



Cohorting to Prevent Transmission

A guide to effective cohorting

AGENDA

Define Cohorting in healthcare and describe its purpose

Identify the evidence basis for Cohorting

Identify barriers in your facility that prevent effective Cohorting

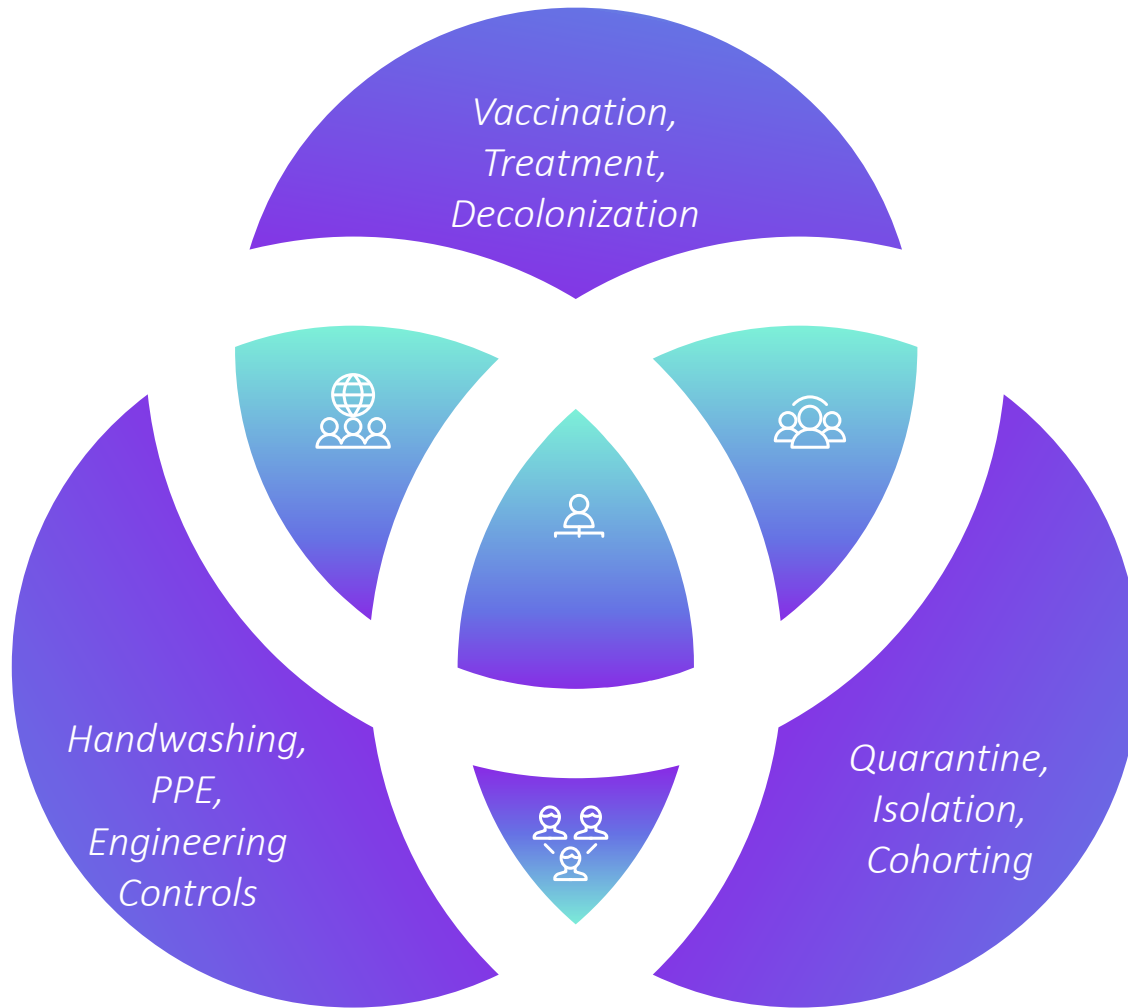
Articulate the criteria evaluated to cohort individuals



Cohorting in Healthcare

- Definition
 - Physical separation, or grouping together, (segregation) of individuals colonized or infected with the same infectious organism
 - Grouping of individuals based on their risk of infection (exposure)
 - “Early identification and rapid separation is key to preventing the transmission of an infectious disease” [Cohorting Guidance \(hqin.org\)](http://hqin.org)
- Purpose
 - Limit the spread of transmissible infections in congregate settings
 - Minimize interactions between infectious and non-infected individuals
- Scope
 - Patients, residents
 - Staff, clinical, support, contract
 - Visitors?

