





Health Quality Innovation Network

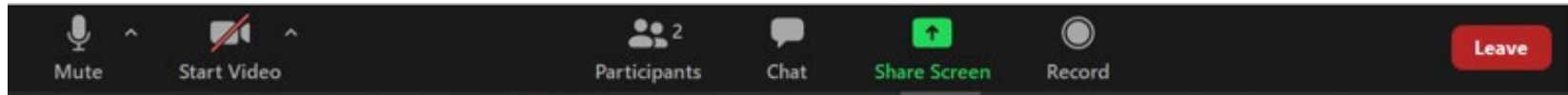
# Partnership to Stop Sepsis

11/17/2022

# Health Quality Innovation Network



# Logistics – Zoom Meeting



To ask questions, click on the **Chat** icon.

**Raise your hand** if you want to verbally ask a question.

Resources from today's session will be posted in **Chat**.

You may adjust your audio by clicking the caret next to the **Mute** icon.

# Your HQIN Team



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Quality Improvement  
Advisor-Infection  
Prevention



**Cindy Warriner,**  
BS, RPh, CDCES,  
Senior Consultant  
Pharmacist

# Today's Presenter



**Rachel Schade, CPH**  
Manager, Analytic Services

# Agenda

**1**

**Review F-867 Program feedback, data systems and monitoring**

**2**

**Review current sepsis data**

**3**

**Discuss types of measurement**

**4**

**Discuss calculating improvement**

**5**

**Discuss analysis and feedback**

# F-867 Program Feedback, Data Systems and Monitoring

- Third QAPI element
- Identify what you need to monitor
- Collect, track and monitor measures/indicators
- Set goals, benchmarks, thresholds
- Identify gaps and opportunities
- Prioritize what you will work on to improve
- Use data to drive decisions





# Nursing Home Sepsis Readmission and ED Visits

Figure 1. Percentage of inpatient admissions with principal DX of sepsis discharged to NH **readmitting** within 30 days

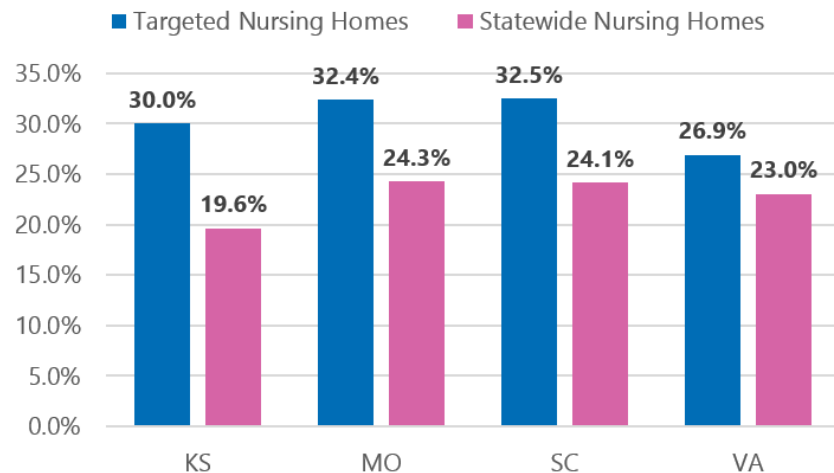
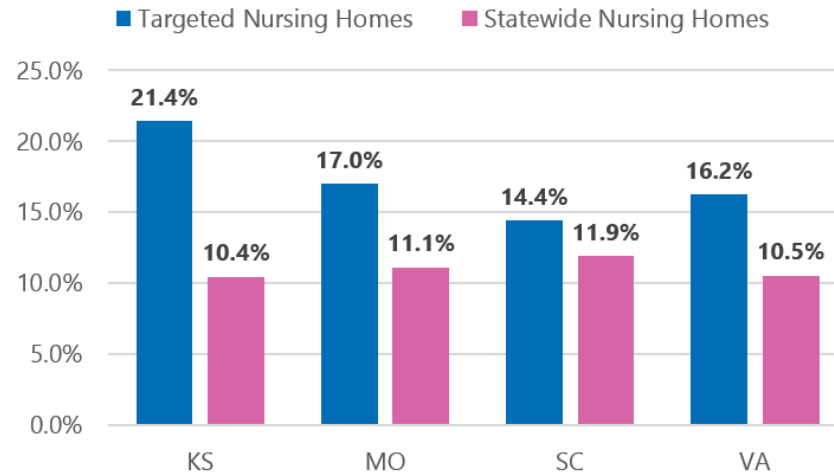


