



National Healthcare Safety Network

Infection Surveillance in Long-term Care: A National Perspective

Jeneita Bell, MD, MPH
Long-term Care Team Lead

July 9, 2019

Agenda

- Burden of healthcare-associated infections (HAIs) in LTC
- Challenges affecting nursing homes
- Strategies to overcome the challenges
- Why do surveillance?
- Annual training overview

Nursing Home Infection Burden Estimates

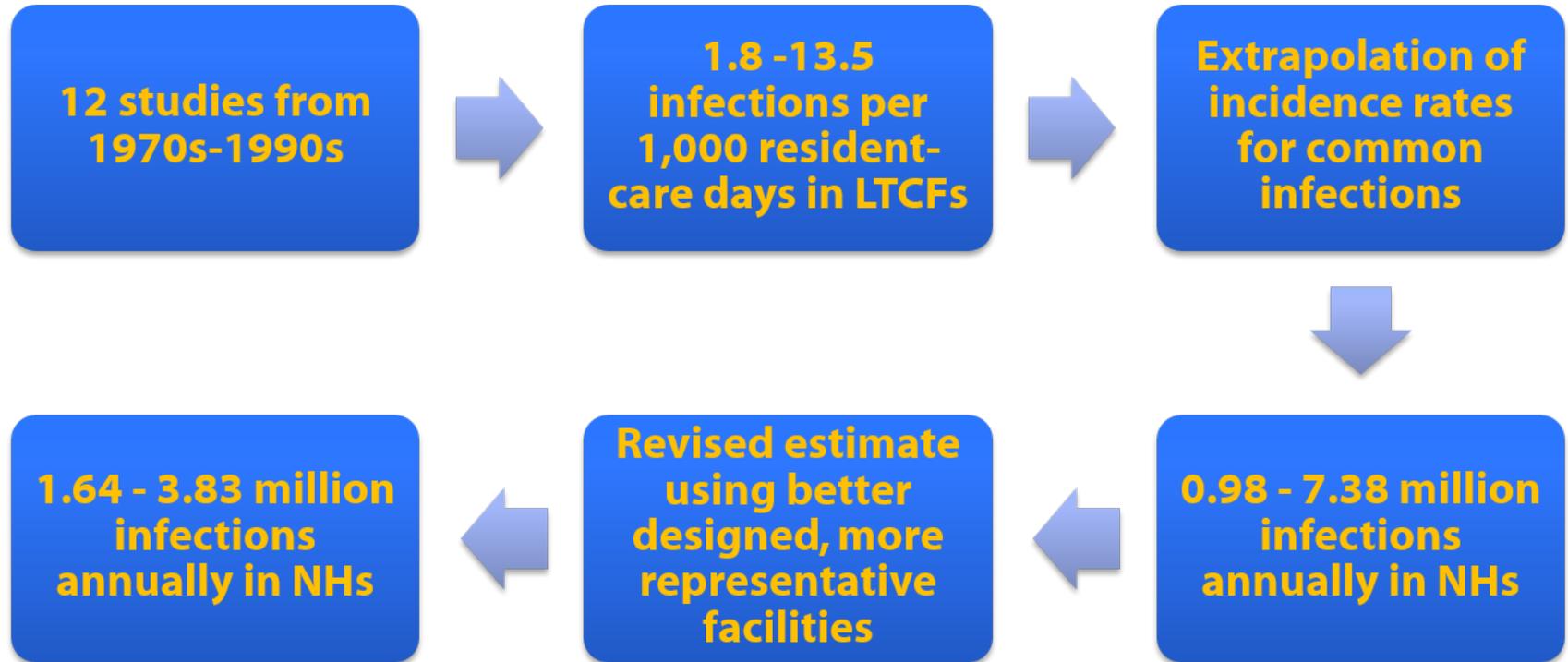
1.64 – 3.83 million infections annually

Strausbaugh and Joseph, 2000

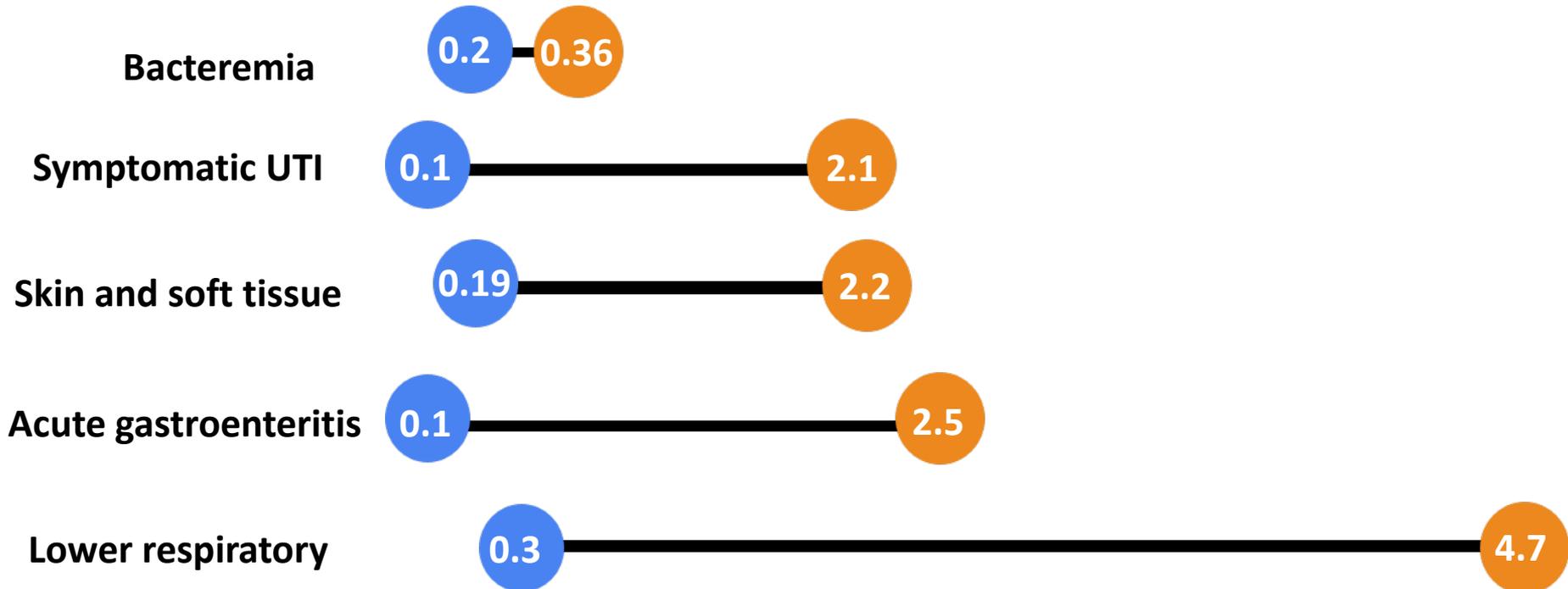
1.13 – 2.68 million infections in 2013

Herzig et al, 2017

Strausbaugh and Joseph, 2000 – Methods Summary



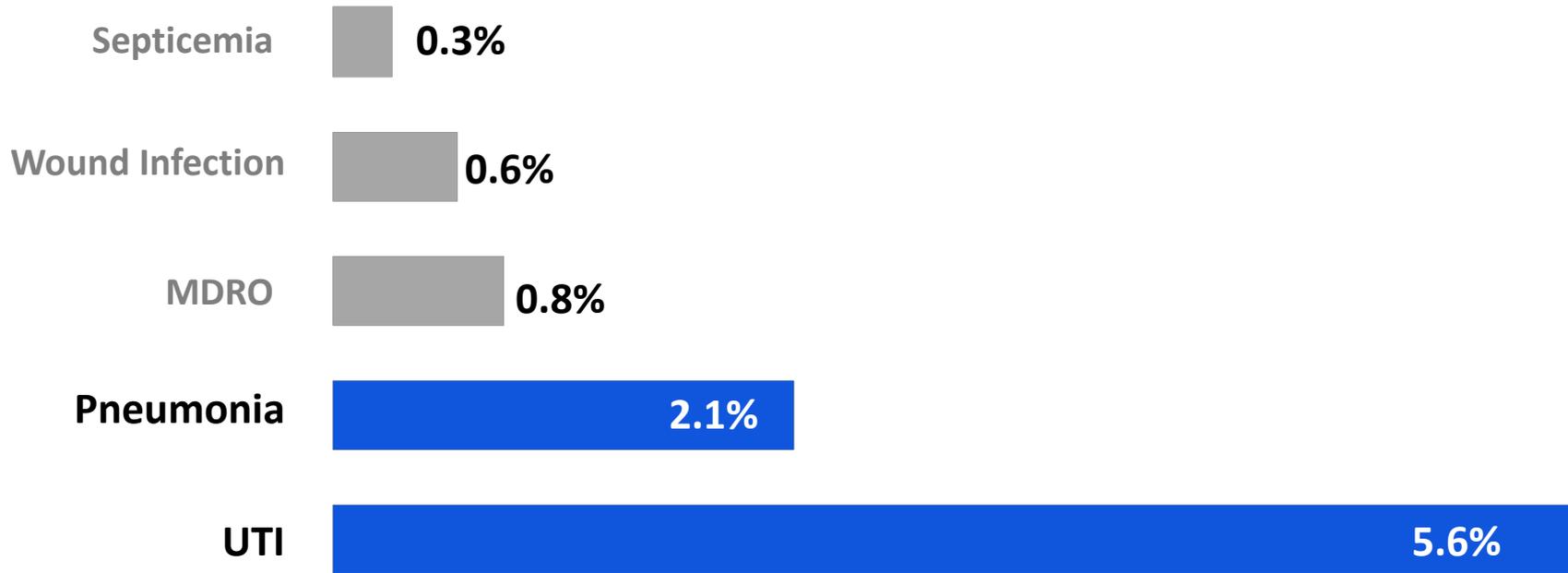
Lower respiratory tract infections have the highest estimated incidence rate per 1,000 resident-days.



Herzig et al, 2017 – Methods Summary

- Minimum Data Set (MDS) 3.0, 2013 Quarter 4
- Used routinely scheduled assessments, excluding admission assessments
- Evaluated MDS infection items
 - Multidrug-resistant organisms (MDRO)
 - Pneumonia
 - Septicemia
 - Urinary Tract Infection (UTI)
 - Wound infection
- Prevalence determined using 7-day look-back periods and 30-day for UTI

