Preparing for Coronavirus (COVID-19)

[Insert presenter information & department]

[Insert facility]

Duke University School of Medicine

Duke Center for Antimicrobial Stewardship and Infection Prevention

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Agenda

- What is COVID-19?
- How does it spread?
- Where have cases of COVID-19 been identified?
- How are we preparing here at [insert facility]?

- Question & Answer Session

What is COVID-19?

- COVID-19 is an acute respiratory illness caused by a novel variant of coronavirus
- Coronaviruses are common viruses that can infect humans and animals
- In humans, coronaviruses typically cause upper respiratory tract infections like the common cold
- Novel coronaviruses are animal coronaviruses that develop the ability to infect humans
- SARS and MERS are other examples of diseases caused by novel coronaviruses

What are symptoms of COVID-19?

- **Clinical presentations are varied and range from asymptomatic to severe**
- **Symptoms:**
  - Fever – 83-98%
  - Dry cough – 76-82%
  - Fatigue or myalgias – 11-40%
  - Other symptoms: Headache, sore throat, abdominal pain, diarrhea
- **Laboratories:**
  - Leukopenia – 70%
- **Radiographic changes**
  - Patchy infiltrates, ground glass opacities on CT scan

del Rio C, Malani PN. COVID-19—New Insights on a Rapidly Changing Epidemic. *JAMA.* Published online February 28, 2020

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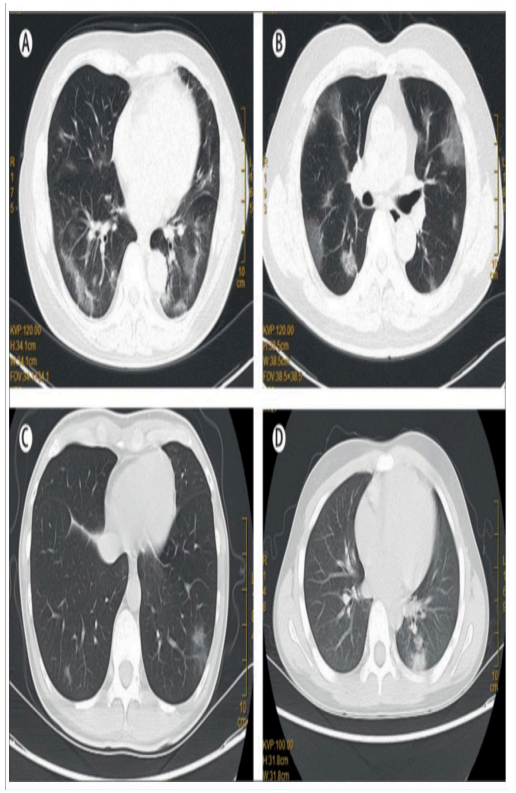
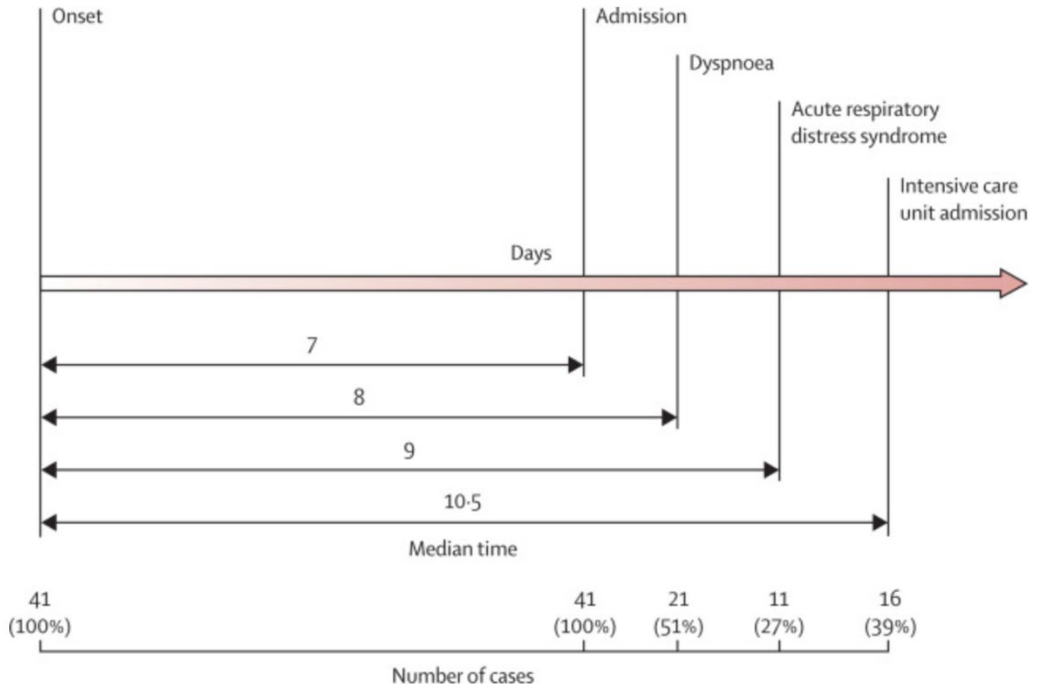


