

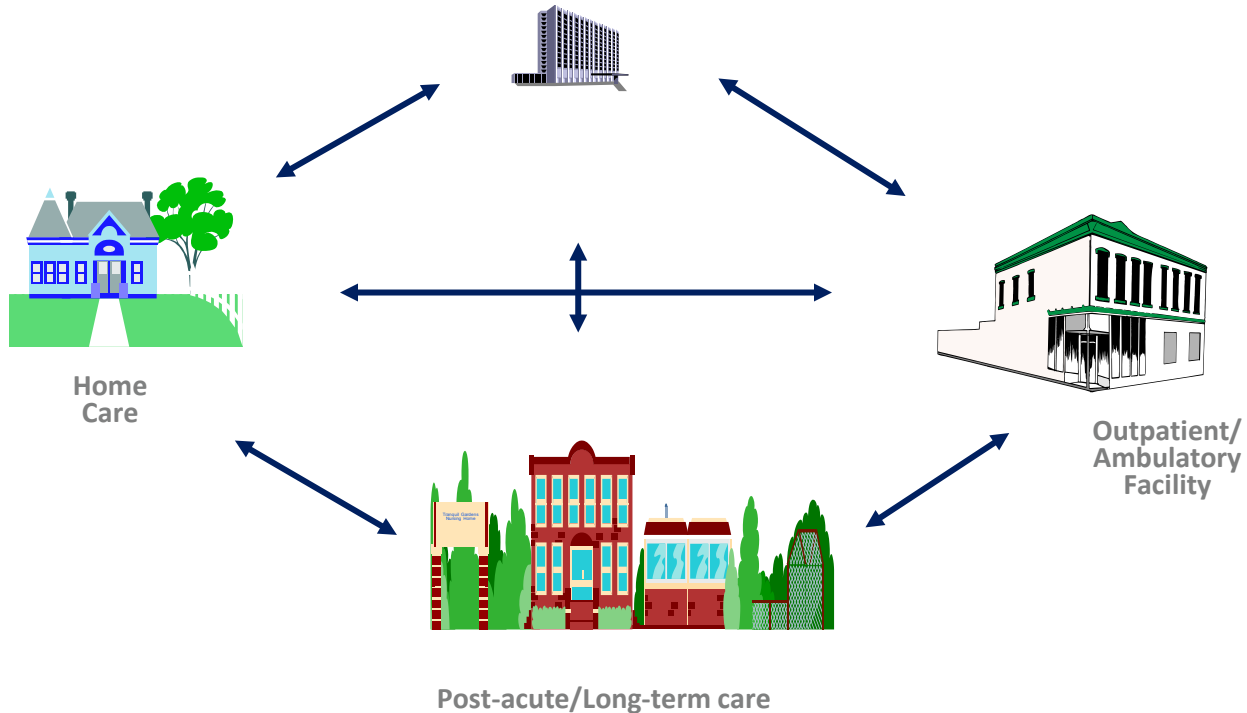


National Healthcare Safety Network (NHSN) Long-term Care Component Past, Present, Future