In 2013, pneumonia and UTI were the most commonly reported infections among all resident assessments.



Note: Estimates are the 7-day prevalence for each except UTI, which are 30-day

Office of the Inspector General — 2014

Adverse events in SNFs among Medicare beneficiaries

Events Related to Infections	26%
Aspiration pneumonia and other respiratory infections	10%
Surgical site infection (SSI) associated with wound care	5%
Urinary tract infection associated with catheter (CAUTI)	3%
Clostridium difficile infection (CDI)	3%
Other infection events	5%

Source: OIG analysis of SNF stays for 653 Medicare beneficiaries discharged in August 2011.

Limitations of Burden Estimates

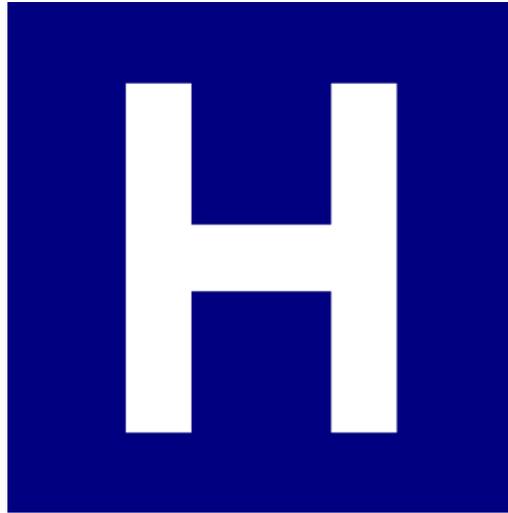
- **Estimates based on small number of residents**
 - Residents may not be representative
- **National estimates extrapolated from few geographic locations**
 - Facilities may not be representative
- **Standard infection definitions are not used**
- **Trends of infections overtime unknown**
 - How many new infections are occurring?
 - Are the rates of new infections problematic?
 - Are infection rates worsening?
 - Are infection rates improving?

