Welcome

Office for State, Tribal, Local and Territorial Support
presents

CDC *Vital Signs* Town Hall
CDC's Containment Strategy for Unusual Antibiotic Resistance

April 10, 2018
2:00–3:00 PM (ET)

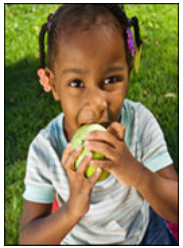
Agenda

Time	Agenda Item	Speaker(s)
2:00 pm	Welcome & Introduction	Matthew Penn, JD, MLIS Director, Office of Public Health Law Services, Office for State, Tribal, Local and Territorial Support
2:05 pm	Vital Signs Overview	Arjun Srinivasan, MD, (Capt, USPHS) Associate Director for Healthcare-Associated Infection Prevention programs, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention
2:10 pm	Presentations	Marion A. Kainer, MD, MPH, FRACP, FSHEA Director, Healthcare Associated Infections and Antimicrobial Resistance Program, Tennessee Department of Health Stephanie R. Black, MD, MSc Medical Director, Communicable Disease Program, Chicago Department of Public Health
2:35 pm	Q&A and Discussion	Matthew Penn, JD, MLIS
2:55 pm	Wrap-up	
3:00 pm	End of Call	

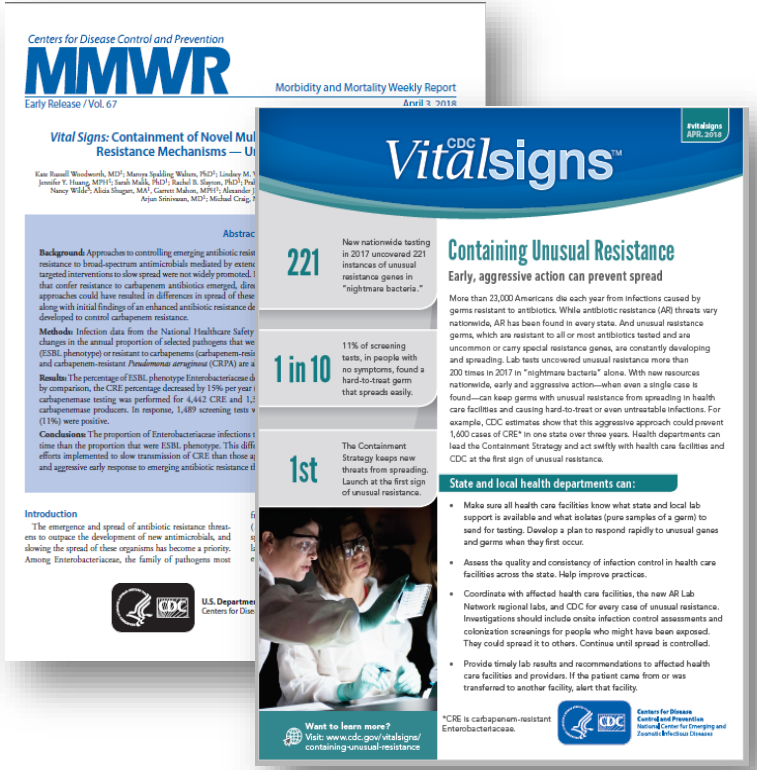
CDC Vitalsigns™

TOWN HALL TELECONFERENCE

to support STLT efforts and build momentum around the monthly release of CDC *Vital Signs*



CDC *Vital Signs:* Containing Unusual Resistance



Arjun Srinivasan, MD (CAPT, USPHS)
Associate Director, Healthcare-Associated Infection Prevention Programs
Division of Healthcare Quality Promotion

April 10, 2018

PROBLEM:

Antibiotic-resistant germs can spread like wildfire.

- Once antibiotic resistance spreads, it is harder to control.
- 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.

Main Points

- “Unusual” types of antibiotic resistance (AR) are widespread across the U.S.
- CDC’s Containment Strategy is an aggressive approach to stop the spread of “unusual” AR.
- For carbapenem-resistant Enterobacteriaceae (CRE) alone, CDC estimates show that the Containment Strategy would reduce infections by 76%.

First Results from AR Lab Network

- *MMWR* report summarized the experience over the first several months of improved lab testing by CDC's Antibiotic Resistance Lab Network.
- Expanded laboratory testing capacity in all 50 states, 5 cities, and Puerto Rico for rapid identification. Regional labs support colonization testing.
- Health departments and health care facilities can work together to aggressively respond to protect patients from these threats and keep infections from spreading within and between facilities.

221

New nationwide testing in 2017 uncovered 221 instances of unusual resistance genes in "nightmare bacteria."

