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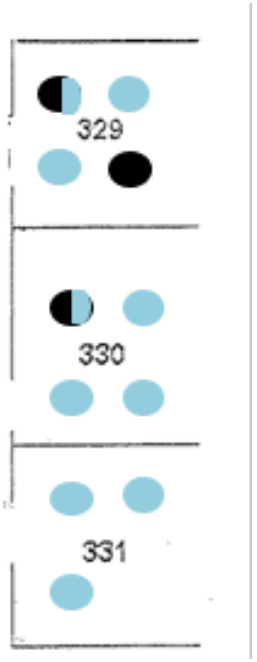


The room where it happens…
VIM and *C. auris* in Chicago

Stephanie R. Black, MD, MSc
March 20, 2018
ELC HAI/AR Grantees Meeting

Collaboration!

Surveillance sources

- **XDRO Registry**
  - SaTScan clusters
  - Review of individual facility data
- **Case investigations**
  - Lookback at healthcare facility encounters and prior culture data
- **Chicago Prevention and Intervention Epicenters (Rush/Cook County Health and Hospitals System) REALM**
  - Point prevalence surveys (PPSs) for CRE
  - Conducted in ACF ICUs and high acuity units of LTACHs and vSNFs
  - Test for carbapenemase (e.g. VIM)

Outbreak Notification

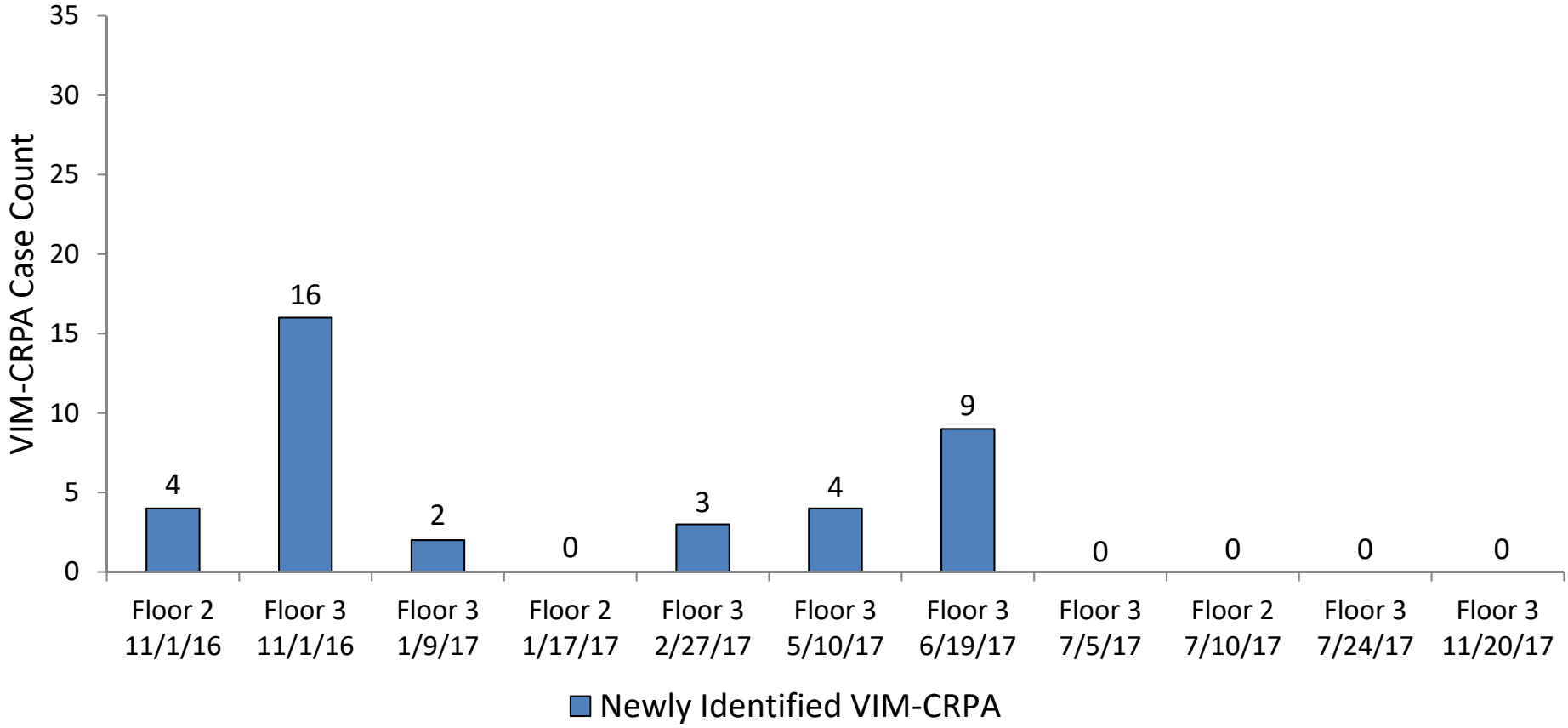
- Nov 2016 REALM PPS identified 20 cases of VIM-PA colonization at a Chicago skilled nursing facility with ventilated patients (vSNF A)
- All rectal screening cultures