Improved national data is needed to inform prevention.

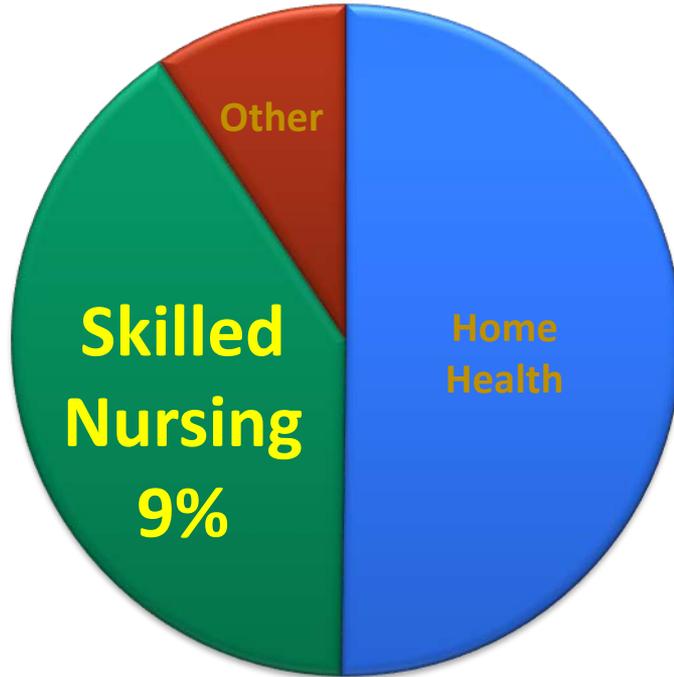
Question	Examples
Who?	Who is disproportionately affected and most at risk of infection?
What?	What infection type is the most problematic?
When?	Is the problem new or was it increasing over time?
Where?	Is there a geographic region or specific facility type most adversely affected?
How?	Were our intervention or prevention efforts effective?

Challenges affecting nursing homes

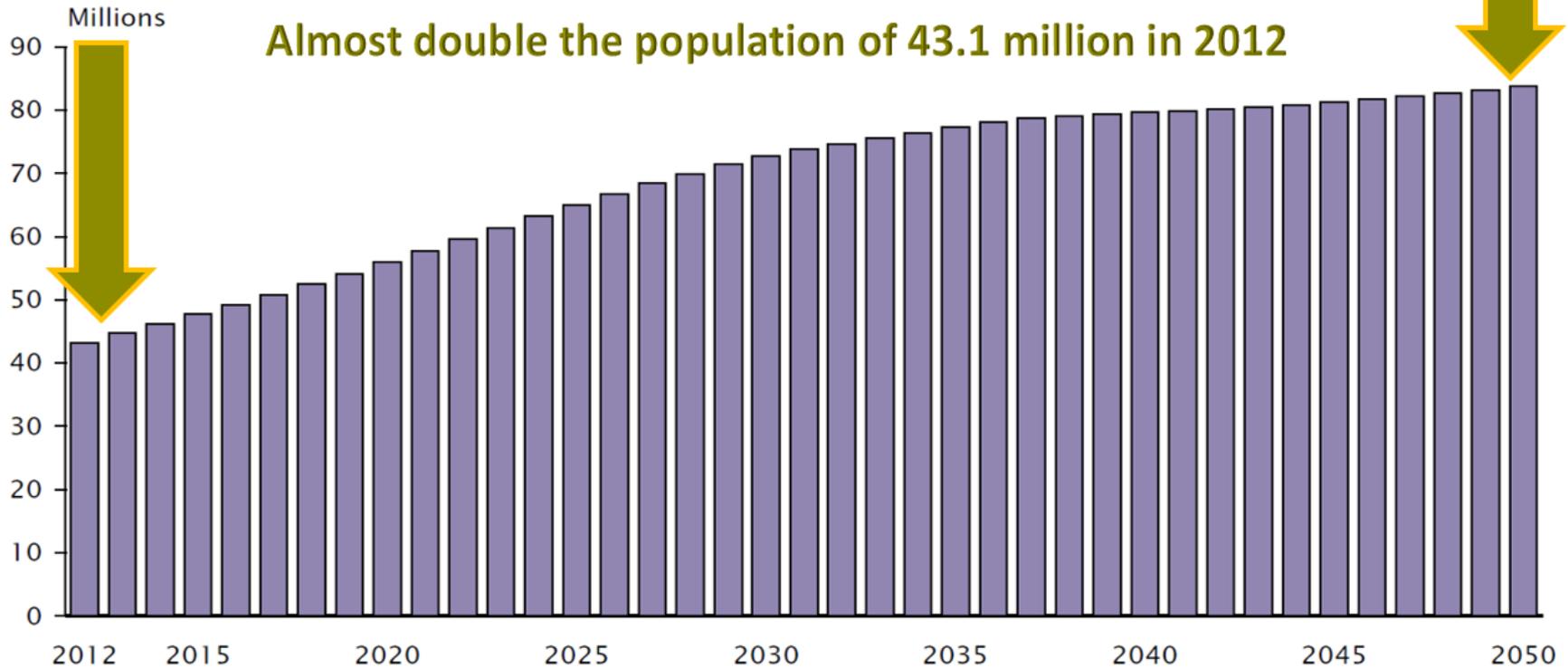
In 2013, there were over 35 million hospital **discharges**.



