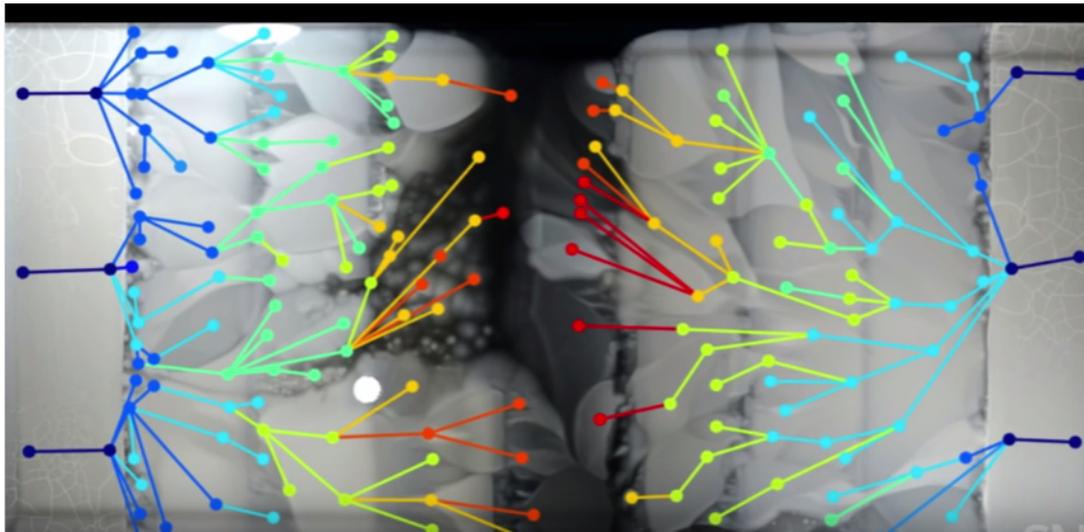

Long Beach CRE Prevention Collaborative June 6th, 2018

Long Beach Department of Health & Human Services
California Department of Public Health



Watch as bacteria evolve antibiotic resistance

- *E. coli* evolved resistance to antibiotics as they grew across a giant petri dish coated with increasing concentrations of antibiotics. At the end of the experiment, the bacteria near the center of the plate could withstand a dose of antibiotics 1,000 times higher than the starting bacteria.



Agenda

- Introduction and Housekeeping
- CRE Updates
- Site Visit Update
- Preventing Transmission of MDRO in SNF and ACH
- Scenarios and Breakout Sessions