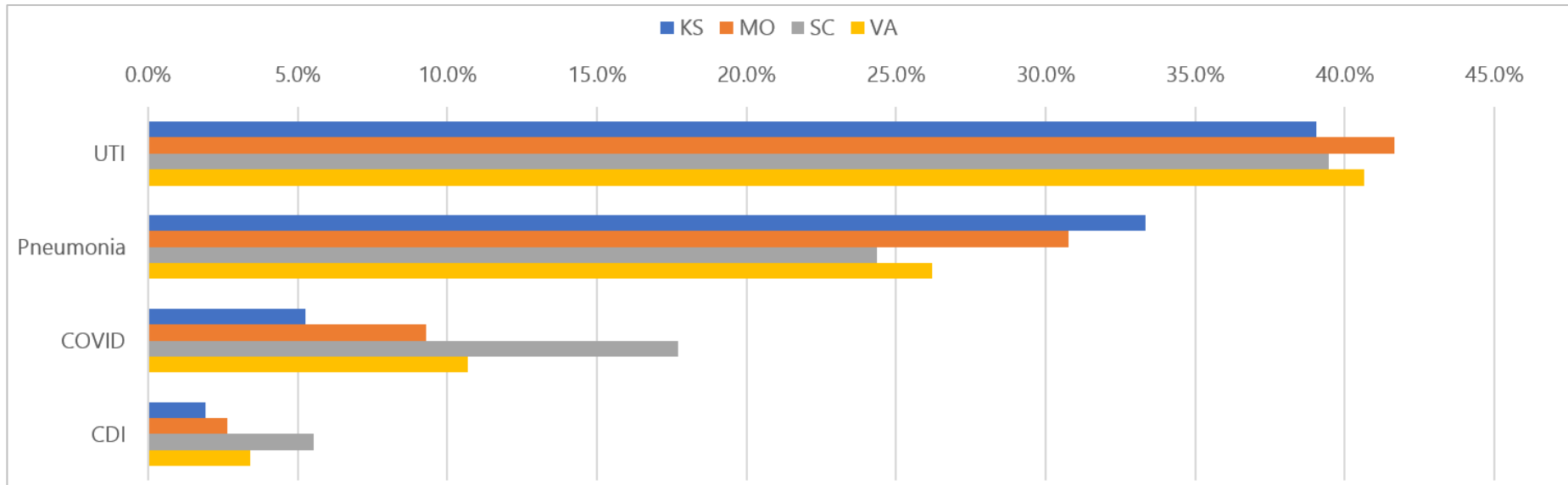
Figure 2. Percentage of inpatient admissions with principal DX of sepsis discharged to NH returning to hospital for an **ED visit** within 30 days



Data Source: Medicare FFS Part A Claims, Timeframe: Jul21 - Jun22

# Nursing Home Sepsis and Secondary Diagnosis

Figure 3. Percentage of inpatient discharges to NH with principal DX of sepsis and secondary DX of: {UTI, Pneumonia, COVID, or CDI}



# Types of Measurement

## Proportion

(e.g., 15.3% of eligible discharges were readmitted within 30 days)

**Definition:** A share or part of a whole; expressed as a percentage. The numerator is necessarily a subset of the denominator.

**Pros:** Easy to understand, interpret and explain

**Examples:**

- 30-Day All-cause Readmissions (%)
- 30-Day Sepsis Mortality (%)

## Rate

(e.g., 3.4 infections per 1,000 patient days)

**Definition:** A quantity or frequency measured against another quantity or frequency; expressed as a value relative to a multiplier (e.g., per 1,000).

**Pros:** Allows us to present data in a more digestible way and incorporate measures of person-time

**Examples:**

- Infection Rates (e.g., CAUTIs per 1,000 catheter days)
- ADE Rates (e.g., per 1,000 discharges)

## Ratio

(e.g., 1.2 observed infections for every 1 predicted infection)

**Definition:** Quantitative relationship of two values (of the same units) explaining how many of one are contained within the other.

