



The Impact of NHSN's COVID-19 Surveillance for Post-acute Care

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NHSN Annual Training for Post Acute Care

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Objectives

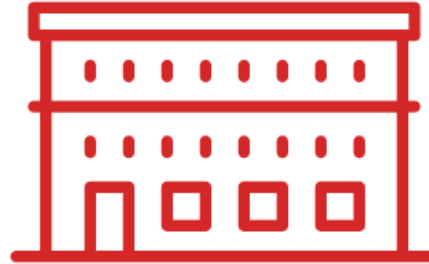
- Review the history of the COVID-19 pandemic and NHSN
- Describe the impact on nursing home and dialysis populations
- Describe the need for a national surveillance system to fill critical gaps during a public health emergency
- Describe how surveillance data informed various public health actions and expanded public health knowledge about the novel SARS-CoV-2 virus
- How to implement lessons learned

Long-term Care – Nursing Homes

Susceptibility of Nursing Homes to Infectious Disease Outbreaks



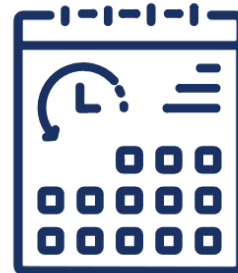
Congregate Setting



Limitations to Built Environment



Population with high-risk
medical conditions



Long lengths of stay

Nursing Home Care is High-contact Care

Dressing

Bathing/Showering

Transferring

Providing Hygiene

Changing Linens

Assisting with
Toileting

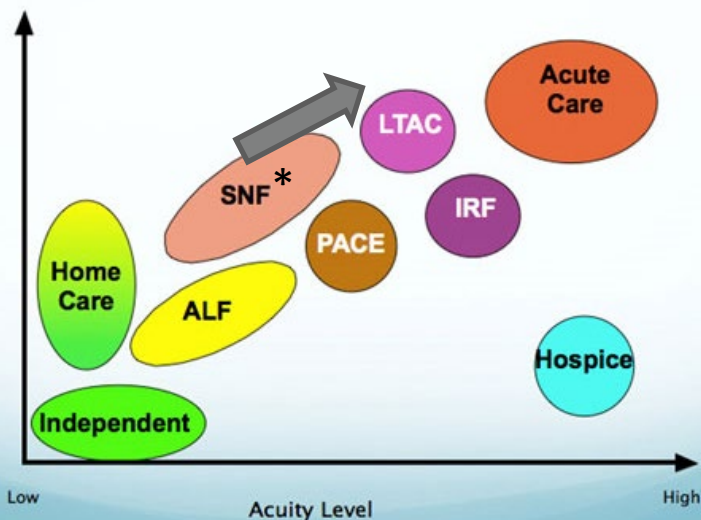
Device Care or Use

- Indwelling catheter
- Trach/vent
- Central line
- Feeding tube

Wound Care

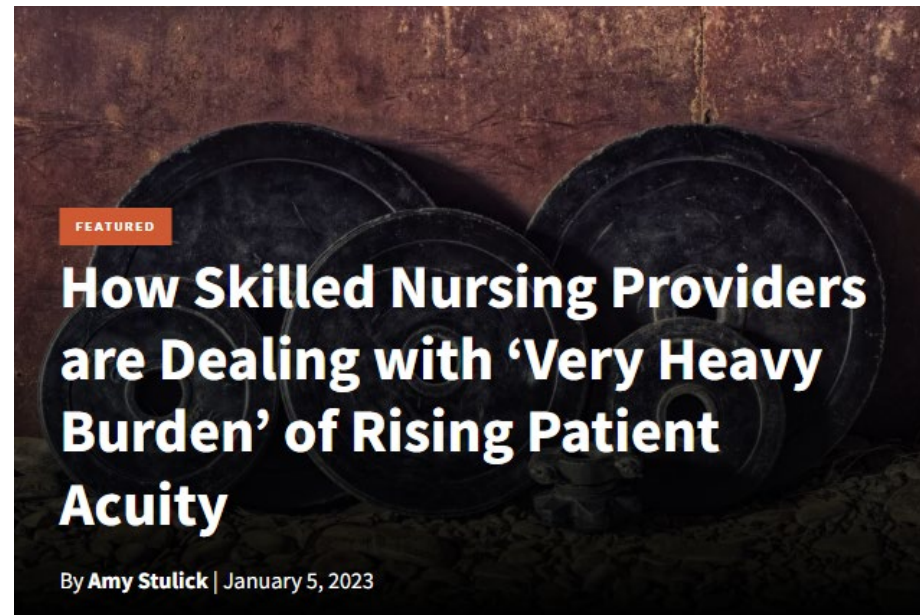
Increasing Acuity

LTPAC Spectrum of Care



*Skilled Nursing Facility (SNF)=Nursing Home

<http://www.ltpachealthit.org/content/about-long-term-and-post-acute-care#SNF>



<https://skillednursingnews.com/2023/01/how-skilled-nursing-providers-are-dealing-with-very-heavy-burden-of-rising-patient-acuity/>

Long-term Care Facility Component

Healthcare-associated Infections (HAI) Module

Urinary Tract Infections (UTI)

Laboratory-Identified (LabID) Event Module

Multi-drug Resistant Organisms (MDRO)