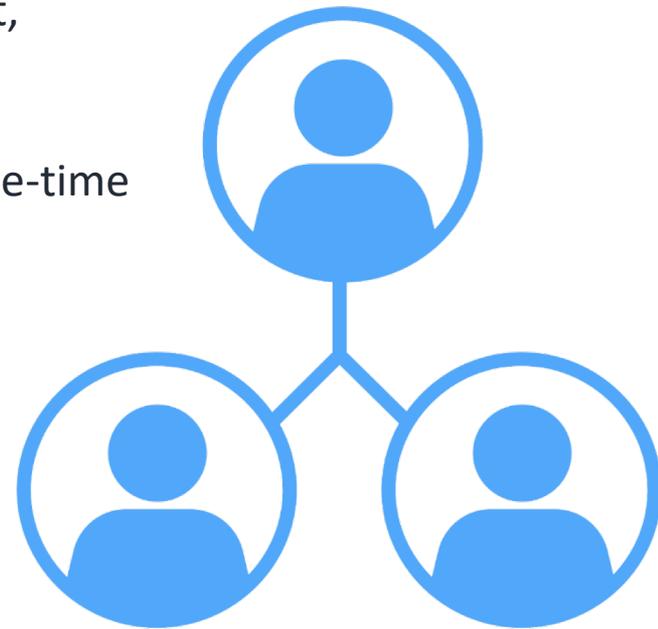
Timeline

Date	Day/time	Task
March 13	Tue 8-10am	Kick-off Meeting
June 6	Wed 8am-12pm	1 st learning/discussion session
July 25	Wed 9-10am Skilled Nursing Facilities 10-11am Acute Care Hospitals	1 st conference/check-in call
Sept 19	Wed 8am-12pm	2 nd learning/discussion session
Oct 24	Wed 9-10am Skilled Nursing Facilities 10-11am Acute Care Hospitals	2 nd conference/check-in call
Dec 12	Wed 8am-12pm	3 rd learning/discussion session
Jan 23, 2019	Wed 9-10am Skilled Nursing Facilities 10-11am Acute Care Hospitals	3 rd conference/check-in call
Mar 13, 2019	Wed 8am-12pm	Final learning/discussion session



CRE Collaborative Expectations

- › Actively engage all CRE team members by ensuring participation in all collaborative activities (e.g. observational assessment, learning and discussion sessions, etc.)
- › Commit to a prevention action plan and participate in a one-time onsite prevention assessment
- › Conduct surveillance and share information regarding CRE





Survey Results

Rank	Topic	Avg Ranking
1	Infection Prevention	2.36
2	Antimicrobial Stewardship	3.45
3	Isolation Protocol	3.73
4	Lab Interpretation of CRE and Carbapenemases	5.09
5	Enhancing Interfacility Communication	5.36
6	CRE Reporting Requirements	5.55
7	Environmental Cleaning	5.55
8	Antibiogram	5.91
9	Reporting into National Healthcare Safety Network (NHSN)	8



Long Beach CRE

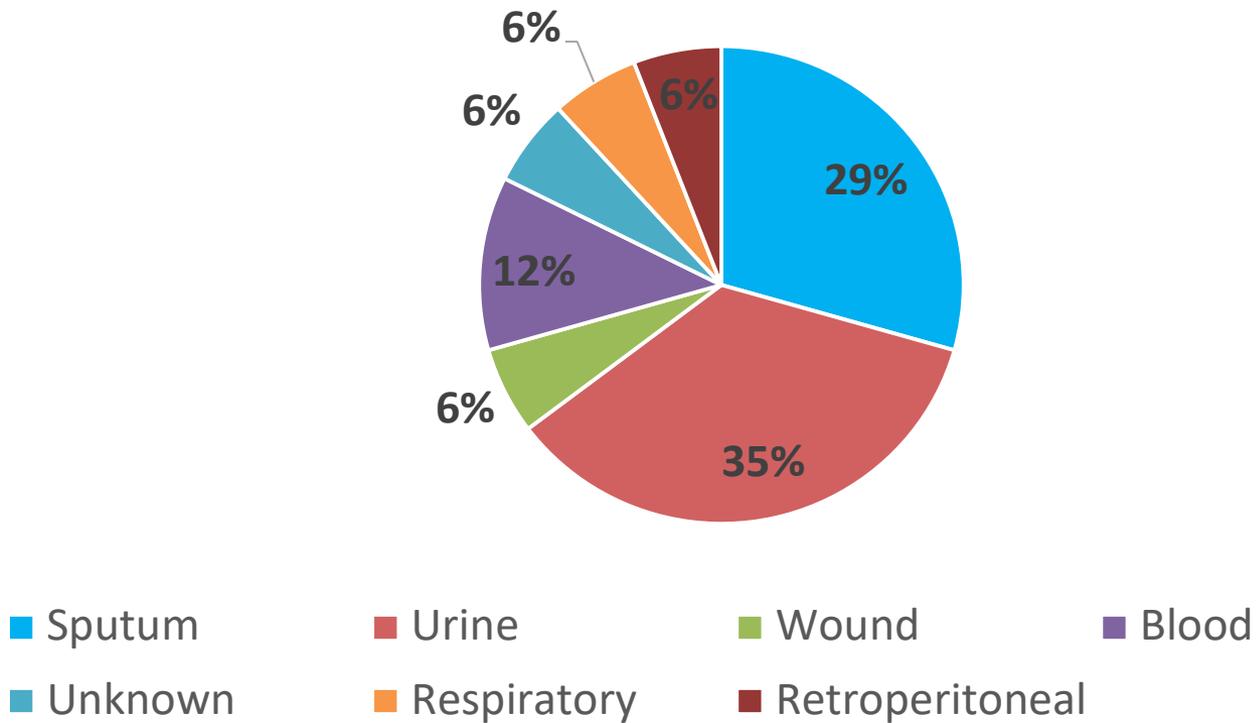
Table 1: CRE Organisms Reported in Long Beach, Q1 2018