**22% or 8 million inpatients were discharged to a
postacute care setting.**

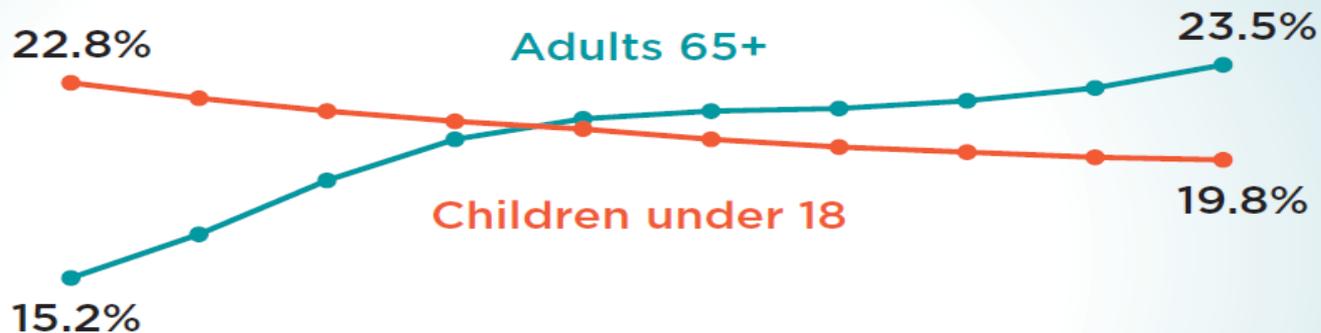


In 2050, the population aged 65 and over is projected to be 83.7 million.



For the First Time in U.S. History Older Adults Are Projected to Outnumber Children by 2035

Projected percentage of population

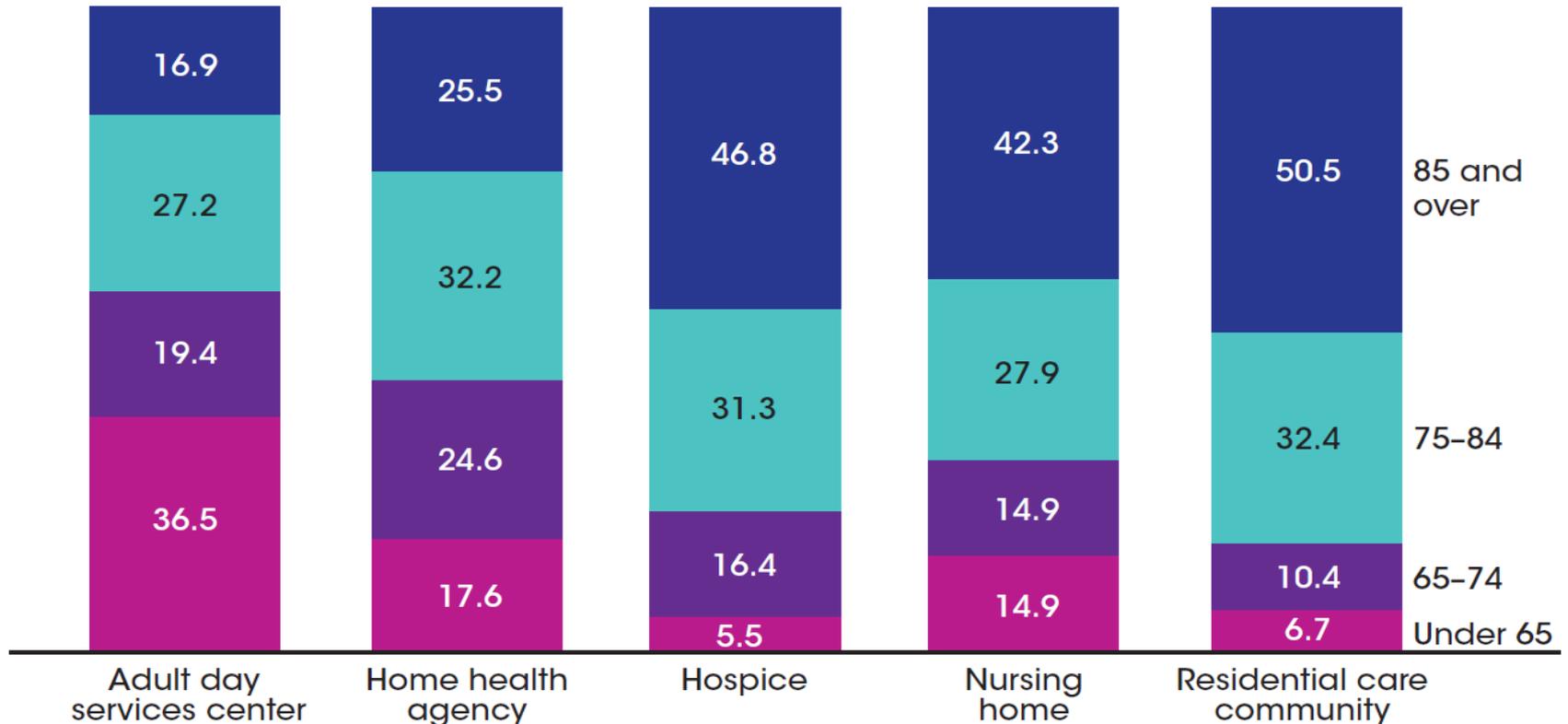


Projected number (millions)



Note: 2016 data are estimates not projections.

The majority of long-term care residents were aged 65 and over in 2011 and 2012.



Long-term care residents have a higher risk of infection.

An elderly couple is shown from the back, embracing each other on a grassy hillside. The man is on the left, wearing a grey jacket, and the woman is on the right, wearing a dark blue jacket. They are looking out over a vast, green landscape under a hazy sky.

