Develop competency assessments/screening process
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Professional societies and nurses should lead the effort
 - Stakeholders: Students (undergraduate students, pre-med, biology, nursing, retirees, etc.)
 - Able-body people that are trainable
 - Faith-based organizations

As your team, describe one breakout action you could take to improve response (continued)

- ▶ What are the obstacles to implementation? How can they be overcome?
 - Acceptance by healthcare; Overcome by effective communication and education
 - Funding for developing curriculum; Overcome by leveraging existing training curriculum grants
 - Regulatory and liability relief; Potentially overcome by efforts with current NGA model
 - Compensation; Overcome by using personnel from mission-based organizations and using a combination of paid and unpaid labor
 - Risk and fear of infection; Overcome by PPE and careful monitoring of symptoms. Priority for anti-virals if they become available

An additional breakout action included an effort lead by the CDC to improve ventilator surge capacity

As your team, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Improve Ventilator surge capacity to 130% (flu, other pathogens, toxins)
 - Ensure mechanism is in place for prioritization of distribution
 - Identify resource pool
 - Adequate functionality is acceptable
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - CDC should lead effort
 - Stakeholders: hospitals, manufacturers, HRSA
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Funding; Overcome by incentives, a volume purchase and acceptable functionality

As your team, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Need for effective national public health and awareness campaign that achieves multiple goals
 - Communication messages must be simple, direct, and consistent, and evolving
 - Empower the public; set expectations
 - Emphasis on protecting the public and providing guidance
 - Need to change behaviors for viral transmissions – respiratory etiquette
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Federal, state and local health departments should lead the effort
 - Stakeholders – leverage power of Media
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Achieving one voice; Overcome by top down leadership and consistency
 - Media market; Overcome by collaborative approach

Acting as the federal government team, the team decided that new regulations to accelerate research and the approval process would be a critical first step

As any team of your choice, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Federal Government to establish an “Apollo” Program for vaccine development and production with a target date and funding model in place
 - Recognize need for financial incentives and liability protection
 - Accelerate FDA approval process for vaccines including adjuvant, intra-dermal
 - Accelerate approval process for cell culture-based technologies
 - Accelerate vaccination research by leveraging parallel studies
 - Promote data sharing and collaborative science
 - This process can be applied to other microbial threats (natural and man made)
 - Develop a distribution and delivery plan

As any team of your choice, describe one breakout action you could take to improve response (cont.)

- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Secretary of HHS should lead effort
 - Stakeholders: pharma, distributors, academic centers, NIAID, DARPA, FDA, MRMC
 - Congress supported by legislative mandate
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Liability and regulatory issues; Overcome by federal waivers
 - Financial; Overcome by funding and incentives for private sector
 - Bureaucracy; Overcome by leadership, authority and accountability for decision making
 - Scientific challenges; Overcome by collaboration
 - Intellectual property and International issues; Overcome by global partnerships

Highlighted below are the key observations and conclusions made by the Healthcare team

- ▶ Regular communication is essential
- ▶ No current surge capacity
- ▶ Just in time delivery paradigm has made us vulnerable
- ▶ Training non-traditional workers should be explored; need for flexibility of credentialing
- ▶ Collaboration and coordination is critical when developing an emergency plan and response activities
- ▶ Ethical issues will arise and put healthcare workers in agonizing positions
- ▶ Mental health support will be required and must be included in planning
- ▶ Recovery plan is required



Team Briefings

Financial Services & Telecom Team

Financial Services and Telecommunications Team Breakdown

- ▶ The Financial Services and Telecom Team was made up of 13 representatives from various telecommunications providers, banks, large telecom corporations, etc.
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion.

The Financial Services/Telecom team identified limited cash availability, soaring loan provisions and limited services as key areas for concern during the pandemic

Overall observations and recommendations by Financial Services/Telecom

- ▶ Significant reduction in ability to service financial customers
- ▶ Limited cash will be available. Long lines at branches. Cash will be accessible via through ATMs, transfers.
- ▶ Limited ability to provide long and short term financing. Loan provisions will soar. Capital ratios will be impacted unless banks receive relief from the FED. Hedge funds could create spikes through speculating in oil and futures market. Small banks will close or go out of business.
- ▶ Network structure continue to operate. Service degradation where there is traffic
- ▶ Ability to utilize Telecom may be ok if pre-planned and pre-provisioned. Additional provisioning at time of crisis is difficult

Overall observations and recommendations by Financial Services/Telecom (cont.)

- ▶ Went from control to loss of control
- ▶ Ability to service and do necessary repairs
- ▶ Dependency on power, fuel and water to maintain service
- ▶ Highly reliant on commercial transportation
- ▶ A signification passenger and materials and supplies of DoD are on commercial carriers
- ▶ Some Telecom service will change/
 - For example, limited detail will be available (e.g., just summary page for billing)

Additionally, the team concluded that pre-planning communication strategies and workforce flexibility would be necessary

Overall observations and recommendations by Financial Services/Telecom (cont.)

