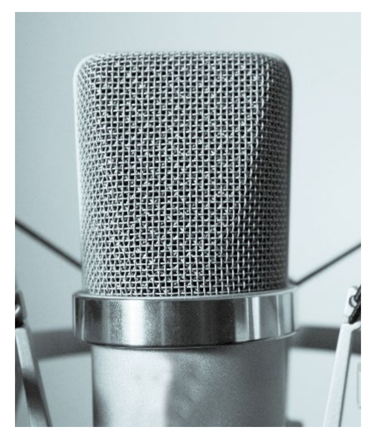
Reception Room



- **Good morning!** The meeting will start shortly.
- **Participants are muted** on entry.
- **Check the chat box:** Information about the training, including information about how to access captions and view the slides, is available there.
- **To view captions for this event**: You can view captions in Teams by clicking the More (…) button in the Teams window, then "Language and Speech," and choose "Turn on live captions."
- **If you have any technical issues,** please visit the Microsoft support page for Teams or email Health.HRDCommunications@state.mn.us.

Nursing Home Regulatory Updates
January 2025

Tennessen Warning

- **The Minnesota Department of Health is hosting this joint regulatory training for providers of long-term care and Health Regulation Division staff.**
- **Your comments, questions, and image, which may be private data, may be visible during this event.** You are not required to provide this data, and there are no consequences for declining to do so.
- **The virtual presentation may be accessible to anyone** who has a business or legal right to access it. By participating, you are authorizing the data collected during this presentation to be maintained by MDH.
- **To opt out of the presentation, please exit now.**

Welcome & Updates

Sarah Grebenc | Federal Executive Operations Manager

Agenda

- Updates
- Citations | Complaint Quarterly Review
- Social Media Posts
- Updates to the State Operations Manual (SOM)
- Independent Informal Dispute Resolution (IIDR) Statute Updates
- Infectious Disease Epidemiology, Prevention and Control (IDEPC) Division presentation on carbapenem resistant organisms and carbapenemase-producing organisms

Provider Feedback Questionnaire

- Thank you for continuing to complete HRD's Feedback Questionnaire!
  - Provided during recertification and complaint surveys on the Federal and State side.
  - Goal is to expand to other federal provider types.
- MDH uses the information to make improvements to our processes.

Feedback Questionnaire About Your Experience

The Minnesota Department of Health (MDH) and the Health Regulation Division (HRD) values your feedback about your experience during the survey/evaluation or investigative process. This questionnaire supports MDH'S culture of learning and collaborative safety by providing opportunities for facilities and providers to give MDH their perspectives about MDH's procedures, how MDH representatives communicated and whether the facilities and providers felt heard.

Please fill out this anonymous questionnaire and it will go to the Planning and Partnership Office in the Health Regulation Division. Your feedback is important to MDH, and your perspective will help identify ways for us to improve our procedures and communication. In addition, the summarized anonymous data from all feedback questionnaires received will be made available on the HRD Website. If you want to discuss any of your responses further, please contact susan.winkelmann@state.mn.us in the Planning and Partnership Office or call 651-201-5952.

Note: If you have specific concerns about an individual MDH Employee, we invite you to bring those concerns

QSO Memo 25-11-NH

- QSO-25-11-NH This memo supersedes QSO-20-29-NH.
- Beginning on January 1, 2025, LTC facilities are required to electronically report information about COVID-19, influenza, and respiratory syncytial virus (RSV) in a standardized format and frequency.
- Survey Process and Enforcement: CMS will develop guidance for surveyors to evaluate compliance with the new acute respiratory illness reporting requirements and provide information on enforcement actions for noncompliance. Once surveyor guidance and enforcement action information are developed, CMS will provide notification that the new requirements have been incorporated into the LTC facility survey process.

Pneumococcal Recommendations F883

CDC made revisions and updates to their website in October and now recommends pneumococcal vaccination for adults 50 years or older.