1 in 10

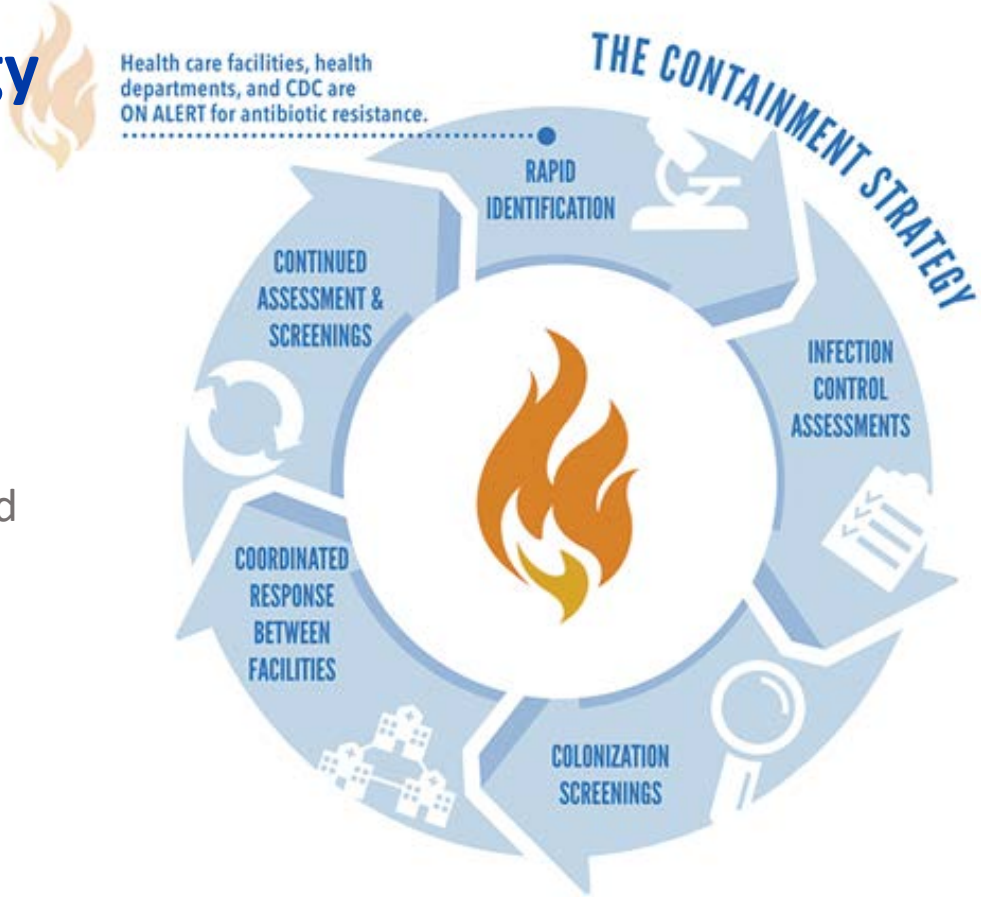
11% of screening tests, in people with no symptoms, found a hard-to-treat germ that spreads easily.

1st

The Containment Strategy keeps new threats from spreading. Launch at the first sign of unusual resistance.

The Containment Strategy

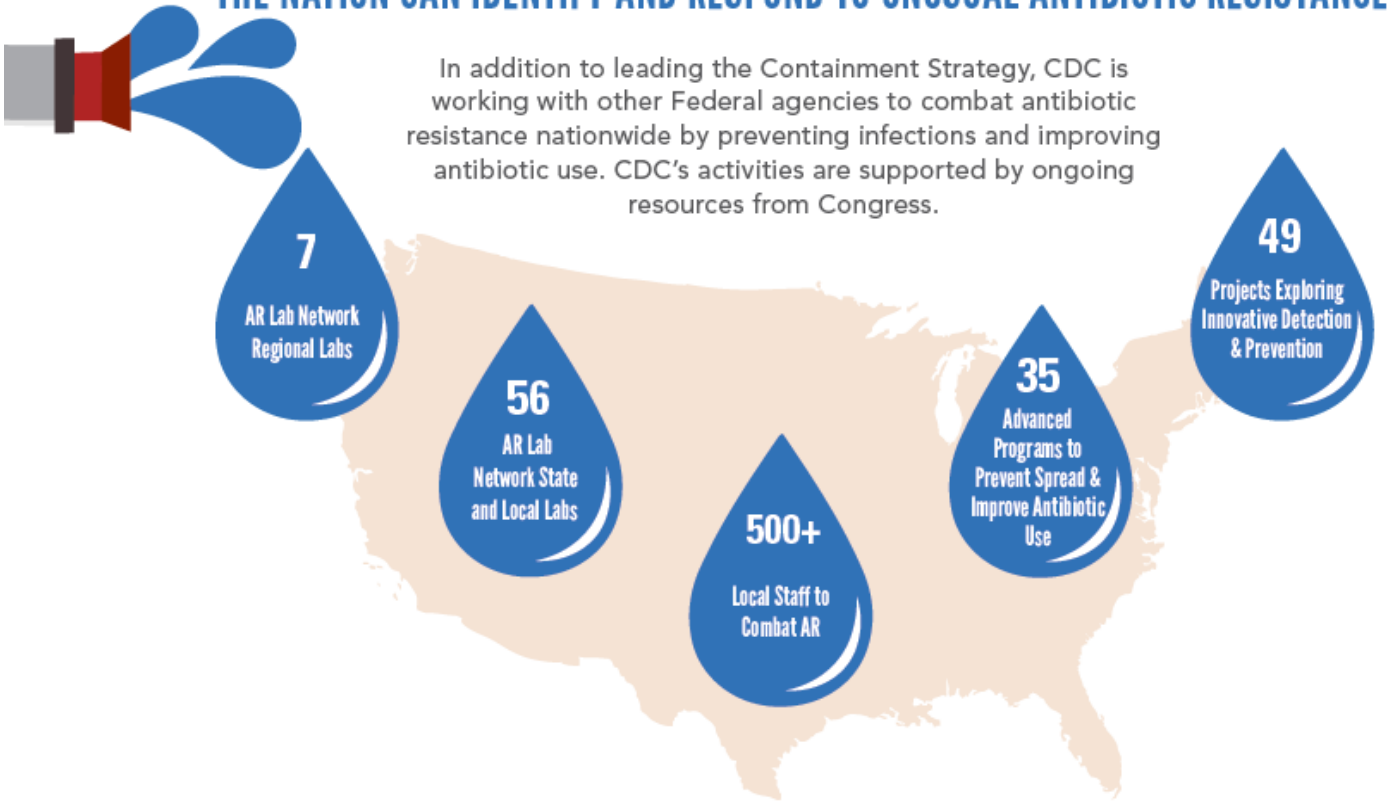
- Rapid detection in health care facilities
- Infection control assessments led by the health department
- Colonization screenings, when needed
- Coordination between healthcare facilities
- Continued vigilance until spread is controlled



Containment Strategy: Be on guard to contain the first spark.

