

Meeting will begin at 1400 Central Time

If you can see this and hear music then you are ready.

We have muted all the participants. Please use the chat feature or call 1-800-720-7287 for questions or help.

1

PANDEMIC

AARC APPROVED FOR 1 LIVE CRCE CREDIT HOUR

2

Learning Objectives

- Describe the stages of pandemics
- Discuss historically significant pandemics
- Contrast historical pandemics with Coronavirus 2019

3

What Defines a Pandemic?

- Pandemic vs. Epidemic
 - Epidemic – an outbreak of disease that spreads quickly and affects many individuals at the same time
 - Pandemic – a type of epidemic with greater range and coverage, spreading over countries or continents

4

Vocabulary

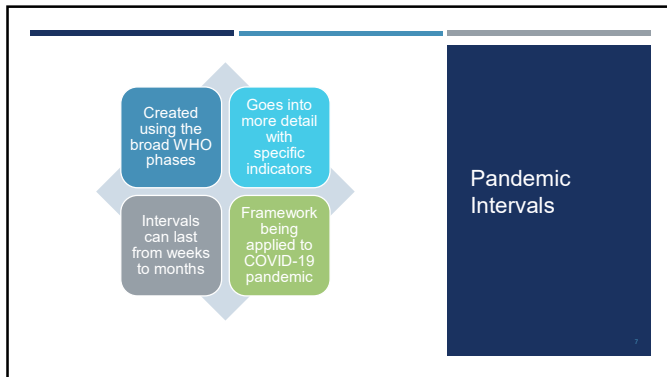
- Passage
- Virulence
- Attenuation

5

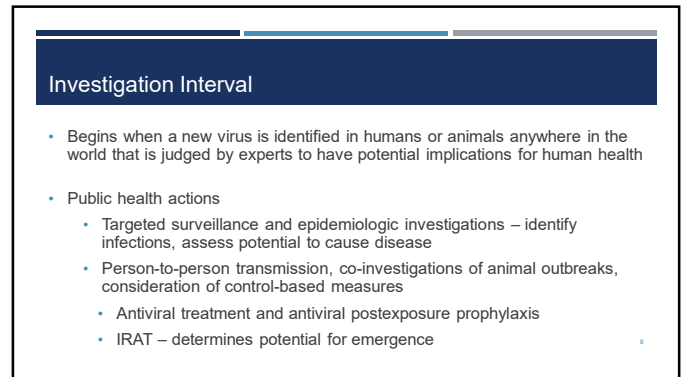
PANDEMIC INTERVALS

AS DEFINED BY THE CENTERS FOR DISEASE CONTROL AND PREVENTION

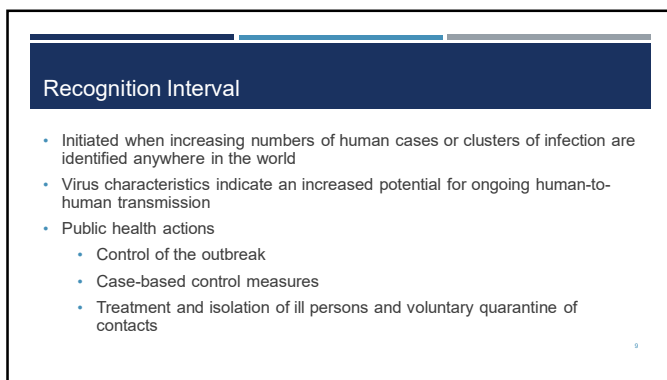
6



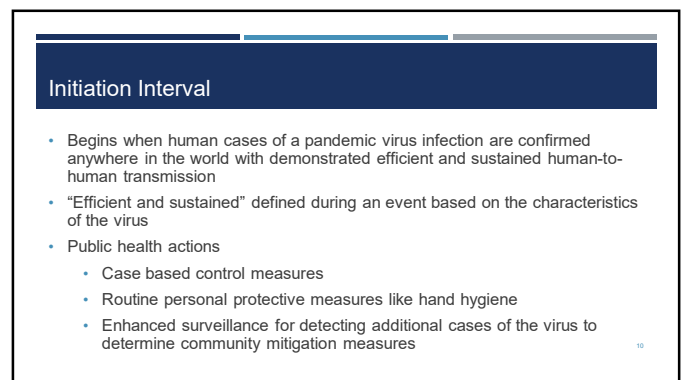
7



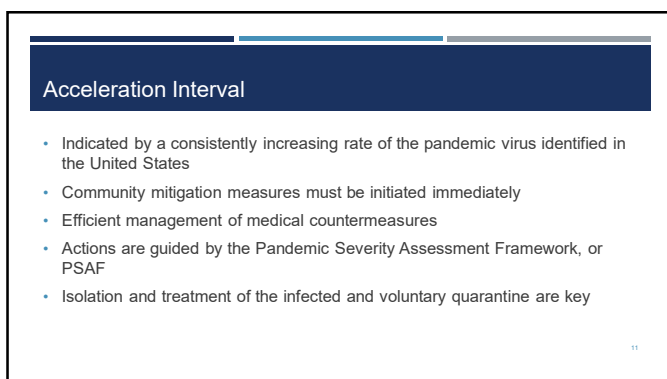
8



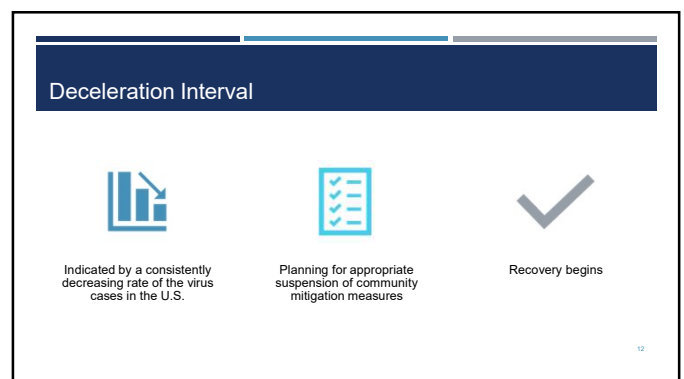
9



10



11



12

Preparation Interval

- Preparation for a subsequent pandemic wave