Functional impairment

Co-morbid conditions

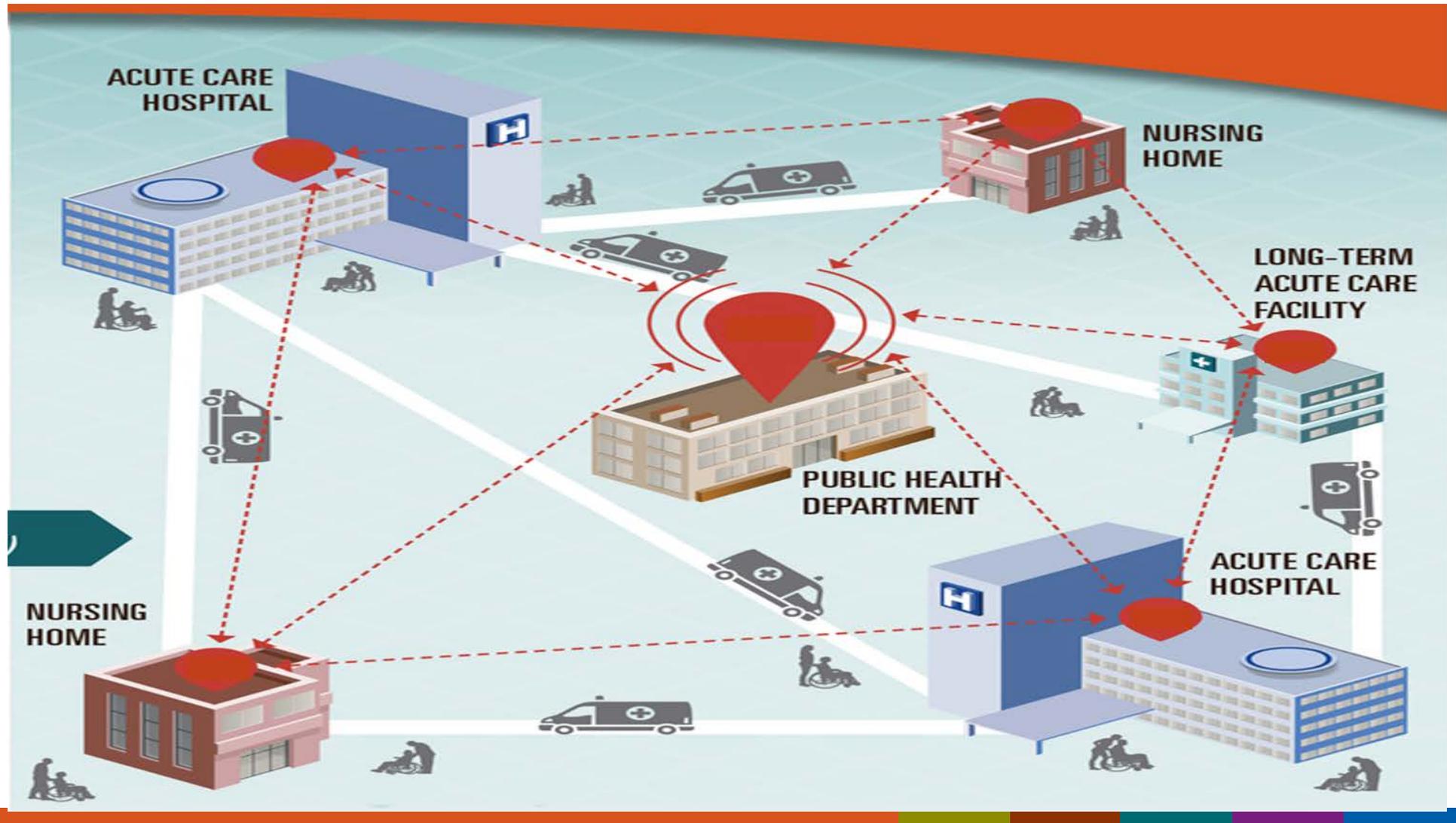
Frequent hospitalizations

Exposure to antibiotics

Implications

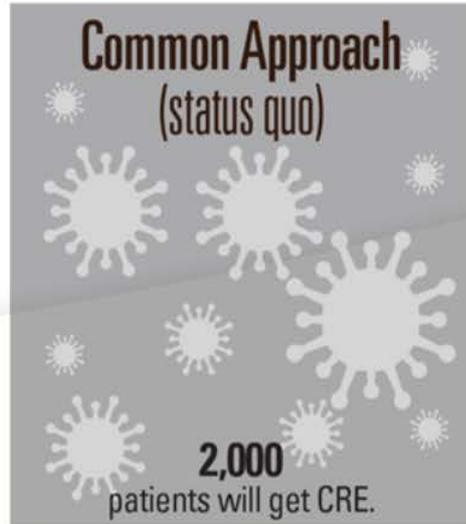
- Increase in acute care and LTC facility volumes
 - Increase demand on health system resources
 - Increase healthcare setting transitions
 - Threat to healthcare quality, infection prevention and control
- 

Strategies to overcome the challenge



More patients get infections when facilities do not work together.

(Example: 5 years after CRE enters 10 facilities in an area sharing patients)



CRE will impact **12%** of patients.



CRE will impact **8%** of patients.



CRE will impact **2%** of patients.

