

The Invisible Challenge

Public Health and Organizational Continuity



Overview

- Understand the “invisible” threats that are present
- Understand the potential impact of a pandemic influenza
- Understand the impact of public health threats on business/organizational continuity
- Practical opportunities to partner to prepare for public health threats



A Little What if...

- Sophomore at KU
- Lives in a crowded dormitory
- Symptoms
- On Friday, drives home to Overland Park to see Mom & Dad
- Has date that night with girl from Liberty
- Sunday attends Chiefs game
- Sunday night admitted to Hospital
- Diagnosed with Mumps late that day
- Who's exposed? Who's got it?



Little Johnny

Girl in Liberty
Attends
William Jewell

Mom
Church
Secretary

Dad
High School
Teacher

Hospital Guy
Mgr store

3 Roommates

8 Cheerleaders

Pastor Larry

Mailwoman
Cindy

80 Students

45 Customers



Mumps 2006

- 3,200 confirmed cases in 12 states (yearly national average is 265)
- Spread through coughing and sneezing
- Theoretically eradicated in the U.S. by 2000
 - Mumps vaccine (MMR) was originally developed in early 1970s (Booster added in 1990s)
 - Questions about effectiveness due to improper storage, etc.
- Common symptoms include fever, headache, and swollen glands

How many employees stay at work with these symptoms?



Reportable Diseases

Diseases that, by law, must be reported by health providers
Within 24 hrs or 72 hrs, sometimes quarterly.
Local health departments have staff dedicated to the
management and surveillance of these diseases

- Examples include:

- Anthrax
- Influenza
- Meningitis
- HIV
- STDs
- Tuberculosis
- Lyme Disease

- Examples include:

- Leprosy
- Whooping Cough
- Mumps
- Measles
- Staph infections
- E.coli
- Chicken Pox