- Characterized by low pandemic virus activity, although smaller outbreaks may continue to occur
- Primary actions

13

13

Pandemic is Over

- Declared ended when evidence indicates that the virus, worldwide, is transitioning to seasonal patterns of transmission

14

14

HISTORICALLY SIGNIFICANT PANDEMICS

15

15

Plague of Athens

- 430 B.C.
- First documented pandemic
- Killed 25% of the population
- Scholars and physicians debate what the disease was
- Social response
- Care for the ill

16

16

Black Death

- 1347 to 1351
- Killed 30-50% of the European population, tens of millions of people
- Either Bubonic Plague or haemorrhagic fever
- Likely originated in China
- Transmitted through fleas, ticks, human lice and rats
- Decreased life expectancy by 20 years
- Had some positive effects in its aftermath

17

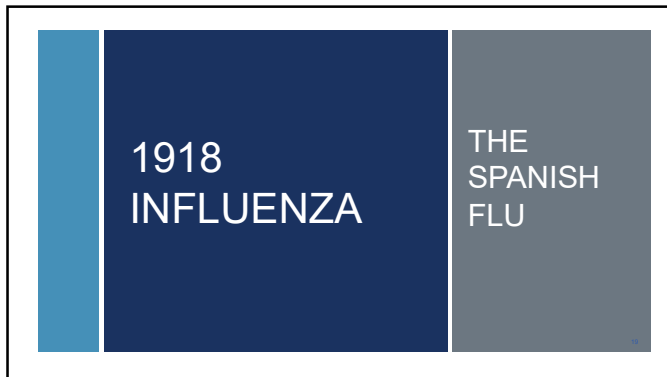
17

HIV/AIDS

- 70 million infected, 35 million deaths
- Obstacles – fear, stigma, ignorance
- Used to be a death sentence, now we have a one pill a day treatment
- WHO's goal to end AIDS by 2030 might not be met
- Disproportionally affects vulnerable populations