Transmission Reduction Strategies



Resident Treatments/Preventative Care

Staff interventions/Engineering

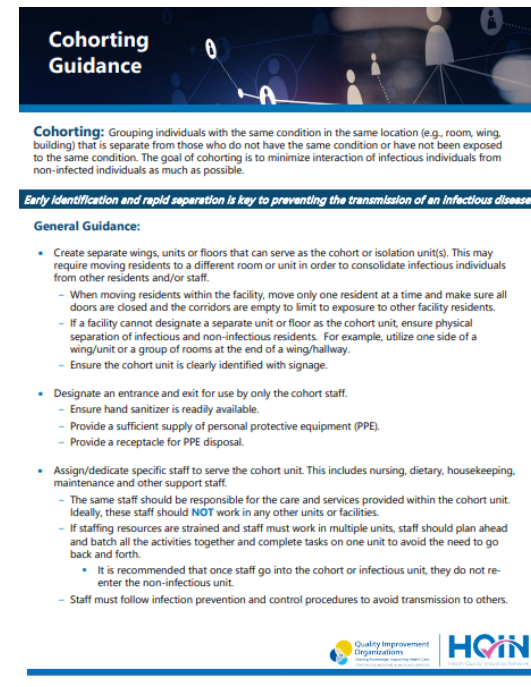
Resident and Staff Placement/Cloistering

QIO/HQIN Guide (Built for COVID-19)

[Cohorting Guidance \(hqin.org\)](https://hqin.org)

- **Consider the organism and mechanism of transmission before moving**
- Separate wing, floor, unit, end of hall, free from traffic, entrance, exit
- Consider facilities, air flow, ability to clean infrastructure
- Close doors and empty corridors, common areas and elevators when transferring to new rooms
- Clear signage for PPE, restrictions, Precautions
- PPE storage and disposal
- Access to nutritional needs
- Dedicate medical equipment

Cohorting is most effective by rapid separation of infected and exposed residents AND when there are dedicated staff and equipment for each cohort



Cohorting Guidance

Cohorting: Grouping individuals with the same condition in the same location (e.g., room, wing, building) that is separate from those who do not have the same condition or have not been exposed to the same condition. The goal of cohorting is to minimize interaction of infectious individuals from non-infected individuals as much as possible.

Early identification and rapid separation is key to preventing the transmission of an infectious disease.

General Guidance:

- Create separate wings, units or floors that can serve as the cohort or isolation unit(s). This may require moving residents to a different room or unit in order to consolidate infectious individuals from other residents and/or staff.
 - When moving residents within the facility, move only one resident at a time and make sure all doors are closed and the corridors are empty to limit to exposure to other facility residents.
 - If a facility cannot designate a separate unit or floor as the cohort unit, ensure physical separation of infectious and non-infectious residents. For example, utilize one side of a wing/unit or a group of rooms at the end of a wing/hallway.
 - Ensure the cohort unit is clearly identified with signage.
- Designate an entrance and exit for use by only the cohort staff.
 - Ensure hand sanitizer is readily available.
 - Provide a sufficient supply of personal protective equipment (PPE).
 - Provide a receptacle for PPE disposal.
- Assign/dedicate specific staff to serve the cohort unit. This includes nursing, dietary, housekeeping, maintenance and other support staff.
 - The same staff should be responsible for the care and services provided within the cohort unit. Ideally, these staff should **NOT** work in any other units or facilities.
 - If staffing resources are strained and staff must work in multiple units, staff should plan ahead and batch all the activities together and complete tasks on one unit to avoid the need to go back and forth.
 - It is recommended that once staff go into the cohort or infectious unit, they do not re-enter the non-infectious unit.
 - Staff must follow infection prevention and control procedures to avoid transmission to others.