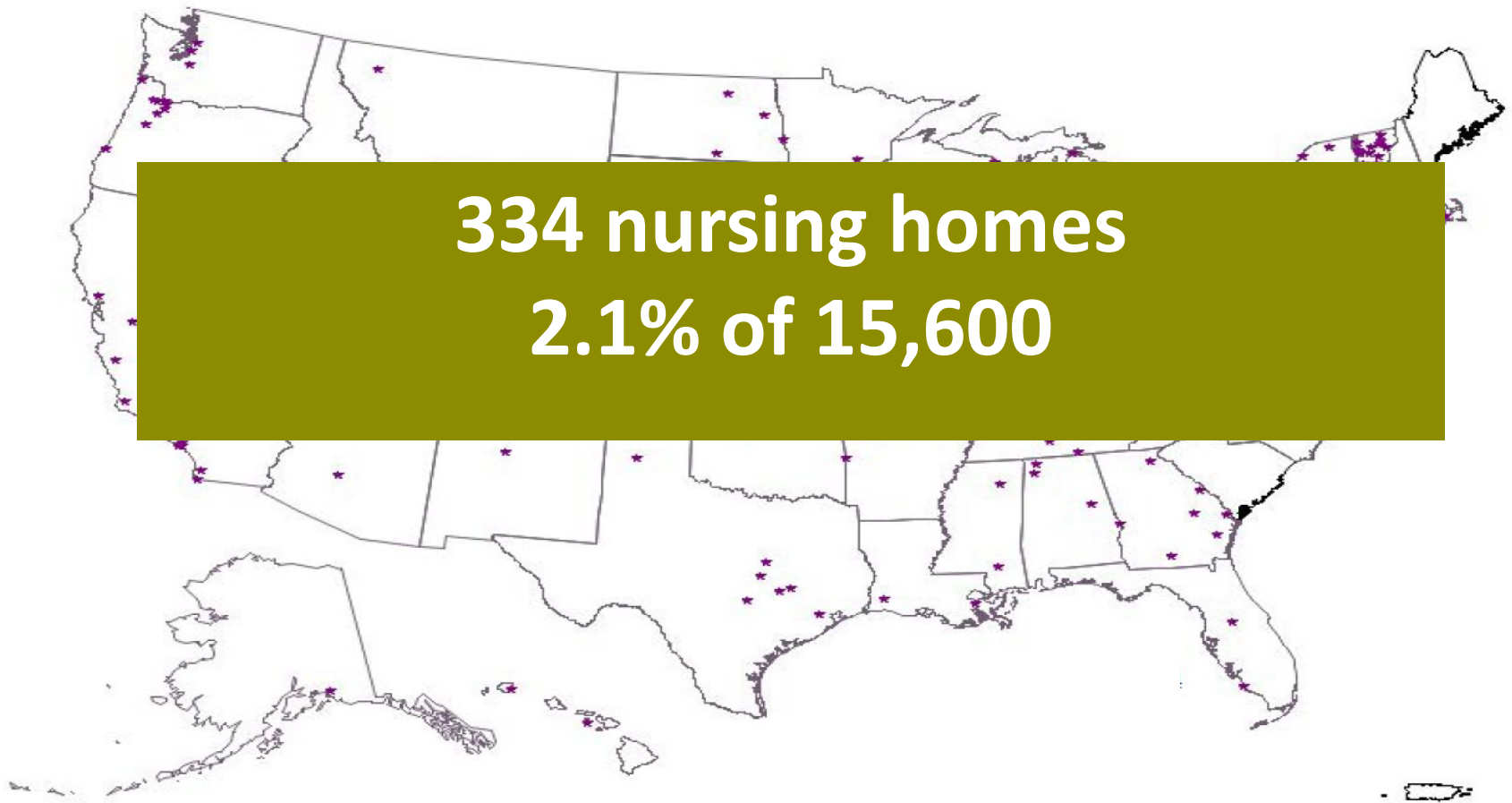
Clostridium difficile Infection (CDI)

Prevention Process Measures Module

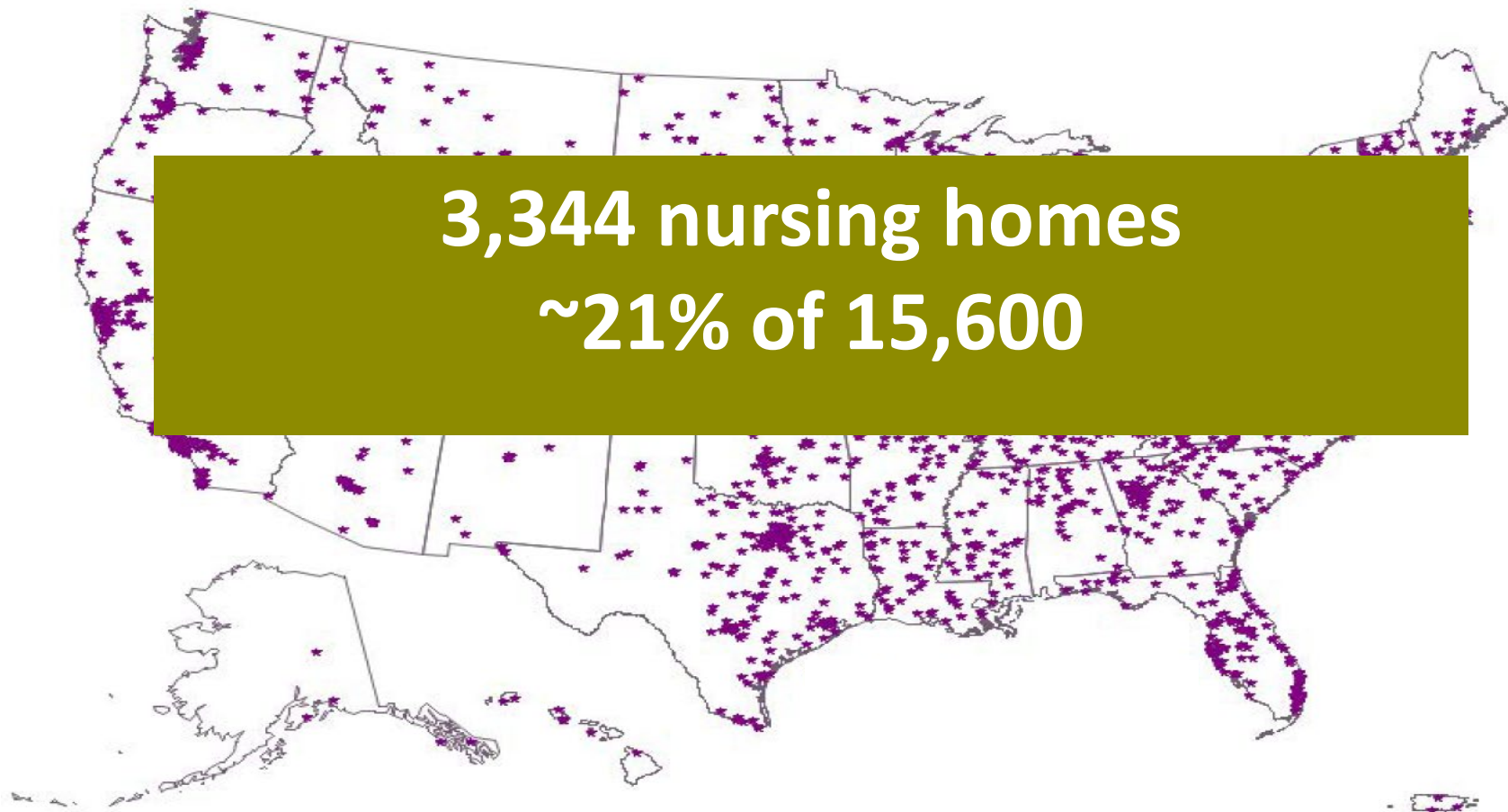
Hand Hygiene

Gowns/Gloves

Nursing Homes Enrolled in NHSN — June 2016



Nursing Homes Enrolled in NHSN — Jan 2019



How COVID-19 Changed Things

The Onset of the COVID-19 Pandemic

December 12, 2019

A cluster of patients in China's Hubei Province, in the city of Wuhan, experience the symptoms of an atypical pneumonia-like illness

January 7, 2020

Public health officials in China identify a novel coronavirus as the causative agent of the outbreak.

2019



2020

January 3, 2020

China informs WHO that they have identified over 40 cases of pneumonia of unknown etiology

January 10, 2020

WHO begins using the phrase "2019 Novel Coronavirus" or "2019-nCoV" to refer to disease causing the outbreak in Wuhan, China.

The Beginning of the U.S. COVID-19 Pandemic in Nursing Homes

January 15, 2020

Worldwide, 282 laboratory-confirmed cases of the 2019 Novel Coronavirus have been reported in four countries

January 20, 2020

CDC reports the first laboratory-confirmed case of the 2019 Novel Coronavirus in the U.S. from samples taken on January 18 in Washington state.