18

18



19

1918 Influenza (Spanish Flu)

- 1918 – most severe pandemic in recent history
- 500 million infected, 1/3 of world's population
- 50 million killed, 675,000 of these deaths in the U.S.
- News of the virus was suppressed in the U.S. to maintain positive morale during the war
- The war effort caused poor living conditions for millions

20

1918 Influenza (Spanish Flu)

- Highest mortality
 - Under 5 years
 - 20 to 40 years
 - 65 years and older
- No flu vaccine, no antibiotics
- Control efforts were non-pharmaceutical
- No national, state, or local coordinated pandemic planning

21

Summer 1918

June 1 – August 1: 10% of British soldiers in France too sick to report for duty

Suddenly, in August, the virus disappeared

British command and medical journals stated the epidemic was over

The virus was mutating – the deadly second wave was about to begin

22

Why the Waves?

- Waves were different diseases – highly unlikely – victims of first wave showed resistance to second wave
- Mild virus met other flu virus – reassorted genes and became the lethal second wave – most modern flu experts don't believe this
- Adaptation to man – as the virus jumped from animal to people, the shock weakened the virus. Over time, it became better at infecting its new host and became lethal

23

Denial & Inaction



"NO DANGER OF AN EPIDEMIC – IT SELDOM ATTACKS WELL-NOURISHED PEOPLE"



20% OF NYC SCHOOLCHILDREN WERE MALNOURISHED



NO ACTION TAKEN

24

Camp Devens

- September 1 – 4 soldiers diagnosed with pneumonia and admitted to the hospital at Camp Devens
- Two weeks later, in a single day, 1,543 reported ill with the flu
- 19.6% of the entire camp was sick
- Healthcare workers – “Am I next?”
- Philadelphia public health director does nothing

25

25


Pressure to Act

- Not all remained silent
- Philadelphia health officials refused emergency planning while doctors and local faculty begged for action to be taken
- Campaign against coughing, sneezing and spitting begins
- Newspapers assure that there is no concern felt by military and naval physicians, as well as civil authorities
- Board of Health states no concern


26

26


Health Board Recommendations




STAY WARM




KEEP THE FEET DRY



KEEP THE BOWELS OPEN



AVOID CROWDS



CAMP CHANGES

27

27

Serum and Masks

- Joe Capps at Camp Grant warned of a more toxic and fatal pneumonia
- Capps had begun testing a pneumonia serum from chickens
- Showed the National Research Council his gauze masks
- It was decided – masks and quarantining of new soldiers at camps was necessary
- “Obey the laws, wear the gauze”

28

28

EPIDEMIC BROKEN AT CAMP GRANT; DEATH TOTAL 452

Camp Grant, Bookford, Ill., Oct. 6.—[Special.]—While a line of more than 500 silent visitors watched and waited on the base hospital veranda and in the big Red Cross rest room today, the small army of expert workers under the command of Gen. Oct. 11, 1918, battled the pneumonia epidemic in Camp Grant to a standstill.

Heavy deaths occurred during the fighting men pulled through the ordeal of their illness with the aid of submarine and a constant of the diet steam eight hours. At 6 p. m. the number total of the epidemic had climbed to 452 deaths but only 176 new patients had been received in the hospital, less than half the number admitted yesterday, and 176 patients had been released after winning their fight.

Reports from every ward showed encouraging improvement and surgeons who have worked without sleep for two days at a time knew that the backbone of the epidemic was broken.

Infection Spreads and Press Suppresses

- Capp's serum
- Germicidal solutions used in noses and mouths of troops
- October 6, 1918 - *Chicago Tribune* publishes that the epidemic has been broken

29

29

Addressing Rumors

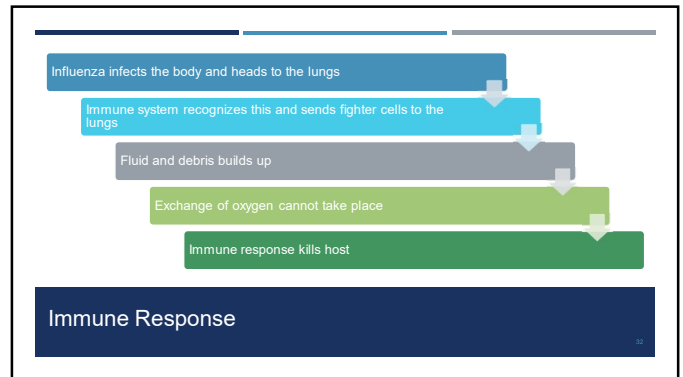
- Disinfectants, drugs, typhoid vaccine, diphtheria antitoxin – nothing worked
- Symptoms seemed endless, and combinations of them didn't always make sense
- Misdiagnosed as dengue, malaria, typhoid
- Mental states of victims