THE NATION CAN IDENTIFY AND RESPOND TO UNUSUAL ANTIBIOTIC RESISTANCE

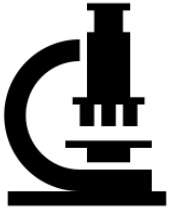
In addition to leading the Containment Strategy, CDC is working with other Federal agencies to combat antibiotic resistance nationwide by preventing infections and improving antibiotic use. CDC's activities are supported by ongoing resources from Congress.



Rapid Containment Response in Tennessee

Marion A. Kainer MD, MPH, FRACP, FSHEA
Director, Healthcare Associated Infections and Antimicrobial Resistance (HAI/AR) Program
Hai.health@tn.gov

Day 1: Identification and Next Steps



NDM + *Klebsiella pneumoniae* (CP-CRE)

30 minutes:

"Dr. X: we have identified NDM in one of your patients. This is a Tier 2 organism. We will be following CDC's guidance document. Would like to have conference call to discuss."

	Tier 1	Tier 2	Tier 3
Infection Control Assessment			
Laboratory lookback			
Prospective surveillance			
Healthcare roommate screening			
Broader healthcare contact screening			
Household contact screening			
Environmental sampling			
Healthcare personnel screening			

2 hours after identification of NDM:

Conference Call

+

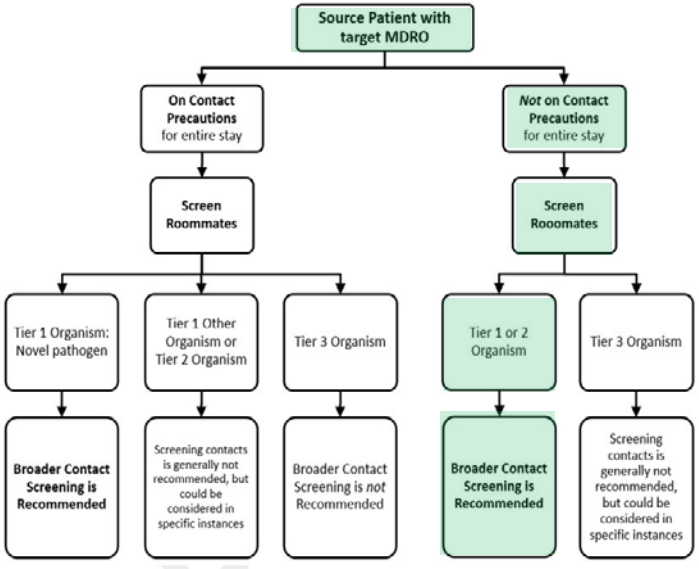
Joint Risk Assessment

https://www.cdc.gov/hai/outbreaks/mdro/

NDM= New Dehli Metallo-betalactamase
CP-CRE Carbapenemase producing Carbapenem resistant *Enterobacteriaceae*

Day 1: Joint Risk Assessment

Recommendations:
Based on CDC's Containment Guidance



	Tier 1	Tier 2	Tier 3
Infection Control Assessment		✓	
Lab Lookback		✓	
Prospective Surveillance		✓	
Healthcare Roommate screening		✓	
Broader Healthcare Contact Screening		✓	
Household Contact Screening			
Environmental Sampling			
Healthcare Personnel Screening			

Yes Sometimes No

https://www.cdc.gov/hai/outbreaks/mdro/

Day 1 continued; Day 2: Collect Swabs

Hospital Leadership

Logistics

- Confirm best address for shipment of swabs
- Point of contact for swabs
- Email: Document packet, including instructions, FAQ, sample assent, specimen requisition form

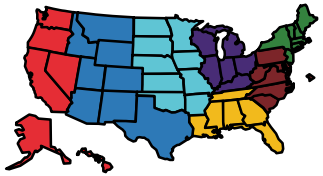
Next Day…

Assent

Frequently Asked Questions (FAQs) and Example Verbal Scripts to Request Assent for Multidrug-Resistant Organism (MDRO) Screening

Collect Swabs

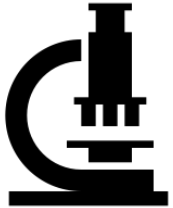
ARLABnetwork



Regional Laboratory

Day 3: Regional Laboratory: Testing

Next Day…



12/12 swabs negative

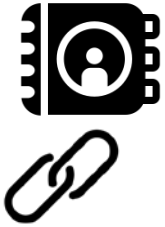
- 11 patients on unit >3 days
- 5 patients on unit before contact precautions initiated

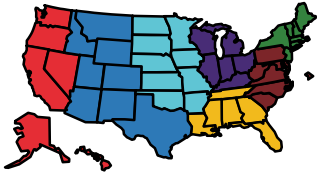
Dr. X notified of results

< 48 hours after initial NDM notification

Keys to Rapid Response

- Advance protocol knowledge
- Effective communications:
  - Healthcare staff
  - Hospital leadership
  - Laboratory
  - Health department