February 29, 2020

4 residents died, 50 associated with the center were being, 25 firefighters who had responded to medical calls at the facility were placed in quarantine

January 17, 2020

CDC begins screening passengers for symptoms of the 2019 Novel Coronavirus on direct and connecting flights from Wuhan, China.

January xx, 2020

Firefighters in Seattle, WA began receiving calls from the Life Care Center in at an alarming rate.

2020

NEWS > HEALTH

Coronavirus Willowbrook

5,368 dead and counting: An investigation of state failures as crisis rampaged through N.J. nursing

Updated: May 20, 2020



A worker shields Washington

AMERICA

4 New Linked to Corona Washington Nurs

BY ZACHARY STIEBER | March 2, 2020 Updated: March 2, 2020

41 confirmed coronavirus cases hit Little Rock nursing home

by Desmond Nugent | Sun, March 22nd 2020 at
Updated Mon, March 23rd 2020 at 5:12 AM



More than four in term care facilities. Advance Media



Brianwood nursing home tests positive for 41 cases (Photo)



LITTLE ROCK, Ark. (K) nursing home in Littl

Coronavirus: 32 with symptoms, including one man who died, connected to Troy nursing home



< Caption

LOCAL NEWS

By Lynn Hulsey

March 20, 2020



Public Health had a Problem

The Pandemic Overwhelmed Public Health Infrastructure and Capacity

- **State health departments launched independent surveillance systems**
- **National surveillance relied on pre-existing case report methods**
 - Voluntarily reported
 - Completed by interviewer
 - Manually uploaded to an electronic CDC secure folder
 - Lacked timeliness
 - Inconsistent data quality
- **CDC performed web-scraping to fill surveillance gaps**
 - Online news stories
 - State health department webpages

Surveillance Gaps Hampered Federal Response Efforts

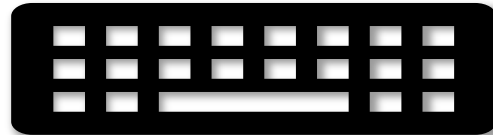
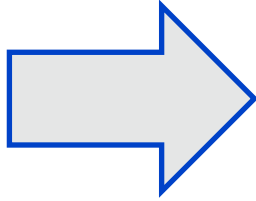
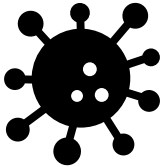
- **The national impact of COVID-19 among nursing homes could not be quantified.**
 - Residents - incidence of COVID-19 cases and deaths unknown
 - Staff - incidence of COVID-19 cases and deaths unknown
 - Facility geographic location and characteristics unknown
- **The status of nursing home mitigation strategies could not be monitored.**
 - Staffing levels
 - Supply of personal protective equipment (PPE)
 - Supply of N95 respirators
 - Availability of testing resources (laboratory access, testing supplies)
 - Vaccination among residents and staff

The Federal Response — National Nursing Home Surveillance

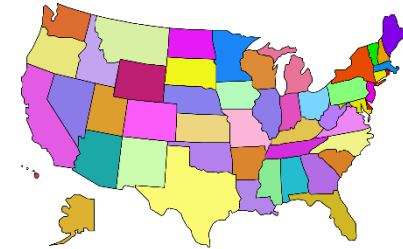
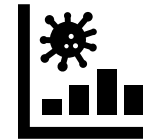
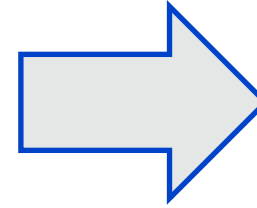


NHSN

NATIONAL HEALTHCARE
SAFETY NETWORK



U.S. CENTERS FOR DISEASE
CONTROL AND PREVENTION



COVID-19 Reporting Requirements for Long-Term Care Facilities — CMS' Final Rule, Effective January 1, 2022

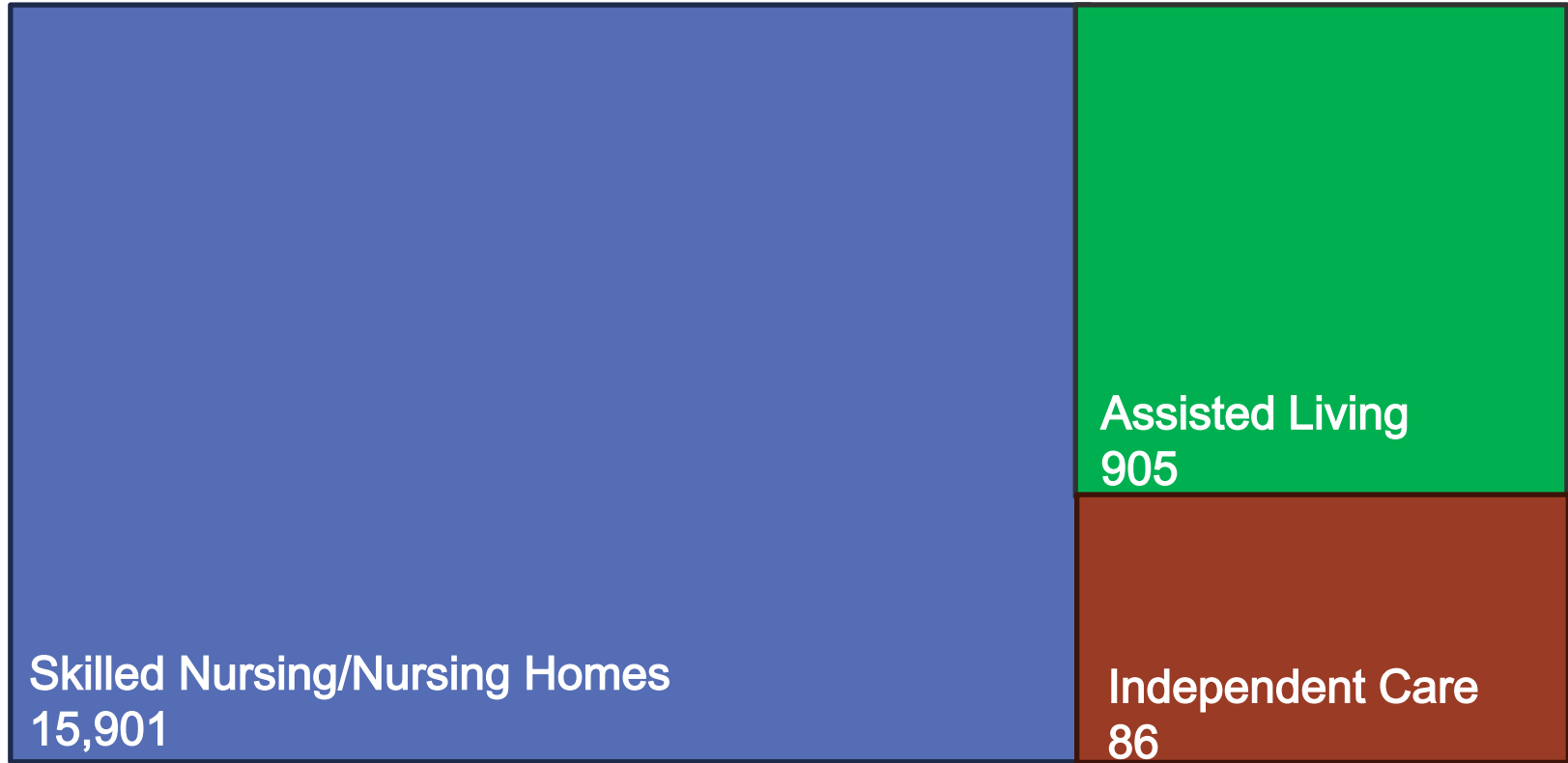
Preceded by interim rules, beginning 2020

COVID-19 reporting. Until December 31, 2024,the facility must do all of the following:

(1) Electronically report information about COVID –19 in a standardized format specified by the Secretary.....