Huang et al. Lancet 2020; 395: 497–506

COVID-19 Spectrum of Illness

- ~44,000 confirmed cases from China
  - **81% mild illness** (no pneumonia or mild pneumonia)
  - **14% severe illness** (hypoxia, infiltrates > 50% in 24-48 hours)
  - **5% critical illness** (respiratory failure, multiorgan failure)

  - May have slow progression to severe illness



Wu Z, McGoogan JM. *JAMA.* Published online February 24, 2020 / Huang et al. Lancet 2020; 395: 497–506

COVID-19 Outcomes

- **Case Fatality Rate: 2.3% (*based on China data)**
  - Highest among elderly and patients with comorbidities
    - >80 years old: 14.8%
    - Cardiovascular disease: 10.5%
    - Diabetes: 7%
    - Chronic lung disease: 6.3%

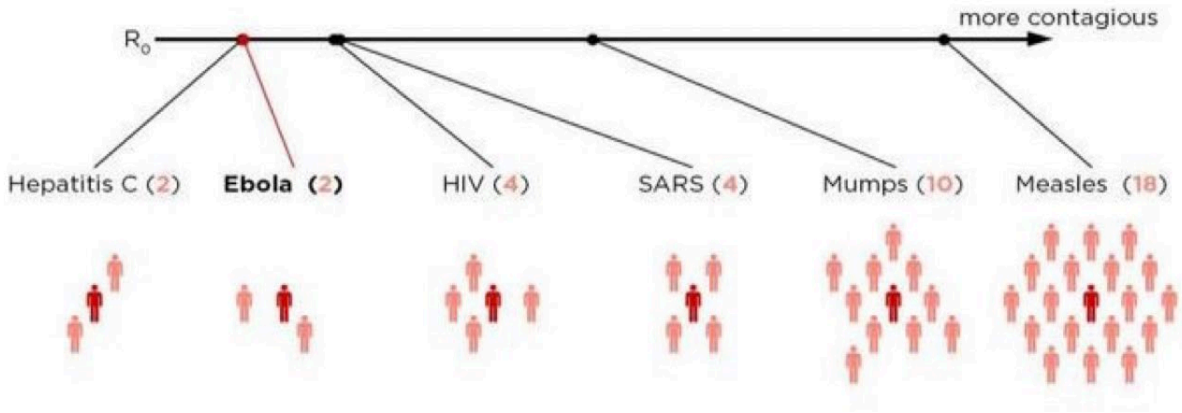
- **Comparison**
  - SARS: 9.6%
  - MERS: 34%
  - Influenza H1N1: 0.1%

How does COVID-19 spread?