- Logistics
- ARLabNetwork:
  - Report out results within 2 working days of specimen receipt
- CP-CRE reportable, isolate submission required in Tennessee

Advance Protocol Knowledge

- Multi-disciplinary Advisory Group on Healthcare Associated Infections (HAI)
- Statewide monthly call with Infection Preventionists
- Association for Professionals in Infection Control (APIC) chapter meetings
- Emerging Infection Program (EIP) Scientific Day
- Monthly statewide webinar for Public Health (PH) staff
- Regional Tabletop Containment Exercises x 8
- Laboratory "Roadshow"

Planned:

- Chief Medical Officer (CMO) Society meeting (to raise awareness among senior healthcare leadership)

Early Identification: Timely Isolate Submission

- **Isolate submission: required in Tennessee (TN)**
- ***Prioritization:***
  - **CRE isolates from patients hospitalized outside U.S. in last 6 months**
  - **Isolates from laboratories serving high risk patient populations**

CSTE Council of State and Territorial Epidemiologists

17-ID-04

Committee: Infectious Disease

Title: Public Health Reporting and National Notification of Carbapenemase Producing Carbapenem-Resistant Enterobacteriaceae (CP-CRE) for *E. coli*, *Klebsiella* spp. and *Enterobacter* spp.

CP-CRE is National Notifiable (effective: January 2018)

Proposal to add *Candida auris*

ARLN Admission Screening

CDCHAN 00341-02-14-2013
Distributed Feb. 14, 2013

- Patients with hospitalization outside the U.S. in past 6 months
  - Screen patient
  - Place in Contact Precautions pending screening result
  - ARLN now can process these admission colonization swabs

Day 1

How to operationalize?

- Protocol for direct admissions
- Travel question (time interval)

Potential Challenges to Rapid Containment

- Laboratories may be located out of jurisdiction
  - Long term acute care hospitals (LTACHs)
  - Ventilator skilled nursing facilities (vSNF)
  - Dialysis facilities
  - Skilled nursing facilities (SNF)
  - May not report and/or submit isolates

Delay in recognizing threat

- Name of healthcare facility where specimen was collected may not be noted on isolate/specimen submission form
  - Centralized laboratory / Referred out

Delay in initiating containment response

Acknowledgements

- **Laboratory staff:**
  - Hospital, State PH Lab/ Regional Lab for the South East Region
- **Hospital staff:**
  - Hospital epidemiologist, infection preventionists, nurses, hospital leadership
- **Public health (PH) staff:**
  - HAI/AR team, regional/local PH

CDC

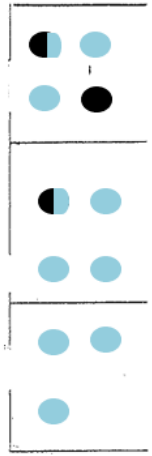
Epidemiology and Laboratory Capacity Cooperative Agreement

ARLABnetwork

TECHNICAL SUPPORT

Epidemiology staff
Laboratory staff

HEALTHY CHICAGO
CHICAGO DEPARTMENT OF PUBLIC HEALTH



The room where it happened…
VIM and *C. auris* in Chicago

Stephanie R. Black, MD, MSc
Medical Director, Communicable Disease Program
April 10, 2018
CDC Vital Signs Town Hall
stephanie.black@cityofchicago.org

Collaboration

Chicago Prevention and Intervention Epicenters

PROTECT and REALM

Outbreak Notification

- Nov 2016 point prevalence survey
- Chicago skilled nursing facility with ventilated residents (vSNF A)
- 20 cases of VIM-producing *Pseudomonas aeruginosa* colonization
- All rectal screening cultures

	VIM-PA	Total Swabbed	% Positive
Skilled nursing floor	4	56	7%
Ventilated/Trached floor	16	62	26%
Total	20	118	17%