**Pros:** Allows us to simplify comparisons of large volumes

**Examples:**

- Standardized Infection Ratio (SIR)
- Standardized Utilization Ratio (SUR)
- Return on Investment (ROI) Ratio

# Types of Data Visuals



## Line Chart (i.e., run chart)

- Used to **track data over time**
- Used to establish trends by joining data points
- X-axis: measure of time (e.g., months, quarters, years, etc.)
- Y-axis: quantity (e.g., volume, rate, proportion)



## Bar Chart

- Used to display frequencies, rates or proportions for categorical variables
- X-axis: variable categories (e.g., state, race/ethnicity, etc.)
- Y-axis: quantity (e.g., volume, rate, proportion)

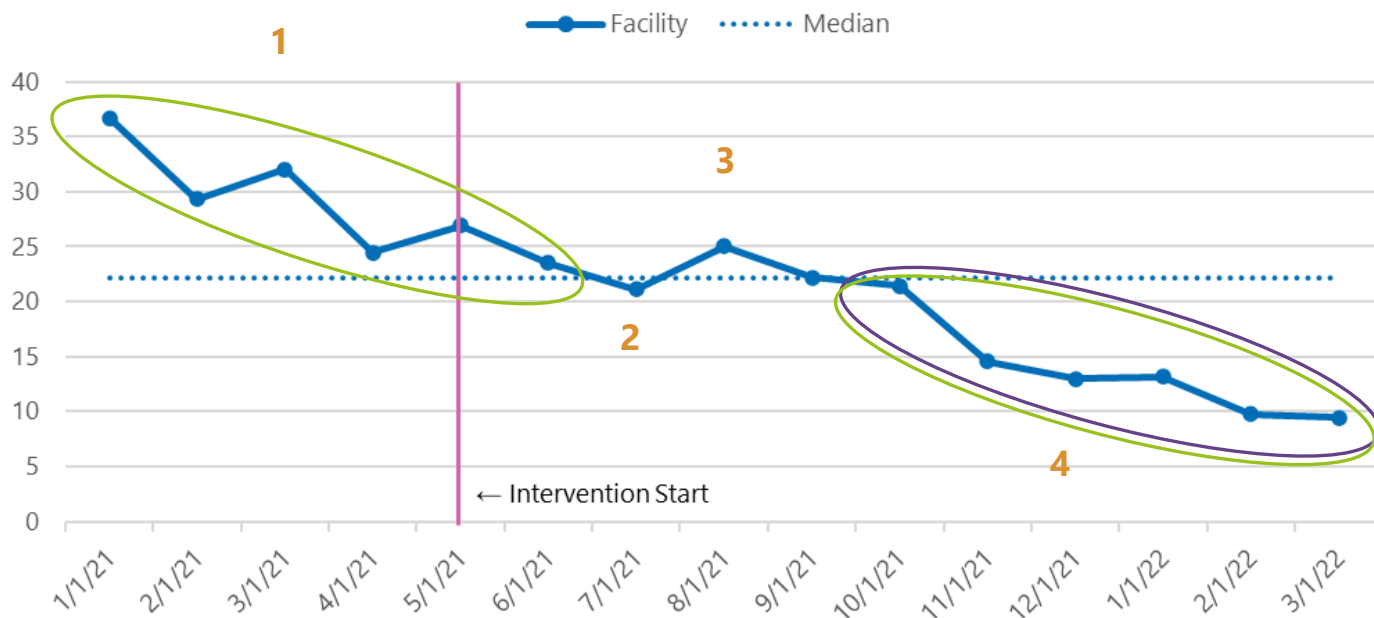


## Pie Chart

- Used to display frequencies or proportions for categorical variables that are **mutually exclusive**
- Each piece of the pie represents a part of a whole