- F883 §483.80(d) Influenza and pneumococcal immunizations (https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-483/subpart-B/section-483.80)
- Facilities should follow the CDC and ACIP recommendations for vaccines.
- CDC Pneumococcal Vaccine Recommendations (https://www.cdc.gov/pneumococcal/hcp/vaccine-recommendations/index.html)

Fiscal Year (FY) 2025 Mission & Priorities Document (MPD) - Action

The MPD structure includes three sections:

1) new program updates since the issuance of the previous FY MPD;
2) standing information that we do not anticipate changing throughout the year; and
3) listing of the priority tier structure for survey & certification activities by provider and supplier type.

ELC Grant Awarded

MDH's Planning and Partnerships Program was awarded a two-year, grant by CDC to study Prevention, Control and Reporting of COVID-19, and other Emerging Infectious Diseases in Long-Term Care utilizing Collaborative Systems Change (CSC).

MDH will begin the study by partnering with MN Nursing Homes through a variety of collaborative data collection methods. Nursing Home providers will be asked to volunteer for focus groups within the Collaborative Systems Change process. This process is unique outreach work and is non-regulatory.

How Can You Participate?

Focus of Study

Our team is currently finalizing initial research involving trends in non-compliance related to COVID 19 and other infectious disease in Long-Term Care settings, specifically Nursing Homes. We are aiming to have possible Areas of Study identified in early February of 2025.

How Can You Learn More?

The ELC Grant team will be hosting three webinars where providers can learn more details about the study, the process we will be following, our past success with CSC, and all the ways our Care Partners can participate.

Citations |Complaints

Sarah Grebenc | Federal Executive Operations Manager

Top Tags Cited in 1st Quarter FFY25

- F880 Infection Control
- F689 Accidents/Supervision
- F684 Quality of Care
- F812 Food Procurement
- F758 Free from Unnecessary Medications
- F609 Reporting Abuse
- F656 Development of Comprehensive Care Plan
- F641 Accuracy of Assessments
- F686 Treatment of Pressure Ulcers
- F550 Resident Rights

Complaints 1st Quarter FFY25

- **2162 Complaints** and **Facility Report Incidents** (FRI's) received for all provider types.
- Nursing homes received 705 **Complaints** and 973 **FRI's**
- 267 Triaged as an **Immediate Jeopardy** (IJ) complaints for all provider types.
- 218 Were triaged as **IJ for Nursing Homes**
- 17 IJ's were called in nursing homes
  - 4 called on recertification surveys
  - 13 called on complaint investigations

IJs cited in 1st Quarter FFY25

F600 Abuse (K)

F686 Treatment to prevent pressure ulcers (K)