- ▶ Degradation to service will occur in retail operations
- ▶ It is vital to take certain actions in advance of the pandemic arriving including remote working capability, pre-purchase medical consumable, training and awareness of staff for hygiene, reduce reliance on just-in-time suppliers deliveries and agree with regulators any relaxations to operational requirements
- ▶ Use of pre-planned communications to clients and staff is important
- ▶ Should convene industry forums to share information across industry (i.e., Securities Industries Association SIA, New York Clearing house, the Bond Market Association)
- ▶ National Coordinating Center for Telecom (NCC) of Homeland Security would be the primary telecom industry-government forum

Overall observations and recommendations by Financial Services/Telecom (cont.)

- ▶ Move toward dynamic staffing
- ▶ Conduct staffing levels on more current time period
- ▶ Absenteeism policies must be in place and must have vehicle to monitor health of organization
- ▶ Essential functions and key business processes are part of business continuity plans
- ▶ High priority for education, awareness, and communicate early to employees with access to necessary supplies and systems
- ▶ Ensure supply chain is uninterrupted

Prior to beginning Move 2, participants were informed they were 6 weeks into the pandemic and every continent has been affected

- ▶ The flu has spread across the US
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 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

With the pandemic underway, the Financial Services/Telecom industries would need to work closely with Federal and State governments to quickly and effectively implement changes

Operations continue via close coordination with Federal Government and regulators

- ▶ Approved: Lower capital ratios in order to extend credit to impacted population
- ▶ Approved: Increase liquidity by easing FED interest rates policies
- ▶ Established an executive forum to include FISIC, US regulators, Global regulators, and CEOs of major companies this forum will meet regularly to address potential regulatory issues (i.e., relaxation of cross-border regulations)
- ▶ The Federal government is working with State and Local governments and key leaders from the financial services sector to ensure stability in the global markets
- ▶ The Federal government is sensitive to the need to provide security for our critical infrastructures. The Federal government will consider assisting in meeting these needs based on requests from State and Local governments

Operations continue via close coordination with Federal Government and regulators, cont.

- ▶ Only provisioning essential services
- ▶ Telecommunication Service Priority (TSP) program in place and operating
- ▶ Death rate higher than anticipated, however service continues

Reassurance to the public as well as flexibility and support to employees will be key in sustaining control during the pandemic

Reassurance to the public

- ▶ US Banking is sound and we are operating to the best of our ability under the current circumstances
- ▶ Financial Services sector is committed to meeting the needs of our employees, customers, and share holders
- ▶ FED eased regulations and monetary policy allowing banks to further extend credit,
- ▶ US Bank are able to delay the repayment of loans and provide sufficient liquidity to the financial system
- ▶ Consumers should not rush to withdraw large sums of money from their accounts. Consumer deposits are much safer in banks and can be easily accessed through current means

Support to Employees

- ▶ Need to communicate with employees daily
 - Provide education awareness regarding the entire process (hygiene, etc)
 - Provide pre-packaged food
 - Redo benefit program; additional sick time, telecommute, short and long term disability, facilitates shut down non-essential will still be paid, “essential employees” will be provided a differential
 - Identify employees who have special needs
 - Facilitate education and awareness to ensure access to healthcare and antiviral

The team identified legal and environmental restrictions as well as civilian unrest as key challenges during the peak of the pandemic

Questions and Challenges

- ▶ Financial services are not in the position to cover liability
- ▶ Possibility to change Chapter 11 amendments
- ▶ Schools closing would be a major issue for both Telecom and Financial Services
- ▶ Prioritize fuel and water delivery to central offices and data centers
- ▶ Lift environment restrictions to enable long term generator usage
- ▶ Both Financial Service and Telecom need to understand civilian unrest response and federal martial law policies

In Move 3, the team identified a plan to help sustain the economy during the pandemic

Financial Services/Telecom Proposal:

- ▶ The Economy Needs to Continue to Function:
 - Elixir of Economy is Money -the economy will be impacted if the Financial Services & Telecom and any other critical infrastructure is hit hard -- lack of financial services will have a big impact – need to have liquidity in the system
 - It's the Planning - Deliberative/proactive planning (COOP/continuity of community), crisis action planning, take actions earlier in the process - pull data from various sources to look at earlier in the stage (early detection and pre-planned actions with actions and specified triggers)
 - Self Reliance will be Necessary - We should have minimal reliance on the Federal Government and suppliers
 - Taking Care of People - Establish and pre-deploy an Emergency Debit Card that can be activated through existing methods – coordinate with the Federal Government to be prepared before a crisis
 - Deliberative/proactive planning, crisis action planning, take actions earlier in the process
 - The national strategy – six pillars of national strategy
 - Preparedness and communication
 - Surveillance and detection
 - Response and containment

To assist Healthcare, the team suggested industries plan for self-reliance by proactively planning health initiatives for consumers

To help Healthcare, Financial Services/Telecom proposed the following:

- ▶ Deliberative/proactive planning (COOP/continuity of community), crisis action planning, take actions earlier in the process
 - Health care industry will not be able to provide for all our needs and we need to plan to be self reliant
 - Reinforce health messages through financial and telecom channels - look for alternative ways to deliver health care (e.g., tele-medicine) – you can distribute messages/education through financial service touch points e.g., print a message on the back of our receipts (ATMs – add soap/sanitizers at ATM machine)
 - Create electronic records/health history for individuals for continuity of care
 - Proactively explore alternative sites (corporate campuses, schools, etc)
 - Financial lines of credit for hospitals in crisis situations
 - Establish a public/private partnership to develop and expedite the introduction of a vaccine
 - Early detection systems/ surveillance systems - an environment of sharing information and intelligence (data mining)
 - Having an inter-sector communication and coordination forum so that we understand their needs (e.g., funding for healthcare, generators, emergency communications) and vice versa
 - Large corporations will do self treatment at the corporation (e.g., create hospitals out of conference rooms and hire doctors) - the health care community could train our staff – as a force multiplier

Overall, the Financial Services/Telecom team identified the need for consistent communication, flexibility and proactive planning as key practices needed during the pandemic

- ▶ Keep the people central – “all crises are local”
- ▶ Be ahead of the curve – plan, detect and respond
- ▶ Minor problems become big problems – Murphy rules
- ▶ Action is not enough – its about communication of actions – an information vacuum fosters rumors
- ▶ Timely Response of the Government is Critical - industry was weeks ahead of government – proactive legislation/regulatory - better government communications
- ▶ Paradigm shift for emergency management may be required pre-position prepared “push package”
- ▶ Streamline/flexible emergency processes – cover your legislative and legal risks
- ▶ Need to exchange information with other groups, parties, etc - the horizontal integration – collaboration and interrelationships are key
- ▶ To know what you owe others and what they owe you – there is interdependence with others – relationships



Team Briefings

Heavy Industry Team

Heavy Industry Team Breakdown

- ▶ The Heavy Industry team was made up of 13 representatives from various health labs, banks, large manufacturing corporations, etc.
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion.

The Heavy Industry team identified operation shut down, product demand fluctuation, and protection of shareholders as key business areas for concern during the pandemic

What are the impacts on your business?

- ▶ Operations may have been shut down
 - Closing of international and state borders
 - Inability to secure supply chain
 - Lack of essential worker healthcare protection
 - Employee absenteeism
 - Liability and regulatory issues
 - Financial viability
 - Communications infrastructure breakdown
 - Lack of federal government priorities
 - Dependence on suppliers
- ▶ Conditions may be worse, given some vendors do not have continuity of operation plans
- ▶ Demand for products may fluctuate
- ▶ Protection of shareholders
- ▶ Multi-national impact

How will you identify essential operations and employees?

- ▶ Continuity of operations plans will identify essential staff
- ▶ Identify tiered essential employee hierarchy
 - on-site, off-site and not required
- ▶ Corporate governance
- ▶ Security
- ▶ Healthcare
- ▶ Essential staff for core manufacturing
- ▶ Legal and regulatory issues
- ▶ Corporate treasury

Additionally, multiple actions for employee protection were identified, including communications, securing supply chains and undertaking controlled shutdown

What actions will you take to protect employees and sustain operations?

- ▶ Need for securing the supply chain, access to international suppliers
 - Need to identify critical industries, products and processes
- ▶ Employee health and welfare
- ▶ Manufacturing operations – need to identify alternate operations
- ▶ Communications, tiered access
- ▶ Reliance on other services/industries
- ▶ Identify critical chokepoints and breakdowns and document for legal protection and inclusion into wave two planning
- ▶ May chose to undertake controlled shut down

How will you keep your employees, vendors, and customers informed? What actionable steps should they take?

- ▶ Multiple channels of communication
- ▶ Intranet, internet
 - Special section with daily communications
 - Mechanisms for feedback, centralized mailbox, message board format
 - Webcast and emails from senior management
- ▶ Telephone
 - Recorded messages from senior management with updated status
 - Live response
- ▶ Tiered mechanisms for feedback through supervisors
- ▶ Communication from senior management is important for reassurance

Prior to beginning Move 2, participants were informed they were 6 weeks into the pandemic and every continent has been affected

- ▶ The flu has spread across the US
- ▶ EU has not closed borders
 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

Determining essential operations, interdependencies and constraints would be needed to maintain essential services during the peak of the pandemic

What level of operations can you sustain (e.g., workforce, facilities, supply)? How? Does this differ for essential and non-essential operations?

- ▶ Determine what are essential operations based on industry and federal input
 - 1. Industry core products
 - 2. Government demands – required for emergency operations
 - 3. Customers demands

- ▶ Need to determine interdependencies and constraints with other industries and the government
 - Utilities, communications, transportation, materials (iron quadrangle)
 - Security
 - Resources: personnel
 - Regulatory relief

Focusing on sustaining pay, benefits, communication and maintaining a healthy/viable workforce are necessary support provision for employees

What support and guidance are you providing employees (treatment, flex work arrangements, comp and benefits)?

