

Social Distancing Strategies and measures in preparation for an influenza pandemic

Presented by
Ziad Abdeen

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Three Kinds of Influenza

Seasonal Influenza *“The Flu”*

Can be transmitted person to person
It is predictable, typically seen in the winter months.
Most people have some immunity
Vaccine is available
Minor impact on the community and economy

Disease primarily of birds—not readily transmitted from birds to humans

**No human immunity
No human vaccine is commercially available**

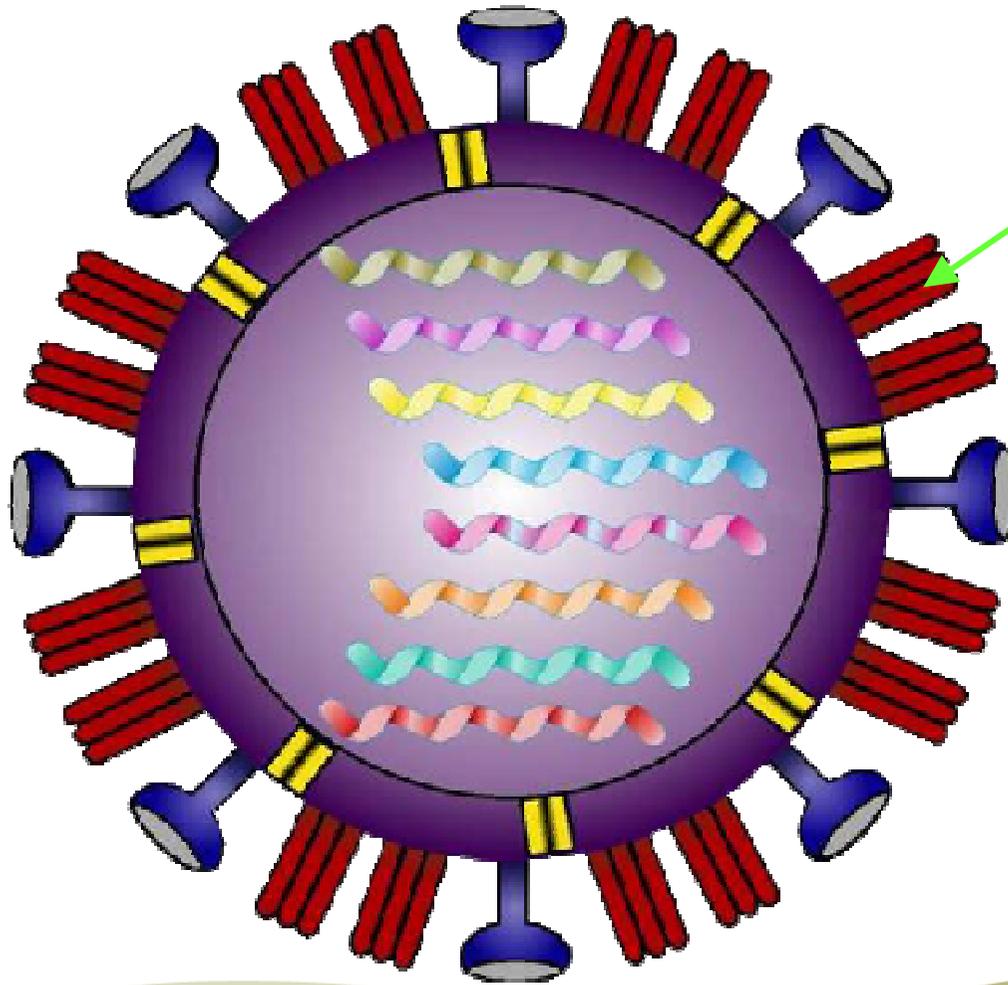
Avian Influenza *“Bird Flu”*

**Novel virus emerges
Little or no natural immunity
Can spread easily from person to person –causes illness
No vaccine available**

Pandemic Influenza *“A Pandemic”*



Influenza A Virus



Hemagglutinin (H)–16 subtypes
(attachment, penetration)

Neuraminidase (NA)–9 subtypes
(release)

8 viral genes
(assembly, replication)



Important Reminders

Influenza Pandemic \neq Seasonal Influenza

Influenza Pandemic \neq SARS

Influenza Pandemic \neq Avian Influenza

BUT

Important Lessons to be Learned from Each



Why the Concern About Pandemic Influenza?

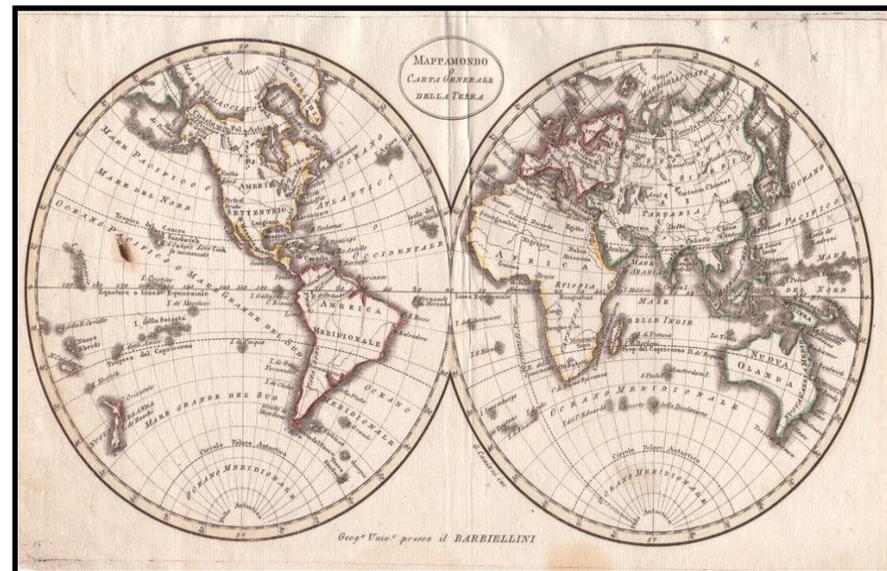
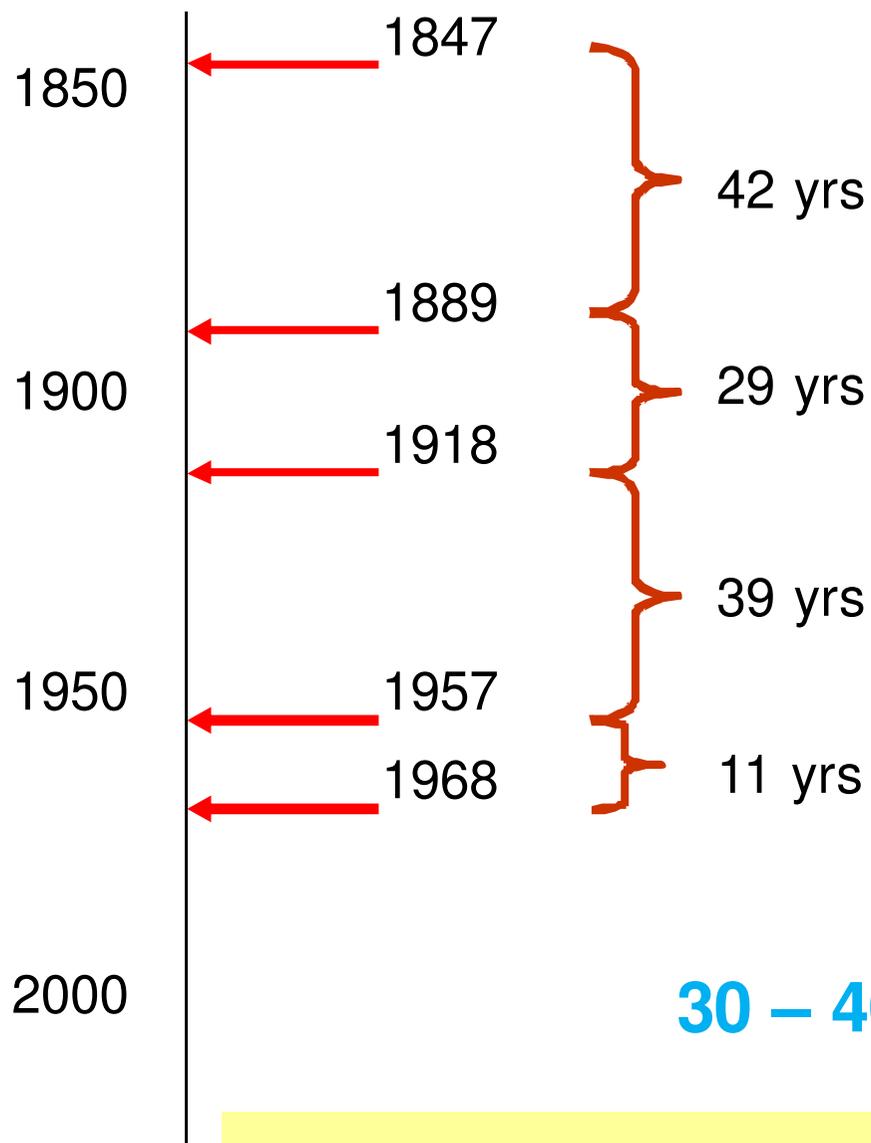