Quality Improvement Organizations | HQIN

QIO/HQIN Guide- Continued

Staff Cohorting Guidance

- Dedicated staff, including support staff
- Staff should NOT work other units or facilities.
- If staffing resources are strained staff should batch all the activities together and complete tasks on one unit to avoid the need to go back and forth.
- Dedicate space to keep staff separated

Other Considerations for non-COVID cohorting (Not QIO/HQIN)

- Share PPS data so staff can see their progress
- Avoid plastic barriers that can become contaminated
- Shared staff (therapy) should tend to MDRO at the end of the day.
- There are currently no decolonization methods for C. auris, CRE, CRPA, or CRAB
- Maintain a log of residents with MDRO for readmissions- rapid identification

Vancomycin-resistant Enterococcus faecium

Japan Study 2023 –
3 Months – Hospital

Time, Space and Care
by Same Nurses

Vancomycin-resistant
Enterococcus faecium

5-6 times more likely to get VRE if
roomed with an infected resident

Above risk was cut ½ if the nurse was
not caring for infected residents

Cost Reduction

Rectal and stool screening

Increased time, increased
transmission.

Contact Precautions also
worked, but had
consequences, such as

patient anxiety, time spent with the
team, workload for staff, fall and
ulcers increase, and increased cost .

Evidence supports staff cohorting

Effectiveness of patient and staff cohorting to reduce the risk of vancomycin-resistant enterococcus (VRE)

acquisition: a retrospective cohort study during a VRE outbreak in Japan K. Kakimoto a,b et al, *a Field Epidemiology Training Programme, National Institute of Infectious Diseases, Tokyo, Japan

Cohorting Works

A systematic review of the effectiveness of cohorting to reduce transmission of healthcare-associated *C. difficile* and multidrug-resistant organisms

In 60 studies, both patients and staff were cohorted. Most studies (77 of 87, 88.5%) showed a decline in infection or colonization rates after a multifaceted approach that included cohorting as part of the intervention bundle. Hand hygiene compliance improved in approximately half of the studies (8 of 15) during the respective intervention.

Length of Stay

Organism

Rapid identification, speciation
Colonization, Infection

Staffing

Cohort preferred, MDRO at end of shift,
avoid interfacility staff

Devices

Portal of entry

Environment/Facility

Access to dining & food, PPE, air flow,
traffic flow,
ability to clean rooms rapidly