AUGUST 2015

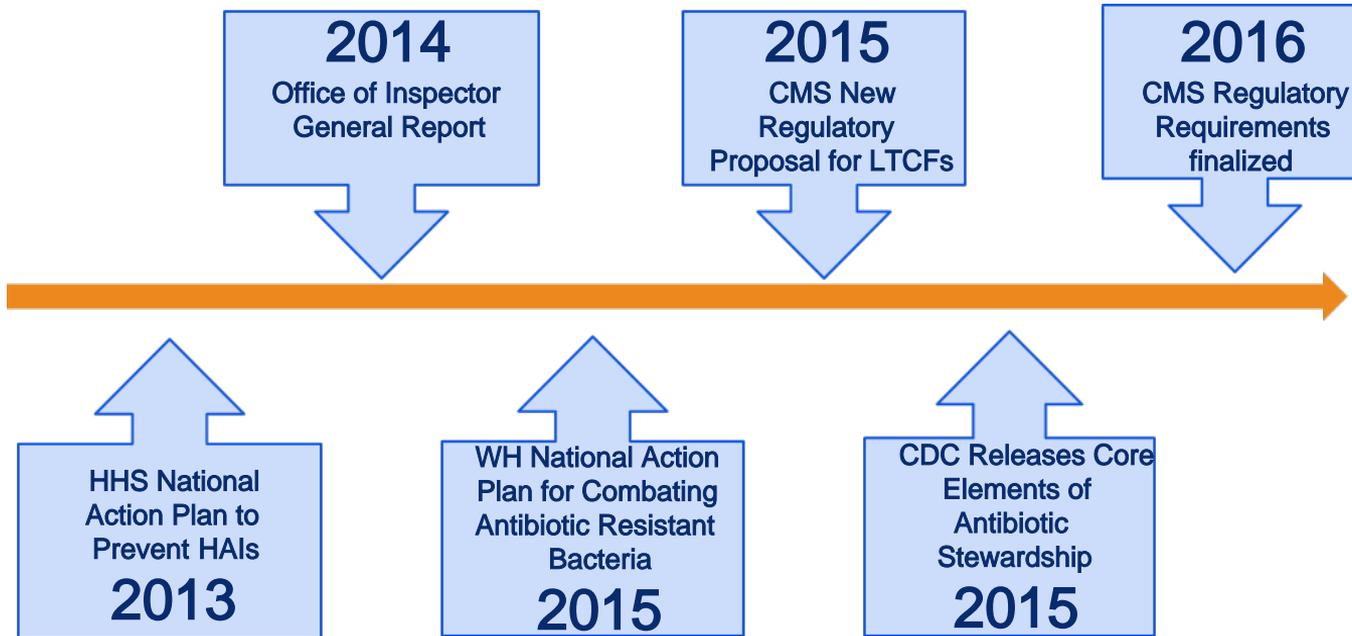
CDC
*Vital*signs™

Making Health Care Safer

Stop Spread of Antibiotic Resistance

- Alert receiving facilities of patients who have drug-resistant organisms
- Provide clinical staff access to prompt laboratory testing
- Join HAI/antibiotic resistance prevention in your area
- Connect with public health department to share data
- **Review and perfect infection control within your facility**

Public Health Action Timeline



National Action Plan to Prevent HAIs — 2013

- Encourage **HAI infection surveillance and reporting to NHSN**
 - *5% of certified nursing homes enroll in NHSN over the five years following launch of the component*
- Construct a data collection system to support assessment of healthcare quality
 - **Disease surveillance**
 - Effectiveness of prevention and control activities
 - Quality improvement
 - Public reporting

Reform of Requirements for LTCFs— 2016

- § 483.80 Infection control.

*We proposed to require the facility to have written standards, policies, and procedures for the IPCP, including but not limited to, **a system of surveillance designed to identify possible communicable disease or infections before it can spread to other persons in the facility***

Why do surveillance?

Public Health Surveillance

ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event to reduce morbidity and mortality and to improve health



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E. coli outbreak from tainted ground beef expands to 10 states

HEALTH AND SCIENCE

Salmonella outbreak

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S. Measles Outbreak Now in 22 States – What You Should Know



U.S. Measles Outbreak Now in 22 States – What You Should Know

State official: Northwest Georgia seeing hepatitis A outbreak

By Andy Miller Georgia Health News Apr 10, 2019 0 1 min to read

Surveillance Informs Prevention

Question	Examples
Who?	Who is disproportionately affected and most at risk of infection?
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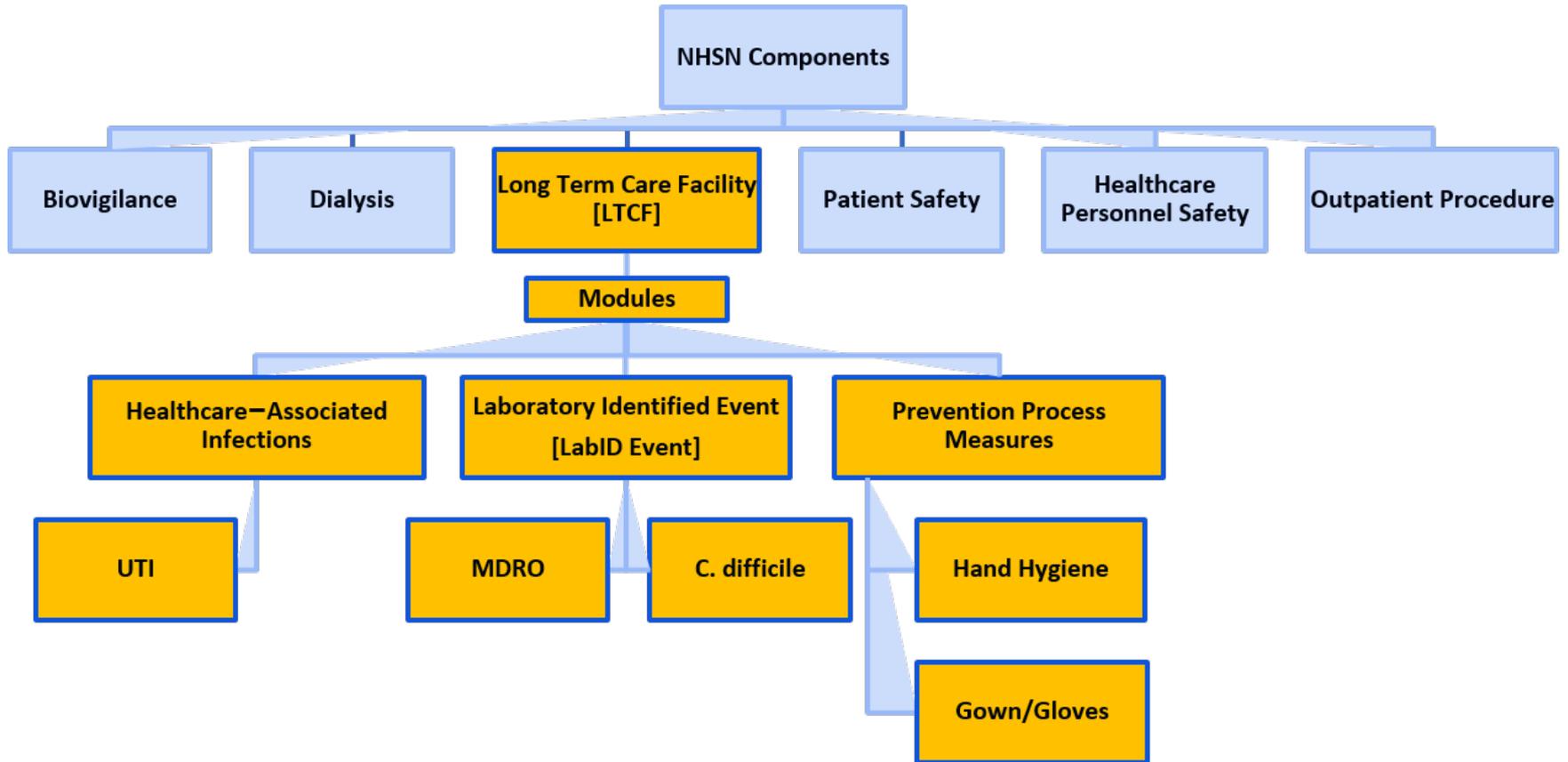
NHSN

NATIONAL HEALTHCARE
SAFETY NETWORK

What is National Healthcare Safety Network (NHSN)?