F600 Abuse

F602 Free from Misappropriate/Exploitation

F678 CPR and Following Advanced Directive

F684 Quality of Care

F689 Free from Accidents/Supervision

F760 Significant Medication Errors

F805 Food to Meet Individual Needs

F806 Resident Allergies, Preferences, Substitutions

Social Media Posts

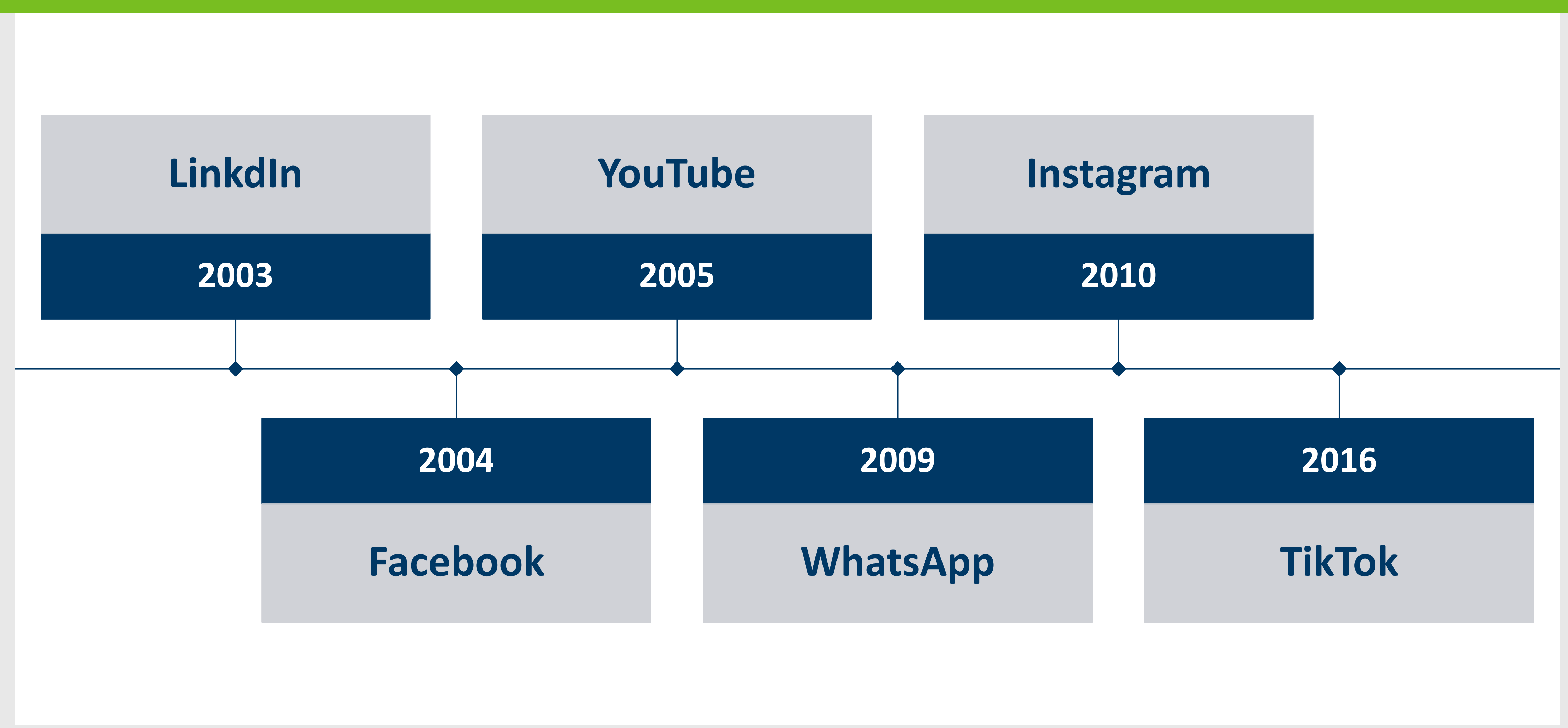
Becky Haberle | Nurse Specialist – Quality and Training Team

Objectives

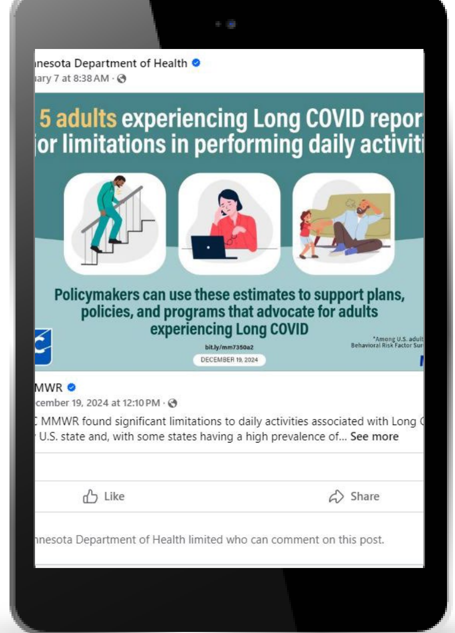
- Discuss technology advances and social media.
- Discuss how technology advances and social media impact residents in care facilities (Nursing Homes (LTC) and Assisted Living Facilities).
- Discuss physical, emotional, and sexual abuse related to technology.
- Discuss regulatory requirements in LTC facilities.
- Discuss preventative steps facilities can put into place to prevent abuse related to social media.