- ▶ Sustaining pay and benefits for everyone
 - Small business will depend on federal subsidy to sustain operation
 - Hazard pay will be enforced
 - Short term/long term disability provisions
- ▶ Communication with employees
 - Routine briefings/communication
 - Sensitivity of communications
- ▶ Maintain healthy and viable workforce
 - Supplier outreach for essential services
 - Food (long-term supply)
 - Physical / mental health (grief counseling)
 - Insurance suppliers to ensure coverage
 - Stockpile chronic care medication
- ▶ Communications with shareholders
 - Policy on recovery
 - Reinforce that we are implementing pandemic flu plans
 - Require internal sacrifice
 - Sustain capital structure
- ▶ Pre-negotiate with unions to ensure sustainable operations

The Heavy Industry also found it necessary to collaborate with the government, industry associations, local community, suppliers and customers on pandemic planning

How are you collaborating with other stakeholders? What support do you provide? What do you need?

- ▶ Developing collaborations with federal government to support manufacturing distribution of essential products
 - Need protection from Anti-Trust
 - Assurances of protection of proprietary information
 - Mechanisms to ensure supply chain continuity given potential border closings
- ▶ Dissemination of information through industry associations
 - Collaborative arrangements for manufacturing
 - Sharing of best practices for continuity of operations planning
- ▶ Collaborate with local community
 - Local public health coordination
 - Education and information dissemination
 - Corporate responsibility
- ▶ Collaboration with suppliers and customers on pandemic planning
 - Provide support to subscale suppliers and customers
 - Delivery payment schedules

Additionally in Move 2, the team identified issues and mitigation strategies relating to financial and liability issues that were encountered during the exercise

What financial and liability issues are you encountering? How do you mitigate? How does this differ for small, mid and large sized businesses?

▶ *Issues*

- ▶ Cash flow issues resulting from:
 - reduction in workforce
 - reduction in business operation
- ▶ Inability to meet obligations of demand contracts
- ▶ Human resource obligations
- ▶ Potential litigation from failure to protect employees
- ▶ Funding of disability and liability insurance, workman's compensation and unemployment
- ▶ Payroll and other infrastructure costs

Mitigation Strategies

- ▶ Add *force majeure* provision into contracts
- ▶ Ensure funding of workman's compensation, short and long term disability, and unemployment benefits
- ▶ Low interest loans for small businesses
- ▶ Guaranteed payments
- ▶ Strategic stockpiling of supplies and education for essential employees at risk of exposure

Breakout actions were discussed to improve response to the pandemic, including a national awareness campaign and pastoral/faith based involvement for support

As any team of your choice, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - 1. Federal Government: Create a national awareness campaign to develop top messages that flow down.
 - 2. Public: Pastoral and faith based involvement for information sharing, mental health support, etc.
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - 1. Federal Government: Leveraging existing information from pandemicflu.gov, HHS will continue to take the lead in coordinating messages across the government from the President, the Cabinet, Congress and Senate, to leveraging organizations like National Governors Association and the US Chamber to spread information to state, local and industry representatives.
 - 2. Public: Faith based organizations (FBOs) can be leveraged to provide consistent, trusted communications and badly needed mental health and counseling support during pre and post crises.
- ▶ What are the obstacles to implementation? How can they be overcome?
 - 1. Federal Government: Federal stovepipes. Identify catalyst for change (i.e. Newt). Lack of commitment from senior executives in industry.
 - 2. Public: No major issues. Constituency needs to encourage FBOs to assume this responsibility.

Additionally, the team spoke about experts creating unique medical treatments and the creation of a health registry as actions that would improve healthcare response

To help Healthcare, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Pool of experts to develop unique medical treatments, incentives for protection, leveraging industry healthcare resources.
 - Create registry of healthcare workers (leverage pharmaceutical and chemical industries personnel). Identify industry organizations (BIO, PhRMA, ACC, etc) to inventory all possible sources of surge capacity for medical supplies.
 - Leverage current R&D pharmaceutical and medical products pilot plants to supplement production capacity
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Professional organizations (AMA, AMGA).
 - Leveraging the existing work being conducted by HRSA (ESAR-VHP) and state governments to identify healthcare volunteers. For surge capacity medical supplies, state and local governments and healthcare organizations will need to collaborate with industry partners to identify sources of supplies.
 - Federal government (FDA), industry organizations.
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Staff poaching, need agreements to share information and resources
 - Credentialing and liability issues.
 - Legal and regulatory issues.

Highlighted below are the key observations and conclusions made by the Heavy Industry team

- ▶ Leverage industry associations to effect change (power in numbers)
- ▶ Need to identify centers of excellence and industry champions
- ▶ Overarching goal: How do plans effect people?
- ▶ Preparation education, preach personal preparedness
- ▶ Don't just plan for the disasters, but plan for the recovery
- ▶ Put the plan into action



Team Briefings

Transportation and Logistics

The Transportation and Logistics Team Breakdown

- ▶ The Transportation and Logistics team was made up of 12 representatives from Federal agencies, major transportation providers, oil companies and others
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion.

Taking government guidance, employee absenteeism, and the global supply chain disruption, into consideration the Team identified the essential operations and essential employees

What are the impacts on your business?

- ▶ Employing plan with guidance from Federal, State and Local Governments
- ▶ Potential decrease of customers which impacts the economic status of the industry
- ▶ Perception of public on utilizing our services
- ▶ Employees not coming to work
- ▶ Determining essential and critical services
- ▶ Global supply chain disruption
- ▶ Social distancing and quarantines
- ▶ Development and expense of alternative work-arounds

How will you identify essential operations and employees?