	Carbapenem-resistant Organism			
	<i>K. pneumoniae</i>	<i>Enterobacter</i>	<i>E. coli</i>	Total
Hospital	9	6	0	15
Skilled Nursing Facility	2	0	0	2
Total	11	6	0	17



Long Beach CRE

Source of Specimen: Long Beach, Q1 2018 (N=17)





Long Beach CRE

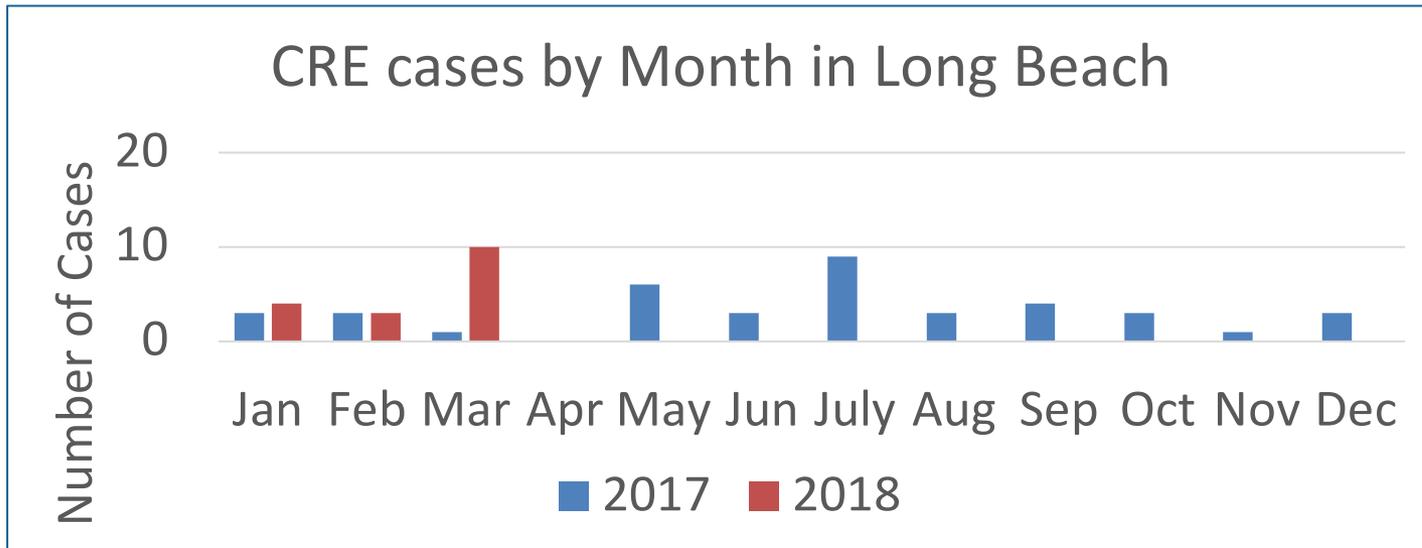
Table 2: Carbapenemase Testing, Q1 2018

Klebsiella pneumoniae carbapenemase (KPC)	2
Unspecified Carbapenemase*	6
Total	8

*Modified Hodge Test



Long Beach CRE





Antibiograms Due

- › Due June 1!
- › Hospitals: send antibiogram to Emily.Holman@longbeach.gov or Nick.Lefranc@longbeach.gov
- › SNFs: if already obtain antibiograms through reference labs either email directly to us, or check with lab that it has been submitted to LA County
- › Long Beach will forward Antibiograms to LA County for analysis
 - › Excel format is preferred (but PDF okay)