# Run Chart Basics

Infection Rate for ABC Nursing Home



**Run:** Series of points above or below the median

**Shift:** 6+ consecutive points above or below the median

**Trend:** 5+ consecutive points trending in one direction

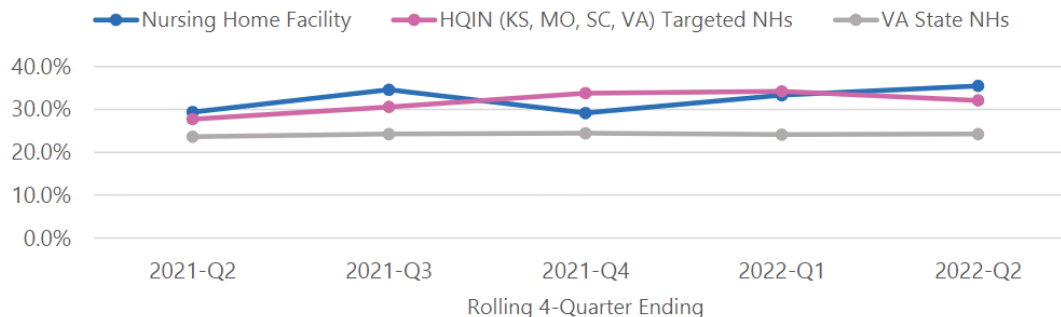
# Comparison Groups

## SEPSIS SPRINT SERIES TARGETED NURSING HOME SUMMARY

Table 1. Nursing Home Readmit and ED Visit Rates by Rolling 4-Quarter Periods

Rolling 4-Quarter Ending	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2
# of Inpatient discharges to NH with principal DX of sepsis	17	26	24	24	31
# of Readmissions from NH following inpatient sepsis discharge	5	9	7	8	11
# of ED visits from NH following inpatient sepsis discharge	0	3	5	5	7
NH Sepsis Readmit Rate	29.4%	34.6%	29.2%	33.3%	35.5%
NH Sepsis ED Visit Rate	0.0%	11.5%	20.8%	20.8%	22.6%

Figure 1. Nursing Home Readmits Within 30 Days of Sepsis Inpatient Discharge



# Comparison Groups, continued

Figure 2. Nursing Home ED Visits Within 30 Days of Sepsis Inpatient Discharge

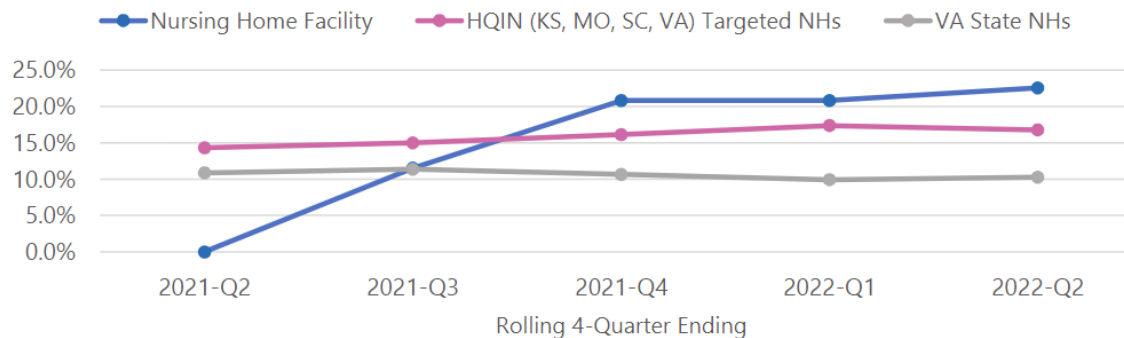
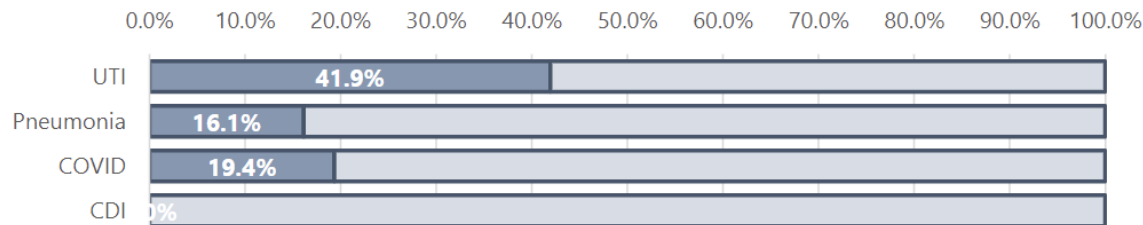


Figure 3. % of Inpatient discharges to NH with a principal diagnosis of sepsis that had a secondary diagnosis of UTI, Pneumonia, COVID, or CDI



# Calculating Improvement

**Relative Improvement Rate (RIR)** provides a way to compare progress for multiple measures where the goal directions may be different