Technology Improvement

Social Media



MDH Presence



Minnesota Department of Health

112K followers • 456 following

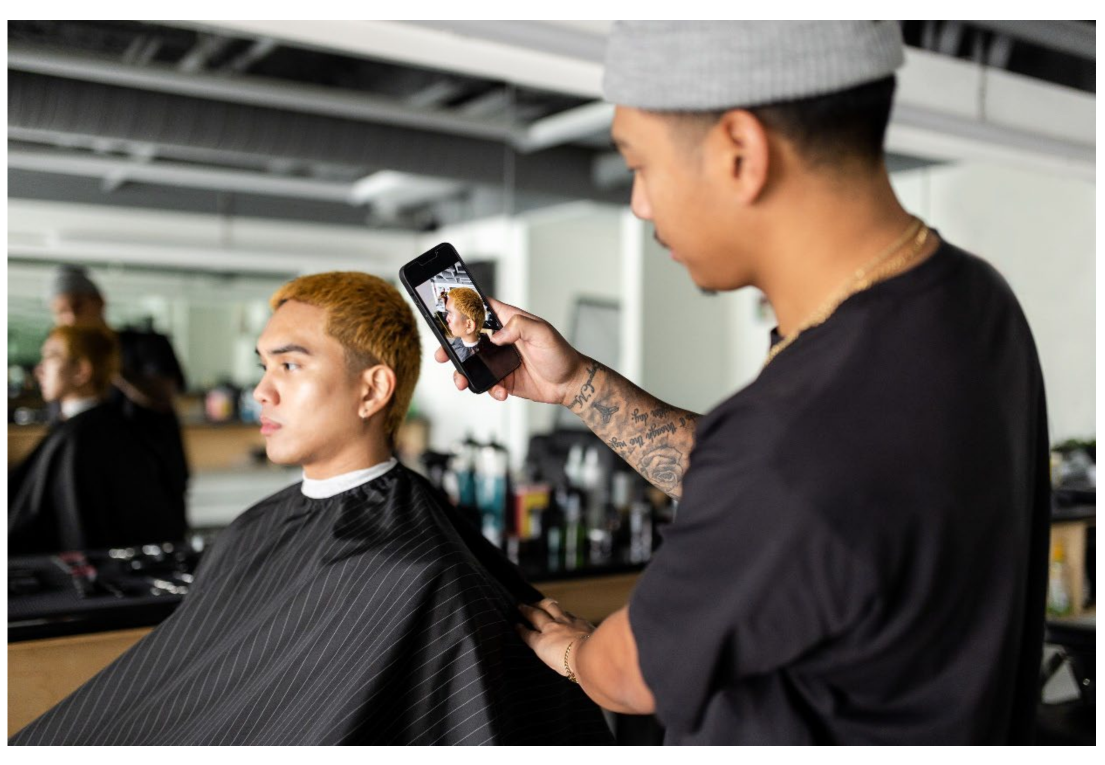
Learn more | Following | Message

Posts | About | Mentions | Followers | Photos | Videos | More

Facility use of Social Media

- ✓ Announcements.
- ✓ Improve Social Image.
- ✓ Invitations to Events.
- ✓ Encourage Community Engagement.
- ✓ Spread the joy happening at the facility.