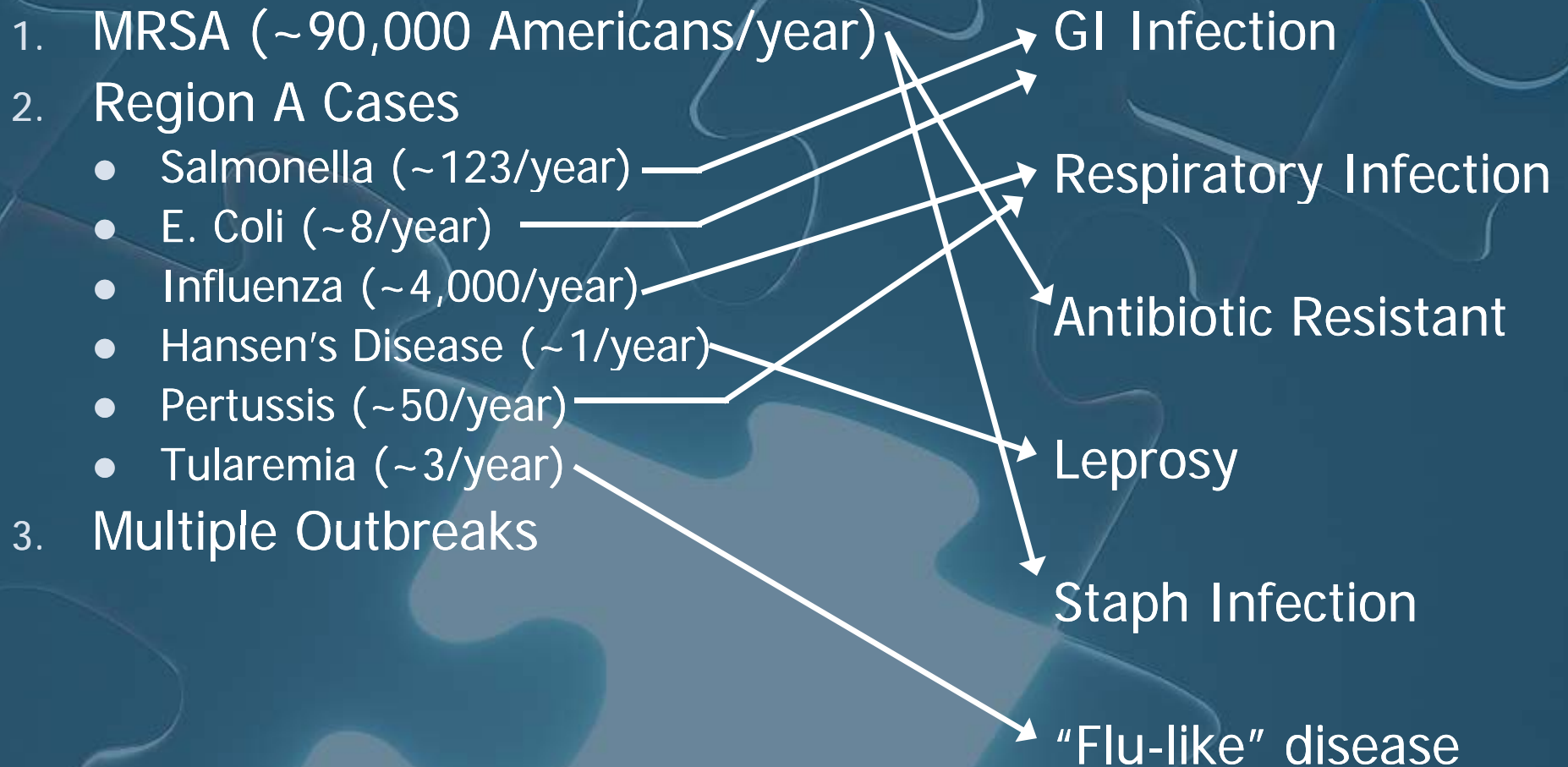
Diseases are Real

- Spread via Person-to-Person or by Vector
- Experts estimate that NMT 10% of call cases are reported
 - Poor Reporting
 - Poor Recognition
- Missouri Region A
 - 17,489 reportable disease cases since January 1, 2002
 - Average of 2,915 per year
 - 0.12% of population
- More than 1% of population actually has had a disease





Other Threats





Recent Outbreaks

- **National**

- E. Coli in frozen pizza (Nov 2007)
- E.Coli in ground beef (Oct 2007)
- Salmonella in pot pies (Oct 2007)
 - 35 states, 272 cases
- E.Coli in fresh spinach (Fall 2006)
- Salmonella in peanut butter (Fall 2006)

- **Regional**

- Shigella
- Mumps

- **Local**

- Platte: non-compliant TB case
- STL: ~900 cases of Shigella



Recent Outbreaks -- MRSA

- Methicillin-Resistant Staphylococcus aureus
- Resistant to traditional antibiotics
- MRSA infections are skin based and may appear as pustules or boils
- Most common in schools, dormitories, correctional facilities, and daycares
- Almost all infections can be effectively treated by drainage of pus and antibiotics
- Usually transmitted by direct skin-to-skin contact or contact with shared items that have been in contact with someone else's infection
- Protection via good hygiene, cover skin traumas, don't share personal items



Diseases vs. Traditional Threats

Diseases

- Duration is extended
- No "Safe" areas
- Commonly misunderstood

Other Threats

- Duration is short
- "Safe" areas
- Generally understood



It won't happen to me...

- 45 year old woman
- Has hysterectomy and stays overnight
- Recovers at home for 3 weeks then has unexpected complications
- OB/GYN performs outpatient procedure and sends her home
- 3 weeks -- runs errands (grocery store, dry cleaners, shopping mall and hairdressers). While at hairdresser, she begins to itch all over particularly in scalp and around eyes.
- Diagnosed with a severe case of chicken pox
- Questions to be posed:
 - 1) The woman had been previously exposed to but did not contract. How did she not get it?
 - 2) How did she contract the chicken pox since she virtually had no visitors at home while she was recovering from her hysterectomy?
 - 3) How many people did she expose the day she ran errands before breaking out with a severe case the next day?

IT MIGHT JUST HAPPEN TO YOU!!!



Economic Impact

- Pandemic Flu
 - Estimated b/w \$71 - \$166 billion
- SARS – Canada (2003)
 - \$1.5 billion (total economic loss)
- 2005 Flu Season
 - 70 million missed work days
 - \$8 billion paid in sick time
 - Cost is \$110 per employee for each day of unscheduled absence



The PH Department should fix it!

- Disease tracking is difficult
- Confirmation takes time
- The “sick” have rights
- The “exposed” have rights
- Non-compliant TB Case

Who's are more important?



How does disease spread?

- Depends on the disease
- Know the source
- Not always clear
- Vectors
 - Birds
 - insects
- Human to human
 - Inhalation
 - Cutaneous
 - Oral/Mucus transfer





Causes of Spread

- Poor handwashing
 - a typical person's hand can carry 10,000 to 10 million bacteria (resident and transient)
 - Fecal-oral
 - Surface transfer
 - Influenza can live on hands up to 5 minutes
- Uncovered coughing
- Touching contaminated surface(s)
- Contaminated food/water
- Reused protection/prevention
- Human proximity to each other



How 'close' are we?