Type of Change	Definition	Example
Absolute Change	Exact difference between ending number and beginning number	$ 30\% - 10\%  = 20\%$ absolute decrease
<b>Relative Change (RIR)</b>	Difference between ending and beginning numbers as a percentage of beginning number	$\frac{ 30\% - 10\% }{30\%} = 67\%$ relative decrease

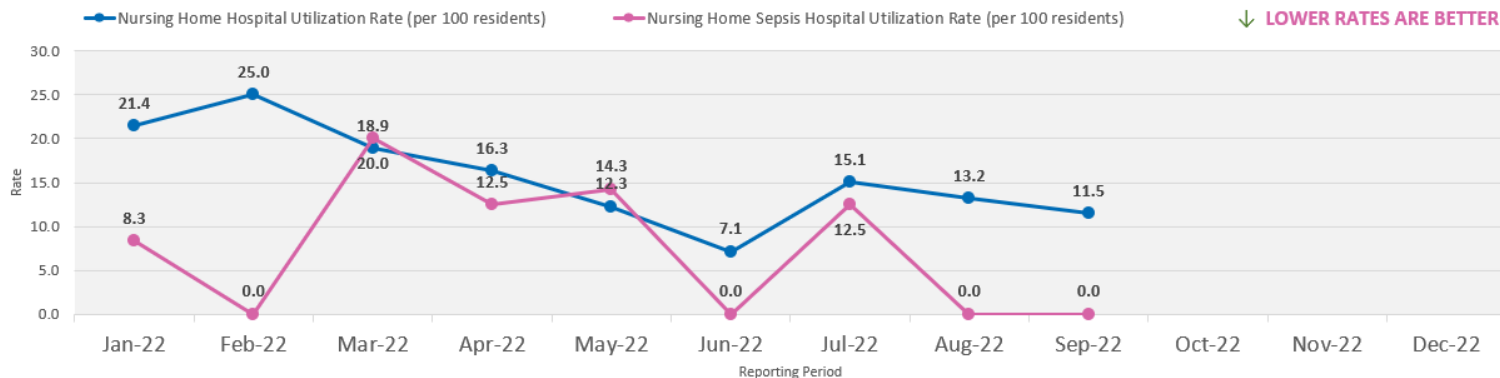
Measure	Goal Direction	Example	% RIR
30-Day Readmissions (%)	<b>Decrease</b>	Baseline: 20% Remeasurement: 15%	25% RIR



# Sample Facility Data Collection

↓ ENTER IN THE TOTAL VOLUME BY MONTH ↓

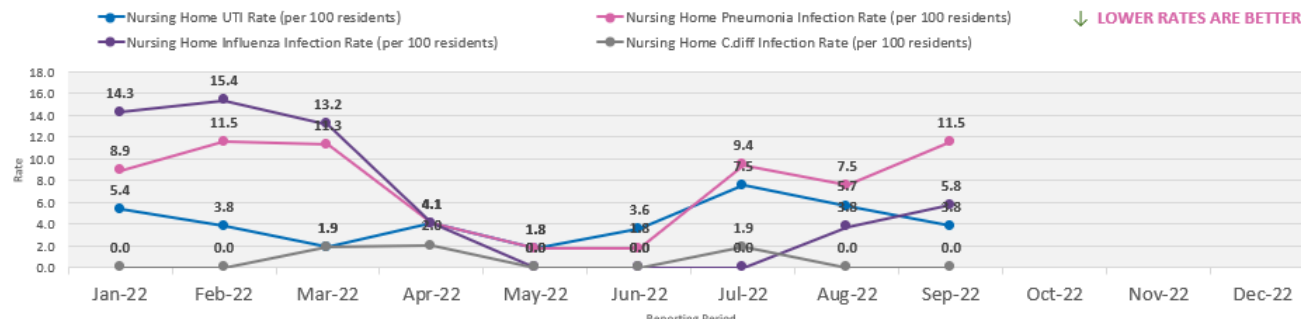
	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Number of residents in your facility	56	52	53	49	57	56	53	53	52			
Number of inpatient admissions or ED visits from your facility to any hospital for <b>any cause</b>	12	13	10	8	7	4	8	7	6			
Number of inpatient admissions or ED visits from your facility to any hospital for <b>suspected sepsis</b>	1	0	2	1	1	0	1	0	0			
<b>Nursing Home Hospital Utilization Rate (per 100 residents)</b>	<b>21.4</b>	<b>25.0</b>	<b>18.9</b>	<b>16.3</b>	<b>12.3</b>	<b>7.1</b>	<b>15.1</b>	<b>13.2</b>	<b>11.5</b>			
<b>Nursing Home Sepsis Hospital Utilization Rate (per 100 residents)</b>	<b>8.3</b>	<b>0.0</b>	<b>20.0</b>	<b>12.5</b>	<b>14.3</b>	<b>0.0</b>	<b>12.5</b>	<b>0.0</b>	<b>0.0</b>			