	VIM-PA	Total Swabbed	% Positive
Floor 2	4	56	7%
Floor 3	16	62	26%
Total	20	118	17%

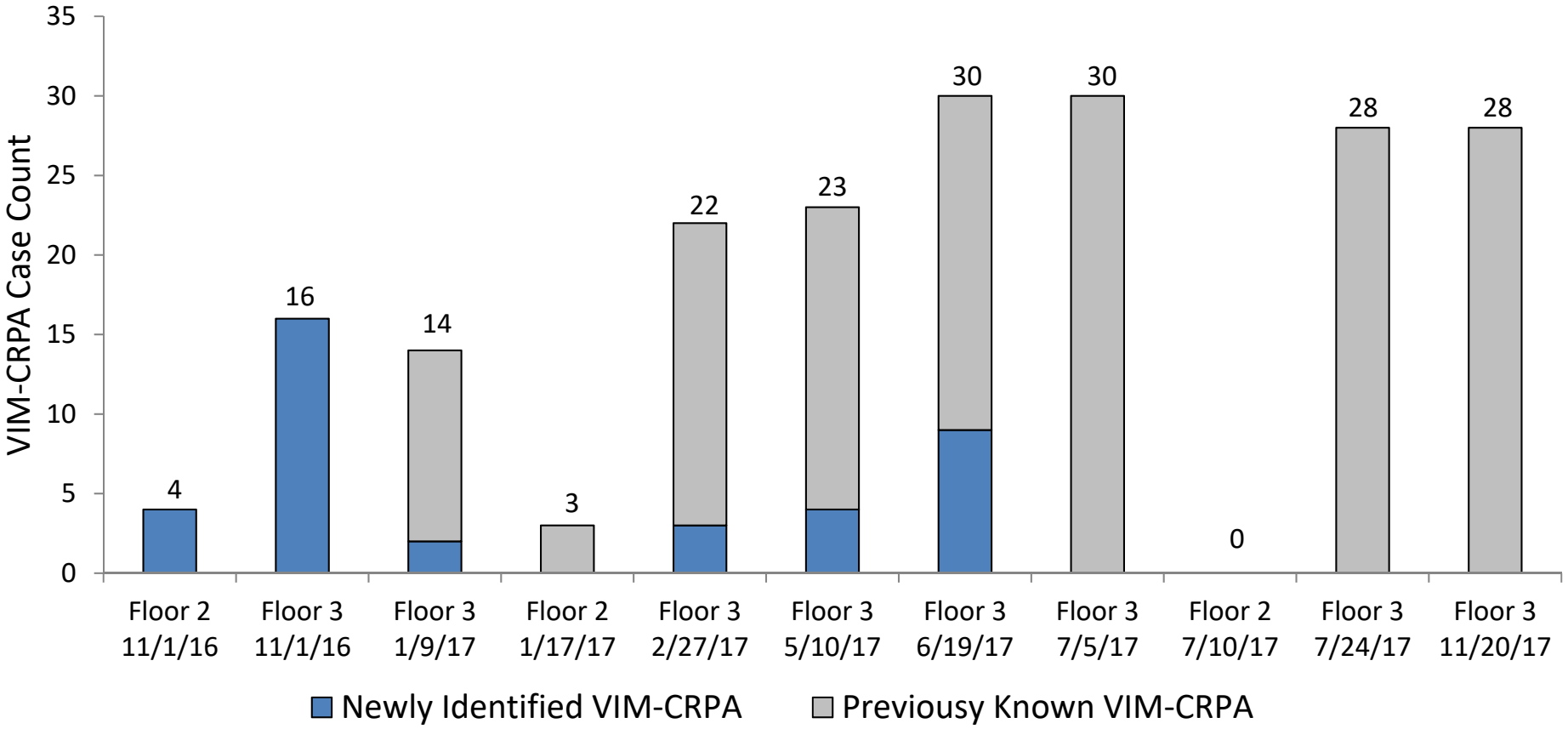
vSNF A

- Census: 260 residents
- 4 floors
  - Floor 1: short term rehab
  - Floor 2: skilled nursing unit
  - Floor 3: ventilated and trach patients
  - Floor 4: psych and dementia
- High-acuity patients