- ▶ Those employees who are responsible for day-to-day operations (pilots, maintenance, etc)
- ▶ Government identification of critical goods and services to prioritize movements of goods
- ▶ Those that have a “long” supply chain and small surge capacity
- ▶ Identifying skilled operators without cross training

The Transportation and Logistics Team then planned to increase employee communication and to sustain operations through identifying critical commodities and operations

What actions will you take to protect employees and sustain operations?

- ▶ Employees
 - Aggressively communicate recommendations of public health
 - Evaluate specific workplace risks for spreading
 - Evaluate communication channels to communicate official information
 - Look at health care plans- more services, extend benefits, more services, different ways of delivering
 - Clear HR policies for absenteeism, pay, etc
- ▶ Operations
 - Identify essential products and services
 - Understand the implication on individual business processes
 - Identify critical commodities to be able to sustain critical operations
 - Identify employees who can staff critical operations from other functions/retirees

The Transportation and Logistics Team identified CDC pandemic recommendations and planned to inform employees, vendors, and customers through the internet, the media and telephone

How will you keep your employees, vendors, and customers informed? What actionable steps should they take?

- ▶ Communication plan for employees
 - Frequently asked questions posted on web sites
 - Email distribution
 - Use of public announcements
 - Signage
 - Phone trees
 - Muster meetings
- ▶ Vendors/Customers
 - Emails
 - Phone
 - Shared web site
 - Business continuity plan
- ▶ Actionable steps
 - Family care plan/shelter
 - Personal hygiene
 - Get recommended vaccines
 - Use of masks, other CDC recommendations
 - Identify key and essential workers- who else can do your job
 - Stay home if exposed
 - Stay home if sick
 - Keep company informed

Prior to beginning Move 2, participants were informed they were 6 weeks into the pandemic and every continent had been affected

- ▶ The flu has spread across the US
- ▶ EU has not closed borders
 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

The Team determined that it was capable of sustaining some level of services through expanding/cross-training employees to help deal with worker absenteeism

What level of operations can you sustain (e.g., workforce, facilities, supply)? How? Does this differ for essential and non-essential operations?

- ▶ Able to sustain some level of services for essential needs (e.g. 25% for trains)
- ▶ Able to sustain minimal level of services long-term
- ▶ Ability to react to government guidelines/requests for essential goods and services
- ▶ Transit around cities using alternate schedules and routes
- ▶ Prioritization of delivery with visibility of priority packages (e.g. special marking)
- ▶ Essential employees should receive “first responder” status for medications, vaccinations, PPE, etc

What support and guidance are you providing employees (treatment, flex work arrangements, comp and benefits)?

- ▶ Some changes needed for long-term medical benefits and communications to employees
 - Policy decisions regarding such things as leave, sick days, vacation use, etc
- ▶ Lack of work for employees (ability to pay?) and decisions around employment status
- ▶ Expanding/cross-training employees to do essential functions, movement to meet demands
- ▶ HR actions on hold (recruiting, leave, assessments)
- ▶ Coordination with labor unions
 - Ability to efficiently operate (labor contracts may be restrictive)
- ▶ Support employees working abroad (employees and families in other countries- evacuation decisions)

Furthermore, collaboration with federal/industry task forces due to potential price gouging for critical products, liability for antiviral medication, and tort law would be needed

How are you collaborating with other stakeholders? What support do you provide? What do you need?

- ▶ Federal/Industry task force that is dynamic/highly interactive to set priorities, etc
 - Operates on a real-time basis to resolve critical roadblocks
- ▶ Can adjust service to priorities, given direction and visibility and government orders
- ▶ Relaxation of certain requirements/certifications for industry that are not safety critical

What financial and liability issues are you encountering? How do you mitigate? How does this differ for small, mid and large sized businesses?

- ▶ Price gouging for critical products
- ▶ Liability for antiviral medication administered by employer (legislation protects manufacturer)
- ▶ Service requirements for localities/cities
- ▶ Protection against class action tort liability
 - Mitigation: develop industry standards (example: industry standards for preparedness)

In Move 3, the Team improved response by establishing a Strategic Transportation Reserve to be coordinated by key industry engineers

As your team, describe one breakout action you could take to improve response

What would make a difference? What specific actions could you take?

- ▶ Establish a Strategic Transportation Reserve to best utilize the infrastructure to transport critical goods and services to improve response and containment
 - Establish an architecture to identify critical goods and services for movement to available transportation infrastructure (similar to eBay)
 - Prioritize transportation workers as first responders for vaccines and antivirals
 - Incentive workers through provision of food/protection for families
 - Identify and leverage existing facilities for hubs (e.g. military bases, etc)
 - Innovative strategies for existing technology (e.g. tracking packages and identifying areas of needs)

Who leads the effort? What stakeholders need to be engaged?

- ▶ Designed by key industry engineers, headed by DOT, with a Consortium/Executive Steering Committee composed of key industry representatives, coordinating with Federal, State and Local Governments to ensure strategic transportation of prioritized essential products (DHS, DOT, State and Local Gov't, Private transportation providers, the public, consumer products, financial services and telecom, others)

What are the obstacles to implementation? How can they be overcome?