VIM-PA=Verona Integron Metallo-beta-lactamase-producing *Pseudomonas aeruginosa*

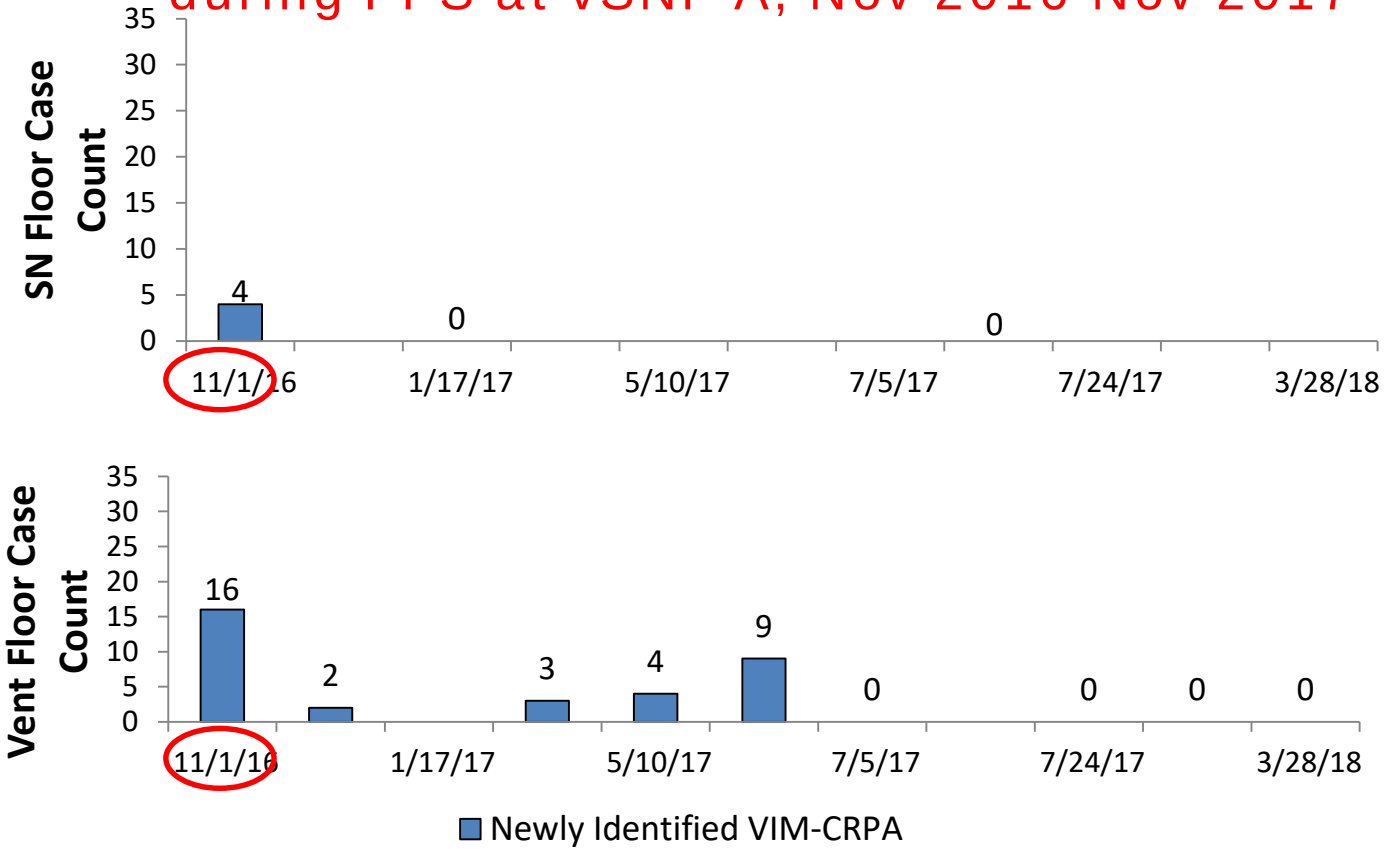
Interventions

- Recommendations:
  - CHG bathing on ventilator unit
  - Improved environmental cleaning practices
  - APIC follow up hand hygiene and bathing practices
  - Cohorting

- Chicago Dept Public Health/Illinois Dept Public Health actions:
  - Carbapenemase-producing Pseudomonas added to XDRO Registry
  - Environmental sampling
  - Follow up point-prevalence surveys

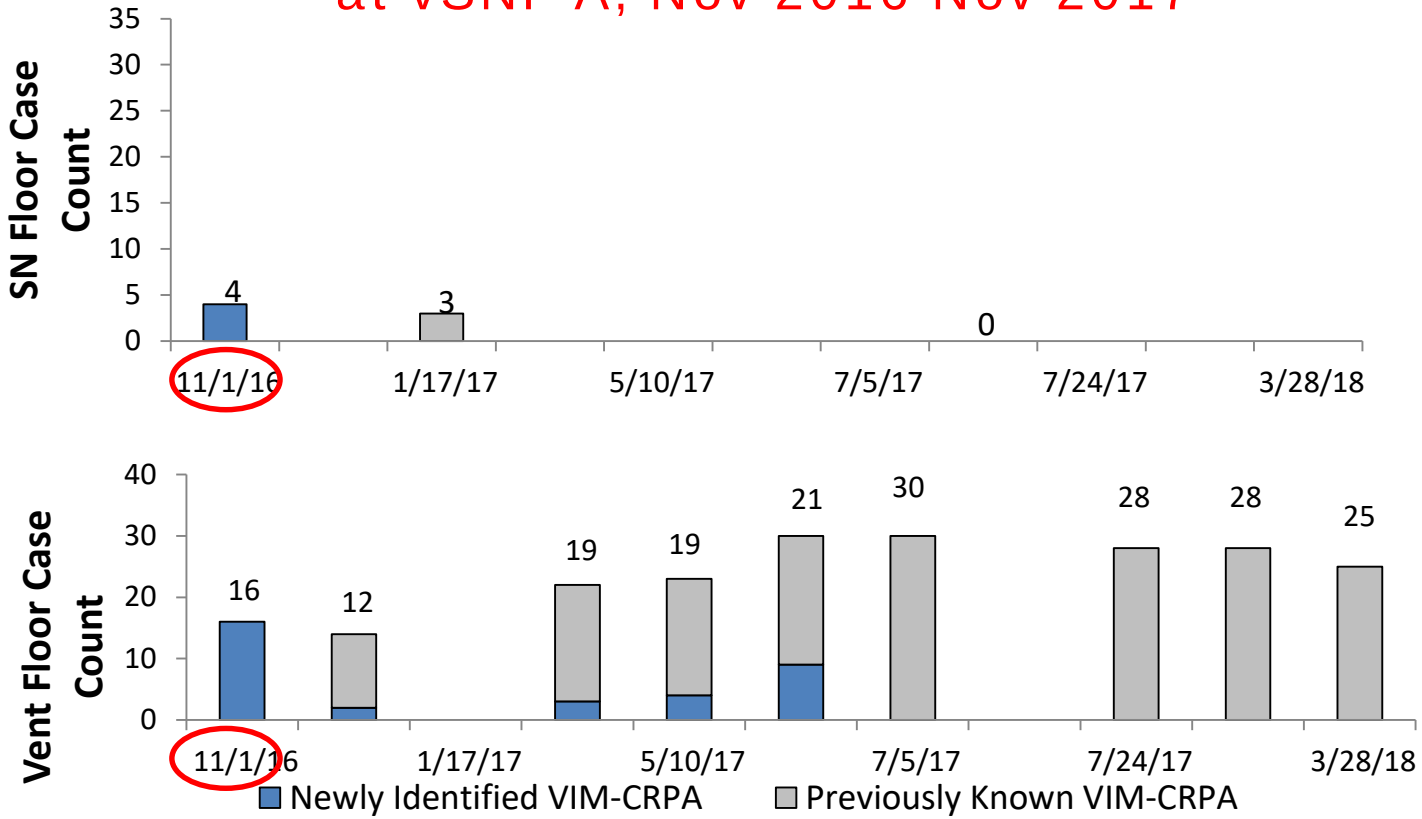
CHG=chlorhexidine gluconate; APIC=Association of Professionals in Infection Control and Epidemiology