Theresa Rowe, DO, MS
Long-Term Care Unit Lead

Post-Acute Care Annual Training
July 23,2024

Shifting Healthcare Delivery Away From Hospitals



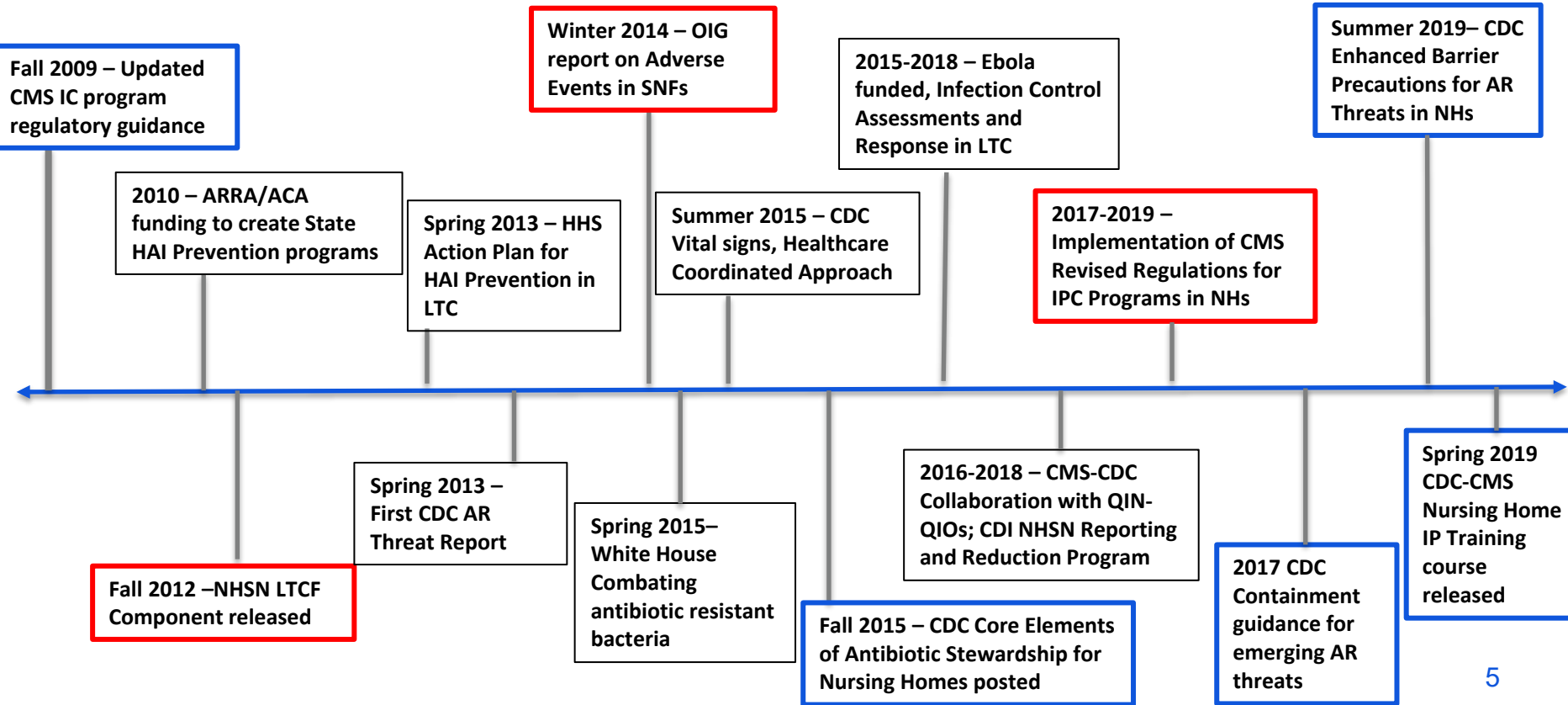
Objectives

- **Discuss how the National Healthcare Safety Network (NHSN) has evolved to meet the changing landscape in nursing homes**
- **Examine the benefits of infection surveillance in nursing homes and review examples of how surveillance improved resident safety during the pandemic**
- **Review upcoming modifications to surveillance using the National Healthcare Safety Network and discuss potential opportunities to improve surveillance and resident safety**

NHSN LTC Component – 2009-2019

Pre-Covid

Nursing Home Policy Drivers 2009-2019 (Pre-Covid)

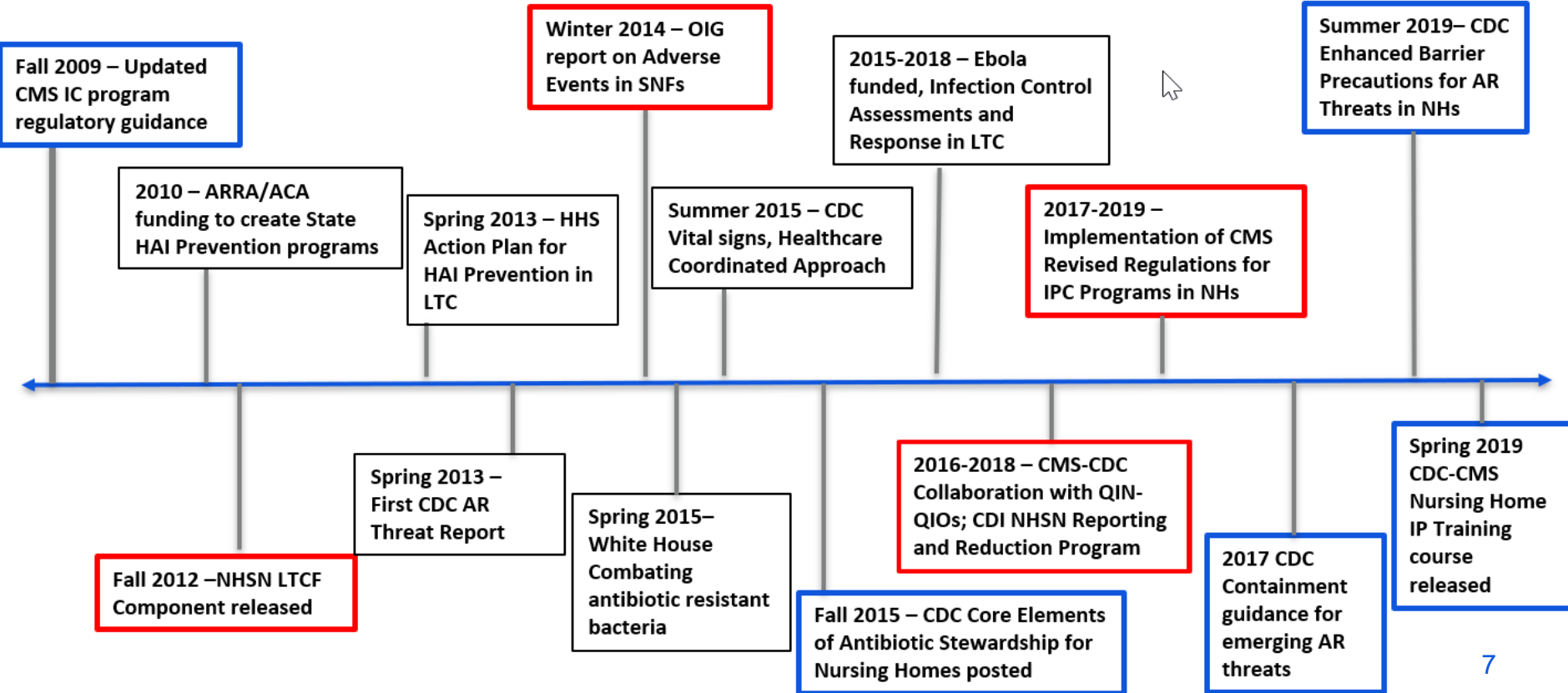


2014 OIG Report

- Infections were among the most common cause of harm; accounting for 26% of adverse events