- Dependence on infrastructure and energy (e.g. telecom and fuel/petroleum products)
Mitigation: Explore alternatives, Create backup plans, Include supply chain in the Strategic Reserve
- Multitude of state and local plans
Mitigation: need to define the consistent national “system of delivery”

To assist the Healthcare Team, the Transportation and Logistics Team suggested the use of training, alternative triage sites, and a strategic reserve for staff

To help Healthcare, describe one breakout action you could take to improve response

What would make a difference? What specific actions could you take?

- ▶ Application of “Strategic Transportation Reserve” concept to Healthcare Infrastructure
 - Education and training for every well adult to make them a “provider/caregiver”
 - Identify alternative infrastructure for triage/care sites (gyms, etc)
 - Outreach/education to find, recruit and train “providers” – provide with identification (laminated cards)
 - Use strategic reserve infrastructure to deploy staff, resources, etc
 - Transportation of the dead to appropriate facilities

Who leads the effort? What stakeholders need to be engaged?

- ▶ Lead: Red Cross
- ▶ Stakeholders: schools, churches, NGOs, public, others

What are the obstacles to implementation? How can they be overcome?

- ▶ Liability concerns
 - Mitigation: universal application of Good Samaritan Laws

In summary, the Transportation and Logistics Team identified the need for prior planning, with or without government guidance, and the need for a redesign of the National Response System

- ▶ The Transportation and Logistics industries should not simply wait for the Government to take action
- ▶ Realistic expectations (e.g. reliance on infrastructure)
- ▶ Awareness of individual responsibilities (need to educate the Public about responsibilities)
- ▶ The Federal Government needs to educate Industry and the public, and clarify incident authority and response structure (including the Federal, State and Local Governments), beginning with a statement from the President
 - Explain and Educate because the National Response approach to a pandemic is unclear/unknown
 - Perceived lack of clarity around roles, responsibilities and leadership in response to pandemic
 - How will the response be coordinated? Clarity around prioritization
 - Who will call Industries for help? Current structure does not enable response
- ▶ Communicate steps that individuals can take proactively
- ▶ Redesign the National Response System from a blank slate
 - Incremental gains from current system, but could have dramatic gains by redesigning the entire system with focus on predetermined roles, responsibilities, communications plans
 - Larger focus on private sector involvement

The Transportation and Logistics Team also realize there is a need to prioritize critical goods, and services, and to know, and practice, continuity plans

- ▶ Define “system of delivery” and make it consistent across the nation
- ▶ Prioritize critical goods and services for emergency transport
- ▶ Know continuity plans of other supply chain members (up and downstream), connect contingency plans when possible
- ▶ Drill/practice continuity plans, with involvement from real decision-makers (e.g. TOPOFF)
- ▶ Assume “survival mode”- consider how to maintain cashflows, workforce (those that won’t return, addressing emotional health of those that do return) etc.
- ▶ May not be able to rely on excesses/supplies from outside of region



Team Briefings

Consumer Products and Services

Consumer Products and Services Team Breakdown

- ▶ The Consumer Products and Services Team was made up of 12 representatives from Union organizations, drug store companies, leading telecommunications corporations, banks and other consumer products and services organizations
- ▶ During the course of the simulation, the team was presented with discussion questions for each move
- ▶ The following slides highlight the main suggestions, discussion points and recommendations that resulted from the discussion

Faced with increasing costs and plummeting revenues, the Team focused on Continuity of Operations with emphasis on the provision of critical goods despite employee absenteeism

What are the impacts on your business?

- ▶ Revenue substantially decreased
 - 30-60% of employees are out
 - Public is not utilizing non-essential services
 - Raw materials are not available
 - Supply chain has been significantly impacted
- ▶ Expenses increased
 - Higher premiums for transportation (i.e., time, cost)
 - Higher security needs
 - Potentially higher Increased cost of telecommunications
 - Increased costs of sanitary products
 - Absenteeism (lower productivity)
- ▶ Customer demands have changed
 - Critical supplies are out of supply (i.e., N-95 masks)

What are the impacts on your business? (cont.)

- ▶ Death of Employees/Key Leadership
- ▶ Continuity of Operations Plans* in place based on business impact analysis
 - Essential and non-essential work tasks have previously been identified
 - Telecommuting in place
 - *If this has not been done, it must be done now
- ▶ Critical Products and Services will need to be supported (e.g., non-perishable food, masks, water, etc.)
 - Limit distribution of critical supplies to make available to first responders (health care providers, critical infrastructure workers)

The Consumer Products and Services Team then adjusted policies to protect employees and keep them informed through planned communications via a number of channels

What actions will you take to protect employees and sustain operations?

- ▶ Some operating procedures have been significantly changed (eg. Hours of operation)
- ▶ Change in HR Policies
 - Encourage telecommuting and work from home
 - Institute special time off and sick leave policies
 - Send sick people home
 - Consider elder and child care at work
- ▶ Provision of personal protection equipment and cleaning and hygiene protocols
- ▶ Utilize self services and social distancing (telephone, Internet, drive-throughs)
 - More frequent use of teleconferences
 - Limit number of patrons in stores/buffet lines
- ▶ Cross training for essential tasks
- ▶ Provide critical supplies at work (i.e., food, water, masks, gloves)

How will you keep your employees, vendors, and customers informed? What actionable steps should they take?