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

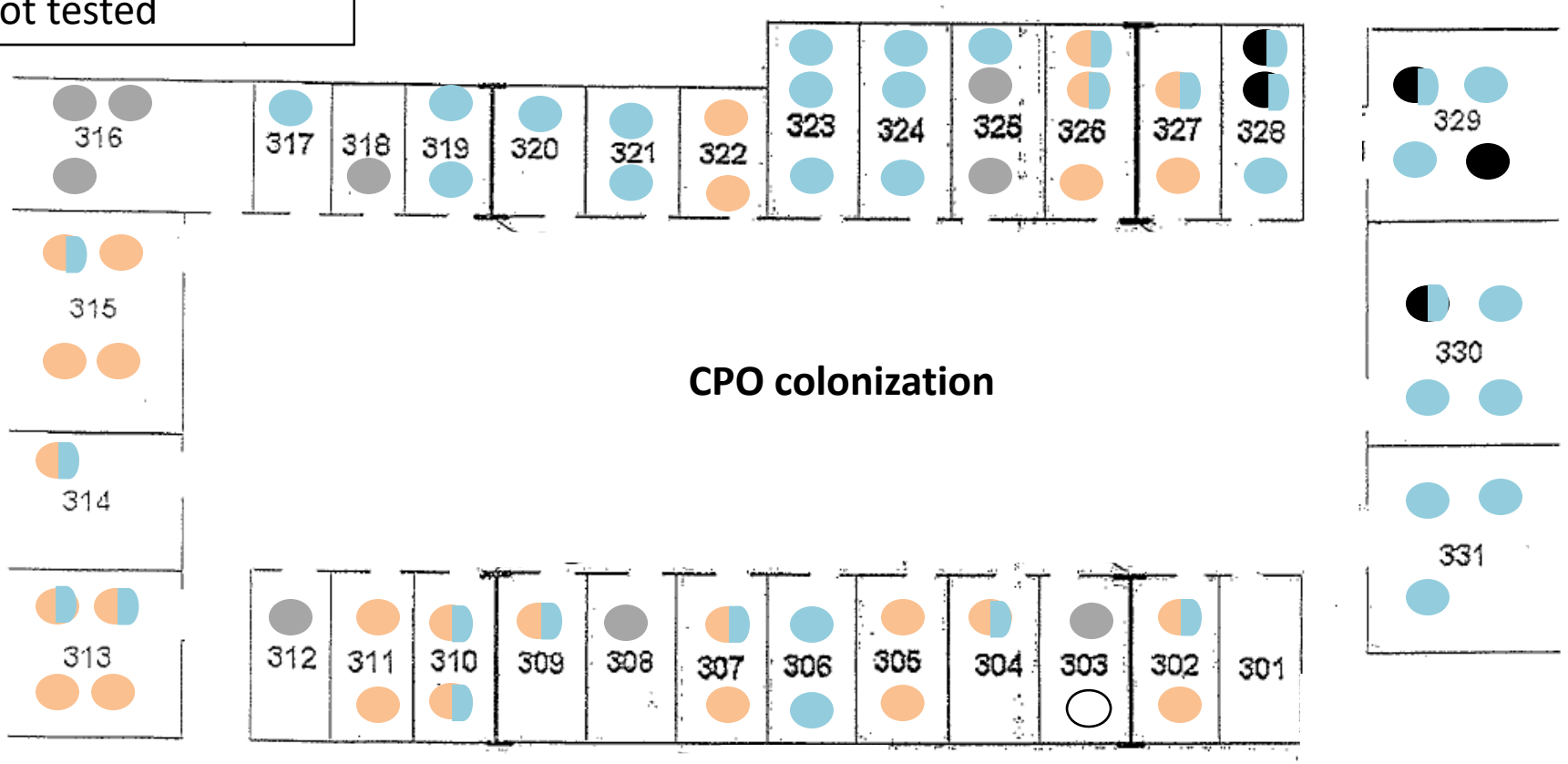


Total number of VIM-CRPA on days of PPS at vSNF A, Nov 2016-Nov 2017



vSNF A 3rd Floor
July 2017 PPS results

- VIM-PA
- NDM
- KPC or CRE with unknown mechanism
- CRE & CRPA negative
- Not tested