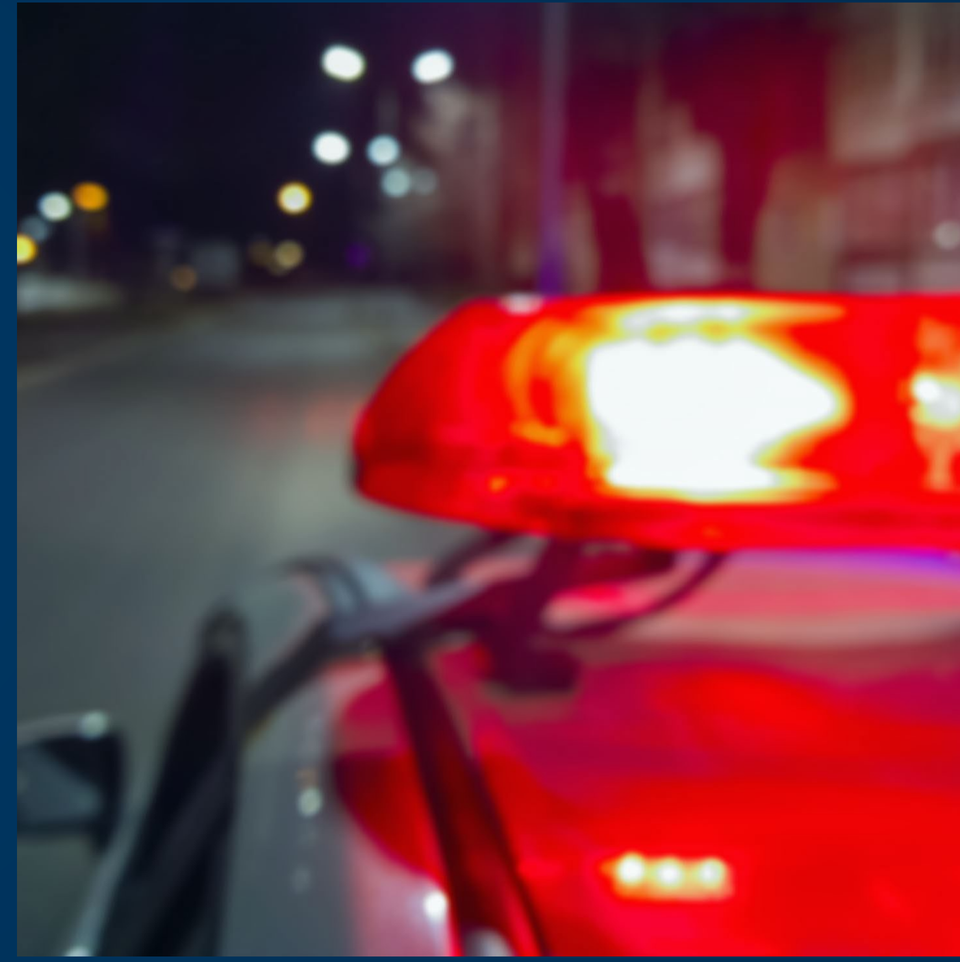
Where is the line?



- Is this photo ok?
- Are the residents ok with the posting photos?
- How has the facility determined the resident/representative wishes related to social media posts?
- Consents obtained?
- Facility policy?