Resistance type*
More next month

Immune status

Treatments, aging, comorbidities

**Procedures &
Equipment**

Dedicated, disposable



**Hygiene-Cooperation
Cognition**

Ability to follow instruction, clean

Considerations for Cohorting

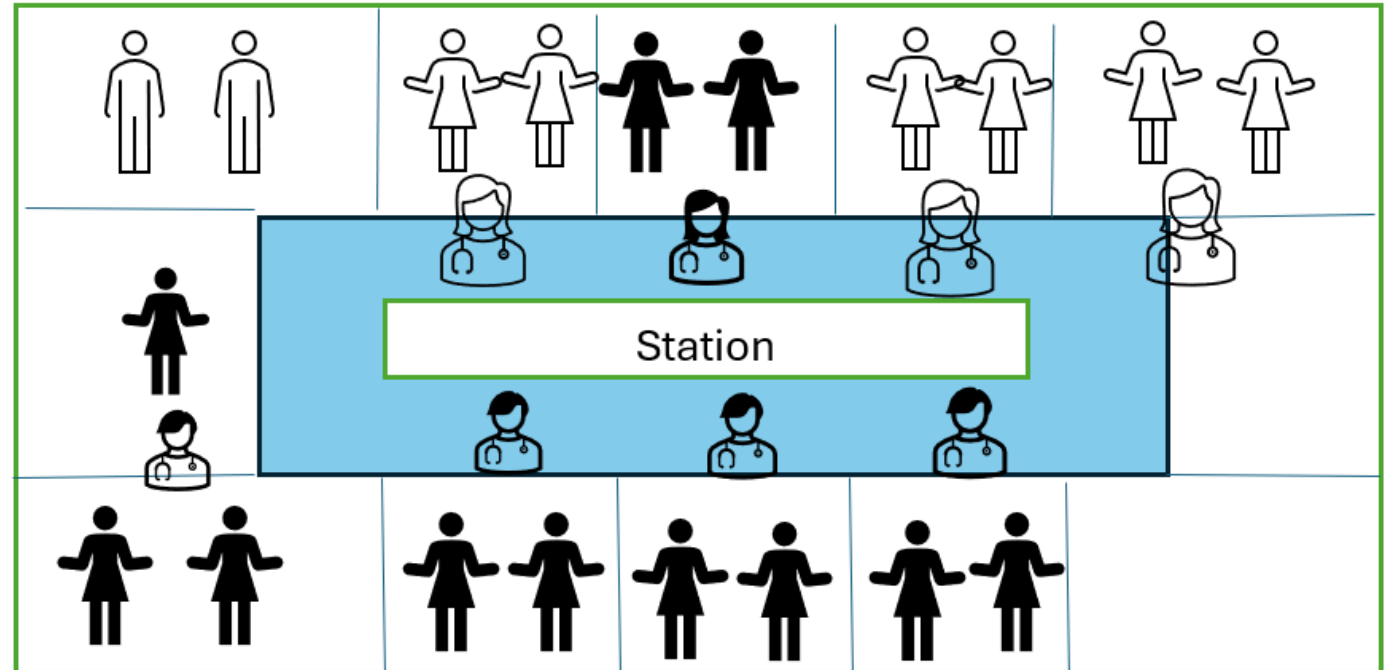
Consider the Carbapenemase type

(e.g., KPC, NDM, VIM, IMP, or OXA-48) if known

Table 1. Principles of Patient or Resident Cohorting by MDRO Type

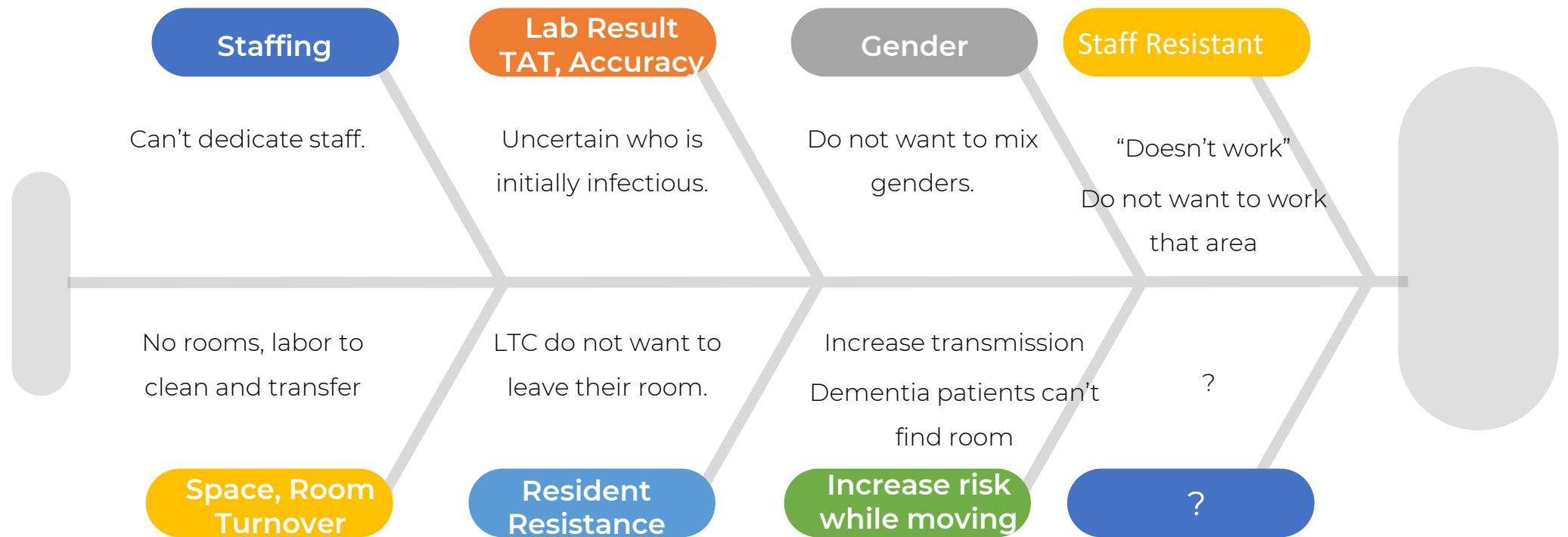
Organism	Examples	Cohorting Recommendations
<i>Candida auris</i> (<i>C. auris</i>)	N/A	Cohort patients or residents with <i>C. auris</i> together with others that have <i>C. auris</i>, whenever possible
Carbapenemase-producing organism (CPO)	Bacteria producing one or more carbapenemases, such as KPC, IMP, VIM, OXA, NDM, ¹ e.g., <ul style="list-style-type: none"> • KPC-<i>Escherichia coli</i> • NDM-<i>Acinetobacter baumannii</i> • VIM-<i>Pseudomonas aeruginosa</i> 	<ol style="list-style-type: none"> 1. Prioritize cohorting by the same carbapenemase(s) and organism combination, e.g., <ul style="list-style-type: none"> • KPC-<i>E. coli</i> with KPC-<i>E. coli</i> • NDM/KPC-<i>E. coli</i> with NDM/KPC-<i>E. coli</i> 2. If not possible, cohort by carbapenemase(s), e.g., <ul style="list-style-type: none"> • KPC with KPC • NDM/OXA-23 with NDM/OXA-23 • Patient or resident with KPC, OXA-48, and NDM carbapenemases with another patient or resident that has KPC, OXA-48, and NDM carbapenemases
Carbapenem-resistant organism (CRO) (not tested for carbapenemases ²)	Carbapenem-resistant <ul style="list-style-type: none"> • Enterobacteriales (CRE) • <i>P. aeruginosa</i> (CRPA) • <i>A. baumannii</i> (CRAB) 	Cohort by organism combination, e.g., <ul style="list-style-type: none"> • CRPA with CRPA • Patient or resident with CRE and CRAB with another patient or resident with CRE and CRAB