- Pre-schools: 35-50 ft² per child
- Schools: 49-64 ft² per child
- Hospital: 190 ft² per person
- Office building: 390-470 ft² per person
- Home: 734 ft² per person

Source: Interim Pre-pandemic Planning Guidance; Community strategy for Pandemic Influenza mitigation in the United States (February 2007)



Germs, Germs, Germs...

- Kitchen sink
 - 500,000/in² in drains
- Airplane bathrooms
 - "Volcanic flush"
- Drinking fountains
 - 62K – 2.7 Million/in²
- Shopping carts
- Mats/Machines at health club
- ATM buttons
- Woman's handbag
 - Thousands on bottom
- Bathtubs
 - 100,000/in²
 - 20% more germs than garbage can
- Hotel Rooms



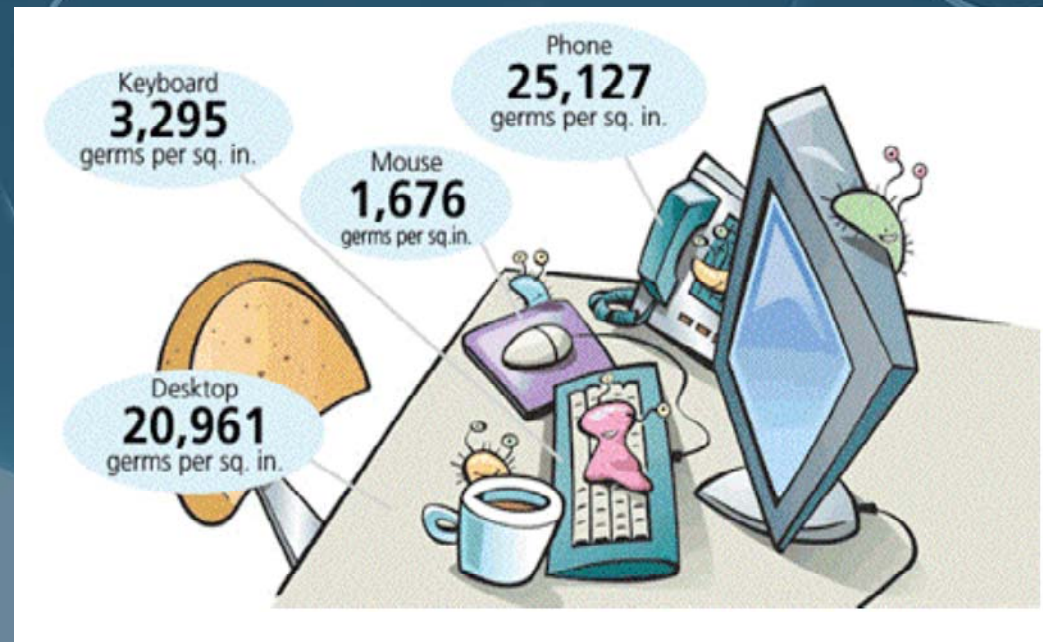
I've got a BCP/COOP program

- Some components may not work during a disease outbreak
- “Business as usual” in 30 days or less may not be possible
- Working at an unaffected site may not be possible
- Opportunity for improved mitigation and prevention plans



Proper Hygiene

- Workplace disinfection
 - Public bathrooms
 - Eating facilities
 - Shared workstations
 - Keyboard/mouse
 - Phones
 - Shared equipment
- Sneeze etiquette
- Cough etiquette
 - www.coughsafe.com
- Handwashing





Hand Sanitizers

- Work by stripping away outer layer of oil and skin
- "99.9% Effective"
 - Only tested on inanimate objects (not hands)
 - Must be alcohol based (60-95%)
- Recommended by FDA as a component of hand hygiene
- Good alternative, not replacement
- Hand washing is better



PPE/Masks

- Includes gloves, masks, glasses, gowns
- Probably not necessary for most outbreaks (gloves are exception)
- Masks could be helpful as part of pandemic preparedness
- Check CDC guidelines for specific questions or considerations
- Possibly assigned to critical personnel





Another What If Scenario...

- Big Johnny is your operations manager
- Big Johnny unknowingly has TB (drug resistant)
- Big Johnny flies to London and Paris for work
- 3-5 days after trip, CDC contacts your office
- CDC tells you that all of Big Johnny's contacts will be quarantined



Disease and Travel

- Can your company absorb the loss of productivity for...?
 - Johnny
 - Johnny plus 1%
 - Johnny plus 5%?
 - Entire office?
 - If so....how long?
- Do you have policies to protect traveling personnel
 - Personal vs. business
 - Mandated vs. recommended vs. precautionary
- Does insurance cover these types of events for Big Johnny? Big Johnny's exposed family?