- Person-to-person transmission
  - Respiratory droplets expelled when someone coughs or sneezes
    - Land in mouths or noses, inhaled into lungs of close contacts
    - Contaminate surfaces
- Transmission from people who have asymptomatic infection is possible
- Early estimates: R_0 = 2-3

  (each infected person infects

  on average 2-3 people)



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How it all began….

Wuhan, China
Population: 11 million
Trading and manufacturing center

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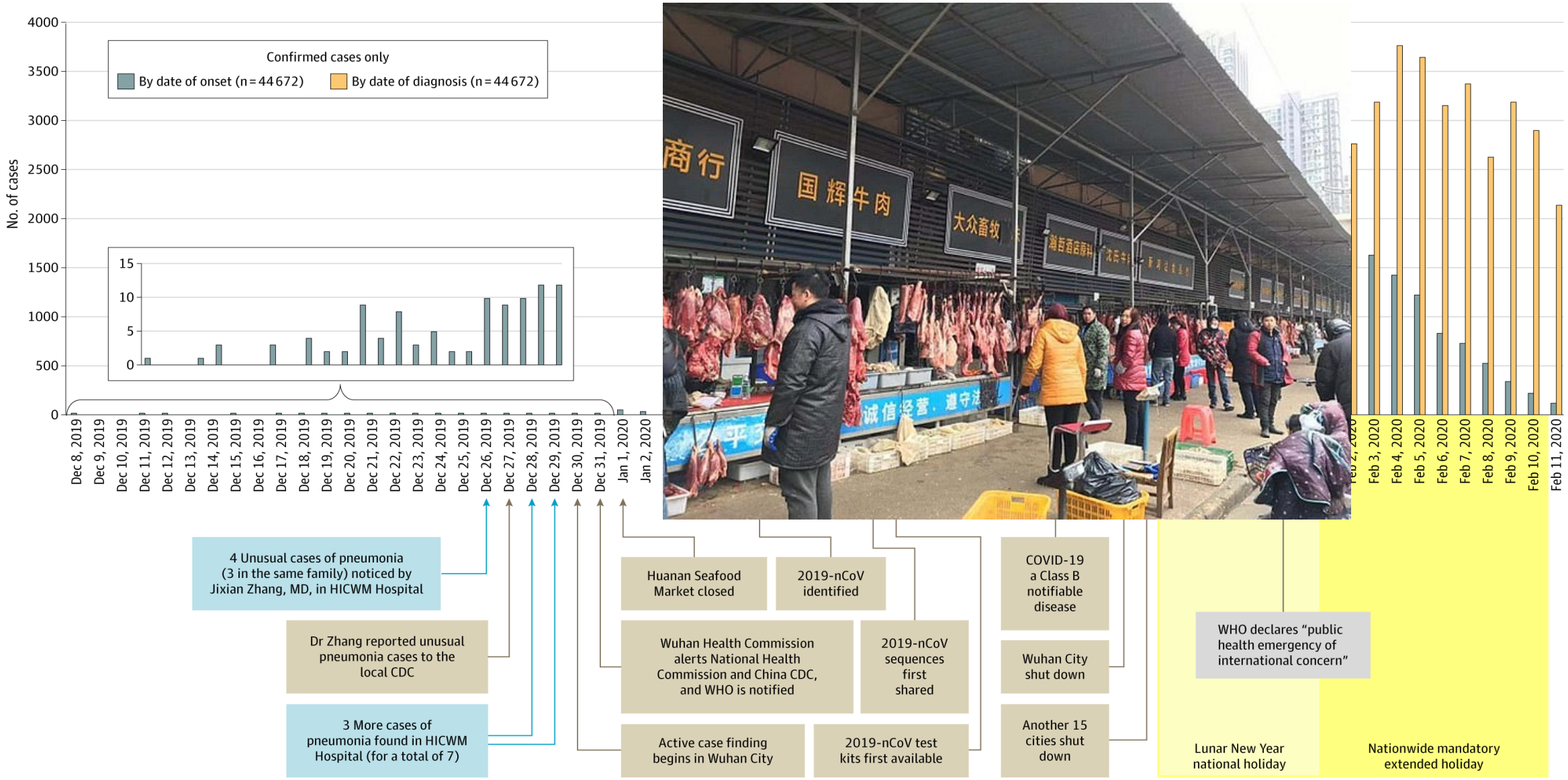
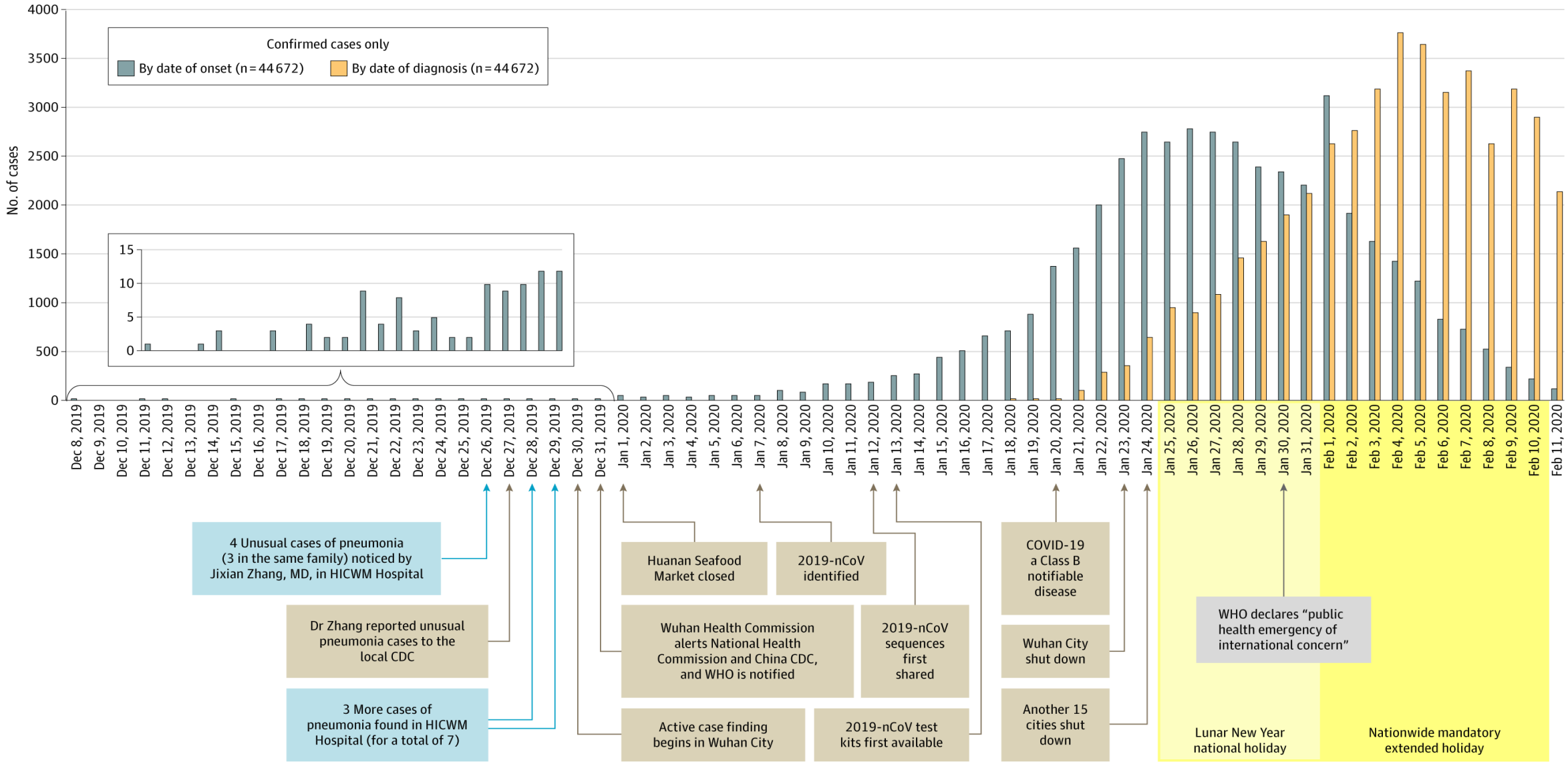