Visual Representation of Cohorts

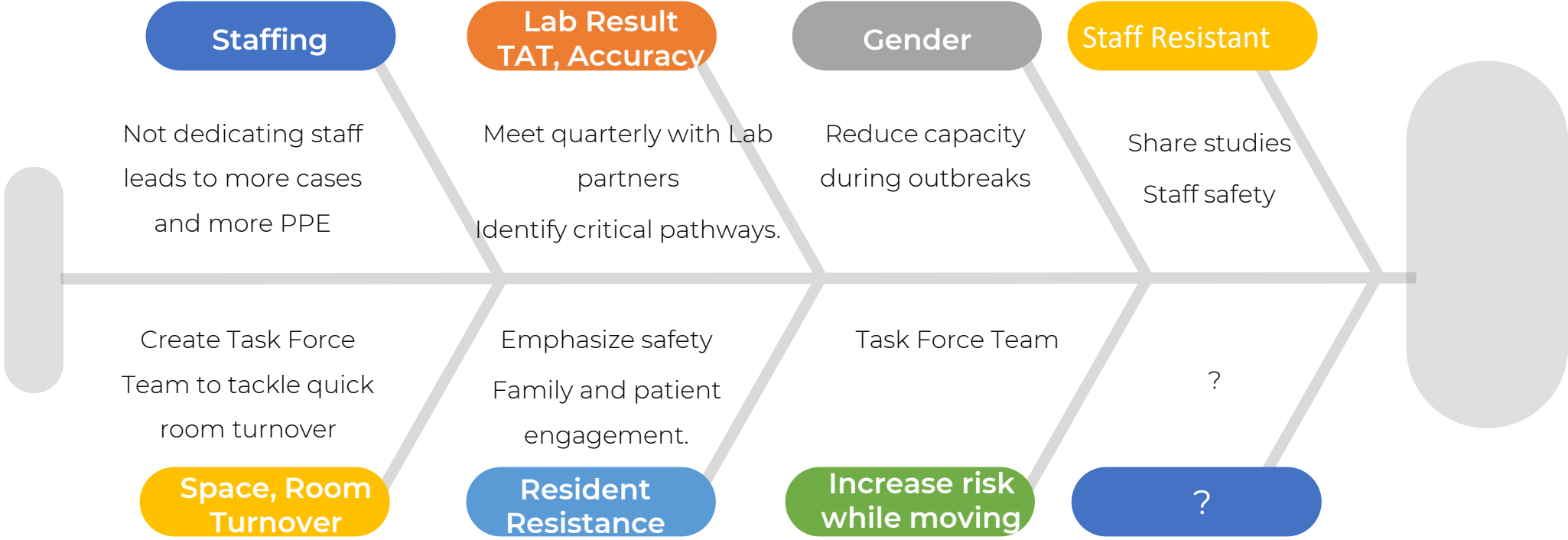


Within-room versus Multi-room Cohort

Barriers in Facilities that Prevent effective Cohorting



Overcoming Barriers for Resident Safety



Perfectionism is the
enemy of progress
W. Churchill

Many interventions completed
imperfectly may surpass one task
completed perfectly