Type of Harm	Events related to infection	Infection events deemed preventable	Transfers to hospital from infection event
Adverse events (n=148)	39 (25.8%)	22 (59%)	34 (87.2%)
Temporary (n=113)	20 (16.8%)	9 (45%)	NA

Nursing Home Policy Drivers 2009-2019 (Pre-Covid)



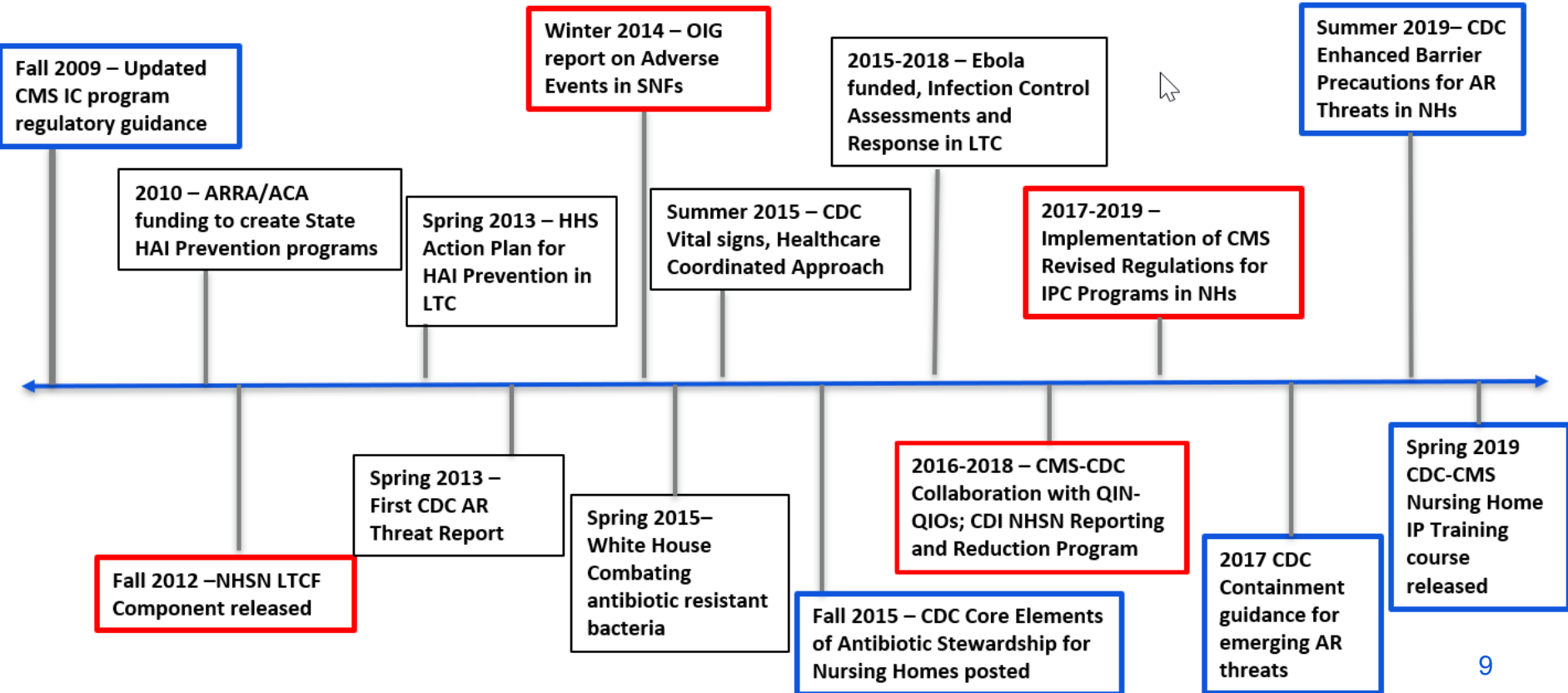
CMS QIN-QIO C. difficile reporting and reduction project, 2016-2018

- QIN-QIO programs working with nursing homes – launched at end of May 2016
- Recruited ~2300 NHs to enroll and report into the NHSN
- Reported CDI data from March 2017 - Dec 2018
- CDC, CMS and partners developed a portfolio of training resources to support NHSN engagement and promote CDI prevention in participating facilities

The screenshot shows the website for the National Nursing Home Quality Improvement Campaign, specifically the section for C. Difficile & Antibiotic Stewardship. The header includes the National Nursing Home Quality Improvement Campaign logo and navigation links for PARTICIPANTS, RESOURCES, GOALS, ABOUT, and CONTACT US. The main heading is "C. DIFFICILE & ANTIBIOTIC STEWARDSHIP". Below this, a text block states: "We've gathered resources from four national initiatives to support your work on C. difficile and Antibiotic Stewardship. The tools, educational opportunities and other resources from these four initiatives are complementary, so mix and match to make the package that works best for you. Not finding what you need? Please let us know at Help@nhQualityCampaign.org." A yellow button says "Start here with a 7 minute introductory video". Below are two columns of resources:

- National Nursing Home Quality Care Collaborative Quality Improvement Organizations**
 - ➔ **FREE CEUs for online education sessions**
 - Nursing homes across the country are working with the CMS National Nursing Home Quality Care Collaborative and their local [Quality Improvement Organizations](#) to implement antibiotic stewardship and prevent and manage C. difficile infections.
- Centers for Disease Control & Prevention (CDC) National Health Safety Network (NHSN)**
 - C. difficile (CDI) Reporting**
 - CDC's National Healthcare Safety Network (NHSN) is the nation's most widely used healthcare-associated infection tracking system. NHSN provides long-term care facilities with a customized system to track infections in a streamlined and systematic way. When

Nursing Home Policy Drivers 2009-2019 (Pre-Covid)



2017-2019 Revised Regulations for IPC in Nursing Homes

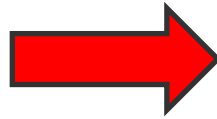
§483.80 -- *The facility must establish and maintain an infection prevention and control (IPC) program...*

A) System for preventing, identifying, reporting, investigating, and controlling infections and communicable diseases

B) Integrating IPC into Quality Assurance Performance Improvement activities - 2019

C) Antibiotic use protocols and monitoring included in IPC – Nov 2017

D) Designated IP with specific training - 2019



NHSN LTC Component Modules Pre-Covid

- Approximately 3,200 nursing homes reporting

**Health-care
Associated
Infections**
- *Urinary
Tract
Infection
(UTI)*

**Laboratory-
identified
Event**
- *CDI*
- *MDRO*

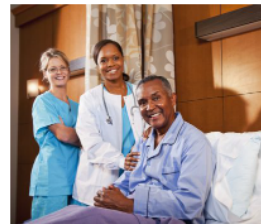
**Prevention
Process
Measures**
- *Hand
Hygiene*
- *Gown &
Gloves*

The NHSN, Long-term Care Facility (LTCF) Component provides long-term care facilities with a customized system to track infections and prevention process measures in a systematic way.

Tracking this information allows facilities to identify problems, improve care, and determine progress toward national healthcare-associated infection goals.

Facilities eligible to report into all modules of this component include nursing homes, skilled nursing, chronic care, and developmental disability facilities. Assisted living facilities can only report into the prevention process measures module.

Long-term acute care hospitals (LTACHs) are not eligible to report into this component.



LONG-TERM CARE FACILITY COMPONENT MODULES

Click on each module to access relevant training, protocols, data collection forms, supporting materials, analysis resources, and FAQs.

C. difficile Infection (CDI) and Multidrug-resistant Organisms (MDRO)

Urinary Tract Infections (UTI)

Prevention Process Measures
Hand Hygiene, Gloves and Gown Use Adherence

TRAINING & EDUCATION



LTCF Component Manual

A single document combining all LTCF protocols, data collection forms, form instructions, and other resources.



Training Materials

NHSN LTCF annual training materials, videos, and presentations.



Educational Roadmap

Kick start your training with an overview of the LTCF component.

RESOURCES



Frequently Asked Questions

Questions and answers categorized by topic.



Newsletters & Archived Communications

Archived newsletters and email communications.



Data Validation Guidance

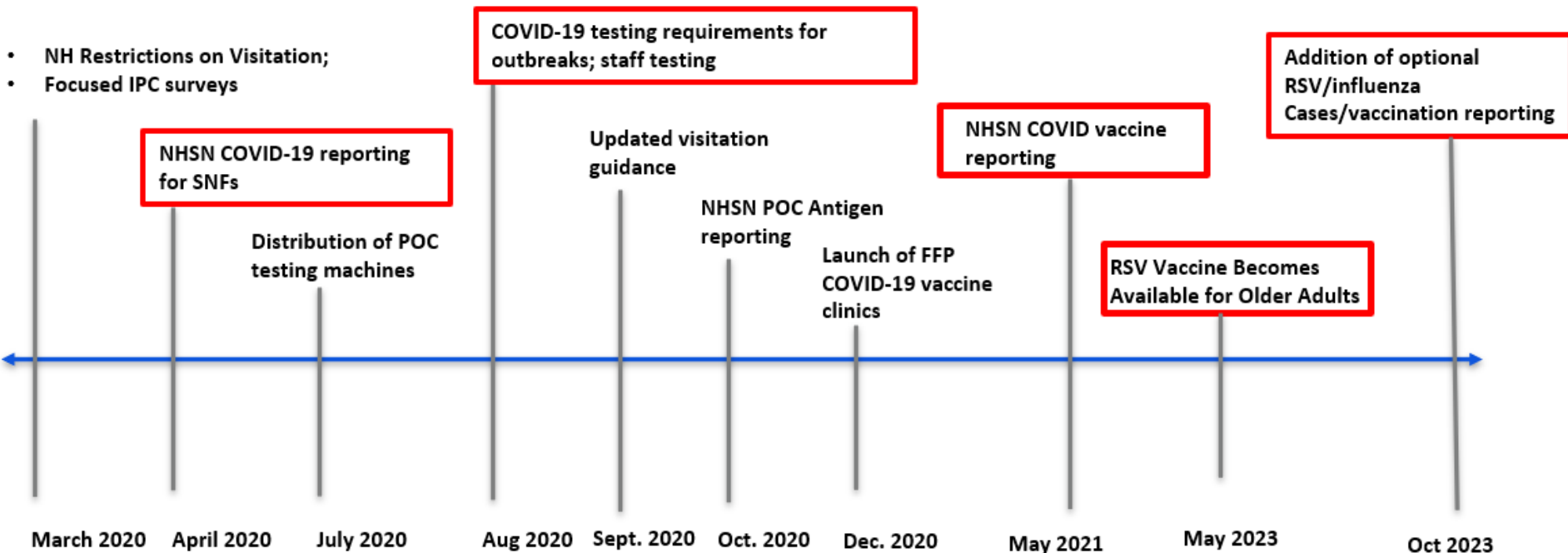
LTCF guidance and resources for internal and external data validation, including relevant archived protocols and trainings.