Number of newly identified VIM-CRPA during PPS at vSNF A, Nov 2016-Nov 2017



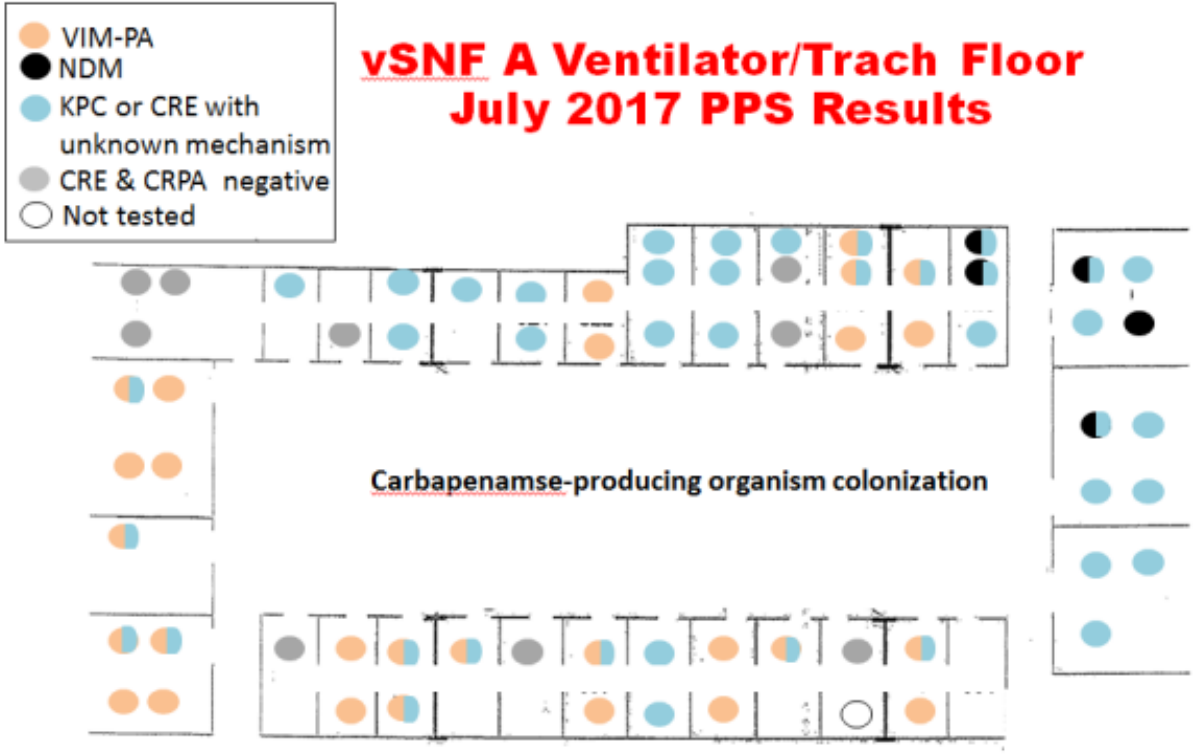
PPS=point prevalence survey; vSNF=skilled nursing facility with ventilated residents; SN=skilled nursing floor; Vent=ventilator/trach floor