School Closures

- Schools have disease thresholds (~20%)
- Likely to happen in large-scale event
- Effective at reducing spread of disease
 - In Israel, school closures reduced:
 - Respiratory infections (42%)
 - Doctors Visits (28%)
 - ER Visits (28%)
 - Medication purchases (35%)
- Cultural complication of closing schools
 - Nearly 100% of children in KC eat school provided meals
 - Where do the children go? What do the parents/employees do?



Communication

- Essential, but probably not affected during a public health emergency
- Pandemic influenza might require alternative methods
 - Text messaging (SMS)
 - VoIP
 - Instant Messaging
 - Smoke signals ☺
- Keep updated contact information for all staff



Prevention

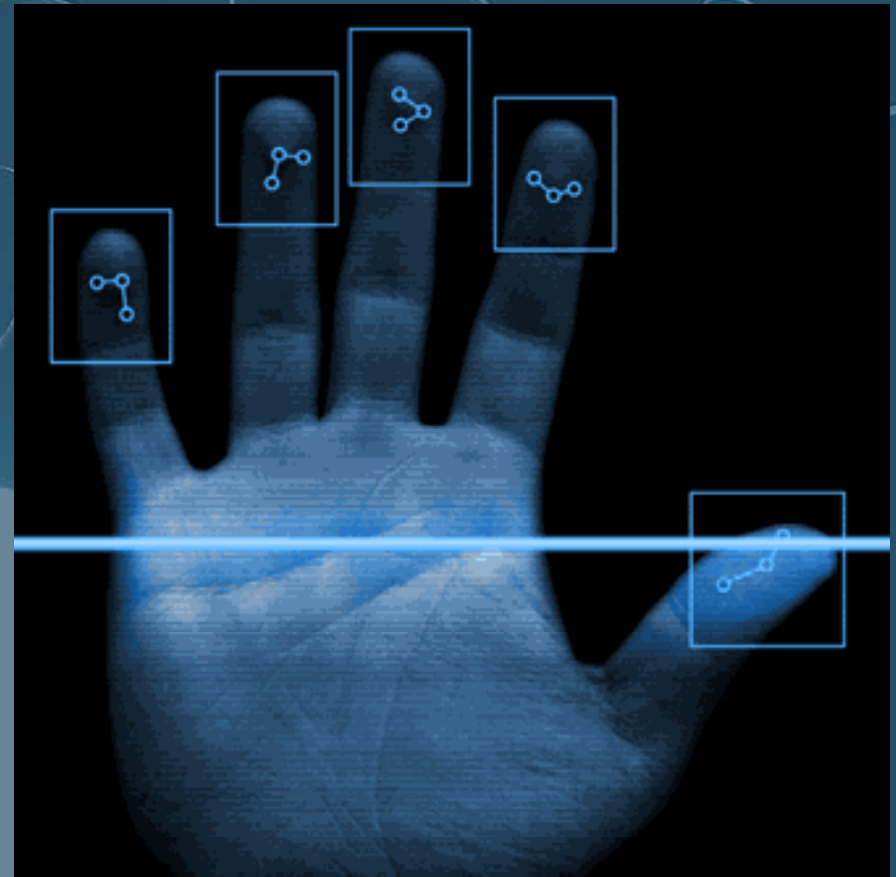
- Educate your staff
- Clear communication pathways
- Measure the risk and reward
- Provide preventative measures (free flu shots and immunizations)
- Annual programs not just in “hot” times





Protect the Protectors

- Security is a vital part of most businesses
- Additional PPE during emergencies?
- Greater visitor restrictions?
- Greater visitor screening?
- Who authorizes changes?
- Who provides PPE training?





Trigger Points

- Use international standards by WHO or CDC
- Work with local jurisdiction to establish disease indicator points
- Create an internal phased approach
- Dependant on disease and circumstances



General Recommendations

- Know When to Act
- Acquire information quickly
- Review/establish policies
 - Leave
 - Travel
 - Off-site activities/moves
 - Handling confirmed cases
 - Remote workers
 - Cleaning and facilities management
 - Security and protection
- REMEMBER: It's the people, not the facility!



Global Threats

- SARS
- Pandemic Influenza
 - Still at WHO Phase 3
 - H5N1 continues to infect humans (61% mortality)
 - Still overdue
 - Can range from mild to severe

**Pandemic and Avian Flu Situation Report available*



“It’s not business as usual, but it’s not like the house is on fire – it’s somewhere in between”

Keiji Fukuda, MD, MPH
World Health Organization



Point of Dispensing (POD)





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