NHSN LTC Component – 2020

COVID-19 Pandemic

COVID-19 & Post Pandemic Timeline

- NH Restrictions on Visitation;
- Focused IPC surveys



Represent measures taken by the Centers for Medicare/Medicaid Services (CMS) in collaboration with the Centers for Disease Control and Prevention (CDC)

COVID-19 Reporting Requirements for Nursing Homes

- **May 2020 Centers for Medicare & Medicaid Services (CMS) Response to the COVID-19 Public Health Emergency**
 - CMS is requiring nursing homes to report **COVID-19 facility data to CDC**
 - CMS posts data from NHSN for viewing by facilities, stakeholders, or the general public - <https://data.cms.gov/>
- **In May 2021, CMS released final rules requiring nursing homes to report COVID-19 vaccination data among nursing home residents and staff in NHSN**

NHSN LTC Component Modules Covid-19

- Approximately >15,500 nursing homes reporting

Long-Term Care Component

HPS

HAI

- Urinary
Tract
Infection
(UTI)

Laboratory -identified Event

-CDI
-MDRO

Prevention Process Measures

- Hand
Hygiene
- Gown &
Gloves

COVID-19

-Cases
-Deaths
-Hospitalizations

COVID-19 Vaccination

-Residents
-HCP

*HCP
Influenza
Vaccination*

Using NHSN for Public Health Action*

- NHSN COVID-19 Primary Data Source used to track nursing home outbreaks
- Data from NHSN was used for driving policies around vaccination requirements for nursing home residents and healthcare workers
- Vaccination efficacy studies
- Data from NHSN was used to inform outbreak response teams and other emergency operations by identifying nursing homes at greatest risk for outbreaks, morbidity and mortality

*See next slide for citations

Select Publications Using NHSN Data

Morbidity and Mortality Weekly Report (MMWR)

CDC



Effectiveness of Pfizer–BioNTech and Moderna Vaccines in Preventing SARS–CoV–2 Infection Among Nursing Home Residents Before and During Widespread Circulation of the SARS–CoV–2 B.1.617.2 (Delta) Variant — National Healthcare Safety Network, March 1–August 1, 2021

Weekly / August 27, 2021 / 70(34);1163–1166

On August 18, 2021, this report was posted online as an MMWR Early Release.

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Infection Control & Hospital Epidemiology (2021), 1–14
doi:10.1017/ice.2021.362



Original Article

The impact of coronavirus disease 2019 (COVID-19) on healthcare-associated infections in 2020: A summary of data reported to the National Healthcare Safety Network

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Infection Control & Hospital Epidemiology (2021), 1–4
doi:10.1017/ice.2021.280



Concise Communication

Hospital capacities and shortages of healthcare resources among US hospitals during the coronavirus disease 2019 (COVID-19) pandemic, National Healthcare Safety Network (NHSN), March 27–July 14, 2020

Hsiu Wu MD¹ , Minn M. Soe MBBS¹ , Rebecca Konnor MPH¹, Raymund Dantes MD^{1,2} , Kathryn Haass MPH¹ , Margaret A. Dudeck MPH¹ , Cindy Gross^{1,3}, Denise Leaprot MSA^{1,3} , Mathew R. P. Sapiano PhD¹ , Katherine Allen-Bridson MScPH¹ , Lauren Wattenmaker MPH¹, Kelly Peterson BBA¹, Kent Lemoine MBA¹, Sheri Chernetsky Tejedor MD^{1,2} , Jonathan R. Edwards MStat¹ , Daniel Pollock MD¹ and Andrea L. Benin MD¹ for the National Healthcare Safety Network

¹Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia, ²Division of Hospital Medicine, Department of Medicine, Emory University School of Medicine, Atlanta Georgia and ³CACI, Atlanta, Georgia

Morbidity and Mortality Weekly Report (MMWR)

CDC



Disparities in COVID–19 Vaccination Coverage Among Health Care Personnel Working in Long–Term Care Facilities, by Job Category, National Healthcare Safety Network — United States, March 2021

Weekly / July 30, 2021 / 70(30);1036–1039

James T. Lee, MD^{1,2}; Sandy P. Althomsons, MA, MHS¹; Hsiu Wu, MD¹; Daniel S. Budnitz, MD¹; Elizabeth J. Kalayil, MPH^{1,3}; Megan C. Lindley, MPH¹; Cassandra Pingali, MPH¹; Carolyn B. Bridges, MD¹; Andrew I. Geller, MD¹; Amy Parker Fiebelkorn, MSN, MPH¹; Samuel B. Graitcer, MD¹; James A. Singleton, PhD¹; Suchita A. Patel, DO¹ [\(View author affiliations\)](#)