Confirmed cases only
By date of onset (n = 44 672)
By date of diagnosis (n = 44 672)
No. of cases
4000
3500
3000
2500
2000
1500
1000
500
0
15
10
5
0
Dec 8, 2019
Dec 9, 2019
Dec 10, 2019
Dec 11, 2019
Dec 12, 2019
Dec 13, 2019
Dec 14, 2019
Dec 15, 2019
Dec 16, 2019
Dec 17, 2019
Dec 18, 2019
Dec 19, 2019
Dec 20, 2019
Dec 21, 2019
Dec 22, 2019
Dec 23, 2019
Dec 24, 2019
Dec 25, 2019
Dec 26, 2019
Dec 27, 2019
Dec 28, 2019
Dec 29, 2019
Dec 30, 2019
Dec 31, 2019
Jan 1, 2020
Jan 2, 2020
Feb 3, 2020
Feb 4, 2020
Feb 5, 2020
Feb 6, 2020
Feb 7, 2020
Feb 8, 2020
Feb 9, 2020
Feb 10, 2020
Feb 11, 2020
4 Unusual cases of pneumonia (3 in the same family) noticed by Jixian Zhang, MD, in HICWM Hospital
Dr Zhang reported unusual pneumonia cases to the local CDC
3 More cases of pneumonia found in HICWM Hospital (for a total of 7)
Huanan Seafood Market closed
2019-nCoV identified
Wuhan Health Commission alerts National Health Commission and China CDC, and WHO is notified
2019-nCoV sequences first shared
Active case finding begins in Wuhan City
2019-nCoV test kits first available
COVID-19 a Class B notifiable disease
Wuhan City shut down
Another 15 cities shut down
WHO declares "public health emergency of international concern"
Lunar New Year national holiday
Nationwide mandatory extended holiday