Total number of VIM-CRPA on days of PPS at vSNF A, Nov 2016-Nov 2017



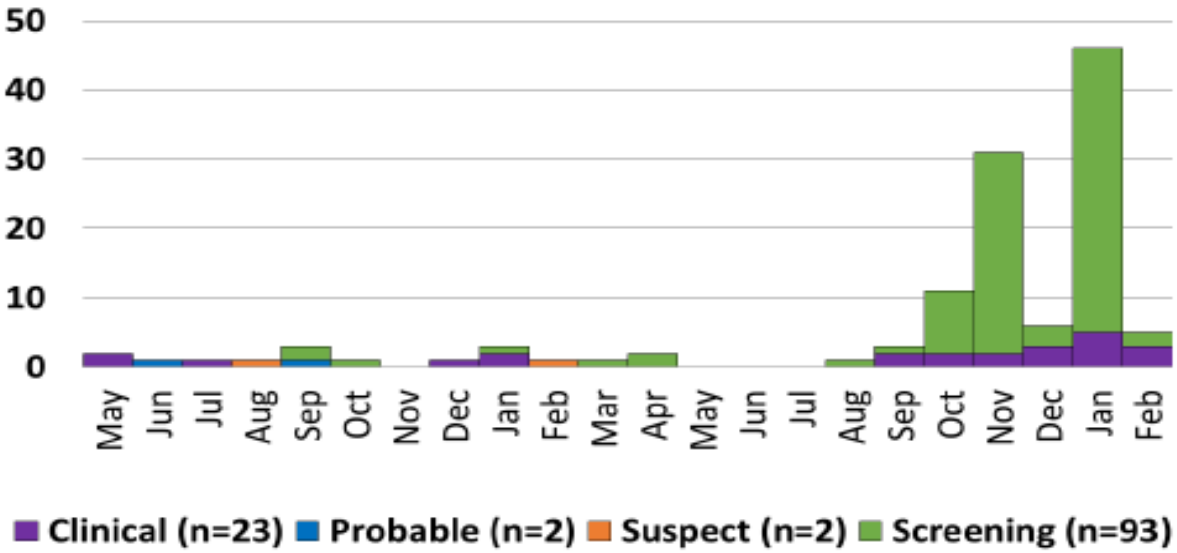
PPS=point prevalence survey; vSNF=skilled nursing facility with ventilated residents; SN=skilled nursing floor; Vent=ventilator/trach floor

vSNF A Ventilator/Trach Floor July 2017 PPS Results



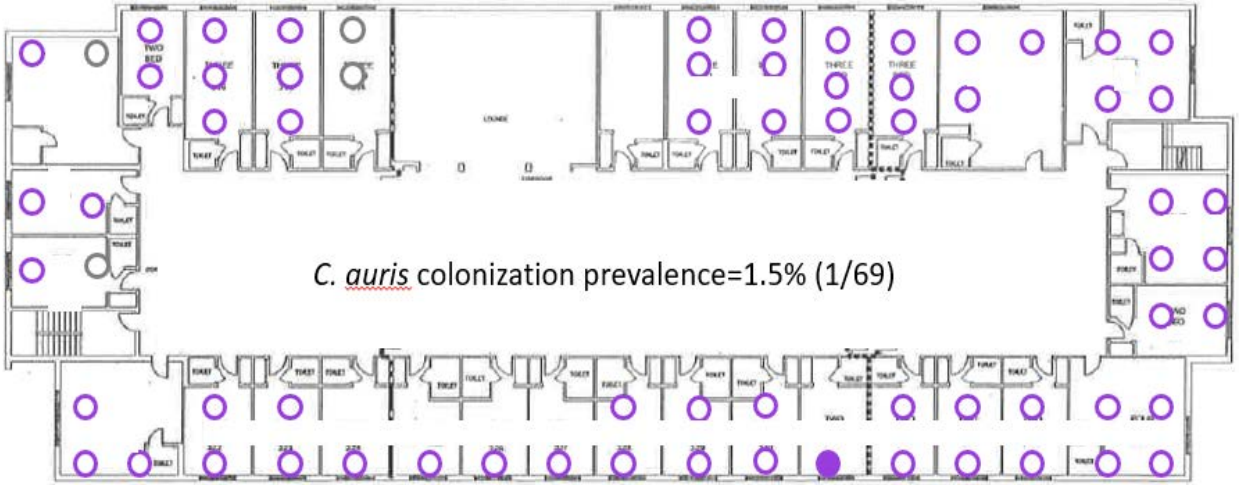
NDM=New Delhi Metallo-beta-lactamase; KPC=Klebsiella pneumoniae carbapenemase; CRE=carbapenem-resistant Enterobacteriaceae; CRPA=carbapenem resistant *Pseudomonas aeruginosa*

C. auris cases (n=120) – Illinois, May 2016-March 8, 2018



- **Confirmed**: Laboratory evidence of *C. auris* from clinical culture.
- **Probable**: Laboratory evidence of *C. haemulonii* from clinical culture & epidemiologic linkage to confirmed case.
- **Suspect**: Laboratory evidence of *C. haemulonii* from clinical culture & no epi link.
- **Screening**: Laboratory evidence of *C. auris* from screening or surveillance culture.

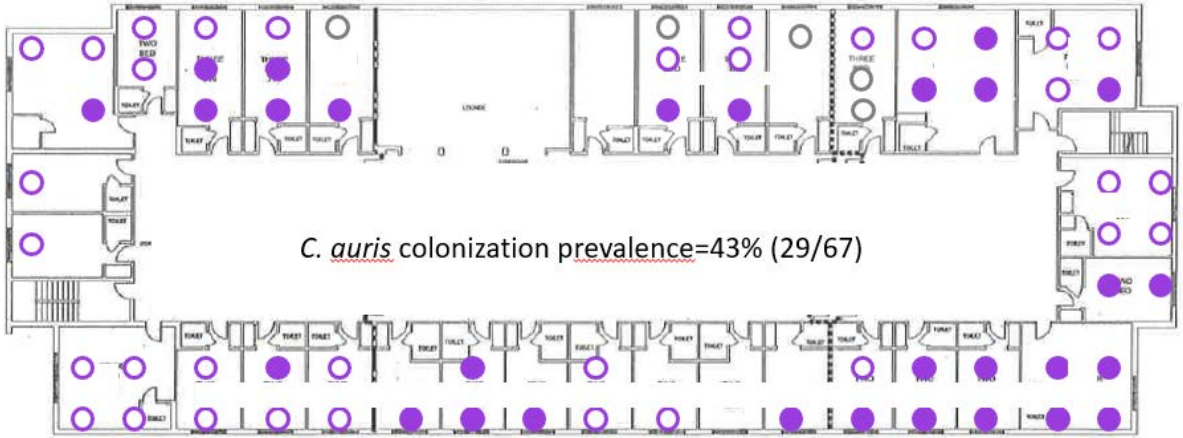
vSNF B Ventilator/Trach Floor
March 2017 *C. auris* PPS Results