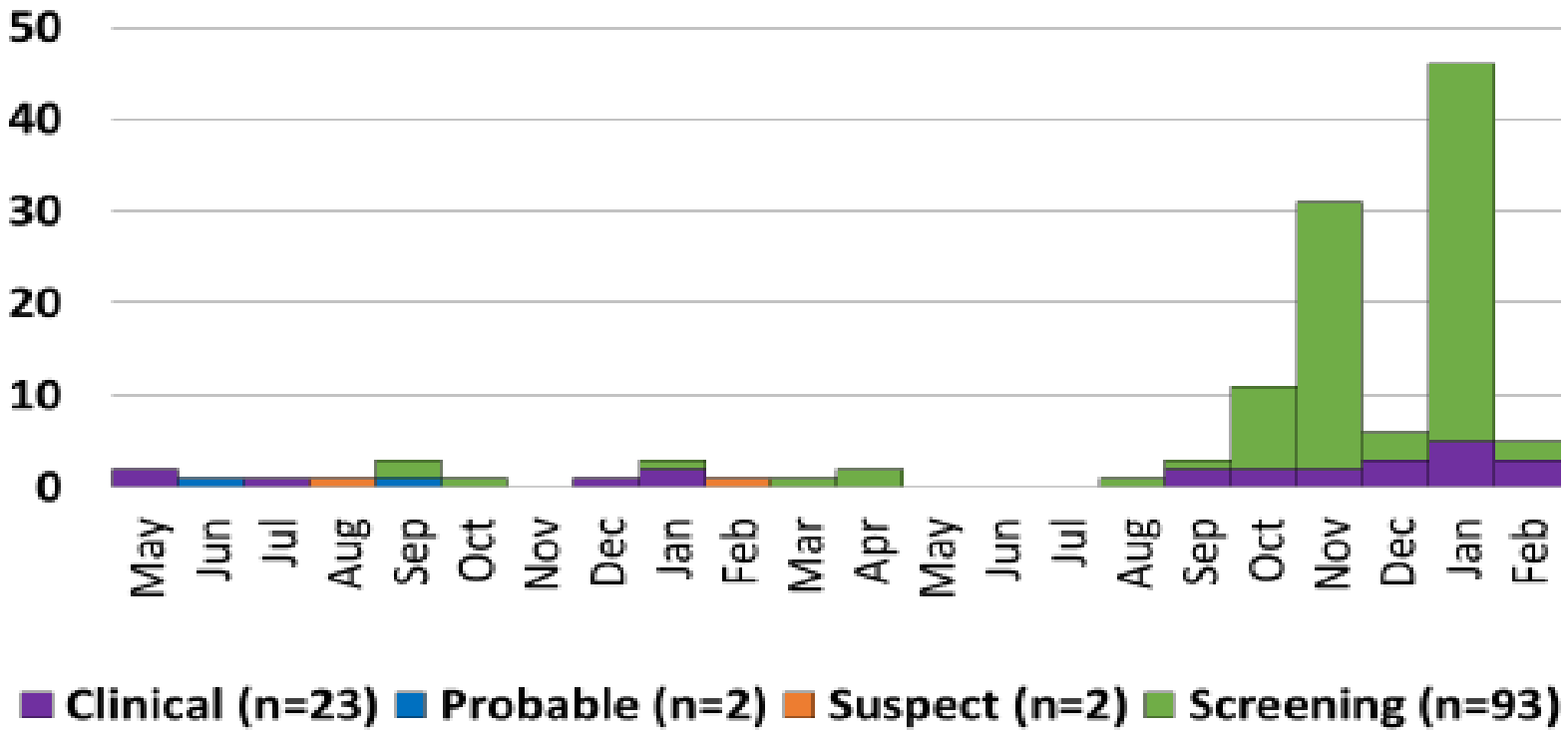


Interventions

- Recommendations:
  - Cohorting
  - Observations: hand hygiene and bathing practices
  - CHG bathing on ventilator unit
  - Improved environmental cleaning practices
  - ABHR dispensers outside patient rooms
  - APIC follow up on-site visit

- CDPH/IDPH actions:
  - Carbapenemase-producing Pseudomonas added to XDRO Registry
  - Environmental sampling
  - Follow up PPS