LONG BEACH
HEALTH & HUMAN SERVICES

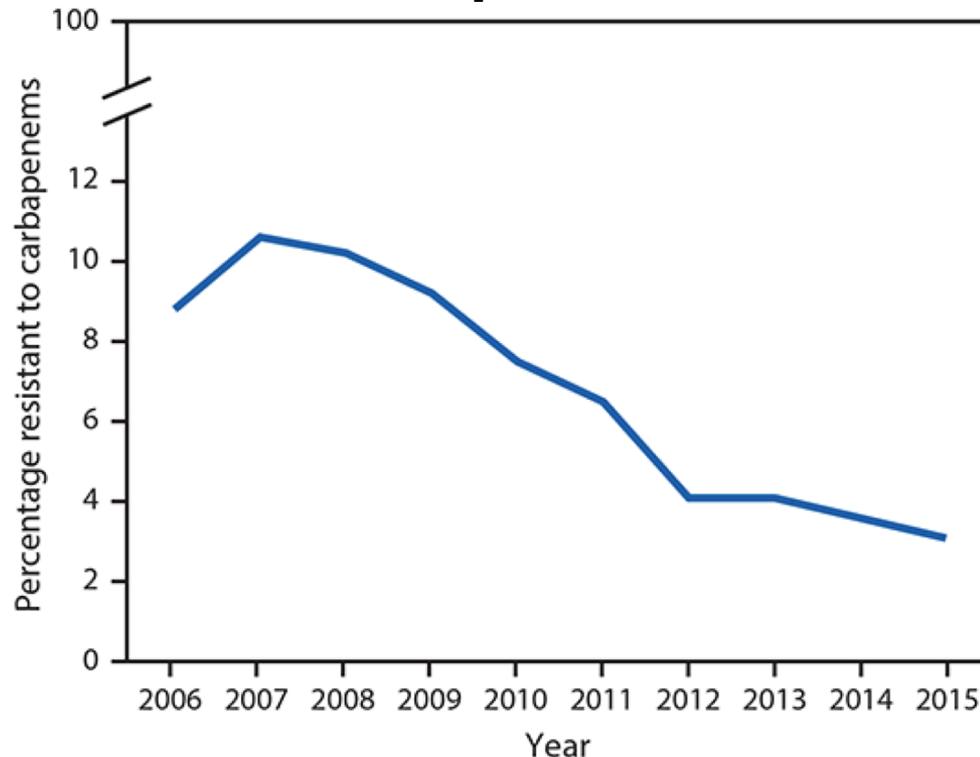


Updates on CRE



CRE in United States

Percentage of *E. coli* and *Klebsiella pneumoniae* isolates from selected HAI reported as resistant to a carbapenem — NHSN, 2006–2015



* Central line-associated bloodstream infections and catheter-associated urinary tract infections.

CDC Vital Signs- April 2018

Once antibiotic resistance spreads, it is harder to control—like a wildfire.

Finding and responding to unusual resistance early, before it becomes common, can help stop its spread and protect people.

New or rare types of antibiotic resistance can be easier to contain when found rapidly—like a spark or campfire.



