

# HCW and COVID-19 Infection Prevention

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# COVID-19 in HCWs

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- Health care workers (HCWs) are at risk for SARS CoV-2
- Preventing HCW infections:
  - Reducing morbidity & potential mortality in HCW
  - Maintaining health system capacity
  - Reducing secondary transmission

# COVID-19 Exposures



Patient



Community



Household



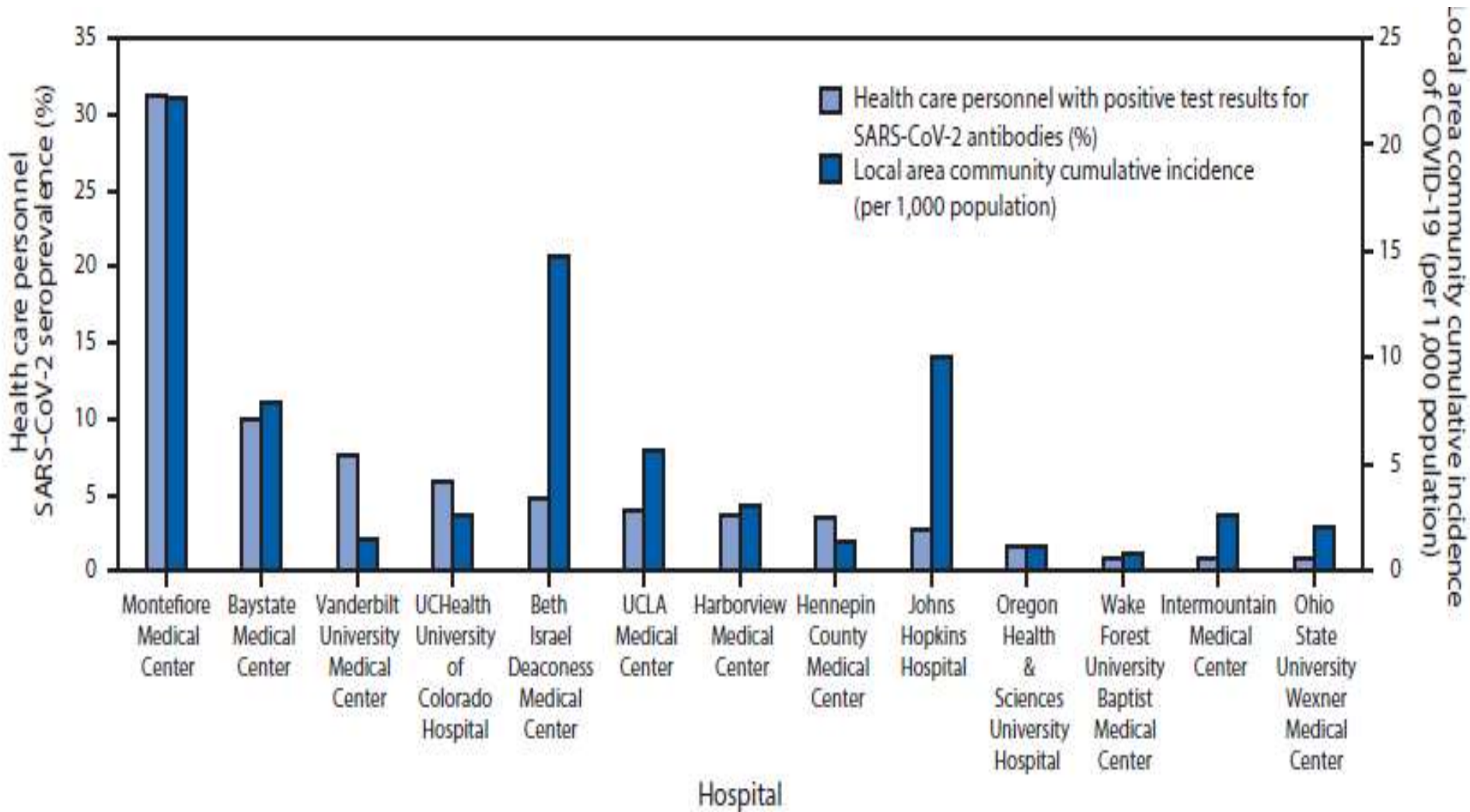
Coworkers

# U.S. HCW COVID-19 Seroprevalence

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- April 3–June 19, 2020
- Frontline HCW working with COVID-19 patients
- 13 geographically diverse academic centers
- 194/3248 (6%) had a positive test  
(Institution range 0.8-31.2%, median 3.6%)