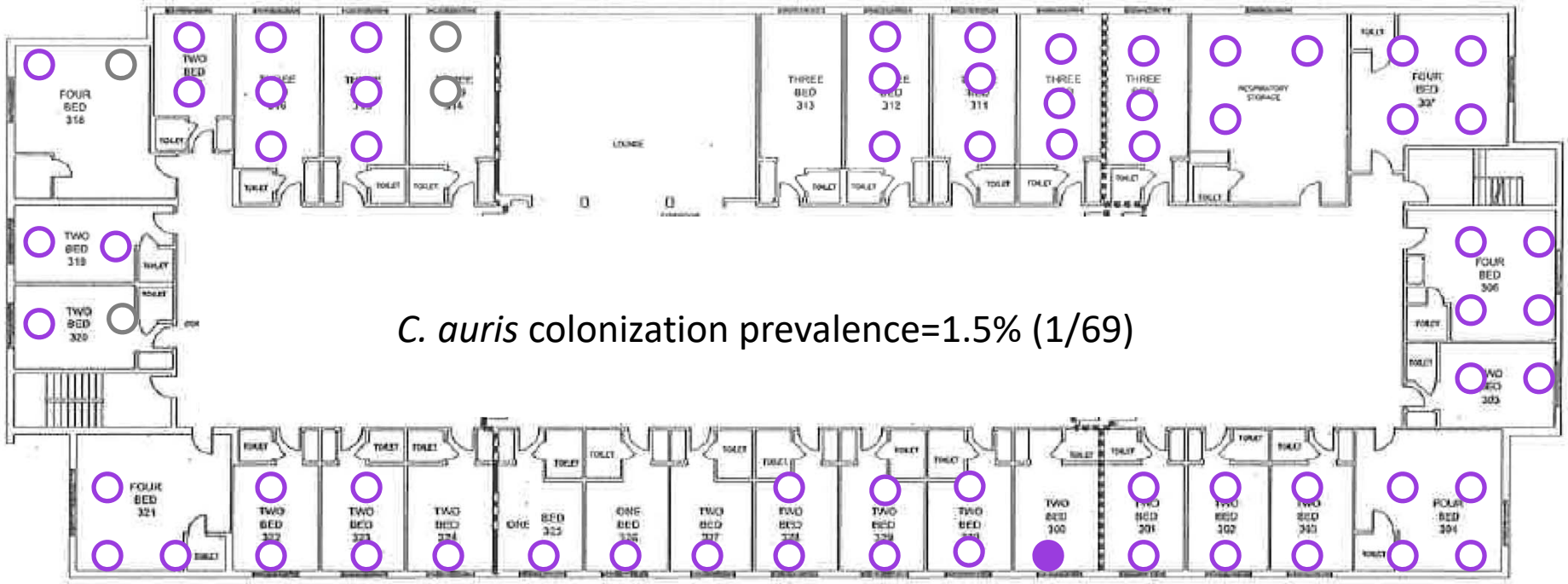
C. auris cases (n=120) – Illinois, May 2016-March 8, 2018



- **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.