UNUSUAL ANTIBIOTIC-RESISTANT GERMS



Resistant to all or most antibiotics tested, making them hard to treat, and



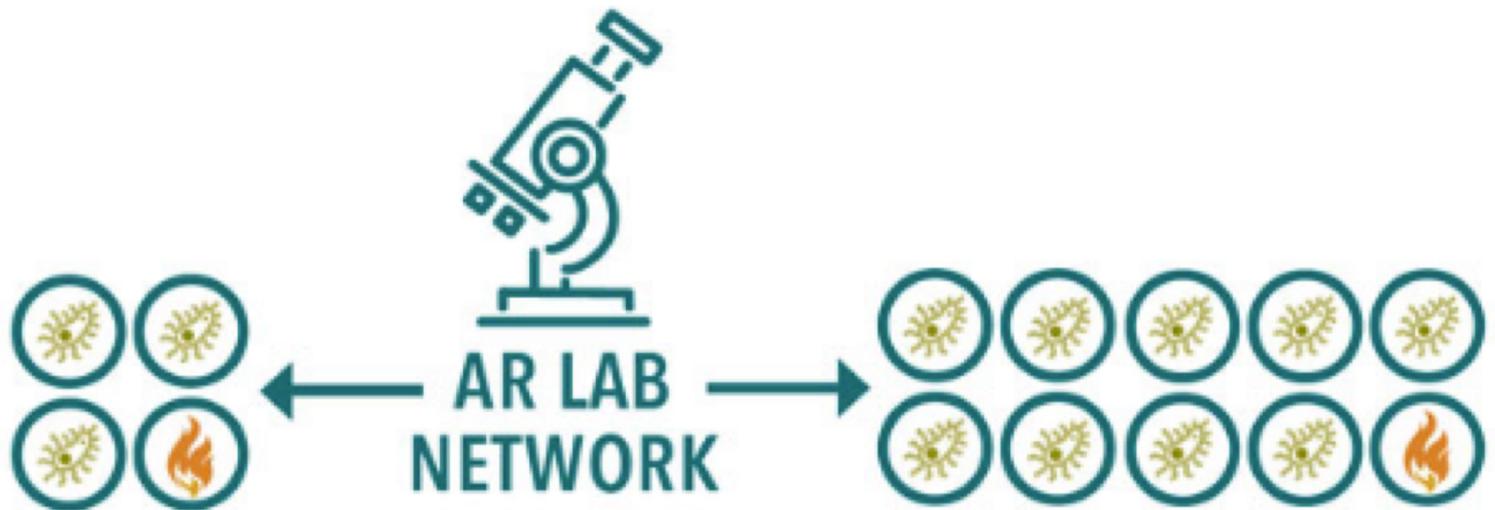
Uncommon in a geographic area or the US, or



Have special genes that allow them to spread their resistance to other germs

Examples of unusual resistance: Vancomycin-resistant *Staphylococcus aureus* (VRSA), *Candida auris*, and certain types of "nightmare bacteria" such as carbapenem-resistant Enterobacteriaceae (CRE).

CDC Antibiotic Resistance Lab Network (ARLN)



1 IN 4 GERMS TESTED WAS POSITIVE.

25% of the germs had special genes that allow them to spread their resistance to other germs. In response, many investigations were conducted and screening tests were performed.

1 IN 10 SCREENING TESTS WAS POSITIVE.

If left undetected, patients without symptoms could continue spreading rare, hard-to-treat germs in the health care facility.



Health care facilities, health departments, and CDC are **ON ALERT** for antibiotic resistance.

THE CONTAINMENT STRATEGY



Public health teams nationwide can launch early, aggressive responses to contain spread and protect people—at the first sign of antibiotic resistance, every time.

Find guidance, lab protocols, and more resources: www.cdc.gov/HAI/Outbreaks/MDRO

Site Visits

- Total facilities visited:
 - One Acute Care
 - Five Long Term Care
- Number of facilities with scheduled visits
 - One ACH
 - One LTCF
 - **Eight Facilities need to schedule a visit**
- Number of facilities participating- 16
 - Three - Acute Care Facilities
 - Thirteen -Long Term Care Facilities

Preventing the Spread of Multidrug-Resistant Organisms (MDRO) in Healthcare Settings

Zenith Khwaja
HAI Liaison Infection Preventionist
Healthcare-Associated Infections (HAI) Program
Center for Health Care Quality
California Department of Public Health



What are Multidrug-Resistant Organisms (MDRO)?