❑ Influenza pandemics are inevitable; naturally recur at more or less cyclical intervals.

❑ The pandemic flu clock is ticking, we just don't know what time it is.

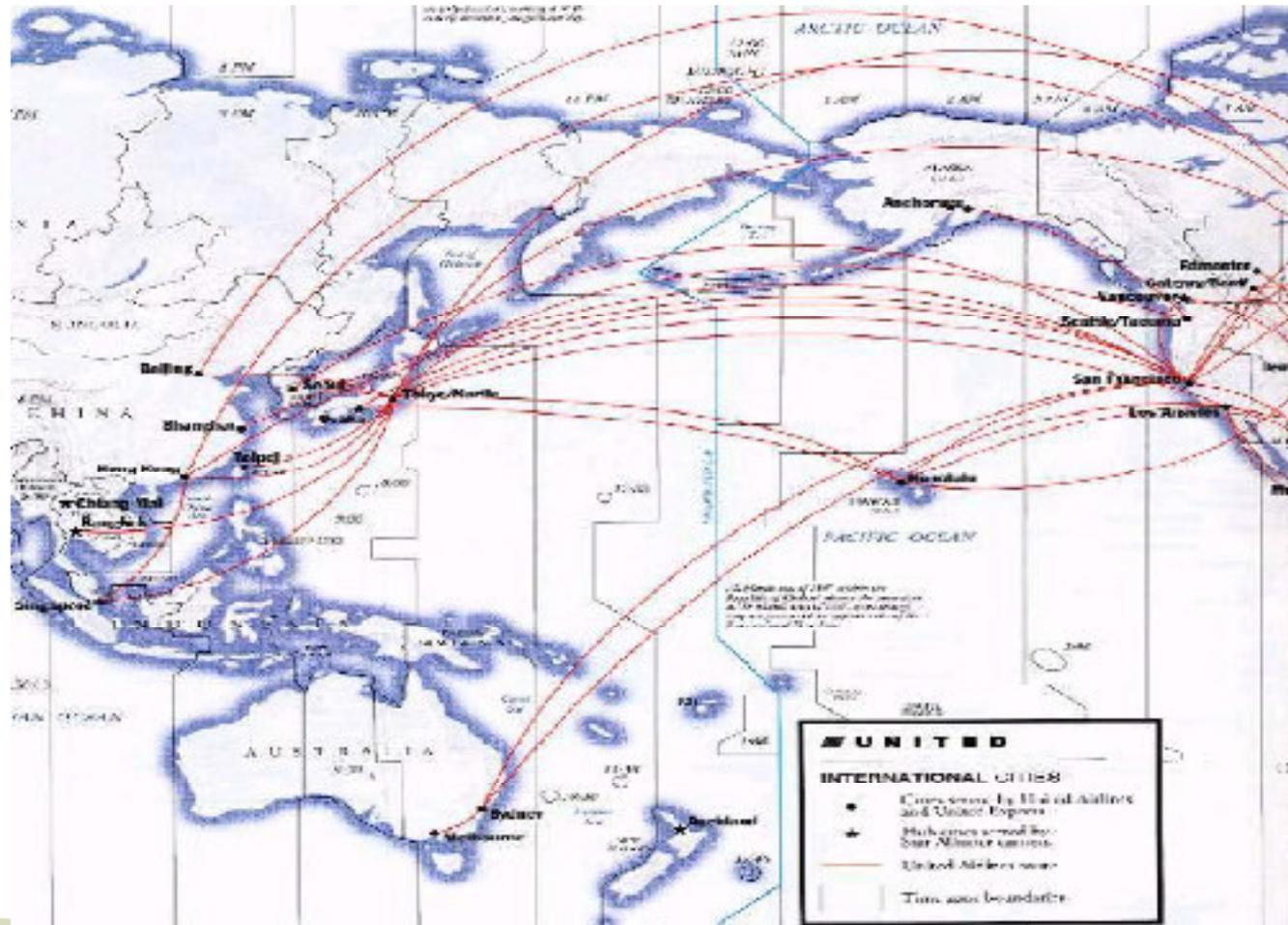


What is the History of Pandemics?



No Pandemic for > 35 years

Pandemic Influenza in Today's World



Risk =

Threat X Vulnerability X Consequence

Pandemic = DISASTER



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How Do We Break the Cycle of Transmission?