Historic Enrollment of Long-term Care Facilities, July 2024



The Long-term Care COVID-19 Module – May 2020

Resident Impact and Facility Capacity

- Newly Positive Tests
- Vaccination Status
- Deaths
- Testing Supplies

Staff and Personnel Impact

- Newly Positive Tests
- COVID-19 Deaths
- Staffing Shortages

Personal Protective Equipment

- PPE available today
- PPE available in next 7 days

Ventilator Capacity and Supplies

- Ventilator beds
- Beds occupied
- Supply shortage

The Long-term Care COVID-19 Module – May 2021

Resident Impact and Facility Capacity

- Newly Positive Tests
- Vaccination Status
- Deaths
- Influenza
- PPE Shortages
- Testing Supplies

Staff and Personnel Impact

- Newly Positive Tests
- COVID-19 Deaths
- Influenza
- Staffing Shortages

Therapeutics

- Residents treated
- In-house Stock
- Stock Stored Outside the LTCF

Vaccination

- Cumulative Number
- Declined Vaccine
- Unknown Status
- Contraindication to Vaccine

NEW

NEW

The Long-term Care COVID-19 Module – May 2024

Resident Impact and Facility Capacity

- Newly Positive Tests
- Vaccination Status
- Deaths
- Influenza
- ~~PPE Shortages~~
- ~~Testing Supplies~~

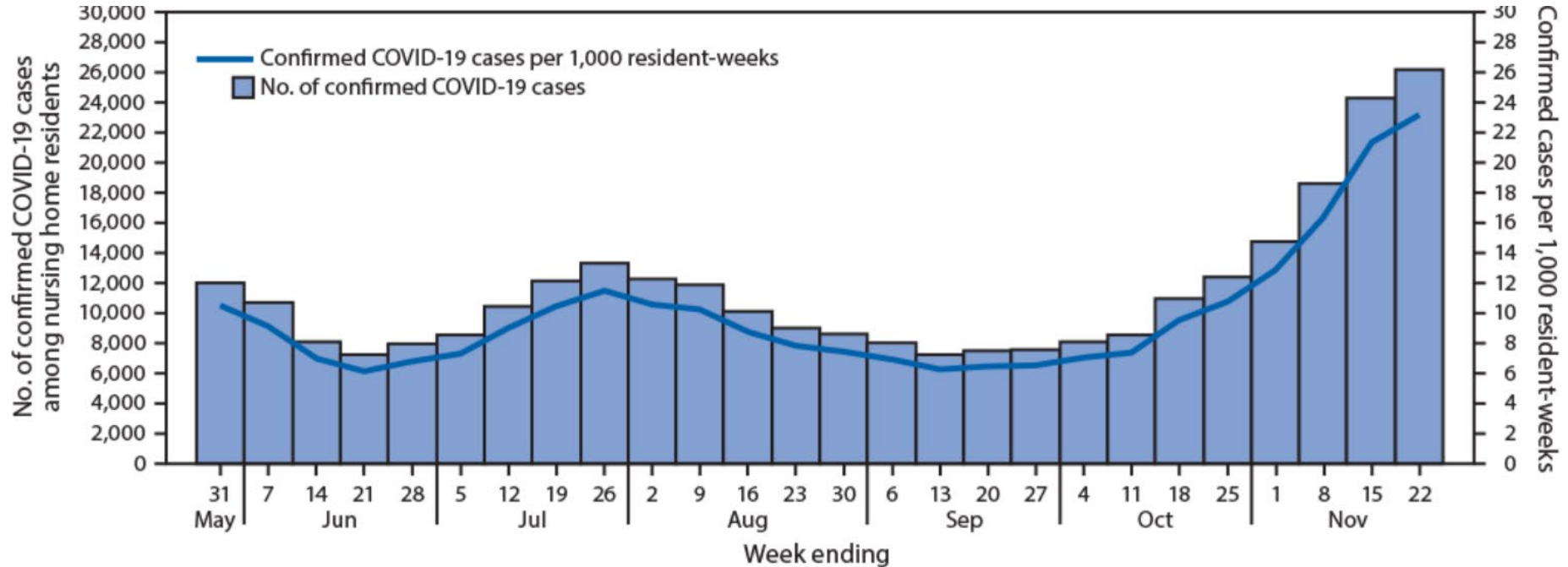
Staff and Personnel Impact

- Newly Positive Tests
- COVID-19 Deaths
- Influenza
- ~~Staffing Shortages~~

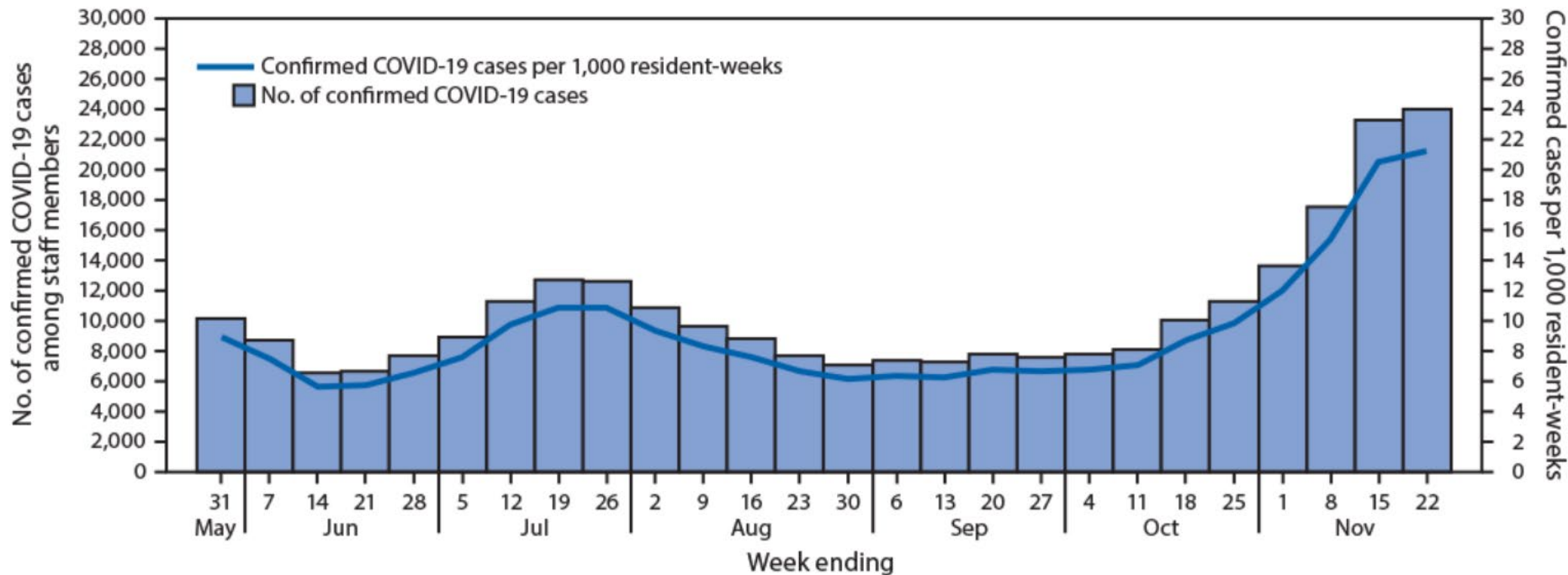
Vaccination

- Cumulative Number
- Declined Vaccine
- Unknown Status
- Contraindication to Vaccine