# Sample Facility Data Collection, cont.

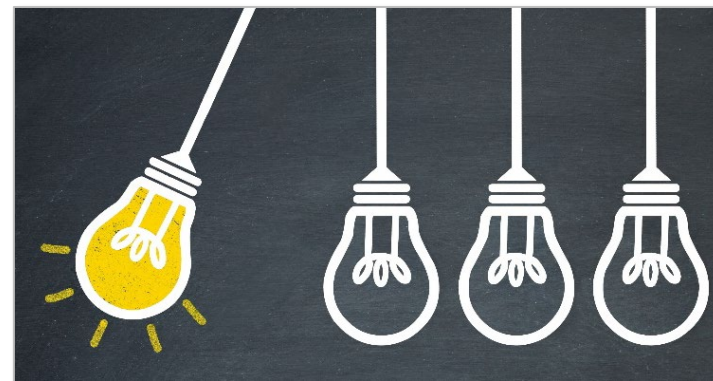
↓ ENTER IN THE TOTAL VOLUME BY MONTH ↓

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Number of residents in your facility	56	52	53	49	57	56	53	53	52			
Number of <b>Urinary Tract Infections (UTIs)</b> in your facility	3	2	1	2	1	2	4	3	2			
Number of <b>pneumonia infections</b> in your facility	5	6	6	2	1	1	5	4	6			
Number of <b>influenza infections</b> in your facility	8	8	7	2	0	0	0	2	3			
Number of <b>C. difficile infections</b> in your facility	0	0	1	1	0	0	1	0	0			
<b>Nursing Home UTI Rate (per 100 residents)</b>	<b>5.4</b>	<b>3.8</b>	<b>1.9</b>	<b>4.1</b>	<b>1.8</b>	<b>3.6</b>	<b>7.5</b>	<b>5.7</b>	<b>3.8</b>			
<b>Nursing Home Pneumonia Infection Rate (per 100 residents)</b>	<b>8.9</b>	<b>11.5</b>	<b>11.3</b>	<b>4.1</b>	<b>1.8</b>	<b>1.8</b>	<b>9.4</b>	<b>7.5</b>	<b>11.5</b>			
<b>Nursing Home Influenza Infection Rate (per 100 residents)</b>	<b>14.3</b>	<b>15.4</b>	<b>13.2</b>	<b>4.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.8</b>	<b>5.8</b>			
<b>Nursing Home C.diff Infection Rate (per 100 residents)</b>	<b>0.0</b>	<b>0.0</b>	<b>1.9</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.9</b>	<b>0.0</b>	<b>0.0</b>			



# Analysis and Feedback

- Identify trends
  - Indwelling catheter-related urinary tract infections, etc.
  - Outbreaks
- Spotlight opportunities
  - Infection prevention training and/or practices
  - Process issues
  - Compliance issues
- Celebrate successes!



# Polling Question

In your facility, hospital readmission/ED visit data is shared:

- A. Routinely in quality meetings
- B. Only with the administrator and DON
- C. We aren't currently sharing hospital readmission/ED visit data



MEETING  
Chat  
DIALOG  
TALK  
BUSINESS  
Answers  
IDEAS  
Communicate  
SOCIAL  
PROPOSAL  
IDEAS  
Discuss  
Connection  
Session  
Group  
INPUT  
CONVERSATION  
PARTNERSHIP  
Forum  
SHARE  
OPERATING  
QUESTIONS  
EXPLORATION  
Community  
Group  
Dialog  
Business  
Communication  
TALK  
Debate

# Discussion

# **Next Session: Provider Communication & Engagement**

**Thursday, December 15  
11:30 a.m. CST | 12:30 p.m. EST**



# FOR MORE INFORMATION

Call 877.731.4746 or visit [www.hqin.org](http://www.hqin.org)

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