NHSN Selected Publications

- <https://data.cms.gov/covid-19/covid-19-nursing-home-data>
- [Rates of COVID-19 Among Residents and Staff Members in Nursing Homes — United States, May 25–November 22, 2020 | MMWR \(cdc.gov\)](#)
- [Early COVID-19 First-Dose Vaccination Coverage Among Residents and Staff Members of Skilled Nursing Facilities Participating in the Pharmacy Partnership for Long-Term Care Program — United States, December 2020–January 2021 | MMWR \(cdc.gov\)](#)
- [Surveillance of COVID-19 Vaccination in Nursing Homes, United States, December 2020–July 2021 - Andrew I. Geller, Daniel S. Budnitz, Heather Dubendris, Radhika Gharpure, Minn Soe, Hsiu Wu, Elizabeth J. Kalayil, Andrea L. Benin, Suchita A. Patel, Megan C. Lindley, Ruth Link-Gelles, 2022 \(sagepub.com\)](#)
- [Association of COVID-19 Vaccination Rates of Staff and COVID-19 Illness and Death Among Residents and Staff in US Nursing Homes | Geriatrics | JAMA Network Open | JAMA Network](#)
- [Effectiveness of Pfizer-BioNTech and Moderna Vaccines in Preventing SARS-CoV-2 Infection Among Nursing Home Residents Before and During Widespread Circulation of the SARS-CoV-2 B.1.617.2 \(Delta\) Variant — National Healthcare Safety Network, March 1–August 1, 2021 | MMWR \(cdc.gov\)](#)
- [U.S. Nursing Home Quality Ratings Associated with COVID-19 Cases and Deaths – ScienceDirect](#)
- [Reses HE, Dubendris H, Haas L, et al. Coverage with Influenza, Respiratory Syncytial Virus, and Updated COVID-19 Vaccines Among Nursing Home Residents — National Healthcare Safety Network, United States, December 2023. MMWR Morb Mortal Wkly Rep 2023;72:1371–1376.](#)

Using NHSN for Public Health Action

[Top of Page](#)

Healthcare Personnel
Safety Component (HPS) +

Neonatal Component +

Outpatient Procedure
Component +

NHSN and Social
Determinants of Health

NHSNCoLab

NHSN Digital Quality
Measures (dQMs) +

NHSN Reports +

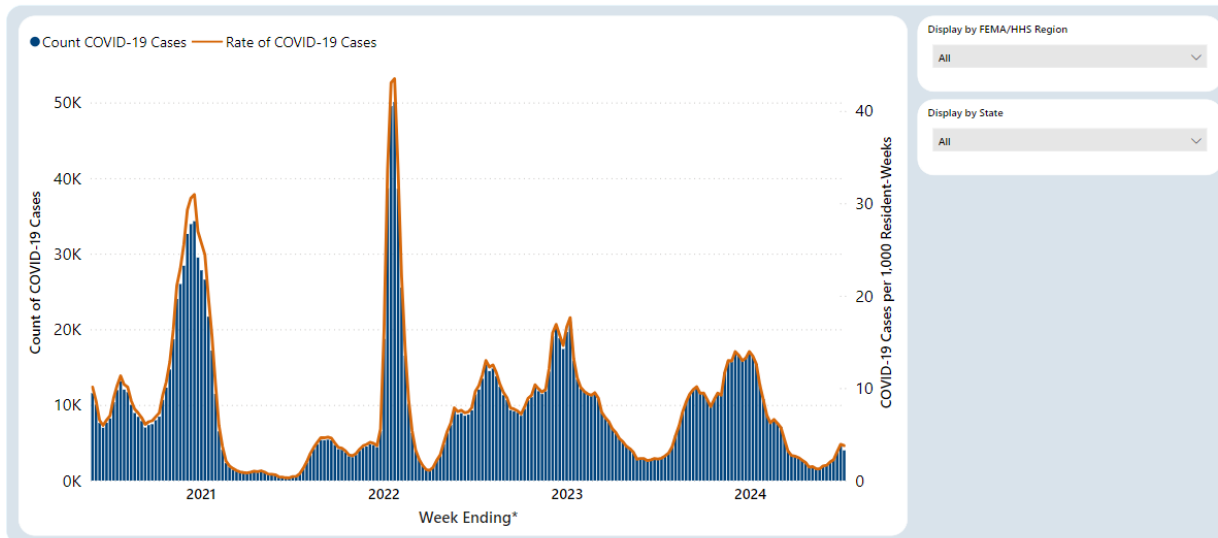
Group Users

Newsletters

Confirmed COVID-19 Cases among Residents and Rate per 1,000 Resident-Weeks in Nursing Homes, by Week—United States



Confirmed COVID-19 Cases among Residents and Rate per 1,000 Resident-Weeks in Nursing Homes, by Week—United States