- ▶ Regularly scheduled internal and external communications
 - Internet, Intranet, web and email communication
 - Alerts to employees, vendors and customers
 - Call center and employee information hotlines
- ▶ Regular communication from distinguished officials (i.e., Medical Officer, Chief officials)
- ▶ Actions for others:
 - Follow government guidelines
 - Follow corporate communications
 - Constant communication from vendors

Prior to beginning Move 2, participants were informed that they were 6 weeks into the pandemic and every continent had been affected

- ▶ The flu has spread across the US
- ▶ EU has not closed borders
 - Small businesses are failing
 - Some companies are shutting down nonessential operations
- ▶ Canada has restricted all international travel
- ▶ Pandemic continues to take its toll in Asia and is spreading to Africa
- ▶ Most private universities in the US have closed indefinitely – students at many universities are returning home

At the peak of the pandemic, the Team concluded that it could not operate as usual, and all efforts were directed at crisis management and offering education and support for employees and customers

What level of operations can you sustain (e.g., workforce, facilities, supply)? How? Does this differ for essential and non-essential operations?

- ▶ How to sustain essential operations:
 - Collaborate with similar businesses: Agree to share resources and sort out financial impact later; waive anti-trust
 - Nationalize key industries and companies: Develop a national guide to distribute critical elements, such as food, water, etc.
 - Ration the food and water supply: Ration food based on last name, 1-day per week
 - Impose price controls: Request that the government impose price controls during a designated time period as a national executive order
 - Communicate essential operations to the public: Submit a press release from the US President detailing the executive decision to maintain essential operations
 - Lack of demand: May allow businesses to curtail or redirect services to further preserve resources
- ▶ How to sustain non-essential operations:
 - Temporarily suspended
 - Recommendation: Employees of non-essential operations be redirected to critical healthcare first responder needs and activities

What support and guidance are you providing employees/customers (treatment, flex work arrangements, comp and benefits)?

- ▶ Employees
 - Enhanced Employee Assistance Programs (EAP) benefits
 - Telecommuting still recommended
 - Split shifts encouraged
 - Provide mobility telecommunication tools (cell phones, Blackberries)
 - Thanks for services rendered during the pandemic flu
 - Continue to pay employees a portion of their salary even if out sick
- ▶ Customers
 - Free downloadable age-appropriate educational software to all ages
 - Relax payment due dates on credit accounts
 - Provide flexible hours for customers to receive products and services
 - Provide safest environment possible to customers to build trust and relax fears

With a continued focus on communication, collaboration and support for employees and others, the Team sought Federal leadership and intervention in addition to State commitment

How are you collaborating with other stakeholders?
What support do you provide? What do you need?

- ▶ Held public announcement coalition meeting to share with other stakeholders our plan for action
- ▶ Created a Public Service Announcement to inform the public of our action plan and thank employees for their dedicated service
- ▶ Requested specific actions of the Federal government to prioritize their needed actions to protect consumers
 - Received Anti-Trust Waiver
 - Did not receive nationalization or price control approval
- ▶ Secured State commitment to provide security to supply chain and distribution facilities
- ▶ Needs:
 - Vaccine
 - Masks
 - Anti-virals

What financial and liability issues are you encountering? How do you mitigate? How does this differ for small, mid and large sized businesses?

- ▶ Financial issues include:
 - Payment for supplies for the poor
 - Cash flow
 - Looting and loss of business inventory
 - Small businesses have gone bankrupt
 - Stock values have plummeted
- ▶ Liabilities issues include:
 - Bills are not being paid; debt levels increase, costs increase
 - Workers compensation claims rise
 - Law suits for contractual non-performance and other issues skyrocket
 - Sustainable population shifts causes health insurance and Social Security insolvency
- ▶ Our plan for mitigation includes:
 - Federal government needs to maintain money supply
 - Federal government needs to provide subsidies for the poor, unemployed, and others
 - Charitable and faith-based organizations can be leveraged to provide support to employees and consumers

In Move 3, the Team proposed a formalized collaboration across all stakeholder groups through the creation of a consortium aimed at planning for the provision and distribution of basic survival goods

As your team, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Create a consortium to hold public roundtables, which include representatives from all key government/industry groups, to discuss action plans prior to a pandemic outbreak
 - Define the basic items that the population needs to exist and survive and develop distribution and supply chain models to ensure availability

- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Participation by all critical suppliers and retailers in industry combined with government leaders from Federal (and State, if possible to integrate)
 - Key stakeholders include Food Marketing Institute, Grocery Manufacturers Association, Food Processors Association, Retailer Industry Leaders Association, FDA, USDA, American Dietetic Association, NGOs (Salvation Army, Red Cross), Transportation, Utilities, Energy

As your team, describe one breakout action you could take to improve response (cont.)