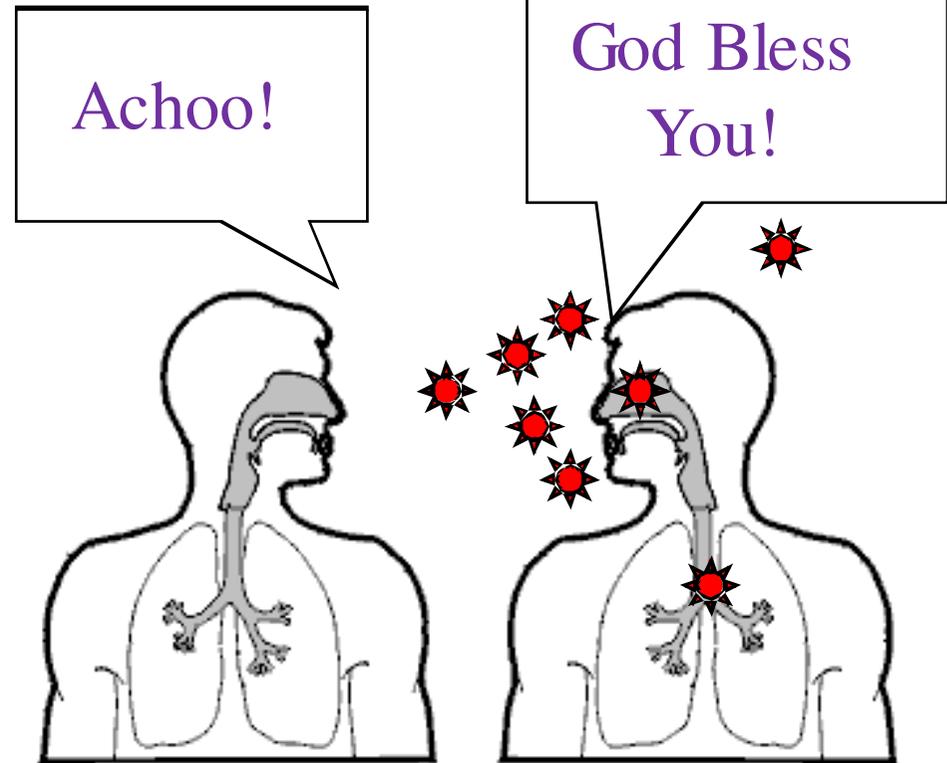
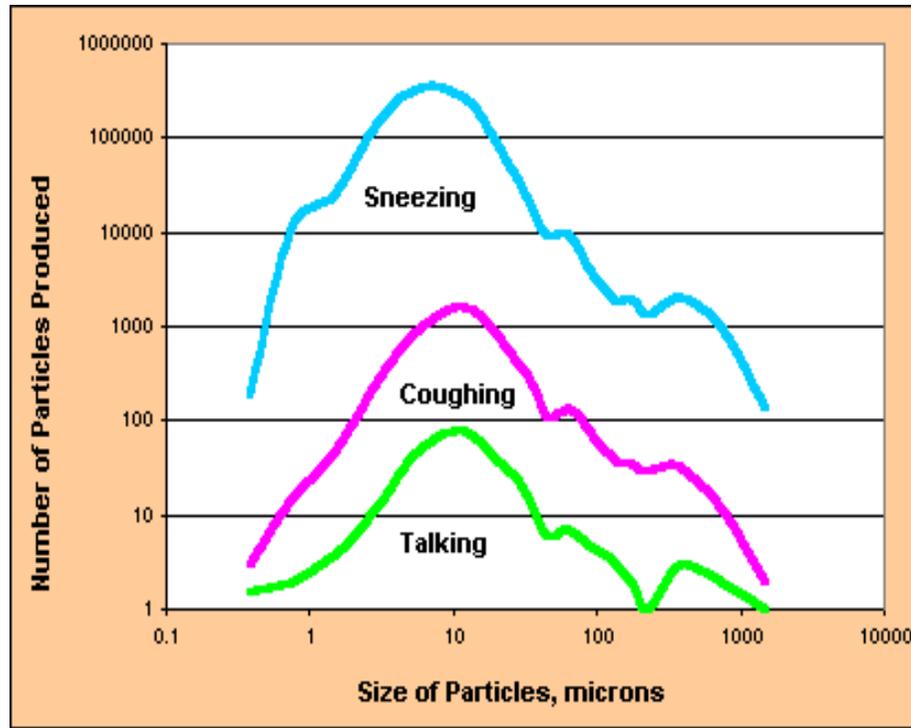


Influenza Virus Transmission

- **Breathing in droplets**
 - produced when infected person talks/coughs/ sneezes
- **Touching an infected person or surface**
 - contaminated with the virus and then touching your own or someone else's face



Large-Droplet and Aerosol Respiratory Transmission



Impact on Healthcare System

- Staffing and bed shortages.
- Shortages of key supplies and equipment; anti-virals, ventilators, etc.
- Demand will outpace supply for months (waves of illness for up to 2 years).
- Vaccine not available for 6 to 8 months.
- Vast majority of ill people will be taken care of at home by family members.



RESPONSE BEYOND HEALTH...

Basic Services and Utilities

- Absenteeism affecting manufacture and services
- Interruption of Electricity and Water Supplies
- Telecommunications overload

Rule of Law and Governance

- Increased demand for governance & security
- Higher public anxiety, reduced capacity
- Potential exploitation

Vulnerable Livelihoods

- Diminished coping & support mechanisms
- Shortage of basic necessities
- Vulnerabilities – & needs - of Contained Groups

Financial Systems And Trade

- Trade & commerce disruptions
- Reduced availability of cash
- Interruption of logistics



Pandemics vary in severity

and

**Combined approaches seem
most effective**

(from history and modeling)

....therefore



Pandemic Severity Index

- Similar to the system for categorizing the strength of hurricanes, the CDC interim guidance introduces a **Pandemic Severity Index**.

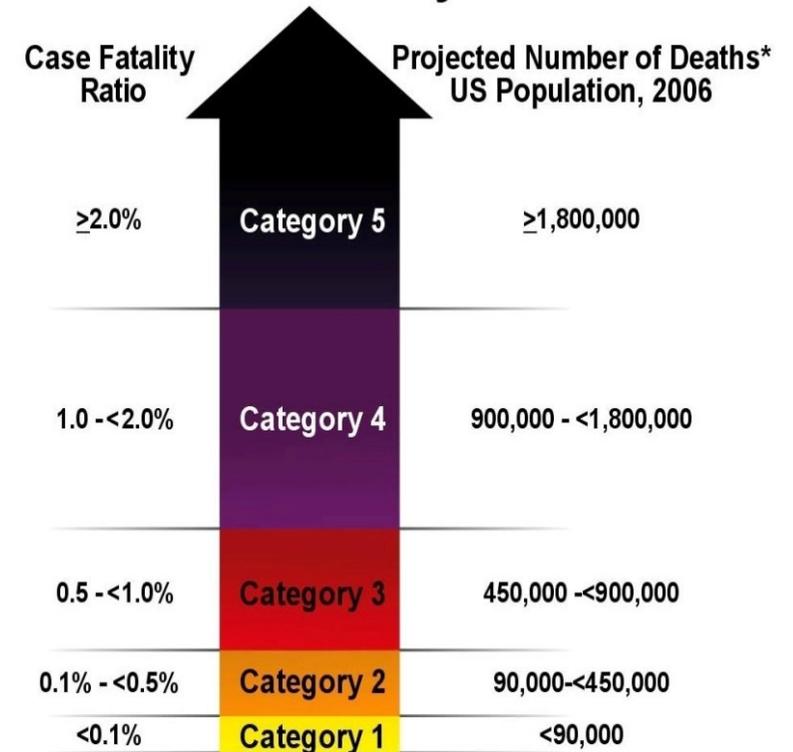
Uses fatality ratio as the critical driver for forecasting a pandemic's severity.