- Bacteria that become resistant to one or more antibiotics
- Due to overuse or inappropriate use of antibiotics
 - Antibiotics can no longer control or kill bacteria
 - Infections are difficult to treat
- Examples
 - Methicillin-resistant *Staph aureus* (**MRSA**)
 - Vancomycin-resistant *Enterococci* (**VRE**)
 - Resistant gram-negative bacteria such as
 - Carbapenem-resistant Enterobacteriaceae (**CRE**)
 - Multidrug resistant *Acinetobacter*

Who is at Risk for MDRO?

Persons with;

- Diabetes, chronic kidney disease, open wounds
- Prolonged use of antibiotics
- Invasive procedures
- Age >65 years
- Age-related immunity
- Extended health care facility stay
- Repeated admission to hospitals or long-term care facilities

MDRO Transmission

MDRO are spread by:

- Health care providers (HCP)
 - Primarily via unclean hands of HCP
- Contaminated environment
- Contaminated equipment
- Introduction during procedures

Preventing MDRO

- Prevent MDRO emergence
 - Appropriate use of antibiotics
- Prevent MDRO transmission (spread)
 - Hand hygiene
 - Environmental cleaning and disinfection
 - Personal protective equipment (PPE)
 - Standard and Transmission-based isolation precautions
 - Identify and isolate residents with MDRO
- Prevent MDRO infections
 - Remove invasive devices as soon as no longer necessary

Standard Precautions

- Basic care practices to be used during **all patient care** in **all health care settings**
- Prevent health care personnel and the environment from spreading organisms that can cause disease to other patients
- Protect healthcare personnel

Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings – CDC HICPAC Recommendations, 2016

<https://www.cdc.gov/hicpac/pdf/core-practices.pdf>

Standard Precautions Elements

1. Hand hygiene
2. Injection safety and safe medication use
3. Selection and use of **personal protective equipment (PPE) based on activities being performed**
 - specifically, **gloves, gowns**, face masks
4. Minimizing potential exposures
 - for example, respiratory hygiene and cough etiquette
5. **Environmental cleaning and disinfection**
6. Reprocessing reusable medical equipment **between each patient** and when soiled

Core Infection Prevention and Control Practices - CDC HICPAC, 2016

<https://www.cdc.gov/hicpac/pdf/core-practices.pdf>



Transmission-based Precautions

- Developed by Centers for Disease Control and Prevention (CDC) in 1996
 - Centers for Medicare and Medicaid Services (CMS) requirement for SNF in 2016
- Used when Standard precautions may not be enough to prevent transmission
- Used in addition to Standard precautions
- Three types of Transmission-based precautions
 - **Contact precautions**
 - Droplet precautions
 - Airborne precautions

Acute Care Hospitals: Is it a policy in your facility that patients infected or colonized with CRE are routinely placed in contact precautions while these patients are in your facility?

Response	Number(%)
Yes, all infected or colonized patients	325(84)
Yes, only all infected patients	30(8)
Yes, only those with certain characteristics that make them high-risk for transmission (e.g., wounds, diarrhea, presence of an indwelling device)	16(4)
Yes, only those admitted to high-risk settings (e.g., ICU)	1(1)
Not applicable: my facility never admits these patients	11(3)
No	4(1)

Enhanced Standard Precautions*

- Developed in 2010 for use in California skilled nursing facilities (SNF)
 - CDPH with the California Association of Health Facilities (CAHF)
- Intended to prevent MDRO transmission in SNF
- Applies to all SNF residents, regardless of known MDRO colonization or infection
- Based on resident risk factors
- Adapts isolation precautions to allow SNF residents to leave their rooms safely