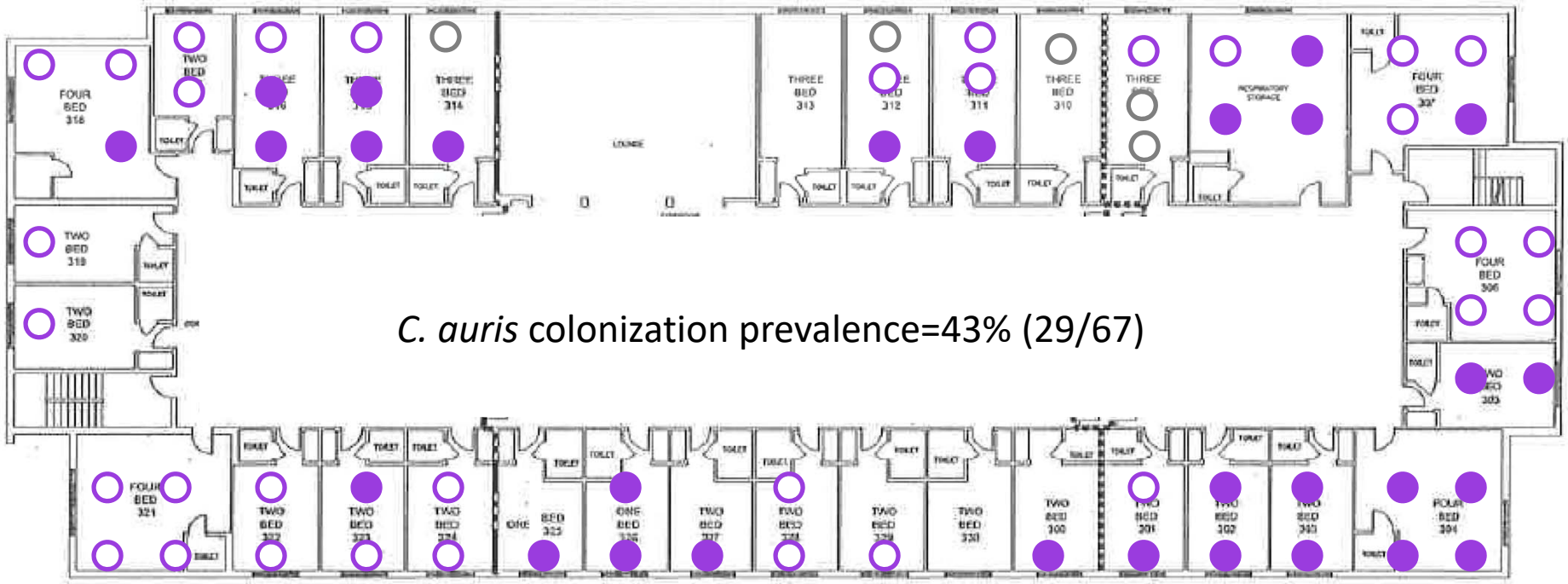
Slide courtesy of A. Tang

vSNF B 3rd Floor
March 2017 *C. auris* PPS Results



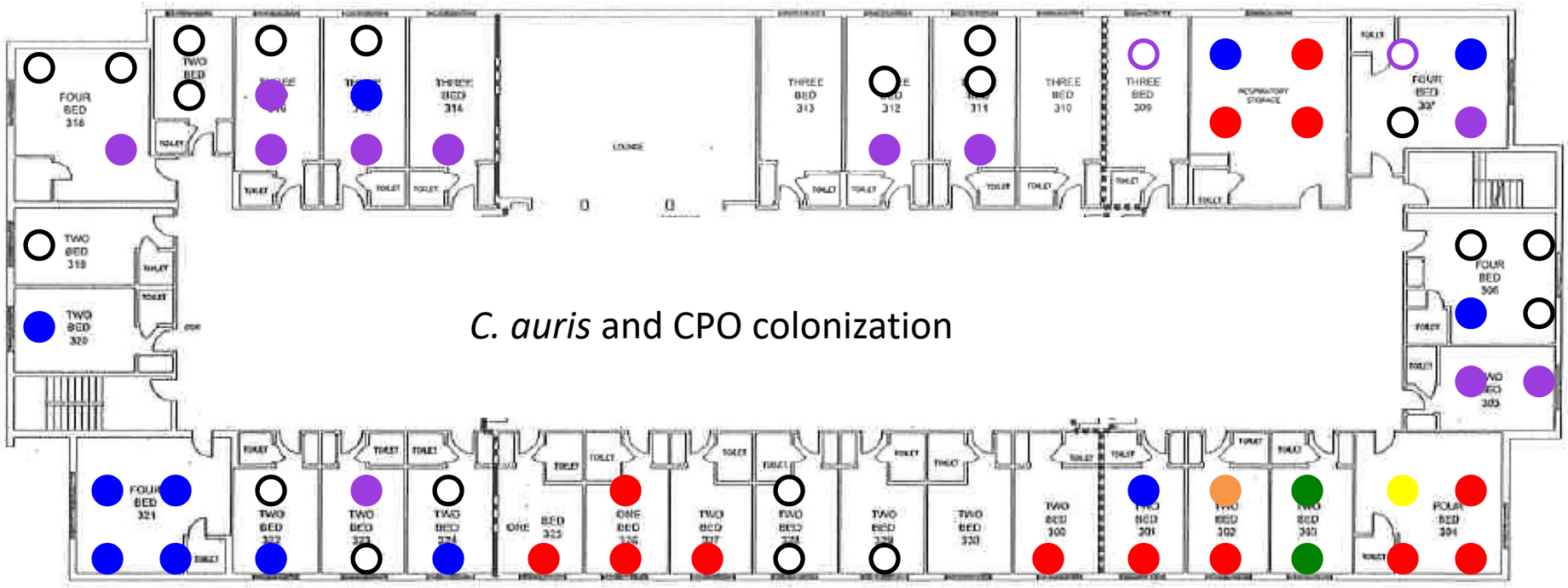
- ● *C. auris* positive
- ○ Screened negative for *C. auris*
- ○ Not tested for C. auris (refused or not in room)

vSNF B 3rd 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)

vSNF B 3rd Floor
January 2018 CPO and *C. auris* 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*

vSNF B Outbreak Response Strategy

- On-site meeting
  - Surveillance and XDRO registry access
  - Contact precautions and cohorting
  - Daily chlorhexidine gluconate bathing
  - Accessible hand hygiene
  - Environmental cleaning
- Cohorting strategy consultation
- Setting expectations
- Intensive follow up
  - Biweekly public health progress review
  - APIC consultations