Allows for better forecasting the impact of a pandemic

Enables recommendations to be made regarding mitigation strategies and interventions.



Pandemic Severity Index



* Assumes 30% Illness Rate



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Impact of Pandemic Influenza

Estimates for a major pandemic in Palestine:

□ 25% to 35% clinical attack rate (people getting sick)

• 990,000 to 1,364,000

□ Hospitalizations

• 134,000 to 315,000

□ Fatalities

• 55,000 to 68,000



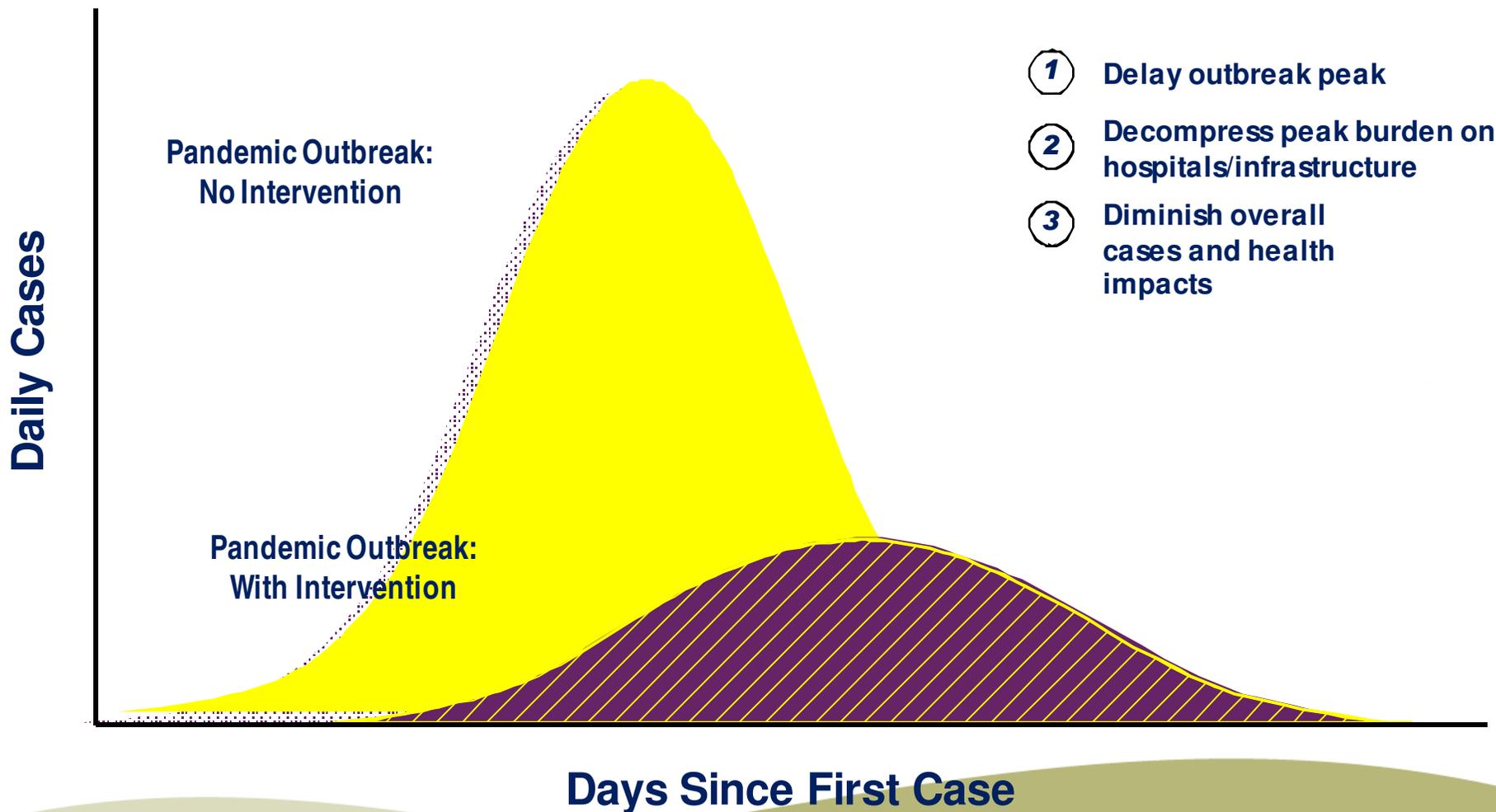
Pandemic Influenza Preparedness

"For the first time in human history, we have a chance to prepare ourselves for a pandemic before it arrives...it is incumbent upon the global community to act now."

-Dr. Margaret Chan, WHO Director, Communicable Diseases



Goals of Community Mitigation



Period	Phase	Description
Interpandemic Period*	Phase 1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk* of human infection is considered to be low.
	Phase 2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.
Pandemic Alert Period**	Phase 3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.
	Phase 4	Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.
	Phase 5	Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).
Pandemic Period	Phase 6	Increased and sustained transmission in general population.
Postpandemic Period		Return to interpandemic period



Early, Targeted & Layered Community Mitigation Strategies



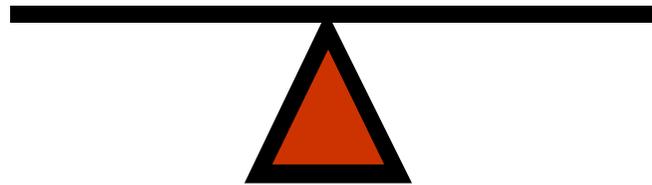
Fundamental Legal Principles

Public health is a
“police power,”

Public health powers may encroach on
individual liberties

Public good

Individual liberties



Effort to balance the needs of the many
while protecting the rights of the few



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Potential Tools in Our Toolkit (4)

22



Pandemic Vaccine

Probably not available 1st wave

Antivirals

Transmission Interventions

Infection Control

Contact Interventions

Social Distancing



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What We Know

- Vaccine will work...when it is ready
- Antivirals may work...but in short supply

What We Can Do

- It **won't** be ready for first wave
- Antivirals available for those who get ill
- Antivirals may be used as prophylaxis for critical positions (not people)
- Related issues: ethics; availability; cost