Rates of COVID-19 Among Residents in Nursing Homes — United States, May 25–November 22, 2020

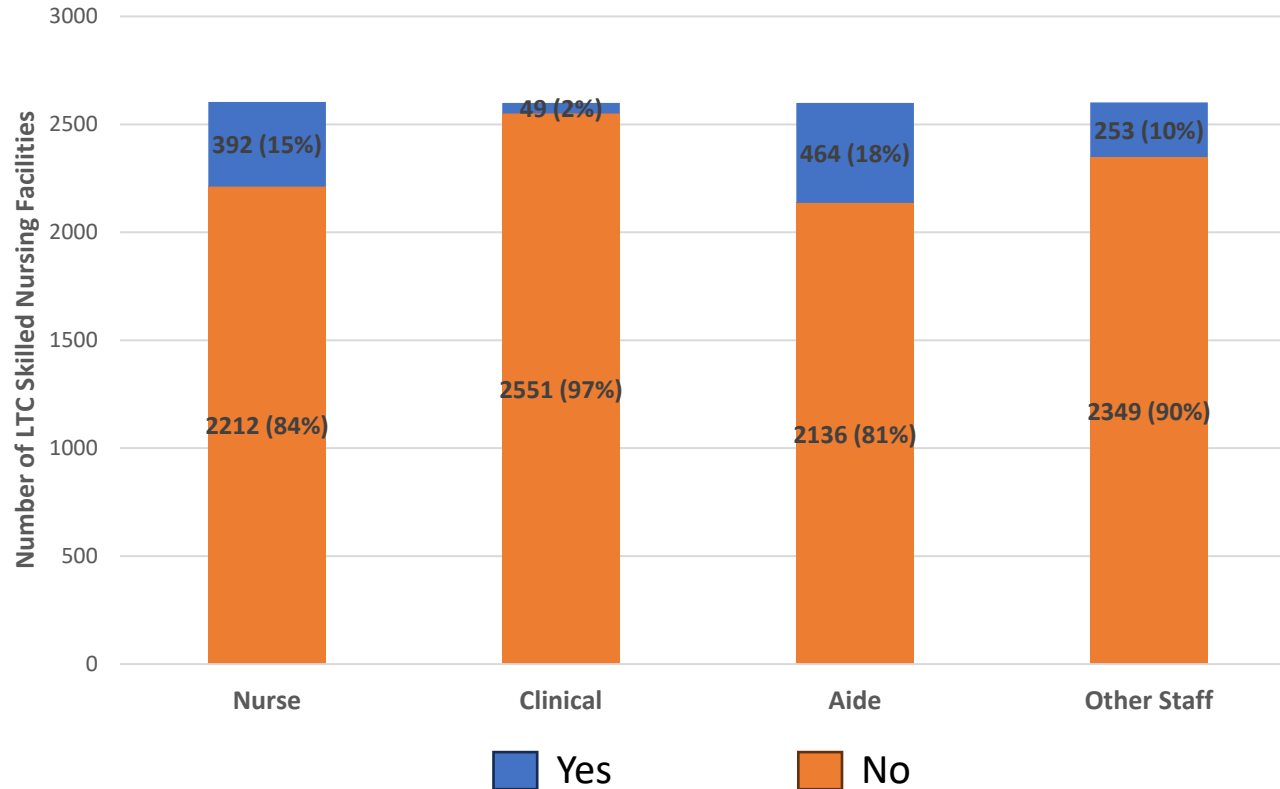


Rates of COVID-19 Among Staff Members in Nursing Homes — United States, May 25–November 22, 2020

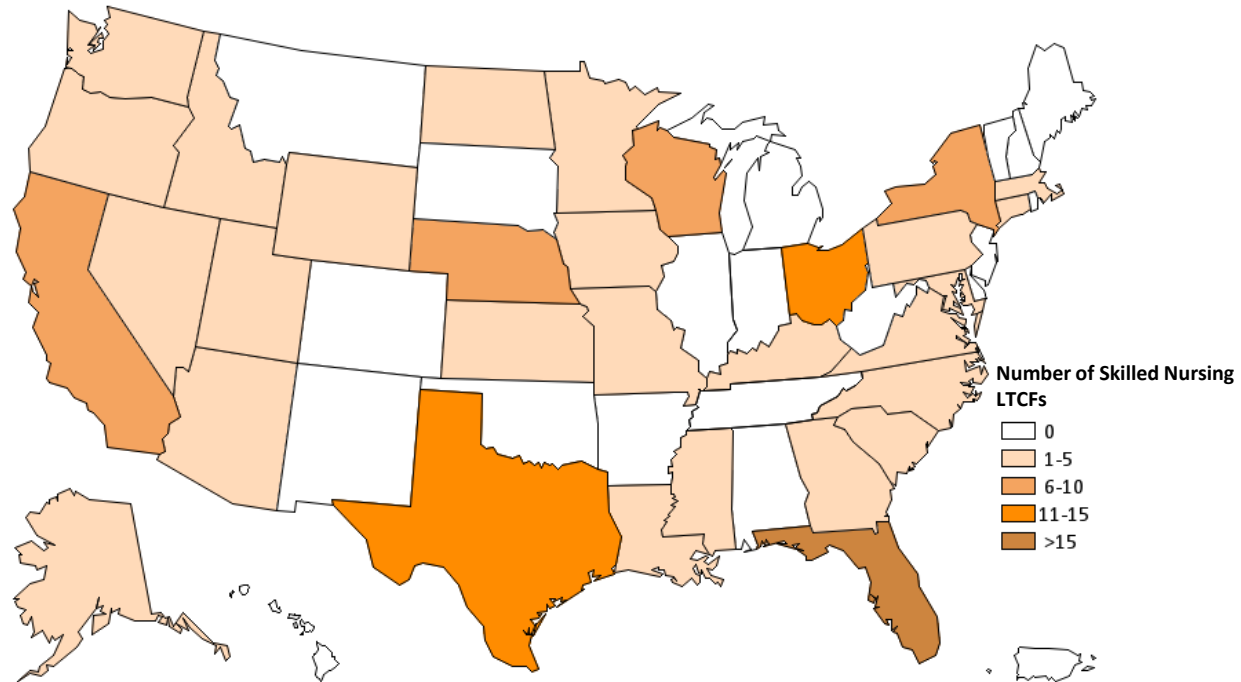


Bagchi S, Mak J, Li Q, et al. Rates of COVID-19 Among Residents and Staff Members in Nursing Homes — United States, May 25–November 22, 2020. *MMWR Morb Mortal Wkly Rep* 2021;70:52–55.