Abuse

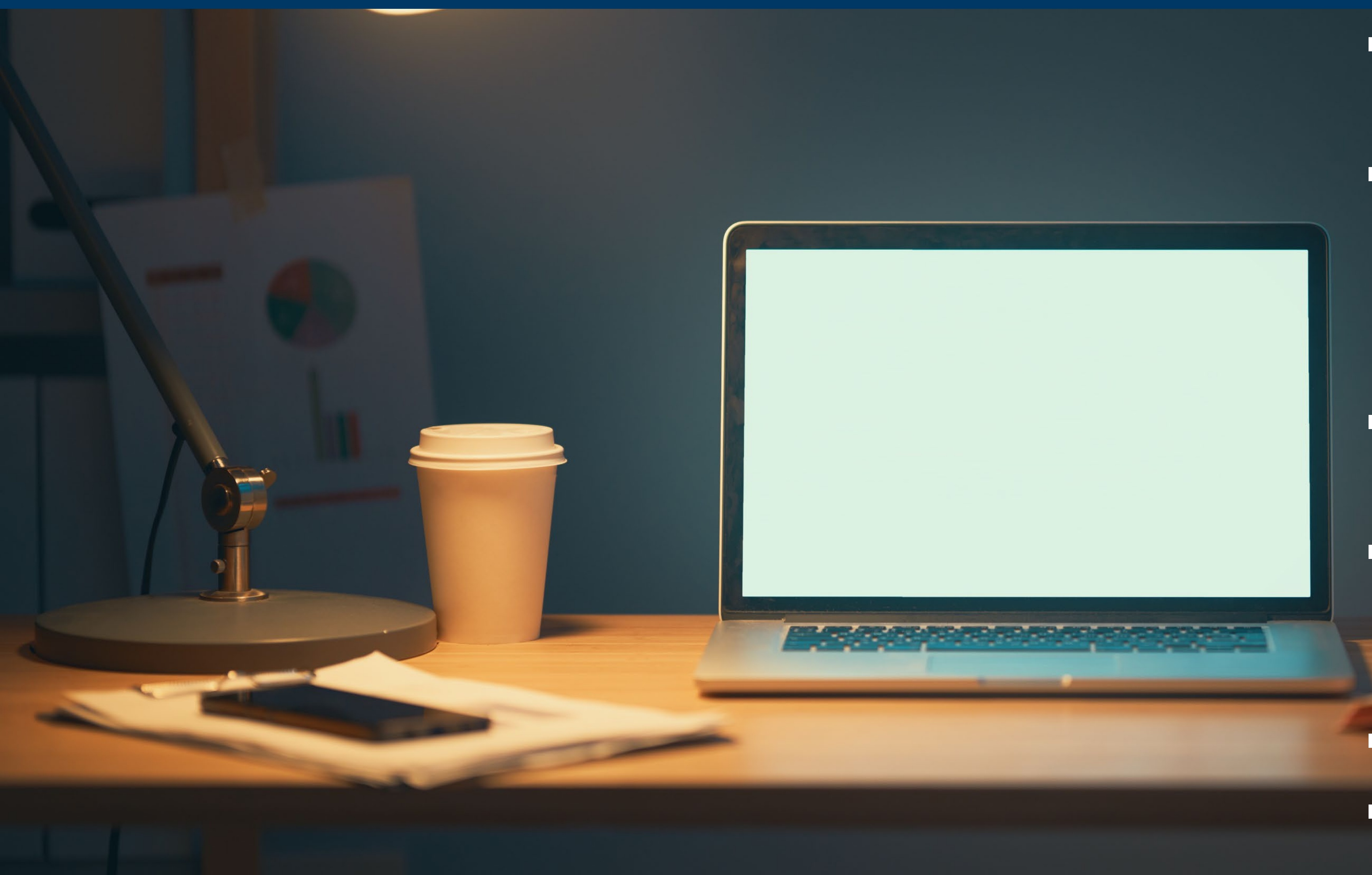
- If the photo is humiliating.
- If the information shows abuse.
- If the information is sexual in nature.
- If the patient has not given consent.
- Has the potential to be a criminal offense.



Examples of social medial abuse

- Photos of residents on the toilet.
- Hitting a resident in the face with a nylon strap.
- Twerking (dancing in a sexually provocative way) in residents face.
- Posting photos of a resident’s bowel incontinence episode.
- Photos of a resident vomiting; resident had a bowel obstruction.
- Instagram video of a staff member bending over and passing gas in a resident’s face.
- Photos of staff posing residents in sexually explicit positions.
- Videos of staff hitting residents, throwing items at them, and humiliating speech.
- Videos of staff putting metal link chains around residents' neck and arms.