Medications During Pandemic Flu

✿ Antiviral Medications

- ❑ can prevent complications if taken within first 48 hours of illness
- ❑ may not be effective against a pandemic flu virus
- ❑ extremely limited supply now
- ❑ would be prioritized
- ❑ initial use probably only for treatment, not prophylaxis

Antiviral Medications

Amantadine (Symmetrel)

Rimantadine (Flumadine)

Zanamivir (Relenza)

Oseltamivir (Tamiflu)



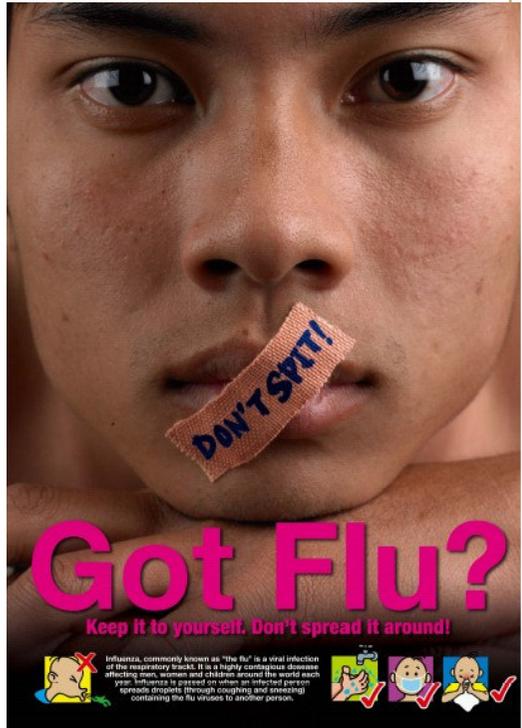
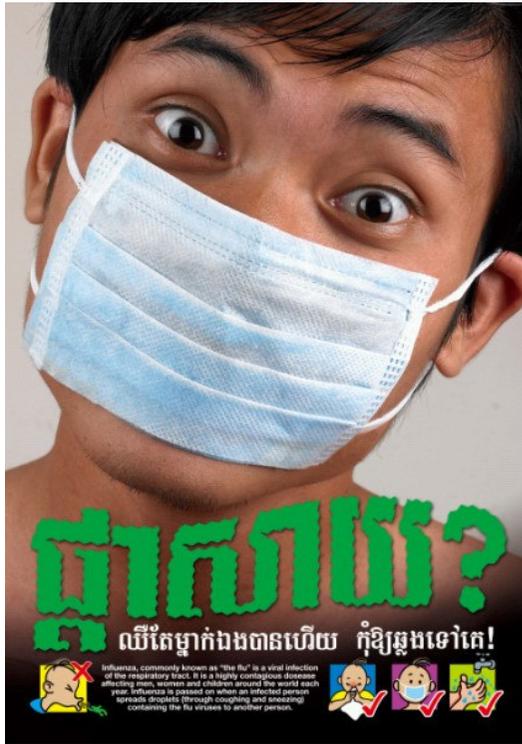
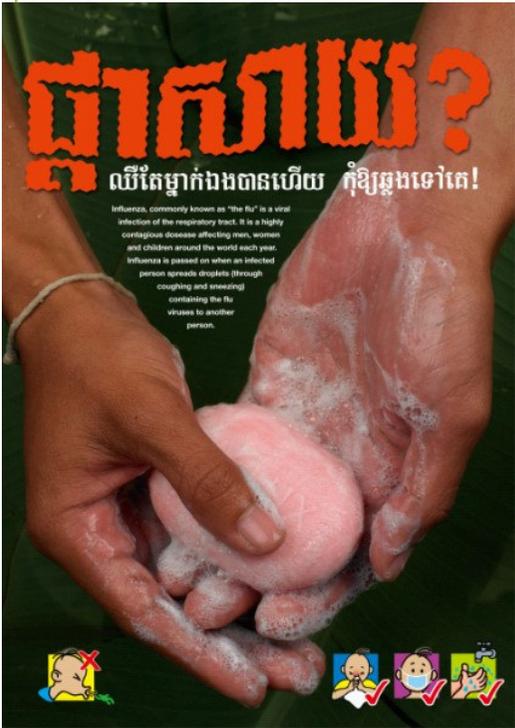
Infection Control

- Infection control
(transmission interventions)
 - Face masks
 - Cough etiquette
 - Hand hygiene



'Street-wise' hygiene campaign

The UNICEF "CREATE" Initiative Promote 4 actions now!



Wash hands thoroughly with soap frequently

Cover coughs and sneezes

Wear a mask if symptomatic

Don't spit!



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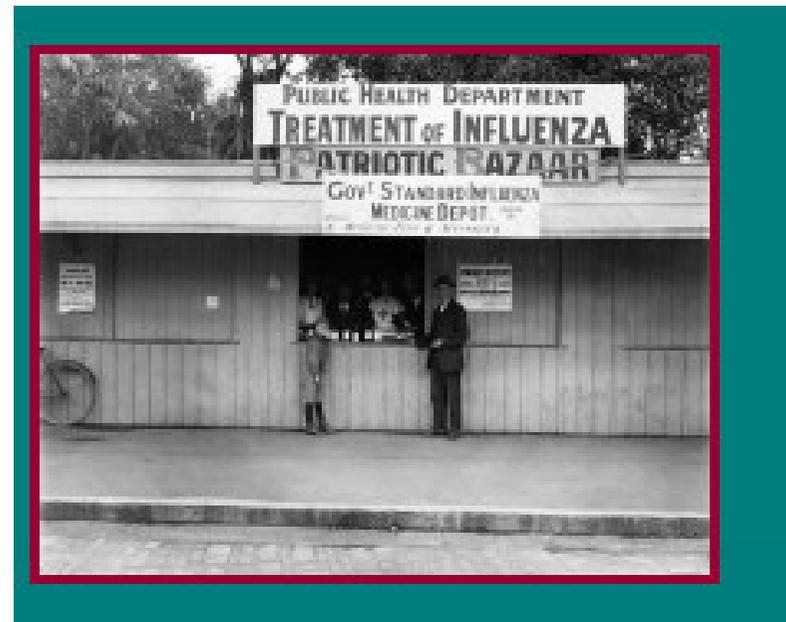
Pandemic Influenza

What the Public Can Expect

You may be asked or required to do things to limit the spread of disease in our community.

Isolation or Quarantine

Comply with Social Distancing Measures



Social Distancing

(“shelter in place” or “snow days”)

Alternative to quarantine: “reverse quarantine”

Persons **not exposed** remove themselves from the general population to avoid any exposure to individuals who are infected

- Measures to **increase the space** between people and **decrease the frequency** of contact among people
- Interventions to mitigate a pandemic aimed at work, community, and school settings



Who Infects Whom?