30

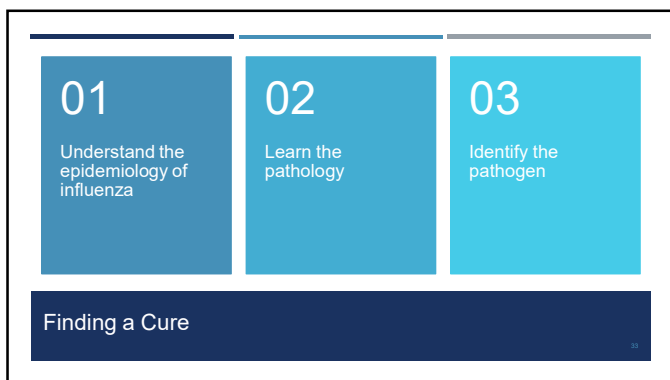
30



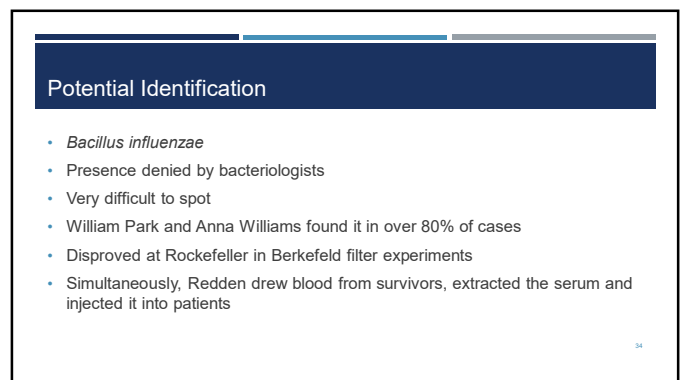
31



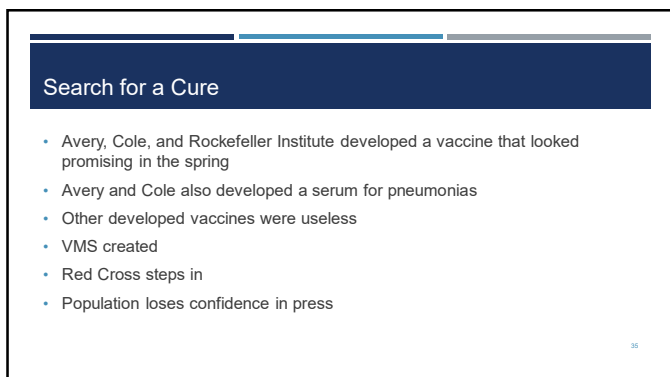
32



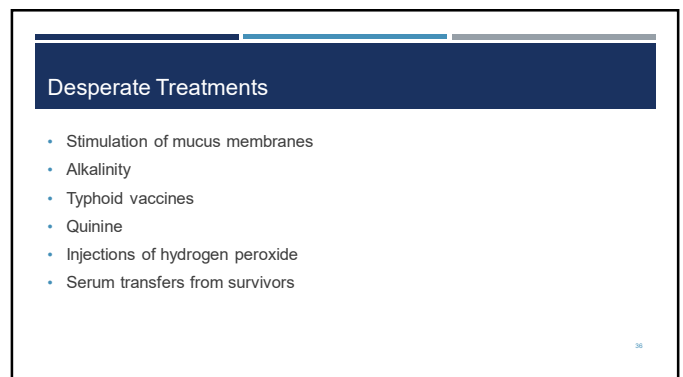
33



34



35



36

False Hope

- October 19, ten thousand vaccines were delivered – they didn't work
- No medicine and no vaccine was developed to cure the influenza
- Masks were also useless
- Some scientists feared it was the end of the human race
- The flu does not need humans to survive