Surveillance summary

Carbapenemase producing- Multi-Drug Resistant Organism (CP-MDRO)
3rd Floor Point Prevalence Survey (PPS) Results (1/30/18)

	3rd Floor
Resident Census (2nd and 3rd floors)	67
In XDRO Registry and not on Contact Precautions	3
Screened for carbapenemase production, n/N (%)	58/67 (87)
Screened for Candida auris, n/N (%)	62/67 (93)
1/30/18 PPS Results, n/N (%)	
Any Carbapenemase	**24/58 (41)**
KPC	22/58 (38)
VIM, KPC	1/58 (2)
NDM, KPC	1/58 (2)
Overall CP-MDRO Prevalence*, n/N (%)	**30/67 (45)**
Newly identified CP-MDRO (not previously known to facility or in XDRO Registry)	5/30 (17)
Not on Contact Precautions on 1/30/18	8/30 (27)

*Includes data from the Extensively Drug Resistant Organism (XDRO) Registry, facility contact precautions list, and 1/30/18 PPS results.

Candida auris 3rd Floor Point Prevalence Survey (PPS) Results (1/30/18)

Overall Prevalence (census n= 67)	3rd Floor
C. auris, n/N (%)*	29/67 (43)
1/30/18-PPS results (62 swabs collected)	
C. auris, n/N (%)	28/62 (45)
Newly identified *C. auris*	28/28 (100)
Not on Contact Precautions on 1/30/18	13/28 (46)

*One resident previously identified with *C auris* during the 3/7/2017 survey screened negative on 1/30/2018. Resident was on CP in single room on 1/30/2018.

vSNF A Outbreak Response

- “Homework”
  - Hand hygiene monitoring tool
  - EVS Roles and Responsibilities tool
  - EVS monitoring tool
  - Monitor XDRO Registry queries
- Resources

SAMPLE
Hand Hygiene Monitoring Tool

Date	Time	Type of Healthcare Provider	Clean In	Clean Out	Clean Between Residents	Comments
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	
		MD RN NA RT HSKP Other	Y N U	Y N U	Y N U	

Y = Hand Hygiene performed   N = No hand hygiene performed   U = Unable to observe or unable to determine if hand hygiene was performed or not.
MD = Physician RN = Nurse including advanced practice nurses NA = Nurses Aid RT = Respiratory Therapist HSKP = Housekeeping   Other = Therapy Services, Social Wor