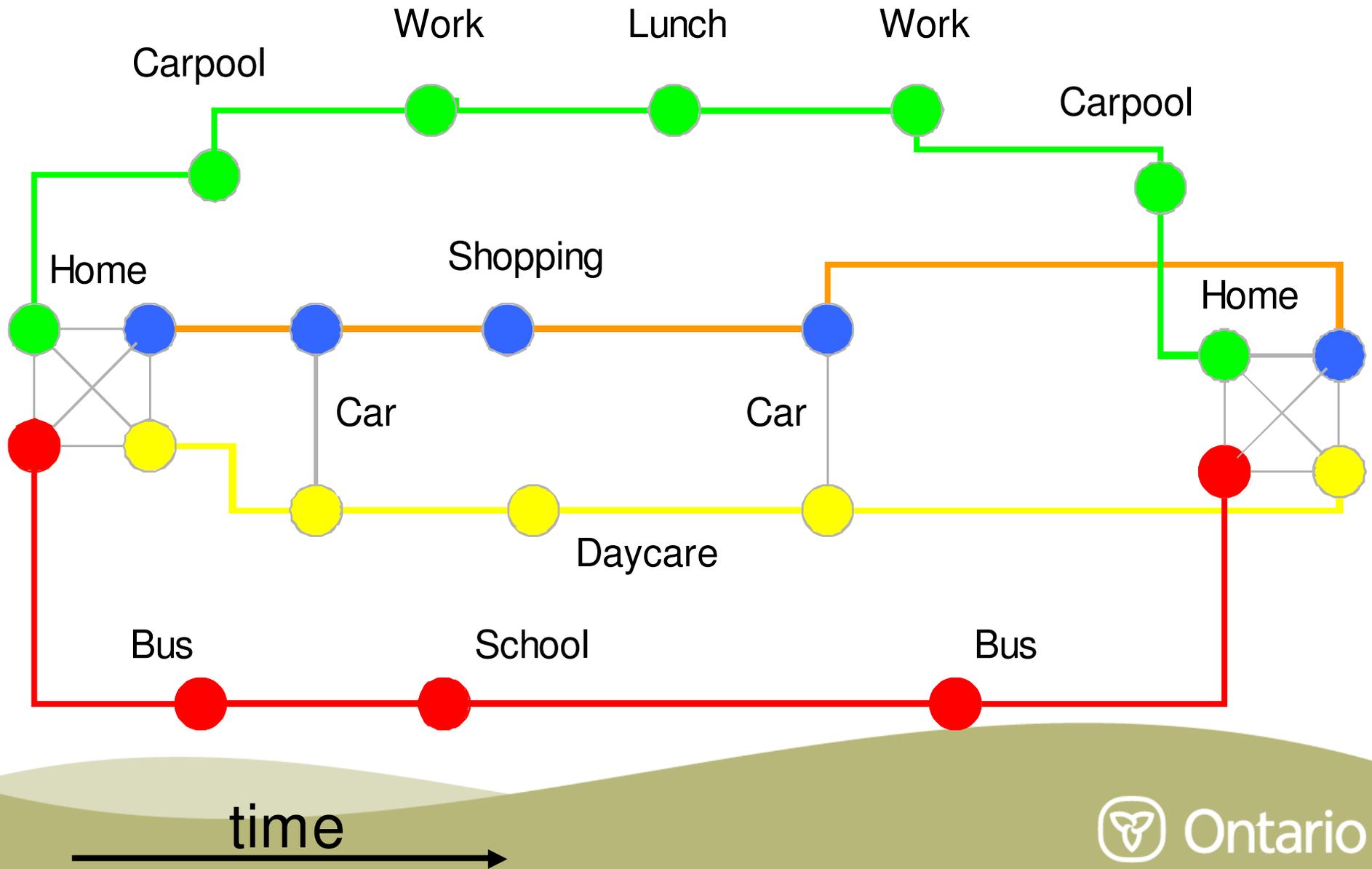
	To Children	To Teenagers	To Adults	To Seniors	Total From
From Children	21.4	3.0	17.4	1.6	43.4
From Teenagers	2.4	10.4	8.5	0.7	21.9
From Adults	4.6	3.1	22.4	1.8	31.8
From Seniors	0.2	0.1	0.8	1.7	2.8
Total	28.6	16.6	49.0	5.7	100

Likely Sites of Transmission	
	Schools
	Households
	Work place

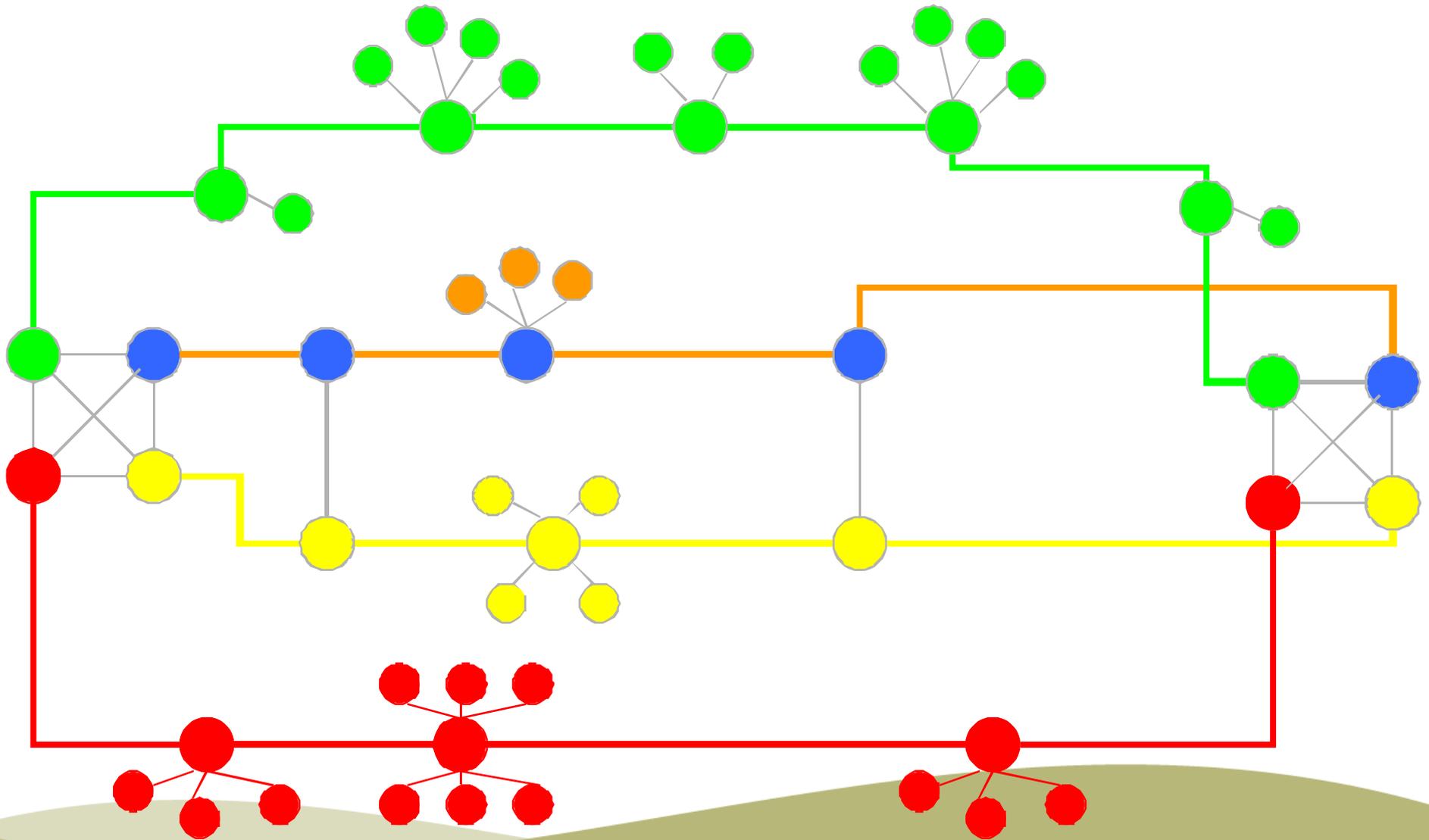
Demographic	
Children/Teenagers	58.0%
Adults	38.3%
Seniors	3.7%