Memory Care

- Changing rooms not usually an option
- Set up appealing activities to have those cohorts remain together
- Prioritize cleaning of high touch and shared bathrooms
 - ? Commode
- Bed, chair, and meal spacing
- Single rooms
- Prioritize dedicated staff

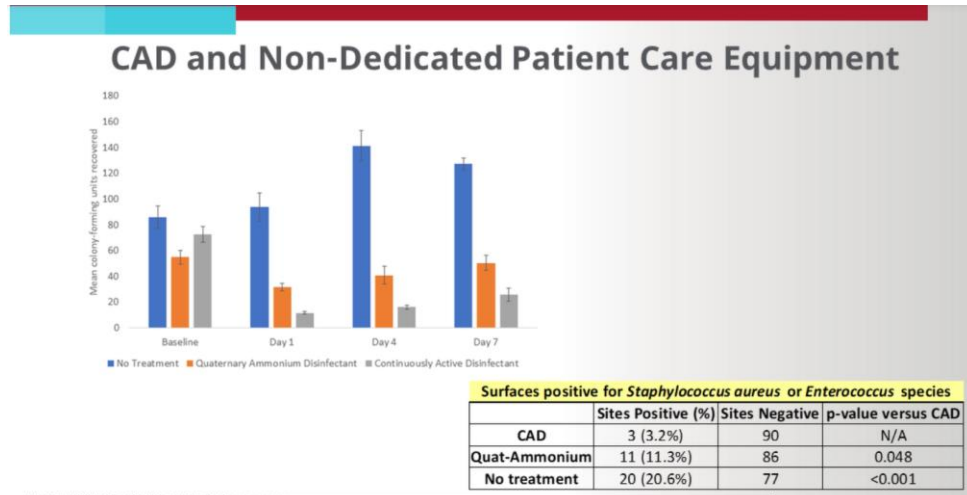


Role of CAD

Continuously Active Disinfectants

- Immediate quick kill,
- plus an ongoing antimicrobial effect

Real World and Lab Studys



CAD in a Lab-Based Study

- Some organisms were not reduced equally 24 hours post application
- Yet, the CAD was superior to all (traditional) alternate non-CAD disinfectants

Disinfectant	Mean Log ₁₀ Reduction vs <i>Staphylococcus aureus</i>
Disinfectant 1 (CAD)	4.4
Disinfectant 2 (quat + alcohol)	0.9
Disinfectant 3 (H2O2)	0.2
Disinfectant 4 (chlorine)	0.1

Organism	Mean Log ₁₀ Reduction
<i>Staphylococcus aureus</i>	4.1-5.5
<i>Escherichia coli</i>	4.8
Vancomycin-resistant <i>Enterococcus</i>	>4.5
<i>Klebsiella pneumoniae</i>	1.5
<i>Candida auris</i>	>5.0
CRE <i>E. coli</i>	3.0
CRE <i>Enterobacter</i>	2.0
CRE <i>K. pneumoniae</i>	2.1
<i>Enterobacter</i> spp.	4.1

Additional Actions

Cleaning

High touch

No items near splash zones

Assign responsibility for all items involved in care (disinfection)

Checklists and audits of disinfection

Proper chemical/disinfectant

Correct EPA list chemical and wet time

Shared Bathrooms unavoidable?

Disinfecting wipes between use

Each bed treated as a separate room

Communication

Clear communication on transfer to and from facilities

Interfacility Transfer Form

Clear signage for staff regarding PPE, Precautions and disinfection

Infographics and education for staff, residents and families

Public Health notifications must be made immediately,

505-827-0060



Questions?

References, Resources, Articles

Abad CL, Barker AK, Safdar N. A systematic review of the effectiveness of cohorting to reduce transmission of healthcare-associated *C. difficile* and multidrug-resistant organisms. *Infect Control Hosp Epidemiol*. 2020 Jun;41(6):691-709. doi: 10.1017/ice.2020.45. PMID: 32216852; PMCID: PMC8561649.

<https://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/MDROCoortingSNF.pdf>

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4845630/ContinuousActingDisinfectantAppearsToWorkBetteronSurfaces\(infectioncontrolday.com\)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4845630/ContinuousActingDisinfectantAppearsToWorkBetteronSurfaces(infectioncontrolday.com))

[Continuously active disinfection | McKesson Medical-Surgical](#)