37

37

A Sudden End

- Populations develop immunity as the virus progresses
- By late November, the virus had made its way through the whole world
- The second wave was over

38

38

Third Wave

- The virus mutated again, striking previously spared places
- Post-influenzal manifestations on CNS
- Effects on President Wilson's decision making

39

39

Virus Fades Away

- No prevention or cure was found
- Virus finally fades away
- Decreases invirulence
- Immunity increases

40

40

Decision Making and Risk Assessment

41

41

Considerations in Decision Making

- Virus transmission parameters
- Severity of disease among different age and risk groups
- Availability and effectiveness of control measures and treatment options
- Impact on health care, schools, businesses and the community

42

42

Risk Assessment Tools

- IRAT – Influenza Risk Assessment Tool
- PSAF – Pandemic Severity Assessment Framework

43

43

IRAT

- Used when a new novel virus is discovered in humans, but is not circulating widely in the population in order to assess:
 - The risk that the virus will develop efficient and sustained human to human transmission
 - The risk that the virus will substantially affect public health

44

44

IRAT

- Involves data gathering, discussion, and consensus building to assign risk scores, one for emergence and one for impact, for elements in three categories:
 - Biologic properties of the virus
 - Population
 - Ecology and epidemiology of the virus
- Next step - PSAF

45

45

PSAF

- Determines how bad the pandemic will be
 - Clinical severity
 - Transmissibility

46

46

Planning and Response

- Incident management
- Surveillance and epidemiology
- Laboratory
- Community mitigation
- Medicinal care and countermeasures
- Vaccine
- Risk communications
- State/local coordination

47

47

WERE WE
READY?

48

48

The CDC

40

49

Public Health Emergency Preparedness and Response Capabilities Planning Model



50

50

Budgets

- Federal support to build state and local capabilities to manage a new viral crisis fell 50% since 2003
- PHEP grant and private health grants have dropped
- More emphasis was put on fighting more predictable problems
- Stockpiling supplies and vents doesn't make financial sense at for-profit hospitals

51

51

We Forget

- 2014 – 70% of hospital administrators say they aren't ready for an emerging infectious disease
- 2017 – 14% of hospital administrators say they aren't ready for an emerging infectious disease

52

52

Summary & Review

- What is a pandemic?
- Passage, virulence, attenuation
- CDC intervals of a pandemic

53

53

Summary & Review

- Historically significant pandemics
 - Plague of Athens
 - Black Death
 - HIV/AIDS
- 1918 Influenza Pandemic

54

54

Summary & Review

- Decision making and risk assessment
- IRAT and PSAF
- Readiness
- PHEP
- CDC and HHS guidance
- Budget cuts
- We forget

55

55

Tell the Truth

- Lesson from 1918

56

56

Sources

1. Pandemic Influenza Risk Management: A WHO guide to inform and harmonize national and international pandemic preparedness and response. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.
2. Duncan CJ, Scott S. What caused the Black Death?. *Postgrad Med J*. 2005;81(955):315-320. doi:10.1136/pgmj.2004.024075
3. Barry, John M. *The Great Influenza: The Story of the Deadliest Pandemic in History*. New York: Penguin, 2018. Print.
4. Plague of Athens - <https://www.ncbi.nlm.nih.gov/pubmed/19787658>
5. Black Death - <https://www.britannica.com/event/Black-Death/>
6. Black Death - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4013036/>
7. HIV - <https://www.who.int/hiv-aids/latest-news-and-events/why-the-hiv-epidemic-is-not-over>
8. PHEP - https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf
9. Budget - <https://www.politifact.com/article/2020/mar/30/federal-pandemic-money-fell-years-trumps-budgets-d/>

57

57

Evaluations & Certificates

Please go back to Lesson 2 on our website and click Mark Complete.

Then go to lesson 3, fill out the evaluation, click Submit, then Mark Complete.

Certificates will be available immediately at the menu Account > Courses.

We will turn off the evals in 1 hour.

58

58