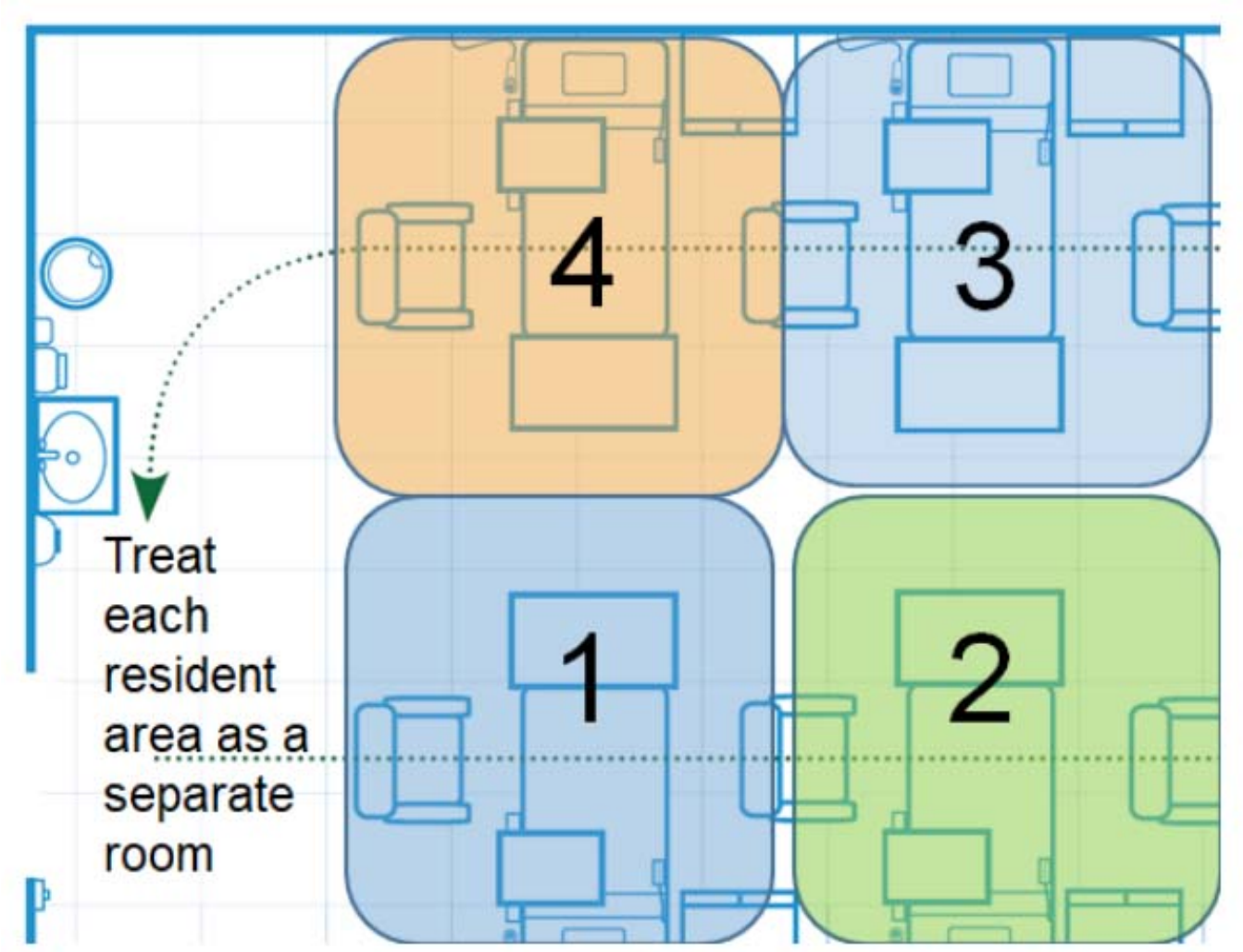
EVS HOUSEKEEPER ENVIRONMENTAL ROUNDS WORKSHEET FOR INFECTION PREVENTION

AREA INSPECTED: Room #:	DATE:	OBSERVER:

Use separate sheet for each department or patient care unit. Check as follows:
FU = Follow-up required; NA = Not applicable

What are we looking for?	Yes	No	I fixed the problem	What do we need to do as a team so it does not keep happening?	FU	NA
Supply Closets and EVS Carts:						
Gloves, PPE, supplies are available and used						
Correct cleaning/disinfecting chemicals available						
Housekeeper knows how to mix the chemicals (if not ready to use)						
Housekeeper knows how long to keep the surfaces wet (contact time)						
There are enough cleaning cloths and supplies						
The cart is stocked with all cleaning chemicals, cloths, bottles						
The cart is cleaned/disinfected after each use						
The cart is restocked after each use						
EVS closet is cleaned and disinfected every shift						
Resident/Patient Rooms						
I know how to clean isolation rooms						
Gloves, PPE, supplies are available and used						
Soap and hand sanitizer dispensers working						
No topping off containers						
Floors & walls clean						
Walls are free of breaks and penetrations						
Bathroom clean and disinfected						
High touch areas are clean and disinfected						
Equipment is clean and disinfected						
Furniture clean and in good condition						
REPORT SENT TO:						

How to clean a quad room



January 24, 2018 HAN alert

Recommendations for Facilities:

1. Place patients from **SNFs with trach or vent** on **contact precautions**
2. Use **sporicidal agent** for rooms with *C. auris* patients
3. **Query XDRO Registry**
4. Identify species of *Candida* isolates from sterile sites
5. Identify species of *Candida* from non-sterile sites if certain criteria are met
6. Report to local health department all confirmed and suspect cases (e.g. *C. haemulonii*)

Containment strategy: next steps

- Actively monitor implementation of infection control recommendations at affected facilities
- Provide ongoing support and technical assistance
- Continued PPSs
    1. Re-survey vSNFs with C. auris
    2. LTACHs
    3. ACHs with epi-link
    4. ACHs participating in REALM CRE surveys
    5. Shared messaging with PROTECT intervention bundle
- Network notifications
- Environmental sampling post cleaning

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