Reason's why staff may post negative photos online



- Misguided sense of humor.
- Seeking to entertain themselves or others at the expense of their residents.
- Maliciously seeking to inflict shame.
- Spread embarrassment or harm upon the resident out of spite.
- Form of retribution.
- Expose abuse or neglect to the public.

F583 Privacy and Confidentially

- The resident has the right to personal privacy and confidential of his or her personal and medical record.
- Guidance
- Photographs or recordings of a resident and/or his or her private space without the resident’s, or designated representative’s written consent, is a violation of the resident’s right to privacy and confidentiality. Examples include, but are not limited to, staff taking unauthorized photographs of a resident’s room or furnishings (which may or may not include the resident), or a resident eating in the dining room, or a resident participating in an activity in the common area. Taking unauthorized photographs or recordings of residents in any state of dress or undress using any type of equipment (for example, cameras, smart phones, and other electronic devices) and/or keeping or distributing them through multimedia messages or on social media networks is a violation of a resident’s right to privacy and confidentiality.

F600 Abuse

[State Operations Manual Appendix PP - Guidance for Long Term Care Facilities]

- F600
- §483.12 Freedom from Abuse, Neglect, and Exploitation
- The resident has the right to be free from abuse, neglect, misappropriation of resident property, and exploitation as defined in this subpart. This includes but is not limited to freedom from corporal punishment, involuntary seclusion and any physical or chemical restraint not required to treat the resident's medical symptoms.
- §483.12(a) The facility must—
- §483.12(a)(1) Not use verbal, mental, sexual, or physical abuse, corporal punishment, or involuntary seclusion;

F600 Abuse cont.

Mental abuse includes abuse that is facilitated or enabled through the use of technology, such as smartphones and other personal electronic devices. This would include keeping and/or distributing demeaning or humiliating photographs and recordings through social media or multimedia messaging. If a photograph or recording of a resident, or the manner that it is used, demeans or humiliates a resident(s), regardless of whether the resident provided consent and regardless of the resident's cognitive status, the surveyor must consider non-compliance related to abuse at this tag. This would include, but is not limited to, photographs and recordings of residents that contain nudity, sexual and intimate relations, bathing, showering, using the bathroom, providing perineal care such as after an incontinence episode, agitating a resident to solicit a response, derogatory statements directed to the resident, showing a body part such as breasts or buttocks without the resident's face, labeling resident's pictures and/or providing comments in a demeaning manner, directing a resident to use inappropriate language, and showing the resident in a compromised position. Depending on what was photographed or recorded, physical and/or sexual abuse may also be identified.

State Regulations

Minn. Stat. 626.5572 Subd. 2

Abuse. "Abuse" means: (a) An act against a vulnerable adult that constitutes a violation of, an attempt to violate, or aiding and abetting a violation of: (1) assault in the first through fifth degrees as defined in sections 609.221 to 609.224; (2) the use of drugs to injure or facilitate crime as defined in section 609.235; (3) the solicitation, inducement, and promotion of prostitution as defined in section 609.322; and (4) criminal sexual conduct in the first through fifth degrees as defined in sections 609.342 to 609.3451.

A violation includes any action that meets the elements of the crime, regardless of whether there is a criminal proceeding or conviction. (b) Conduct which is not an accident or therapeutic conduct as defined in this section, which produces or could reasonably be expected to produce physical pain or injury or emotional distress including, but not limited to, the following: (1) hitting, slapping, kicking, pinching, biting, or corporal punishment of a vulnerable adult; (2) use of repeated or malicious oral, written, or gestured language toward a vulnerable adult or the treatment of a vulnerable adult which would be considered by a reasonable person to be disparaging, derogatory, humiliating, harassing, or threatening.

2019 Eldercare And Vulnerable Adult Act (MN Statue 144G)

- Residents of assisted living facilities have protection against unfair discharges and evictions.
- Residents of nursing homes and assisted living facilities will be protected from retaliation.
- Residents of nursing homes and assisted living facilities will have the right to install a camera in their own rooms to monitor care.