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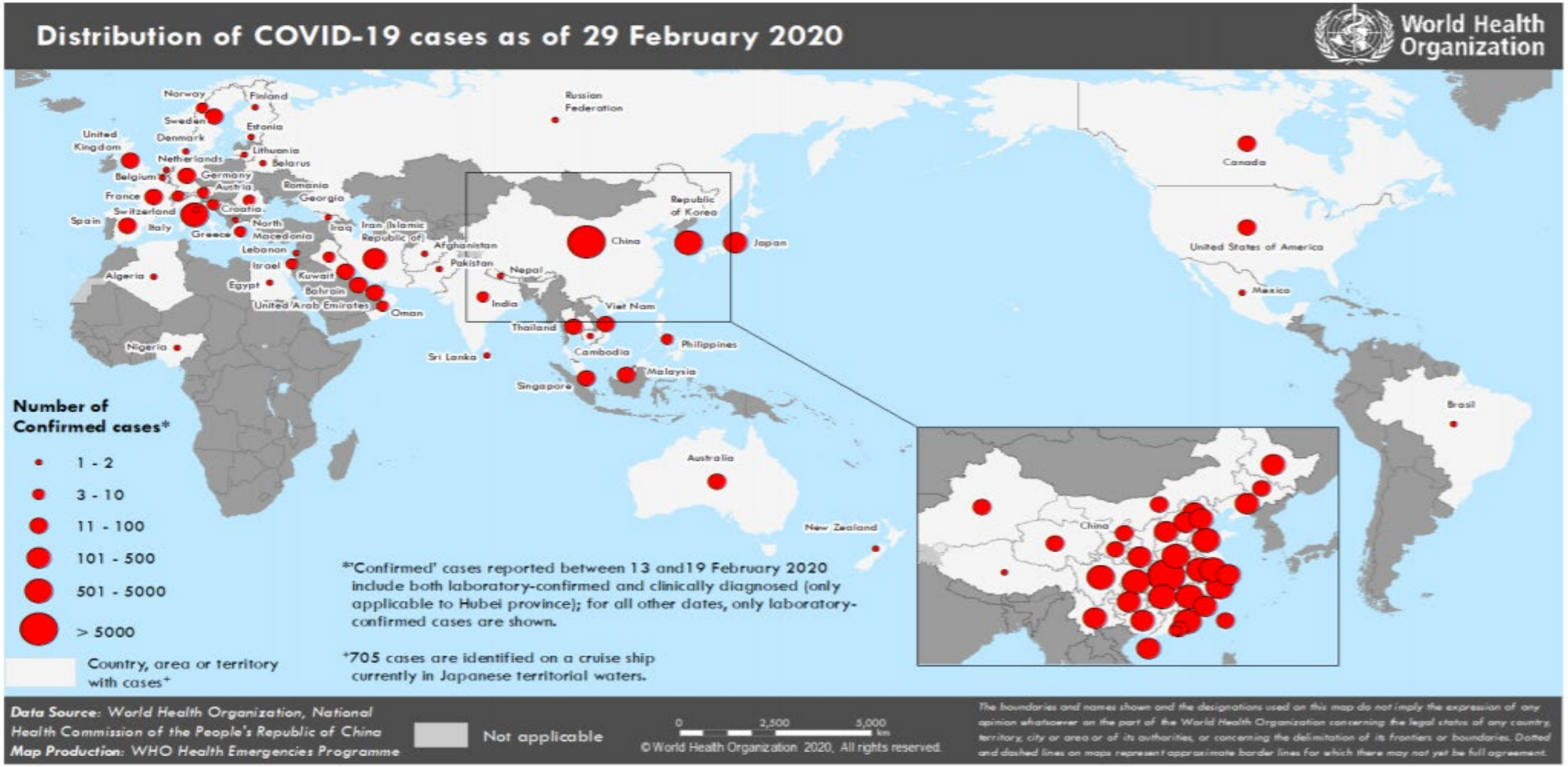
84,403 Confirmed Cases – 6009 Outside of China



US Cases**

- As of 3/2,
  - Cases acquired in the US: 43
  - Total hospitalized: 17
  - Total deaths: 6
  - States reporting cases: 10
    - California, Oregon, Washington, Arizona, Wisconsin, Illinois, Massachussetts, New York, Rhode Island, Florida
  - Healthcare-associated transmission: yes
  - Healthcare facility outbreak: yes

What are we doing at [insert facility] to Prepare?

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Initial Triage and Management

Identify

- Perform travel and symptom screening

Isolate

- Place procedure mask on patient
- Place patient in airborne isolation room OR single room with door closed

Investigate

- Call Infection Prevention
- Put on Appropriate PPE and Perform Secondary Assessment

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1. Identify

Clinical Features	&	Epidemiologic Risk
Fever[1] **or** signs/symptoms of lower respiratory illness (e.g. cough or shortness of breath)	**AND**	Any person, including healthcare workers[2], who has had close contact[3] with a laboratory-confirmed[4] COVID-19 patient within 14 days of symptom onset
Fever[1] **and** signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization	**AND**	A history of travel from affected geographic areas[5] (see below) within 14 days of symptom onset
Fever[1] with severe acute lower respiratory illness (e.g., pneumonia, ARDS) requiring hospitalization and without alternative explanatory diagnosis (e.g., influenza)[6]	**AND**	No source of exposure has been identified

Rapidly Changing!