****NOTE: Revision coming soon (Summer 2018)***

Risk Factors for Enhanced Standard Precautions

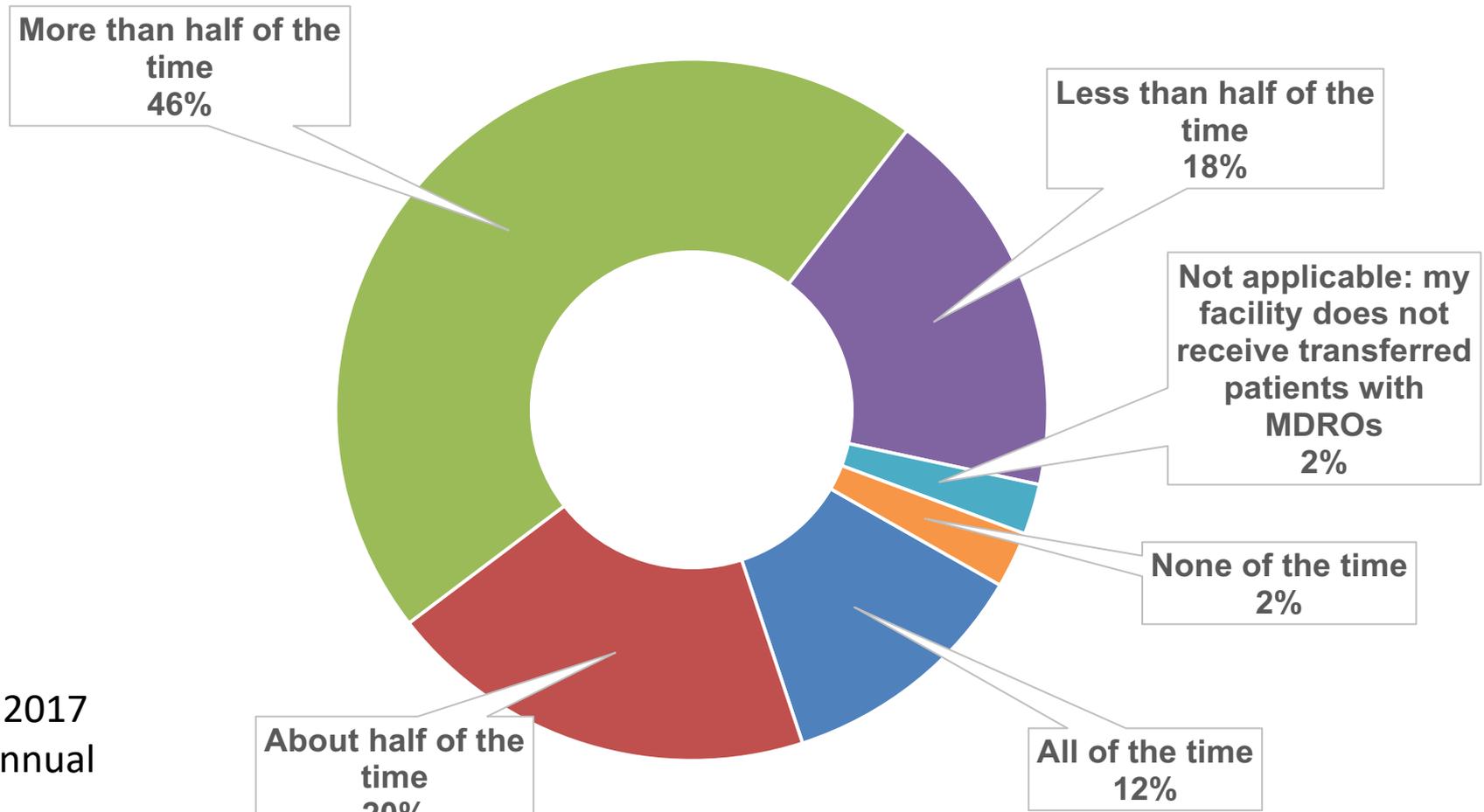
- Consider if residents are at **high** or **low** risk for MDRO transmission