- **Most widely used healthcare-associated infection (HAI) tracking system**
- **Web-based resource for healthcare facilities to collect HAI data**
 - Acute care hospitals
 - Ambulatory surgery centers
 - Long-term care facilities
- **Data can be used by facilities**
 - Identify problem areas
 - Measure progress of prevention efforts
 - Comply with quality reporting requirements
- **>22,000 facilities reporting**

NHSN Long-term Care Facility Component



Benefits of NHSN

- **Why NHSN and how does this fill a gap?**
 - Epidemiology
 - Standard infection definitions
 - Benchmarking at national and facility level
 - Identify prevention targets and goals
 - Track prevention progress

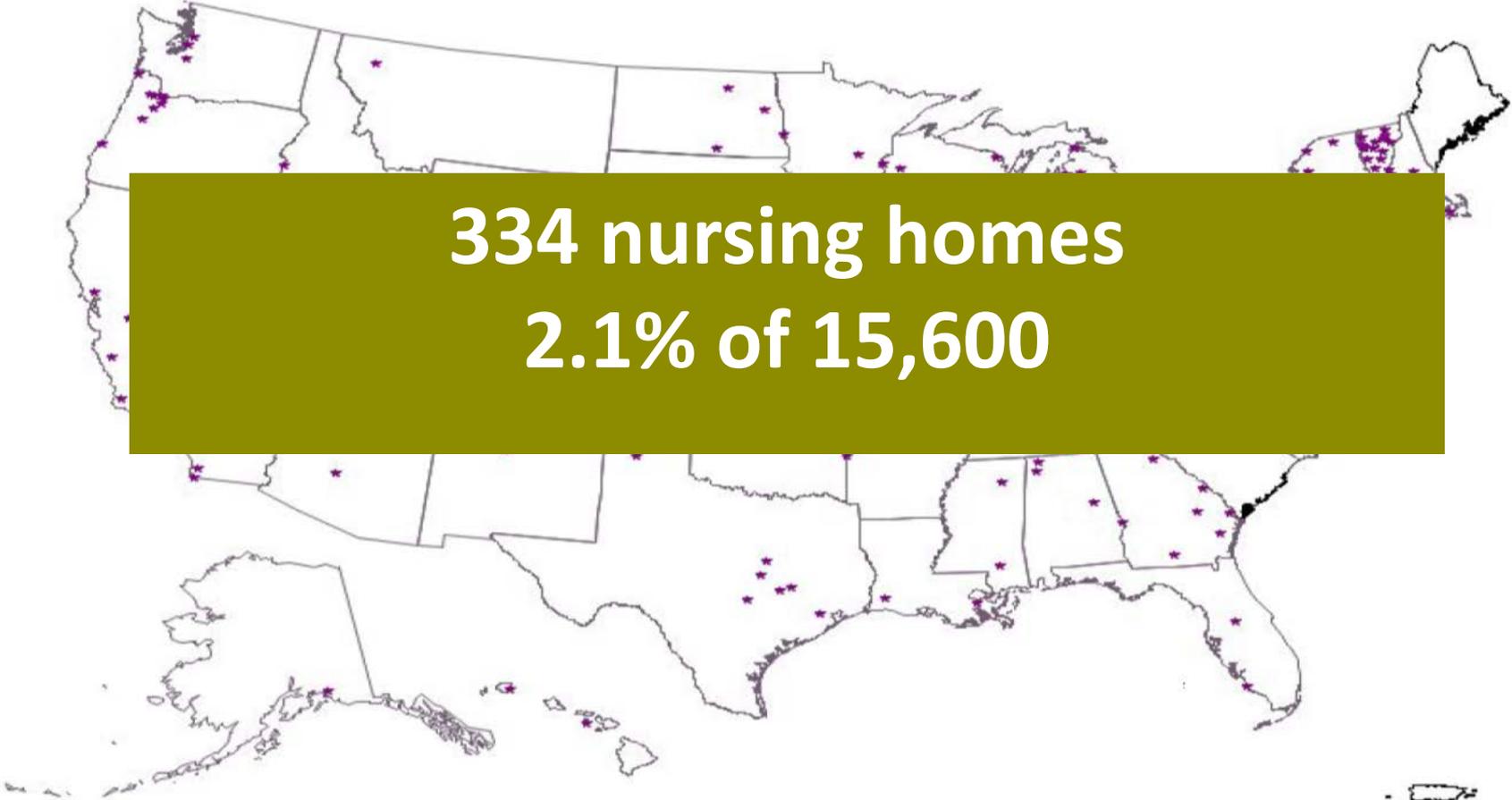
NHSN data can inform prevention.