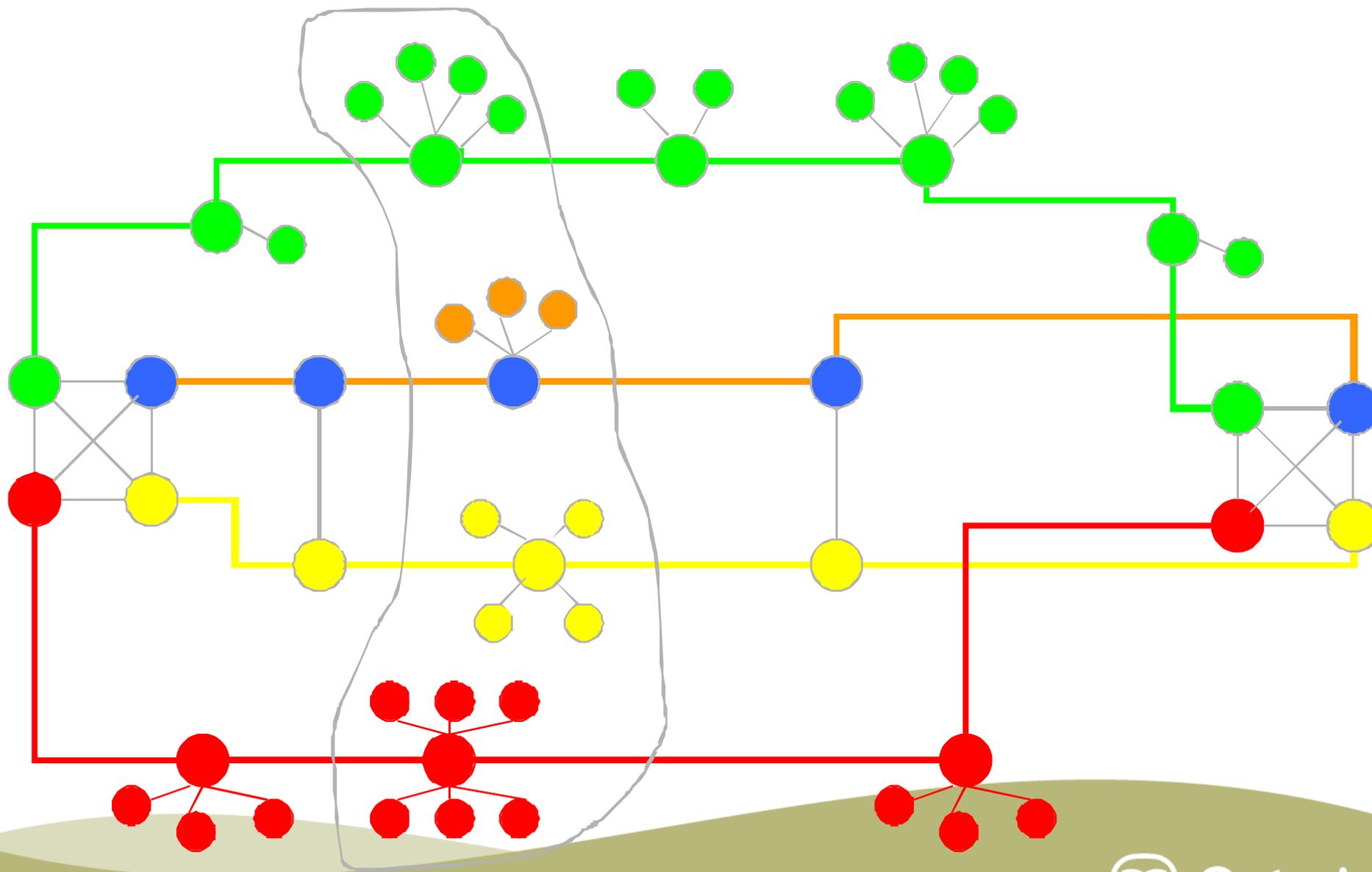
A Typical Family's Day



Others Use the Same Locations

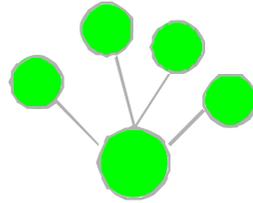


Time Slice of a Typical Family's Day

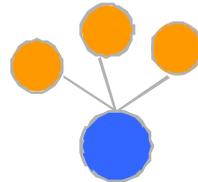


Who's in contact doing what at 10 AM?

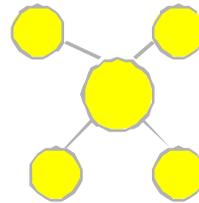
Work



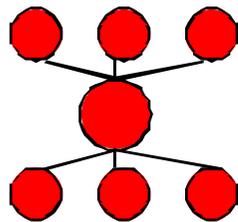
Shopping



Daycare



School



A Scared Family's Possible Day

Home

Home



What We Know

- **Planning will make a difference**

What We Can Do

- **Work in collaboration with management, frontline staff and public**
 - significant role for Emergency Committee
 - Consider additional measures appropriate to diverse work environments
- **Education/training of all groups**
- **Ethical framework for decision-making:**
 - Open/transparent process
 - Inclusive of all those affected
 - Responsive to feedback
 - Accountability for decisions



No amount of planning can remove

- Uncertainty
- Unpredictability
- Worries about the future
- Loss
- Trauma
- Social disruption
- Grief
- Difficult decisions



Psychological Impact

- Psychosocial needs and impact far exceed physical needs and impact.
- Consequences are heightened because of the separations and disruptions of the family unit, within our patient population and within our emergency responders.
- Child, parental and health professional concerns about this separation must be acknowledged.