- ▶ What are the obstacles to implementation? How can they be overcome?
 - Defining what we stockpile and what are the “survival kit” needs
 - Overcoming competitive instinct of all participants and concerns with trusting each other and understanding other stakeholders’ actions
 - Mitigating Federal Government reluctance to step into the discussion

Frustrated with the Federal Government's reluctance to step into the discussion, the Team developed a set of suggestions around the need for leadership and action from the Federal Government

As any team of your choice, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Have Federal Government ensure food, water, and masks are available
 - Concentrate efforts on creating vaccinations?
 - Separate FEMA from DHS (and rename it) to be its own entity with the priority being national response and strategic planning for disasters and add an Advisory Board from the private sector
 - Employ rules of engagement during the crisis period that may differ from current processes and laws
 - Restructure Government?
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Federal Government leads in collaboration with industry and States
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Federal government see its role as stockpiling anti-virals
 - Focus needs to be on matching broad resources

To assist healthcare and expand its capacity, the Consumer Products and Services Team suggested the use of volunteers and non-traditional facilities

To help Healthcare, describe one breakout action you could take to improve response

- ▶ What would make a difference? What specific actions could you take?
 - Utilize military and active-duty personnel to use non-traditional facilities (e.g., military medical facilities, hotels, schools, churches) to serve as healthcare centers
 - Create training for volunteers to be able to augment hospital staff
 - Stockpile items such as oxygen, food, water, masks, medical supplies and other necessary items for survival
 - Create a database for volunteers of healthcare workers during an emergency
 - Ensure that mental health issues are addressed to the public and all individuals
 - Fund by government to promote pre-planning of healthcare system to include employee education and training and provision of PPE
- ▶ Who leads the effort? What stakeholders need to be engaged?
 - Key leaders include: healthcare professionals, NGOs including volunteer base (i.e., military, civilian volunteers, retired nurses, etc.), supply chain including all industry, all levels of government, media, and public
- ▶ What are the obstacles to implementation? How can they be overcome?
 - Ensuring that the non-traditional facilities can be transformed into a healthcare center
 - Finding a location to stockpile the items needed for survival now
 - Securing the funding and managing and coordinating these efforts
 - Addressing ethical and societal problems (i.e., life saving issues)
 - Security of all healthcare facilities and centers

In summary, the Consumer Products and Services Team identified the need for prior planning and collaboration to provide information and essential items to the public during the pandemic

- ▶ What we learned:
 - Identified critical needs
 - Surprised by assumptions of Federal government and slow response rate
 - “Just in Time” model of most businesses is contrary to what you need in any crisis situation that impacts the supply chain

- ▶ Recommended Actions:
 - Need to maintain the integrity of the supply chain for essential items (i.e., oxygen, food, water, energy, shelter) to preserve normal society
 - Need for cross-industry collaboration and multi-disciplinary teams (including private industry and government) to plan and be ready to execute
 - Need to prepare *before* pandemic crisis occurs
 - Need for strong, honest communication to public
 - Need to prepare plans for Avian Flu in US short-term

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The questions posed throughout the simulation elicited the following key observations and recommendations from participants

- ▶ Measured by either scale or complexity, an influenza pandemic will be unlike any crisis today's government or business organizations have ever prepared for or experienced.
- ▶ The U.S. healthcare system will likely be overwhelmed by a prolonged surge of a severely ill population.
- ▶ A pandemic will raise a number of complex and difficult bioethical decisions regarding provision of care.
- ▶ Special circumstances during a pandemic may require liability relief within the healthcare system and other sectors.
- ▶ Stakeholders looked to the Federal government for the active exercise of guidance and policy.
- ▶ Participants advocated a high-priority national effort for the rapid development of vaccines
- ▶ Special care will be needed to protect the mental health of the population during and after a pandemic
- ▶ Special care will be needed to protect the mental health of the population during and after a pandemic
- ▶ Participants affirmed that continuity of commerce, trade, and transportation will be essential to maintain the economy and welfare of the U.S. population.
- ▶ Employers must address workforce/workplace issues well in advance.
- ▶ A severely depleted workforce will require creative, cross-sector sourcing strategies to maintain production and delivery of essential goods and services
- ▶ Leaders must prepare to communicate developments, policies and guidance in ways that encourage compliance, cooperation, empathy, and courage.

Control Team Observations and Final Remarks

▶ Learnings (Nabarro):

- Focus on people more than the virus – *plan not just for disaster, but for recovery, “it’s about the people, dummy”*
- Tough prioritizations need to be made – *triage recommendations, essential resource allocations*
- Rapid horizontal decisions are needed – *whether Apollo or Manhattan, massive cross-cuts will be required*

▶ Team Observations and Insights:

- Educate, communicate, and activate – *“barefoot doctors”*
- Political concerns must not be overlooked – *“emergency leadership”*
- Socio-economic issues will pervade the scenario – *mental health, death & dying*
- Ethical choices will drive much of what we do – *triage pre-planning*

▶ Areas for Additional Emphasis:

- The military process ... decide, detect, act ... applies – *“act rather than respond”, “synchronize the switch”*
- Including the private sector and the public in the planning process is key – *collaborate and cooperate across all stakeholders, including non-traditional ones*
- Reluctance to give up “normalcy” can cripple our decision making – *“emergency leadership”, Government/Industry Roundtable, “ ... prepare for what will become”*