**SARS-CoV-2 seroprevalence among a convenience sample of frontline health care personnel and local area community cumulative incidence of COVID-19\* — 13 academic medical centers, United States, April–June 2020**



# COVID-19 Seropositivity in HCWs

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29%

- No symptoms

69%

- No previous COVID-19 diagnosis

6% vs. 9%

- Seropositivity lower if consistent mask use for patient care, compared to those who did not.

# Risk Factors for COVID-19 in HCWs—Tertiary Care Hospital, Turkey

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- Working on a COVID-19 unit
- SARS-CoV-2 positive person in the household
- Inappropriate use of PPE
- Staying in the same personnel break room as a HCW without a medical mask for >15 minutes
- Consuming food within 1 m of HCW
- Failure to keep a safe social distance from a HCW



# Risk Factors for COVID-19 in HCWs

- Inappropriate use of PPE during the care of suspected or confirmed cases of COVID-19 (OR = 11.295, CI = 2.183-59.429, P = .04)
- Using break rooms with other HCWs without wearing a medical mask for > 15 minutes (OR = 7.422, CI = 1.898-29.020, P = .04)



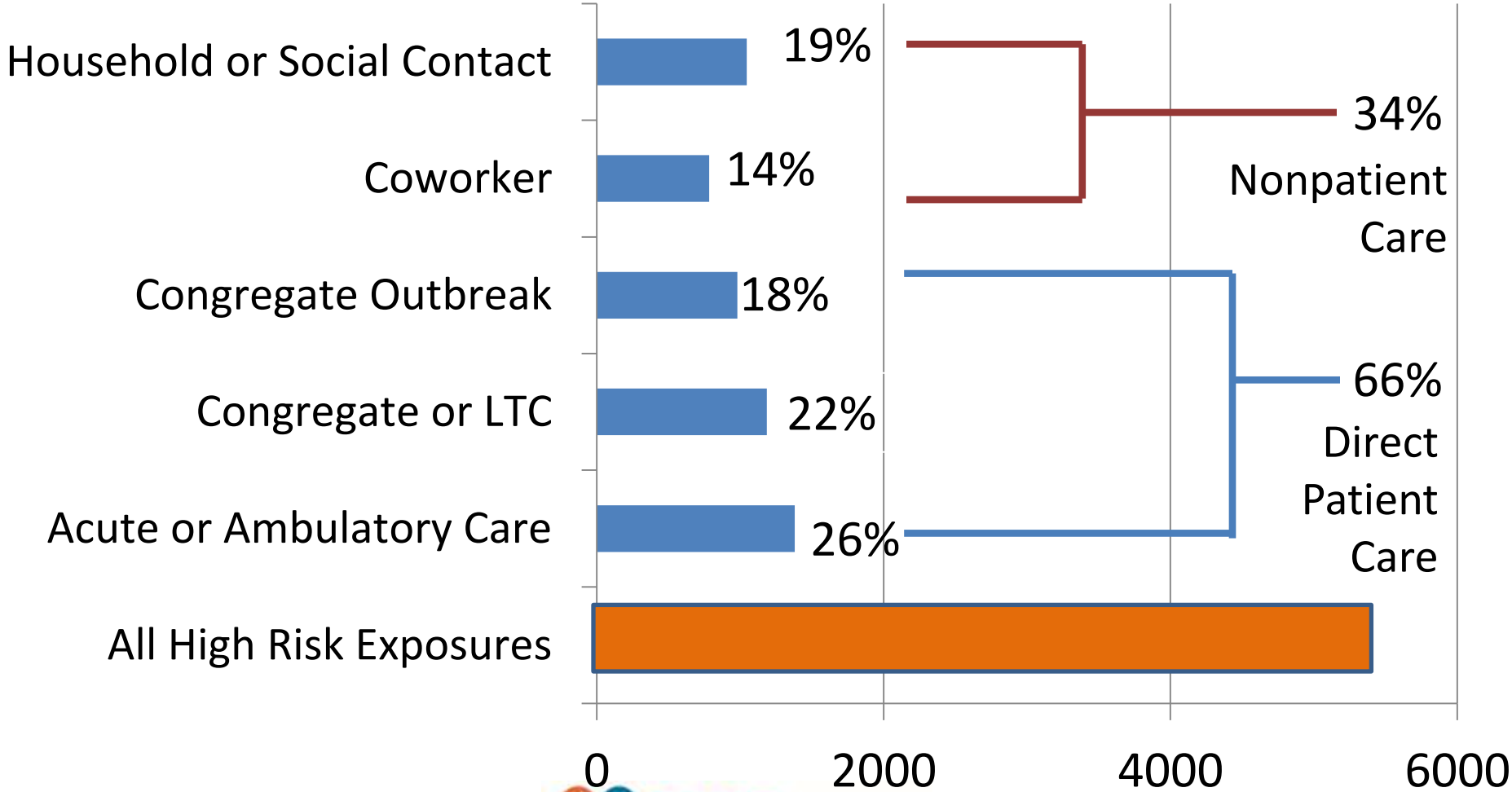
# COVID-19 Exposures in HCWs

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- Minnesota—March 6-July 11
- 1,217 partnering health care facilities
- 21,406 HCW exposures
- 5,374 (25%) were classified as higher-risk

Fell A. et al. MMWR; October 30, 2020;Vol 69 (43) 1605-1610.

# High Risk COVID-19 Exposures Among HCW



Fell A. et al. MMWR; Oct 2020: 69 (43) 1605-1610.