Highest Risk Countries
China
South Korea
Japan
Italy
Iran

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1. Identify

- Travel Screen
  - [Insert facility-specific details]

2. Isolate

- Place a procedure mask on patient

- Move patient to an Airborne Isolation Room (if available) OR single room with HEPA filter and door closed

- Call Infection Prevention

3. Put on your PPE

- Special Airborne/Contact
  - N95 respiratory or PAPR
  - Gown
  - Gloves
  - Face shield

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3. Perform Secondary Assessment

- Obtain vital signs
- Obtain detailed travel history including locations and departure/return dates
- Obtain dates of onset of symptoms:
  - Cough
  - Fever
  - Shortness of breath
  - Other symptoms

4. Contact Infection Prevention

- Infection Prevention: [insert contact]
- Infection Prevention Nurse verifies the proper isolation
- Hospital Epidemiologist will review the patient with you and make recommendations for next steps

5. Testing for COVID-19

- Currently available from CDC and State Public Health Laboratory and requires approval from the State Epidemiologist On-call
- Based on Patient Under Investigation Criteria
- No testing currently available for patients who have traveled and presenting with mild, vague, or no symptoms

- Test for other respiratory viruses (Rapid Flu versus extended respiratory viral panel)
- Co-infection with other viruses is possible, no data

Lab testing

<u>Requires approval from state epidemiologist</u>

- Send-out to State lab
- Nasopharyngeal swab
- Oropharynageal swab
- Sputum (if productive cough)

Materials for Patients *meeting* CDC criteria

Proper Specimen collection technique

6. Disposition of Patients

- PUI: being tested for COVID-19
  - Not requiring inpatient admission
    - Disposition will be determined in conjunction with Department of Public Health
  - Requiring inpatient admission
    - Current Plan: Patient will be transferred from our ED for inpatient management
    - But always be prepared….

What Changes Could We See?

- Visitor screening and restriction
- Healthcare worker screening

- Cohorting of sick versus “well” patients (locally and system-wide)
- Dedicated respiratory illness evaluation centers

What can I do to protect myself?

- **Wash hands** with soap and water or an alcohol sanitizer that contains at least 60% alcohol – at home and at work
  - Before eating, after coughing/sneezing, after using the restroom
- **Avoid touching your face**
- **Stay home** and avoid other people if you are sick with respiratory symptoms not severe enough to require medical attention
- **Wipe high-touch surfaces** in your workplace and home frequently with disinfectant

https://www.cdc.gov/coronavirus/2019-ncov/preparing-individuals-communities.html

What else can I do now to help [insert facility name] prepare?

- Use personal protective equipment (PPE) as instructed
- Look for opportunities to conserve PPE
  - Check to make sure patient in room before gowning up
  - Bundle care

What do I do if I am sick and concerned that I might have COVID-19?

- **Contact Occupational Health:** [insert contact]
- Occupational Health has an Employee Exposure Plan and will make determinations about employee quarantine, return to work in the event of potential exposure or infection
- Anticipate that healthcare workers who are exposed (at work or in community) to confirmed case will be placed on quarantine
  - This plan will change if transmission becomes widespread as quarantine is no longer an effective strategy

Are people who have traveled restricted from working?

- Employees must self-quarantine for 14 days after return from Level 3 or 4 country (currently China, Iran, South Korea, Italy)
  - Work with you manager if you have upcoming travel planned
- Know that the situation is rapidly changing and traveling may risk quarantine
- Monitor CDC Travel Advisories
- If you have traveled internationally within the last 14 days, monitor symptoms. Contact Occupational Health [insert contact] if you develop fever, cough, or other concerning symptoms

Summary Points

- We are anticipating that we will see cases of COVID-19 in our community
- The extent to which our community will be impacted by COVID-19 is unknown
- COVID-19 has been reported to have a case fatality rate that is lower than SARS but higher than influenza
- The safety of our healthcare workers is top priority
- [Insert facility] are actively preparing for what may come

Team Members and Contact Info

- [List names & contact information]

Questions?

CDC resources: https://www.cdc.gov/coronavirus/2019-ncov/index.html

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