Staffing Shortages Reported by U.S. Nursing Homes, May 4 – May 10, 2020

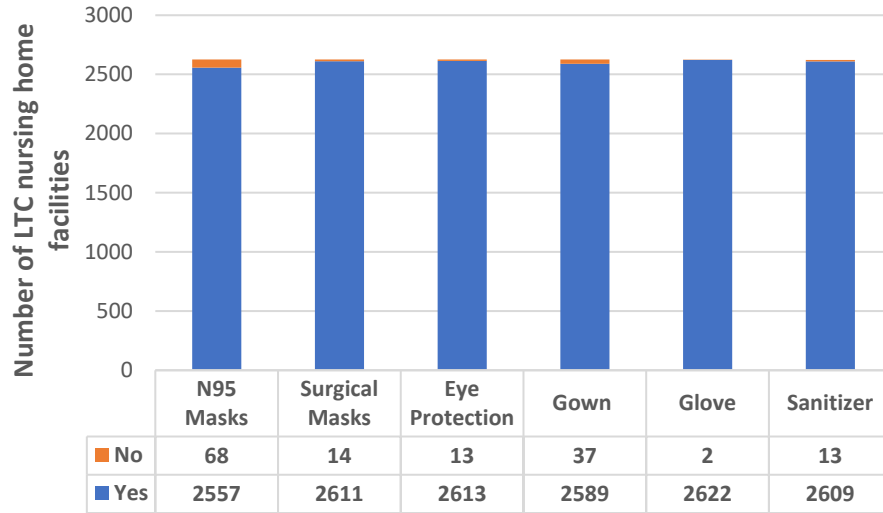


Number of Nursing Homes without Access to COVID-19 Testing, May 5-May 11, 2020

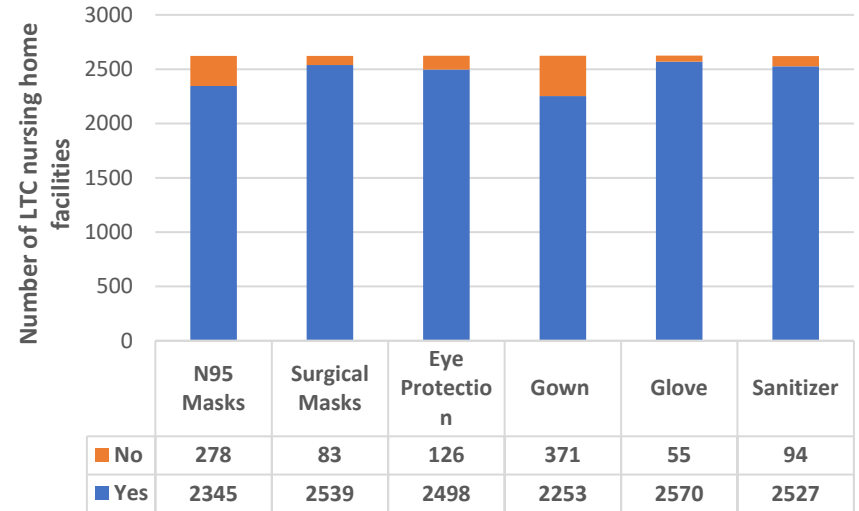


Personal Protective Equipment Supply Shortage at Nursing Homes, May 4-May 10, 2020