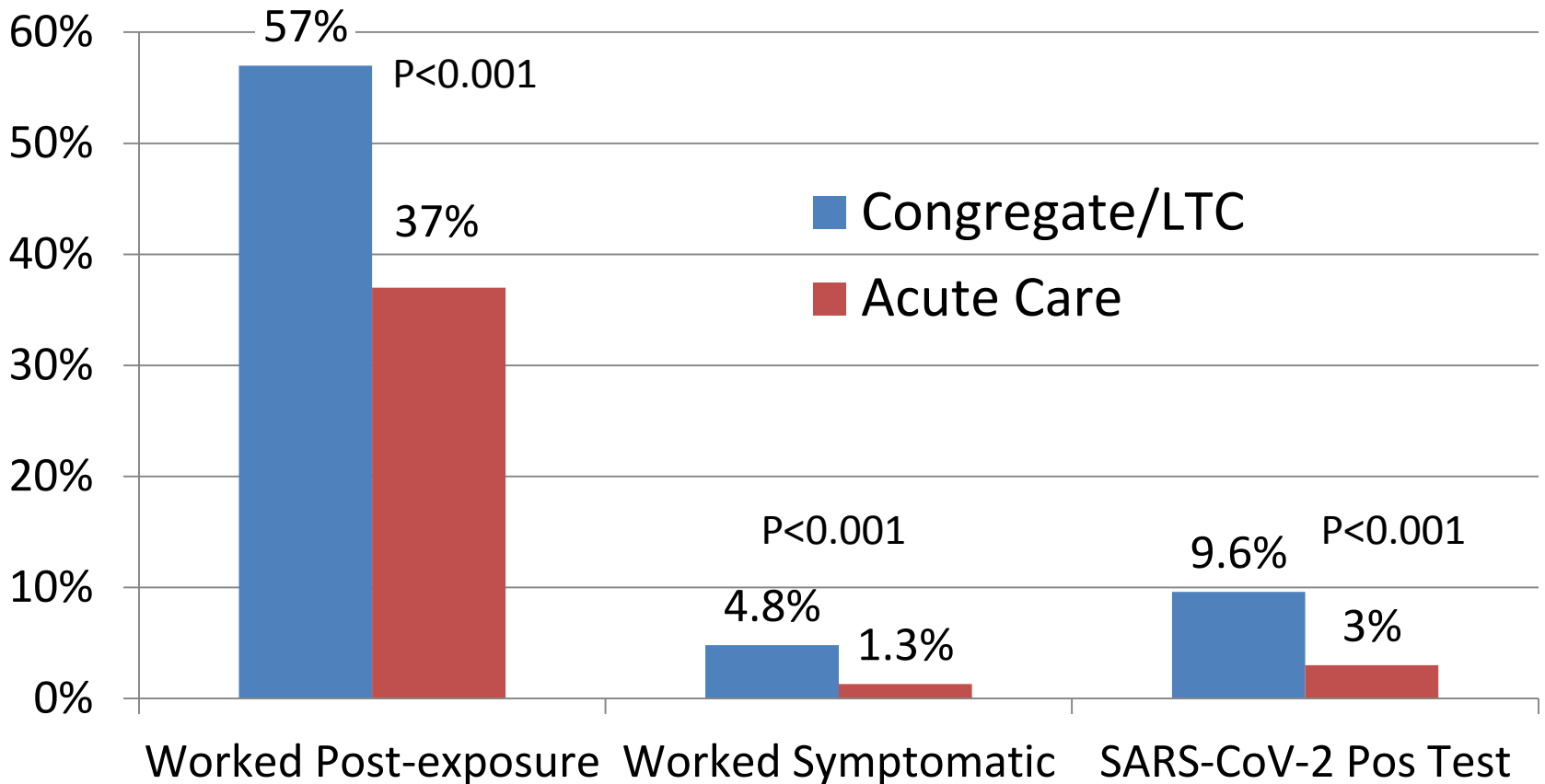


# Implications of HCW COVID-19 Exposures

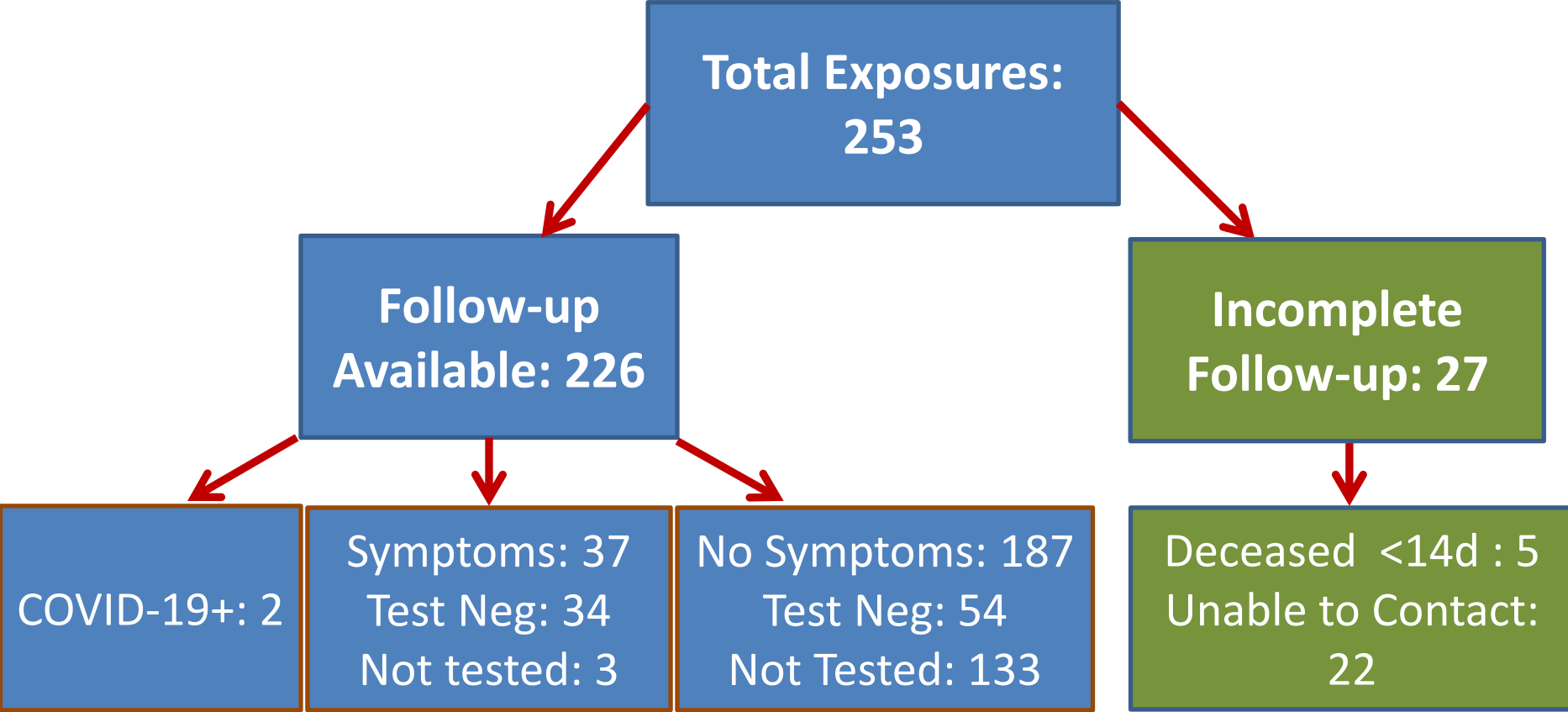
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- HCW with COVID-19 exposed a median of two coworkers (IQR = 1–3).
- $\leq 14$  days following a higher-risk exposure, 6.9% of 5,374 HCW had (+) SARS-CoV-2 test.
- HCW exposed to COVID-19 (+) household or social contacts had the highest positivity rate (13%) among all exposure types.