Question	Examples
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CDI Reporting and Reduction Project

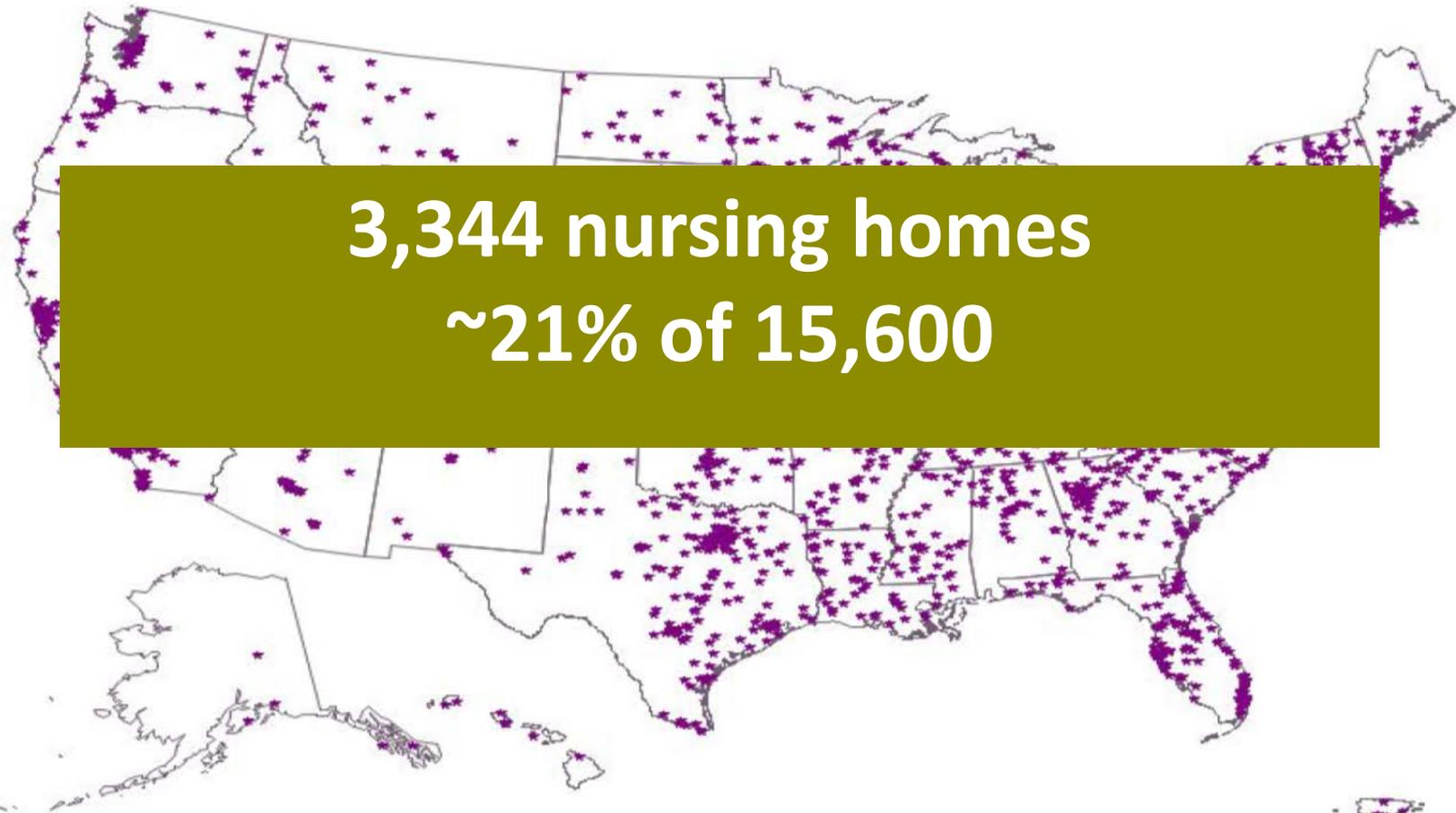
- Collaboration with CMS and Quality Improvement Organizations
- **Project timeline:** May 23, 2016 – December 28, 2018
- **Objectives:**
 - Increase NHSN reporting
 - Establish CDI baseline
 - Monitor prevention outcomes
- **Recruitment period:** May 23, 2016 – April 7, 2017
- **Enrollment target:** 2,330 nursing homes
- **Data submission target:** 80% (1,864) March 1, 2017 – December 31, 2018

Nursing Homes Enrolled in NHSN — June 2016



334 nursing homes
2.1% of 15,600

Nursing Homes Enrolled in NHSN — Jan 2019



3,344 nursing homes
~21% of 15,600

**Increased participation is great but
data quality is also important!**



2019 Annual Training

Partnership

Improve healthcare quality

Reduce morbidity and mortality

Make a difference

NHSN LTC Team



Jeneita Bell, MD, MPH
LTC Team Lead



Theresa Rowe, DO
Medial Officer



Ti McCray, MPH
Infection Prevention
Consultant



Angela Anttila, PhD, MSN
Nurse Epidemiologist



Josephine Mak, MPH
Epidemiologist



Elisabeth Mungai, MPH
Epidemiologist



Ismaila Ramon, PhD, MPH
Epidemiologist



Courtney Price, MPH
Public Health Analyst



Kristi Gillis, MBA
Public Health Analyst

Training Overview

- **Morning sessions**
 - Epidemiology
 - NSHN Protocols
 - Infection prevention
 - Case studies
- **Afternoon sessions**
 - Hands-on training
 - CDC tours

Concurrent Activities

- **Onsite Support**
 - SAMS
 - NHSN User Support
- **Healthcare Personnel Safety Team**
 - Influenza vaccination reporting
- **CDC store**
 - CDC branded merchandise



CDC

CENTERS FOR DISEASE
CONTROL AND PREVENTION

EDWARD R. ROYBAL
CAMPUS

Thank You!

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone: 1800-CDGINFO (2324636)/TTY: 1888-232-6348

E-mail: NHSN@cdc.gov Web: <http://www.cdc.gov/nhsn>

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.

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References

- **The Silver Tsunami** (also known as **The Grey Tsunami** or **Gray Tsunami**) is a [metaphor](#) used to describe [population aging](#). The silver [tsunami](#) metaphor has been used in [popular media](#) and in [scholarly literature](#) to refer to the late-twentieth century demographic phenomenon of [population aging](#) in major media platforms including [The Economist](#), [Forbes.com](#), and multiple news outlets. The phrase has also been used to refer more specifically to [health](#) and [economic](#) implications associated with population aging by major [medical publications](#) including [The British Medical Journal](#), [New England Journal of Medicine](#), and [professional organizations](#) including [American Psychological Association](#).
- https://en.wikipedia.org/wiki/The_Silver_Tsunami

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