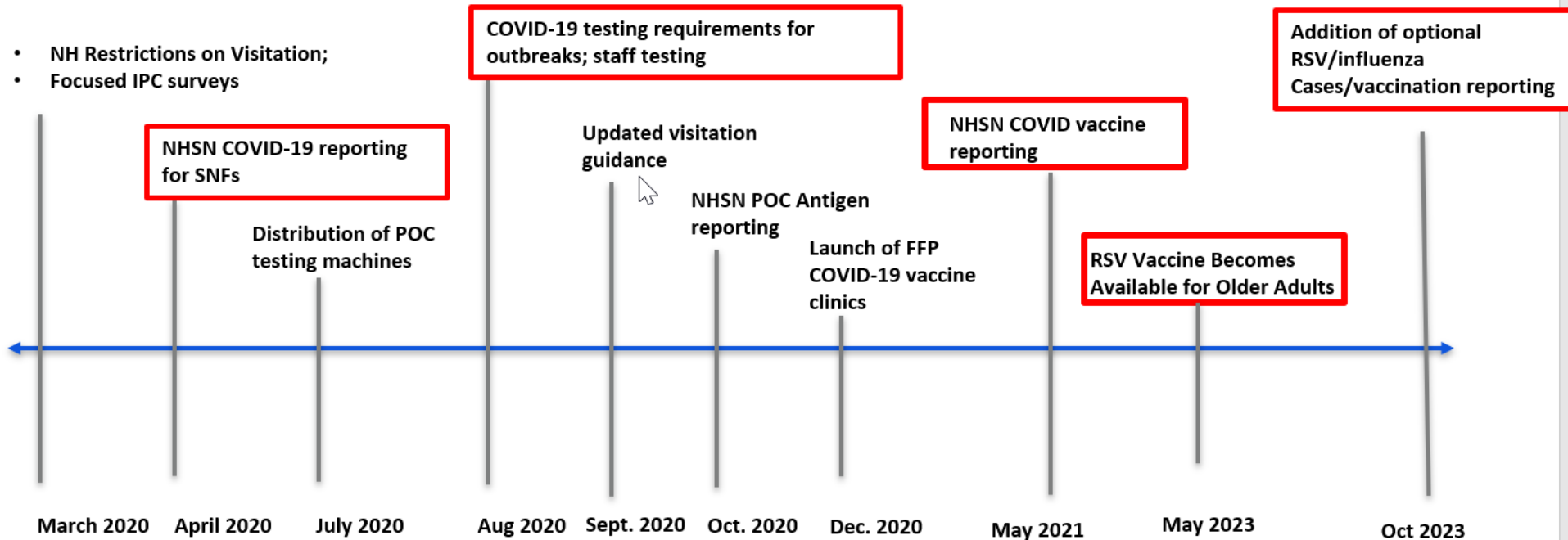


* Data are likely accruing, all data can be modified from week-to-week by facilities

For the purpose of creating this time-series graph, data that fail certain quality checks or appear inconsistent with surveillance protocols are assigned a value based on their patterns for data-entry or excluded from analysis

Data source: Centers for Disease Control and Prevention, National Healthcare Safety Network. Accessibility: [Right click on the graph area to show as table]

COVID-19 & Post Pandemic Timeline



Represent measures taken by the Centers for Medicare/Medicaid Services (CMS) in collaboration with the Centers for Disease Control and Prevention (CDC)

RSV Vaccination

- RSV Vaccines were approved by FDA in May 2023
- ACIP recommended both vaccines June 23, 2023
- Updated Guidance June 2024
 - CDC recommends an RSV vaccine for everyone ages 75 and older and adults ages 60-74 at increased risk of severe RSV.
 - Adults 60-74 who are at increased risk include those with chronic heart or lung disease, certain other chronic medical conditions, and those who are residents of nursing homes or other long-term care facilities.

[RSV \(Respiratory Syncytial Virus\) Immunizations | CDC](#)



NHSN Long-term Care Component Modules Covid-19

- Approximately >15,500 nursing homes reporting

Long-Term Care Component

HSP

Health-care Associated Infections

- *Urinary Tract Infection (UTI)*

Laboratory-identified Event

- *CDI*
- *MDRO*

Prevention Process Measures

- *Hand Hygiene*
- *Gown & Gloves*

COVID

RSV/ Influenza*

- *Cases*
- *Deaths*
- *Hospitalizations*

COVID

RSV/ Influenza*

- Vaccination**
- *Residents*
- *HCP*

HCP Influenza Vaccination

* Optional Reporting

NHSN LTC Component – 2024 & Beyond

Continuing NHSN Reporting Post Pandemic

- **Challenges Pre-Pandemic**

- Nursing homes not aware of NHSN*
- Challenges with enrollment^
- Manual Reporting/time commitment
- Additional modules (Abx use)

- **Opportunities Post Pandemic**

- Most Skilled nursing facilities enrolled in NHSN
- Improvements to facility/user enrollment using authentication token (Experian)
- Improvements to user interface, combining vaccination/covid-19 module/person level reporting/focus on electronic data reporting
- Adding Antibiotic Use Module

*Fu CJ, Agarwal M, Dick AW, Bell JM, Stone ND, Chastain AM, Stone PW. Self-reported National Healthcare Safety Network knowledge and enrollment: A national survey of nursing homes. *Am J Infect Control.* 2020 Feb;48(2):212-215. doi: 10.1016/j.ajic.2019.08.016. Epub 2019 Oct 9. PMID: 31606259; PMCID: PMC6980968.