# HCW Outcomes Post COVID-19 High Risk Exposure



# Outcomes of Patients Exposed to Healthcare Workers with COVID-19

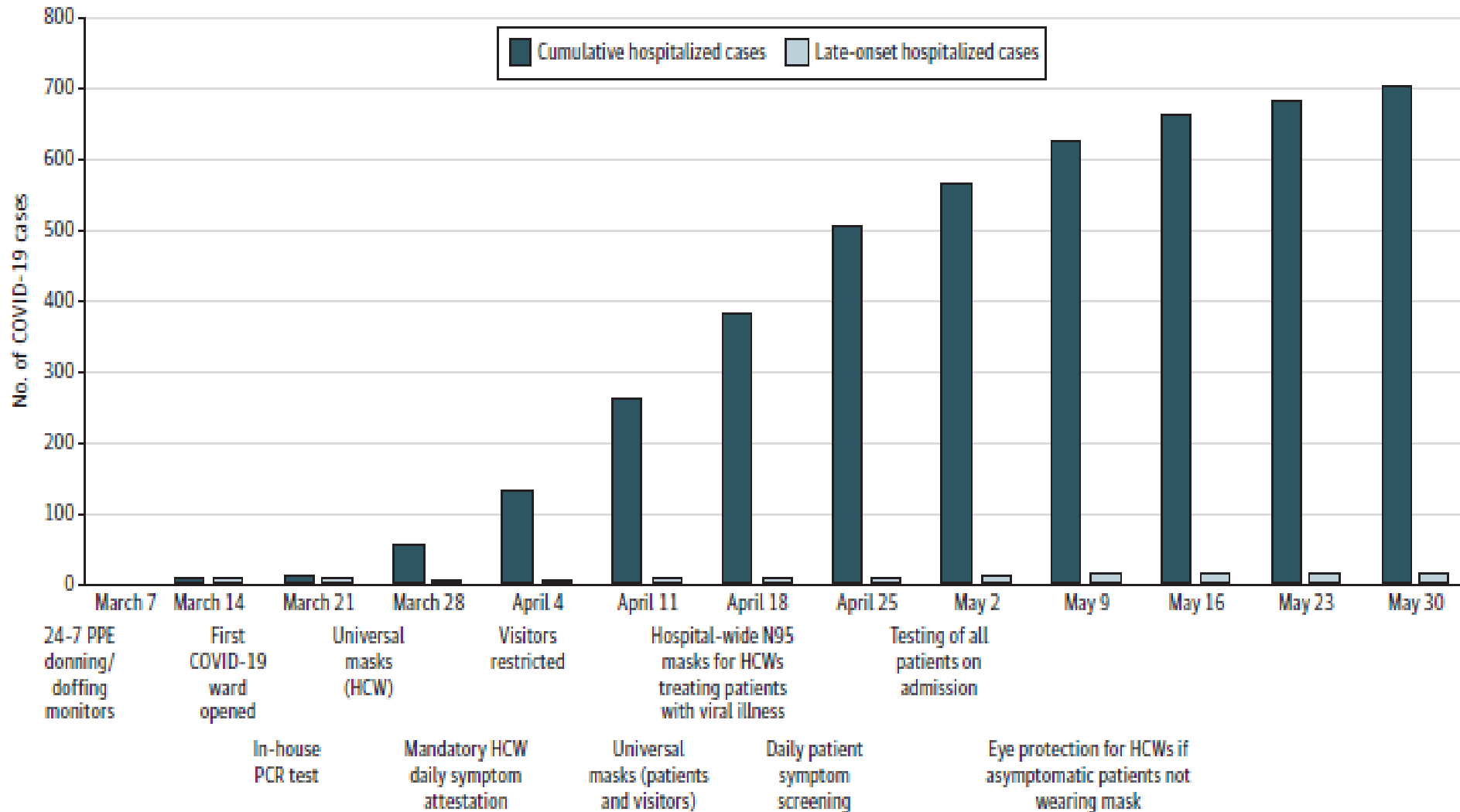


Baker MA et al. Clin Infect Dis. 2020  
Aug 28:ciaa1269. doi:  
10.1093/cid/ciaa1269.



# Incidence of Nosocomial COVID-19 in a US Academic Medical Center

Rhee C et al. *JAMA Network Open*. 2020;3(9):e2020498.  
doi:10.1001/jamanetworkopen.2020.20498

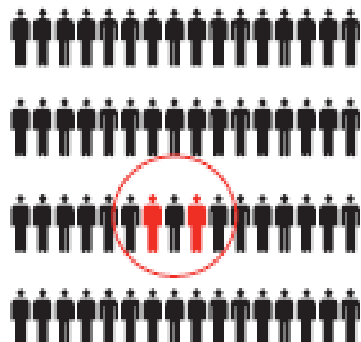


Containment phase

Mitigation phase



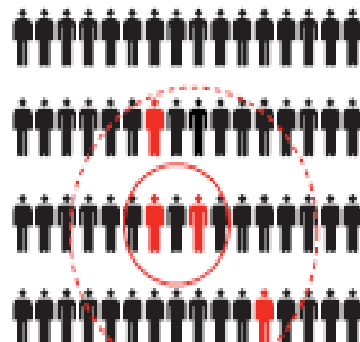
Patients with specific epidemiological links



Most likely source of HCW infection at work

Most promising approach towards identifying SARS-CoV-2 positive HCWs

Some community transmission, but frequently with epidemiological links

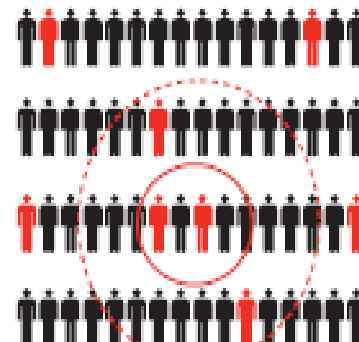


Exposure to patients not fulfilling case definition (no epidemiological criteria, mild or no symptoms, atypical presentations)

Exposure to small number of infected colleagues who themselves acquired infection from patients as above

Standard contact tracing approaches

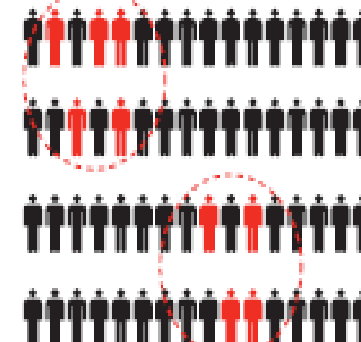
Wider community transmission, rarely with epidemiological links



Exposure to patients with mild or no symptoms or those with atypical presentations

Encourage self-monitoring or support active monitoring of HCWs with direct patient contact with rapid testing of HCWs

Clustered community transmission with ongoing local outbreaks



Exposure to patients when there are breaches in optimal PPE use

Exposure to infected colleagues with various pathways of SARS-CoV-2 acquisition at the bedside and away from patient care (meetings, break times)

Encourage self-monitoring and provide rapid testing to all hospital staff

SARS-CoV-2 circulation established in the community



# Minimizing HCW COVID-19 Exposure & Transmission

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- Consistent PPE availability and use
- Flexible sick leave
- SARS-CoV-2 testing access
- Vigilance to nonpatient exposures
  - Coworkers
  - Household members
  - Social contacts