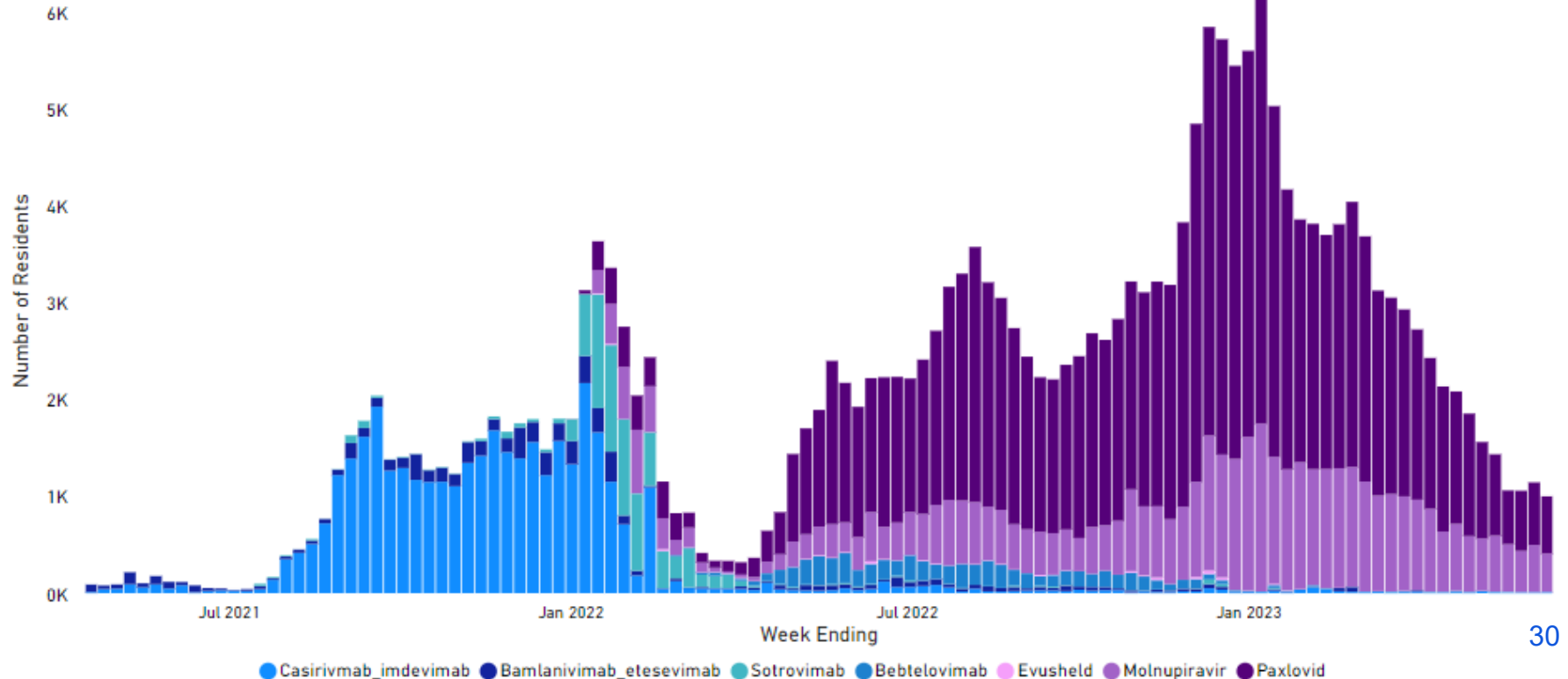
Available supplies for today



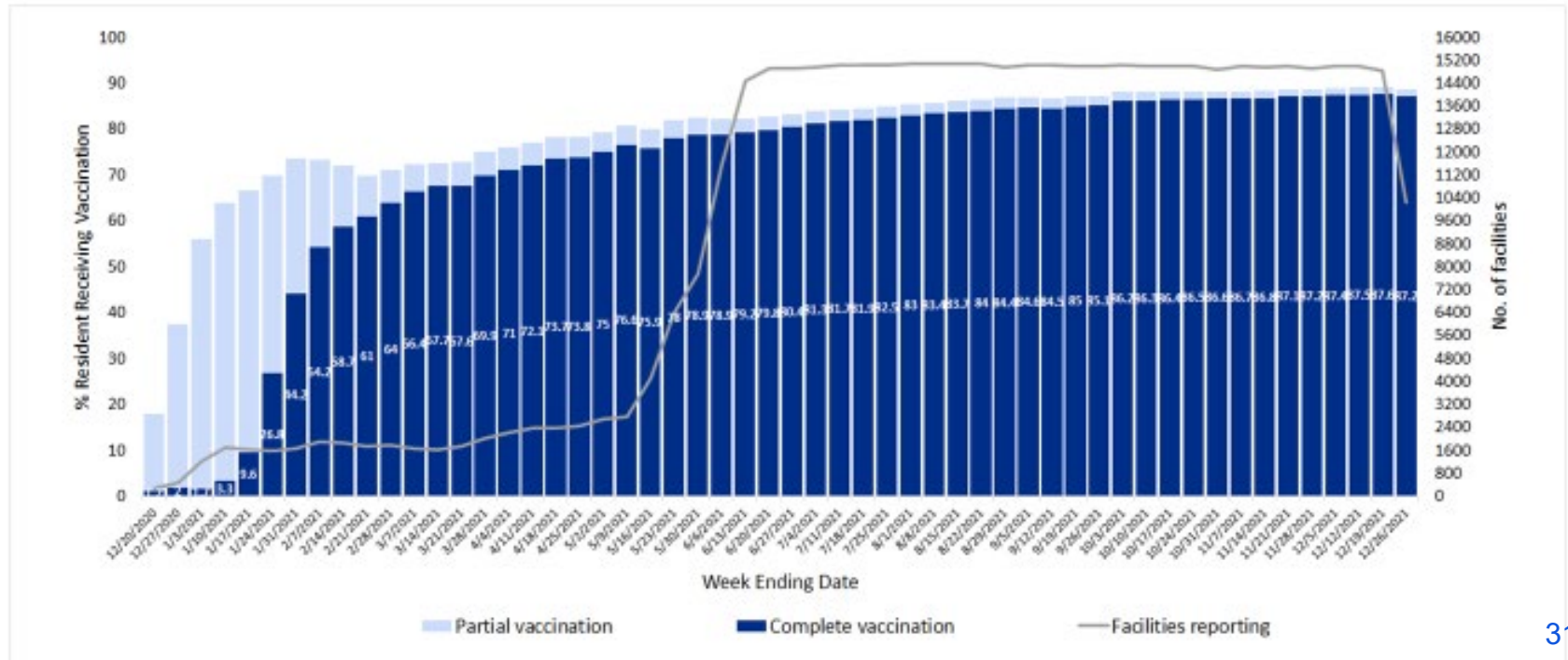
Available supplies for the next week (7 days)



Number of Residents Treated with Therapeutic Medication for COVID-19 — June 2021–February 2023



Weekly COVID-19 Vaccination by Week for Nursing Home Residents, December 2020 – December 2021



NHSN Surveillance Supplied Data for the Federal Response

- **Advisory Committee on Immunization Practices**
 - Phase 1 Vaccine roll-out for older adults and healthcare workers
- **CDC's Vaccine Task Force**
 - Vaccine effectiveness studies
- **HHS Supply Chain Tower**
 - PPE supply distribution
- **State Health Departments**
 - Outbreak response
- **Federal Response Teams**
 - Direct technical assistance



Health Department HAI/AR* Programs



Territories **AS** **GU** **PR** **VI** **MP** **FM** **PW** **MH**



*Healthcare-Associated Infection/Antimicrobial Resistance (HAI/AR)

The Federal Response for National Dialysis Surveillance



Why are Dialysis Patients Disproportionately Affected?

- Older age
- Co-morbidities
- Compromised immunity
- Repeated healthcare exposures
 - Healthcare personnel
 - Dialysis patients
 - Shared transportation
- Patients ***MUST*** receive dialysis treatment!



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Dialysis Component

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graph TD; A[Dialysis Component] --- B[Dialysis Event]; A --- C[Prevention Process Measures]; A --- D[Central Line Insertion Practices]; A --- E[Patient Influenza Vaccination];
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Dialysis Event

Prevention Process Measures

Central Line Insertion Practices

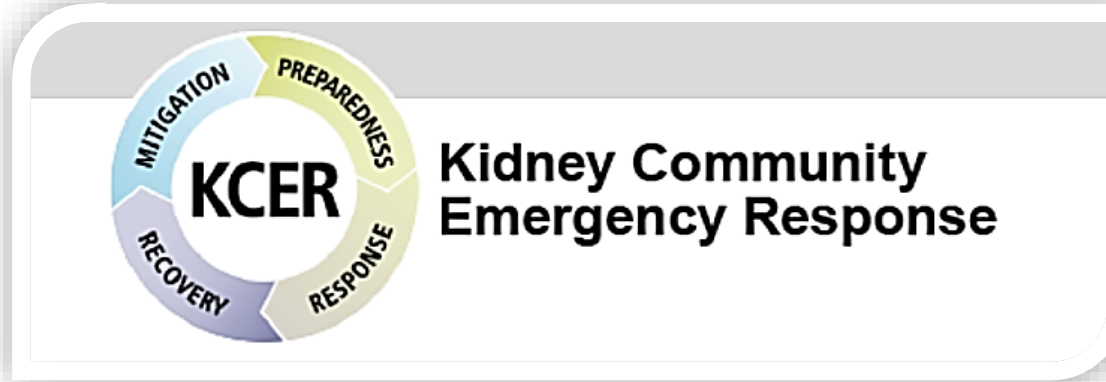
Patient Influenza Vaccination

- Outpatient hemodialysis patients
- Required to report by CMS since **2012**
- ~7,000 facilities reporting average
- Large dialysis organizations complete reporting by Clinical Document Architecture
- Home dialysis eligible to report voluntarily to limited modules

Collaboratively develop and implement a coordinated preparedness and response framework

Provide resources to improve outcomes, empower patients, educate, build partnerships

Under contract with CMS, conducts activities to support ESRD Networks for disaster preparedness and response



Monitor medical updates for treatment and medication recall notices related to ESRD services

Share emergency management standards, and lessons learned from actual emergency/disaster events

The Dialysis Component – COVID-19 Module

Cases – newly tested positive

- Patients and staff
- In-center and home patients
- Patient hospital admissions

Vaccination Status

- Primary series – complete and partial vaccination
- Additional or booster doses
- Up to Date vaccination