Challenges to Consider

- Dismissal of schools and daycares/ closure of public places
- Transit shutdowns (air, bus)
- Closure of stores/ businesses (grocery, drug, banks, etc.)
- Supply chain and fuel disruptions
- Drinking and wastewater treatment system disruptions
- Power and fuel disruptions
- Healthcare surge capacity
- Public Safety
- Quarantines or restrictions of movement
- Communication with stakeholders.



Aim

Create a “Culture of Preparedness”



Palestinian Health Plan for an Influenza Pandemic: Overview

Limit number of illnesses

Limit number of deaths

Preserve continuity of essential services and functions

Minimize social disruption and economic losses

Approach:

- Be ready** – establish comprehensive contingency plans at regional and district level
- Be watchful** – practice active screening and monitor emerging epidemiological and clinical information
- Be decisive** – act quickly and effectively to manage the epidemic
- Be transparent** – communicate with health care providers and Public



What Do We Mean By “A PLAN”

- ❑ Guiding Principles
- ❑ Strategic-level Plan (“Policies”)
- ❑ Operational-level Plan (“Procedures”)
- ❑ Detailed plans identify the set of tasks, the order of the tasks, and the responsible party for task accomplishment – i.e. specific who, what, where, when, why and how.
- ❑ Allocate resources
- ❑ Engage employees and public
- ❑ Coordinate with external organizations

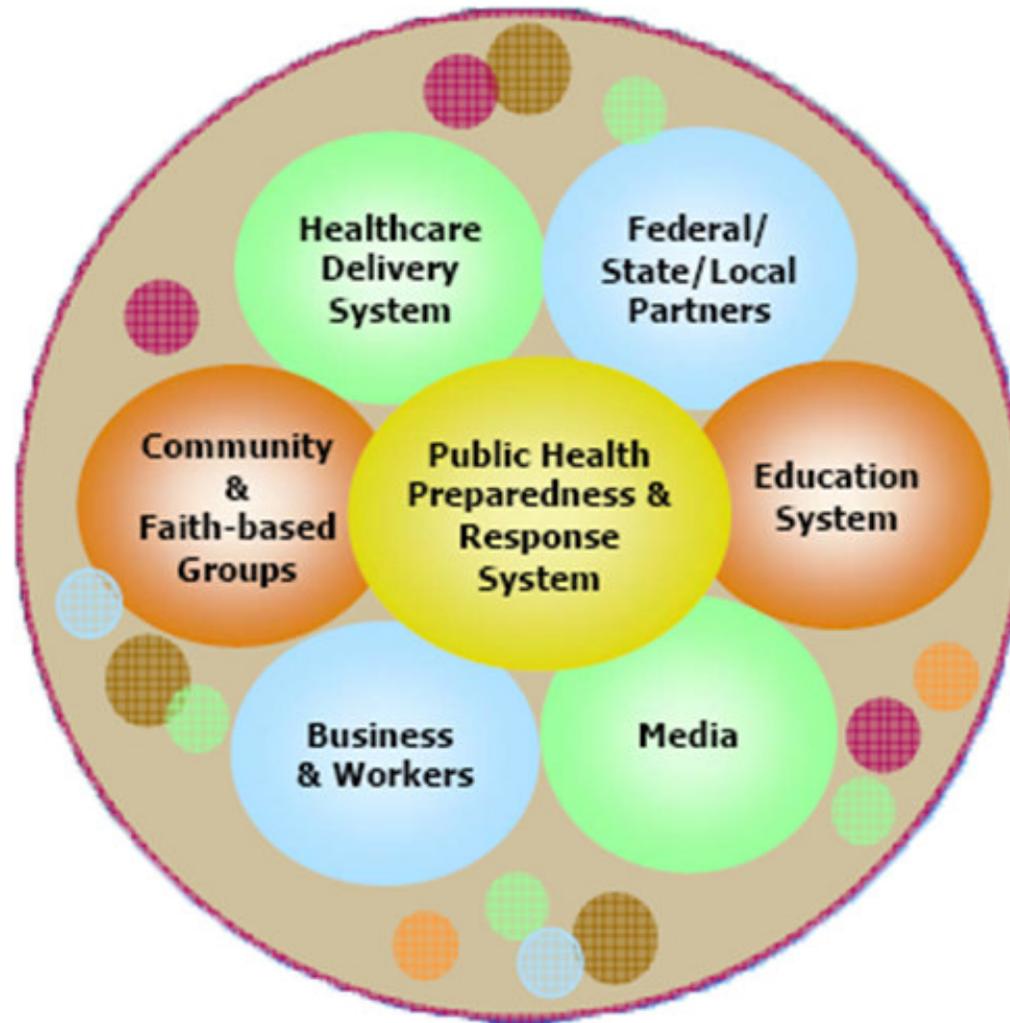


Public Health Preparedness and Response System

A network of Shared Responsibility to Minimize Impact

4Ps

- People
- Plans
- Products
- Practice



“We don’t know when a pandemic might strike. But we can be sure of two things:

- **Everything we do before a pandemic will seem alarmist.**
- **Everything we do after a pandemic will seem inadequate.**

This is the dilemma we face, but it should not stop us from doing what we can to prepare. We need to reach out to everyone with words that inform, but not inflame. We need to encourage everyone to prepare, but not panic.”

Michael Leavitt

Department of Health and Human Services

Pandemic Influenza Leadership Forum

[June 13, 2007]



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“My job is to tell you....

things you don't want to hear...

asking you to spend money you don't have....

for something you don't believe will happen”

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Much achieved: much more to do

- **It is up to all of us, together**
- **We are all held to account**



Questions?

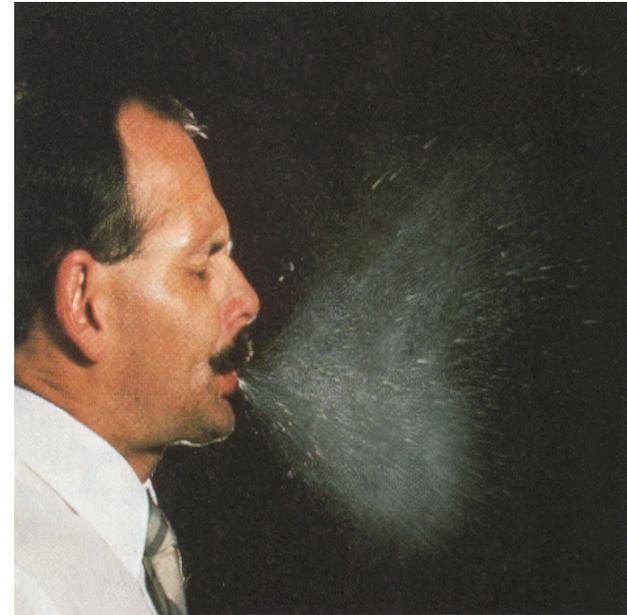
Ziad Abdeen

Director

**Al-Quds Nutrition and Health Research
Institute**

zabdeen@planet.edu

(02) 6289798



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