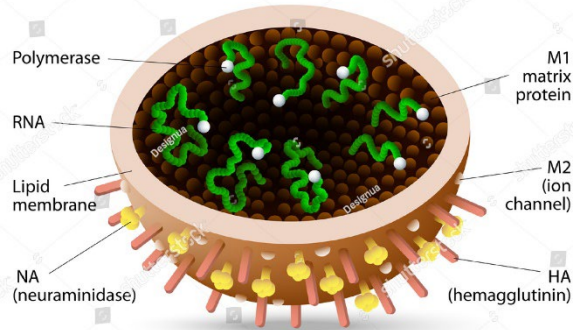
^Braun BI, Longo BA, Thomas R, Bell JM, Anttila A, Shen Y, Morton D, Rowe TA, Stone ND. Facilitators and challenges experienced by nursing homes enrolling in the CDC national health care safety network. *Am J Infect Control.* 2021 Apr;49(4):458-463. doi: 10.1016/j.ajic.2020.08.033. Epub 2020 Sep 2. PMID: 32890551; PMCID: PMC7921198.

Respiratory Pathogen Surveillance

RSV/Influenza/COVID-19 Cases & Vaccination Combined Module

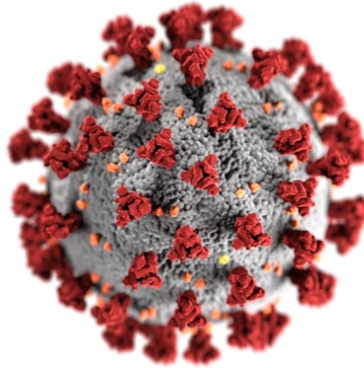
Respiratory Pathogen Surveillance - Cases & Vaccination

INFLUENZA VIRUS



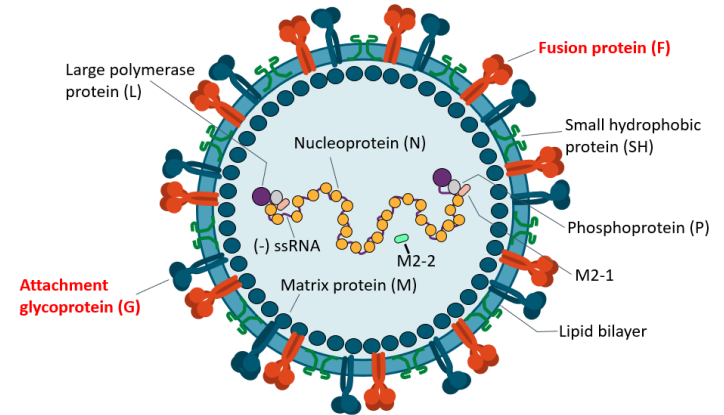
Vaccine
Treatment
Prophylaxis

SARS-Cov2



Vaccine
Treatment

RSV



Vaccine

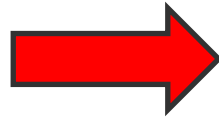
Respiratory Pathogen Surveillance Module 2024

COVID19/RSV/Influenza

- Cases
- Deaths
- Hospitals

COVID-19/RSV/Influenza Vaccination

- Residents
- HCP



Respiratory Pathogen Surveillance

Resident COVID-19/RSV/Influenza

- Cases
- Hospitalization
- Deaths

Resident COVID-19/RSV/influenza

- Vaccinations

Long-Term Care Antibiotic Use Module

LTC-AU

Long Term Care - Antibiotic Use Module LTC-AU

Needs:

- Expectation for nursing homes to have a ***system to monitor antibiotic use***
- How do we do this with limited resources and in a meaningful way?

Public Health & Facility Objectives:

- Support nursing home staff in using AU data to implement and monitor stewardship activities to ***improve resident care***
- Track and report AU rates nationally
- Establish risk adjusted AU benchmarks for nursing homes

Long-term Care – Antibiotic Use Module

- Electronic Data Reporting / No Manual Reporting
- Anticipated development Spring 2025
- Data readily available to nursing homes
 - Quality Assurance and Performance Improvement (QAPI)
 - Evaluate antibiotic stewardship programs



NHSN LTC Modules

NHSN HSP Module

Antibiotic Use Module

- Antibiotic prescriptions (courses and/or orders)

Respiratory Pathogen Surveillance

- Resident COVID-19/RSV/Influenza Cases/Hospitalizations/Deaths
- Resident Covid-19/RSV/Influenza Vaccinations

Healthcare-Associated Infection (HAI) Modules

- Urinary Tract Infection (UTI)
 - CLABSI
 - SUTI
 - ABUIT

LabID Event Module

- *Clostridioides Difficile* infection (CDI)
- Multi-drug Resistant Organisms (MDROs)

Prevention Process Module

- Gown and Glove use
- Hand hygiene

HCP Vaccination

- HCP influenza vaccination

Conclusions

- The National Healthcare Surveillance System (NHSN) Long-term Care Component has evolved over the past decade as healthcare has shifted to post acute care settings
- Collection of COVID-19 cases and vaccination in NHSN was integral to developing policies aimed at improving safety of nursing home residents and provided real time data to nursing homes to improve infection prevention and control practices
- NHSN continues to develop to meet the changing needs of nursing homes and to improve resident safety

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.