High risk for spreading MDRO	Low risk for spreading MDRO
<p>Poor functional status Such as</p> <ul style="list-style-type: none"> Dependent on assistance for activities of daily living (ADLs) Unable to maintain personal hygiene 	<p>Higher functional status Such as</p> <ul style="list-style-type: none"> Able to carry out ADLs with minimal assistance Cognitively intact Maintains personal hygiene
<p>Presence of indwelling devices Such as central lines, urinary catheters</p>	<p>No indwelling devices</p>
<p>Ventilator dependent</p>	<p>Not on ventilator, no tracheotomy</p>
<p>Wounds</p>	<p>No wounds</p>
<p>Incontinence</p>	<p>Continent</p>

Using Enhanced Standard Precautions for High Risk SNF Residents

- Room placement
 - Place in **private room** (preferred)
 - Cohort when private room not available
- Select **appropriate PPE** for the task
 - Gloves & gowns or gloves only
- Hand hygiene (**consistently!**)
- Special considerations for
 - Room cleaning and disinfection
 - Medical equipment
 - Transportation
- **Communicate** with hospitals or other facilities upon transfer

Acute Care Hospitals: Among patients with an MDRO admitted to your facility from another healthcare facility, please estimate how often your facility receives information from the transferring facility about the patient's MDRO status?



Summary

- MDRO bacteria require specific care practices to prevent and control spread in SNF
- Enhanced Standard Precautions
 - Address the burden of MDRO colonization in SNF
 - Applied based on **each** resident's clinical and functional status
 - Can prevent MDRO transmission when used appropriately and consistently

CDC References

- Nursing Homes and Assisted Living (Long-Term Care Facilities)
<https://www.cdc.gov/longtermcare/index.html>
- Multidrug-resistant organisms (MDRO) Management
<https://www.cdc.gov/infectioncontrol/guidelines/mdro/index.html>
- Hand Hygiene in Healthcare Settings
<https://www.cdc.gov/handhygiene/providers/guideline.html>
- Standard Precautions for All Patient Care
<https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html>
- Isolation Precautions
<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>
- Carbapenem-Resistant Enterobacteriaceae in Healthcare Settings
<https://www.cdc.gov/hai/organisms/cre/index.html>
- CRE Prevention Toolkit
<https://www.cdc.gov/hai/pdfs/cre/CRE-guidance-508.pdf>

Break

Scenario #1

- A resident at a SNF was transferred to an acute care hospital, and four days later had a positive clinical culture for carbapenem-resistant *Klebsiella pneumoniae*. Several days later, after the infection has resolved, a discharge planner at the ACH is discussing the transfer of the patient back to the SNF.

Scenario #2

- The local public health department received a report from a local acute care hospital about a long term SNF resident who tested positive for CRE. After contacting the hospital, it appears that the patient was discharged back to the SNF. The local health department is now calling the SNF to report the result and discuss infection prevention.

Breakout Discussion

- Acute Care Hospitals
 - What are the steps from time the patient is tested to the time the patient is placed on contact precautions?
 - Are there criteria to discontinue the use of contact precautions?
 - How often does your facility receive information from the transferring facility about the patient's MDRO status?
 - Have you had trouble placing patients with CRE at a SNF?

Breakout Discussion

- Skilled Nursing Facilities
 - Are residents with CRE infection/colonization routinely assessed for risk of transmission?
 - Does your facility use contact precautions, or enhanced standard precautions, on patients with MDROs like CRE?
 - How does your facility determine room placement for a resident with CRE?
 - How often does your facility receive information from the transferring facility about the patient's MDRO status?

Breakout Session: Recap