COVID-19 Deaths

- Patient
- Staff

Shortages

- Staff and personnel
- Personal protective equipment

Patient Types Eligible for COVID-19 Reporting

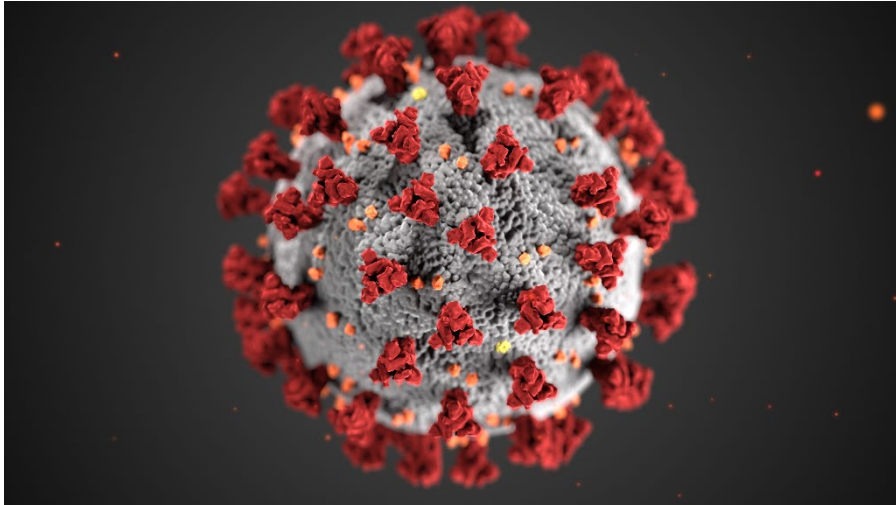
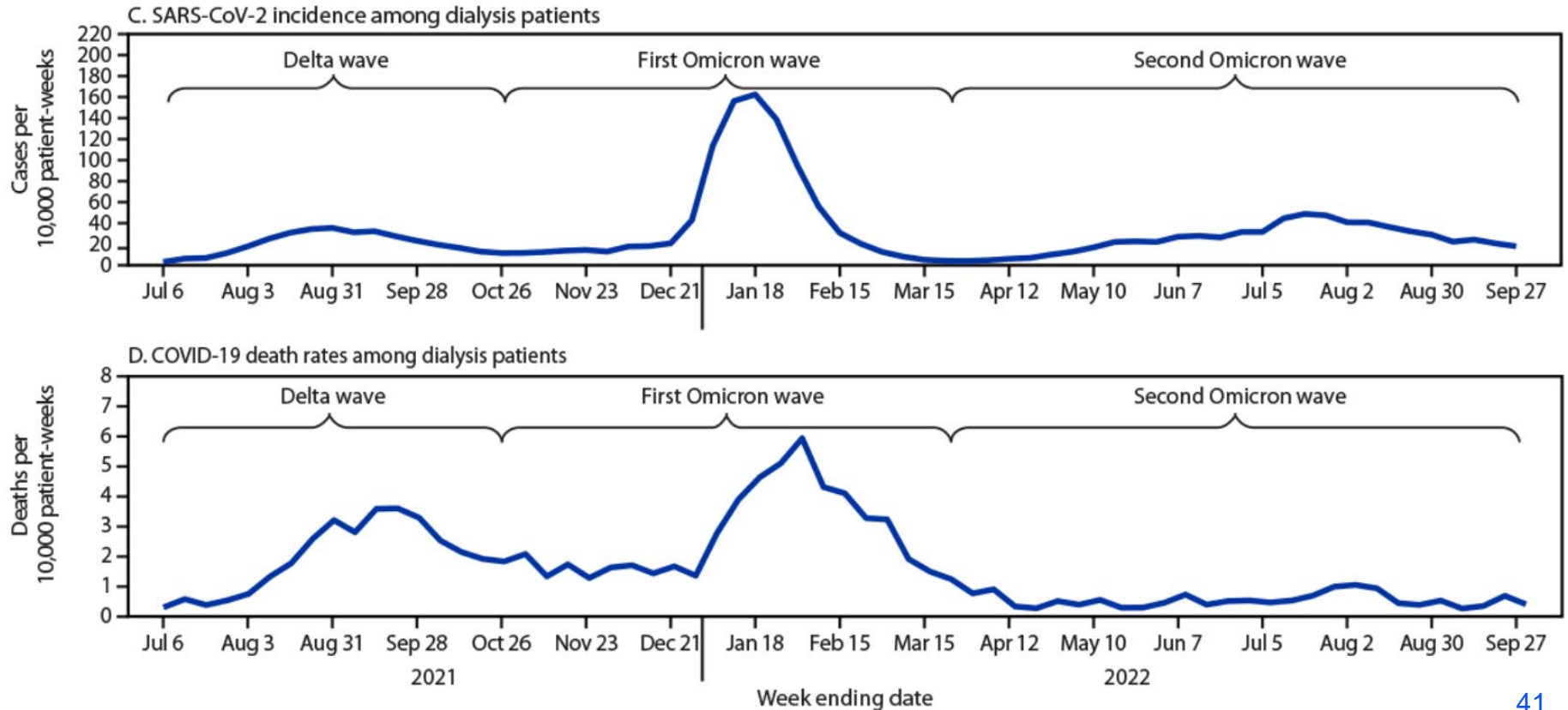


Photo Credit: Alissa Eckert, MSMI; Dan Higgins, MAMS

- Hemodialysis outpatients
- Transient patients
- Peritoneal dialysis patients undergoing temporary hemodialysis
- Transplant patients undergoing temporary hemodialysis
- Outpatients with acute kidney injury
- **Nursing home residents for hemo- or peritoneal dialysis**
- **Permanent peritoneal dialysis patients**
- **Patients performing hemo- or peritoneal dialysis at home**

SARS-CoV-2 incidence and COVID-19–related deaths among maintenance dialysis patients — United States, June 30, 2021–September 27, 2022



Response Activities of the Florida Department of Health

- **Healthcare-associated Infection Program fostered relationships to minimize blood stream infections and COVID-19**
- **Performed 515 Infection Control and Response (ICAR) evaluations.**
- **Provided onsite support to outpatient facilities reporting 10 or more COVID-19 cases**
- **Revised the ICAR to gather details about PPE shortages**
- **Monitored blood stream infections**
- **The NHSN data allowed the HAI Prevention Program to target outpatient dialysis facilities reporting 10 or more COVID-19 cases**

Closing remarks

Lessons Learned from Public Health and Healthcare's Response to COVID-19

- **Beware and stay prepared! Continue to build capacity to ensure emergency readiness**
- **Leverage the surveillance infrastructure to build capacity to improve healthcare quality**
- **Maintain private and public partnerships to fill resource gaps and improve healthcare safety**
- **Identify additional opportunities to improve usability of surveillance data to expand its value beyond emergency response situations**
 - Engage electronic health record vendors
 - Engage state health departments
 - Simplify reporting

Questions or Need Help?

Please use **NHSN-ServiceNow** to submit questions to the NHSN Help Desk. The new portal can be accessed at <https://servicedesk.cdc.gov/nhsncsp> and should be used in place of nhsn@cdc.gov, nhsntrain@cdc.gov, and nhsndua@cdc.gov.

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