- ● *C. auris* positive
- ○ Screened negative for *C. auris*
- ○ Not tested for C. auris (refused or not in room)

PPS=point prevalence survey; vSNF=skilled nursing facility with ventilated residents

vSNF B Ventilator/Trach Floor
January 2018 *C. auris* PPS Results



- ● *C. auris* positive
- ○ Screened negative for *C. auris*
- ○ Not tested for C. auris (refused or not in room)

PPS=point prevalence survey; vSNF=skilled nursing facility with ventilated residents

vSNF B Ventilator/Trach Floor
January 2018 *C. auris* and CPO PPS Results

- *C. auris*
- *C. auris* and KPC
- KPC or CRE with unknown mechanism of resistance
- *C . auris*, KPC, and NDM
- *C. auris*, VIM-CRPA, and KPC
- *C. auris* and KPC-CRPA
- Screened negative for *C. auris*, but not tested for CRE
- Screened negative for CRE and *C. auris*

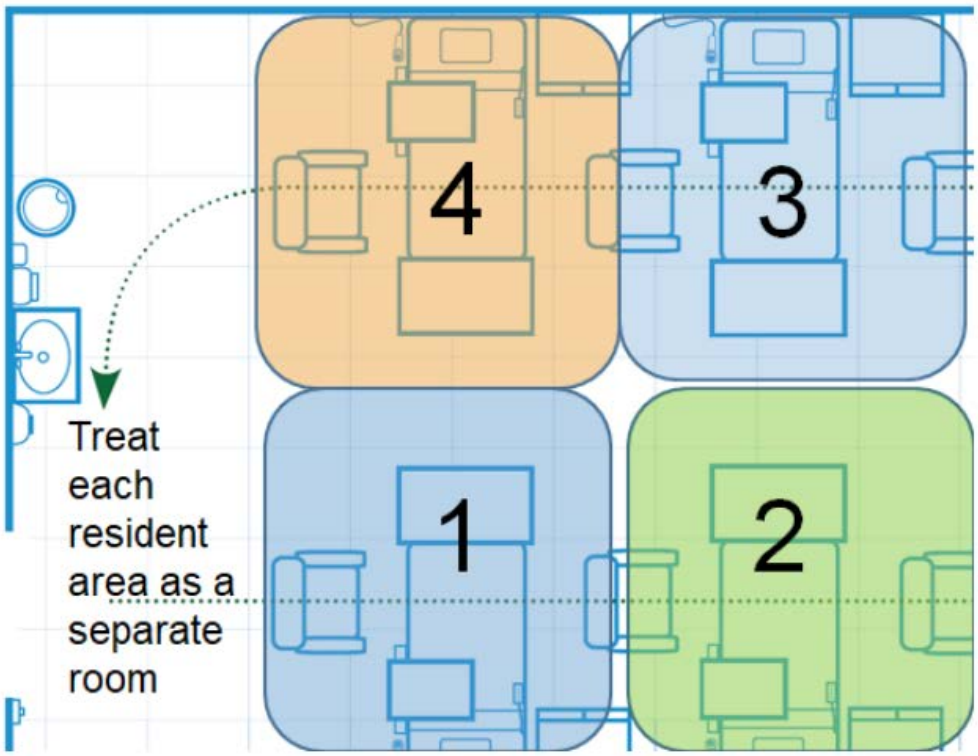
CPO=carbapenemase-producing organism; PPS=point prevalence survey; vSNF=skilled nursing facility with ventilated residents

vSNF* B Outbreak Response Strategy

- Intervention bundle
  - Surveillance and XDRO registry access
  - Contact precautions and cohorting
  - Daily chlorhexidine gluconate bathing
  - Accessible hand hygiene
  - Environmental cleaning
- Cohorting consultation
- Set expectations

vSNF=skilled nursing facility with ventilator unit

How to clean a quad room



Summary

- Monitor implementation and provide ongoing support and technical assistance
- Health alert to local facilities to place SNF* residents who are vented/trached on contact precautions and clean room with sporicidal agent
- Notify patient sharing networks
- Continued point prevalence surveys
- Environmental sampling post cleaning

SNF=skilled nursing facility

Acknowledgements

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Greg Raczniak

Erica Runningdeer

Angela Tang

APIC Consulting

Deborah Burdsall

Mary Alice Lavin

CDC

Kaitlin Forsberg

Alexander Kallen

Snigdha Vallabhaneni

Maroya Walters

Rory Welsh

ARLN Wisconsin

Timothy Monson

Ann Valley

Chicago CDC Prevention Epicenter (Rush University/Cook County Health and Hospital Systems)

Carl Froilan

Mary Hayden

Michael Lin

William Trick

Robert Weinstein

vSNF A and B staff

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  https://tools.cdc.gov/medialibrary/index.aspx#/media/id/305883
- Vital Signs interactive buttons and banners
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Thank You

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Please mark your calendars for the next *Vital Signs* Town Hall Teleconference

May 8, 2018

2:00–3:00 PM (ET)

For more information, please contact Centers for Disease Control and Prevention.

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