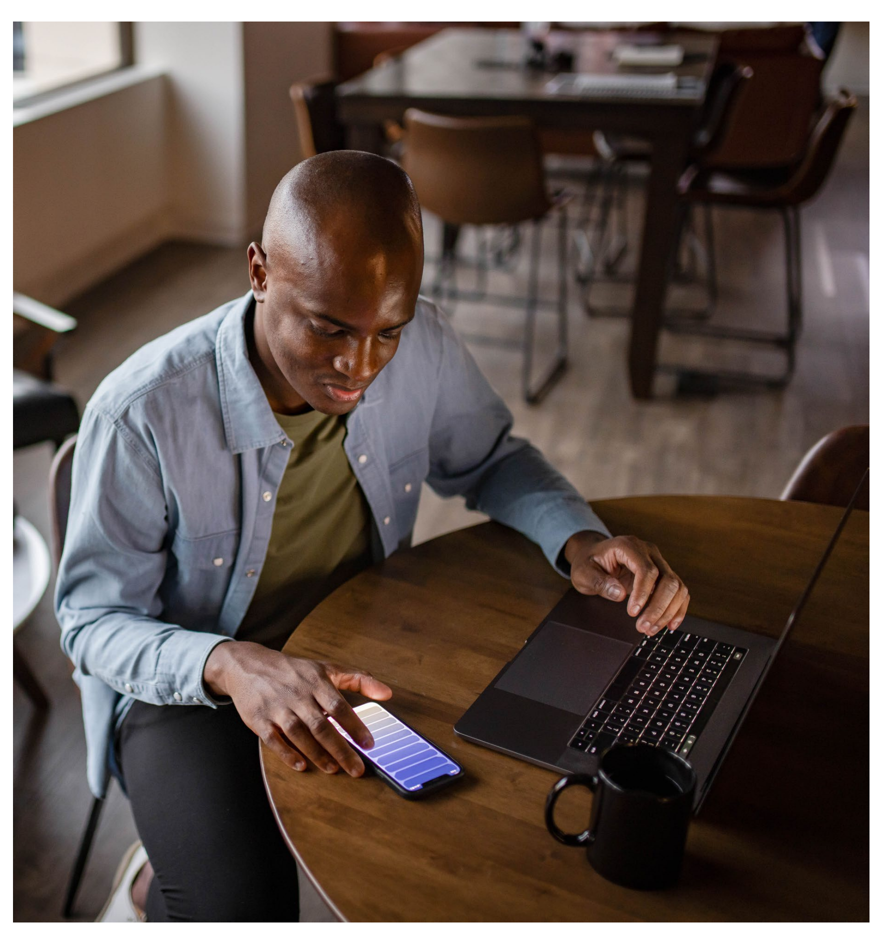
Facility Policy

- ✓ When can photographs of residents be taken?
- ✓ How can will they be used?
- ✓ Social Media Policy
- ✓ Consent by resident and or representative
- ✓ When to report – to whom?

Facility Responsibilities

- ✓ Review your policies.
- ✓ Provide Education to staff.
- ✓ Encourage staff not to carry cell phones on the nursing units.
- ✓ Take all reports of abuse seriously.
- ✓ Report the allegations to NHIR.
- ✓ Report to law enforcement, as necessary.

MDH Staff and Cell phones



- Utilized for Hotspot connections.
- Used for 2-Step authentication to log into the MDH computers.
- Needed for communication with team members throughout the building.
- MDH personal safety officers encourage MDH staff to carry their cell phones while onsite.

Thank You!

Becky Haberle, RN | MDH Quality and Training

Becky.haberle@state.mn.us

218-308-2105

LTC Regulatory and Interpretive Guidance Updates

Becky Haberle | Nurse Specialist – Quality and Training Team

CMS Notification

- REVISED: Revised Long-Term Care (LTC) Surveyor Guidance: Significant revisions to enhance quality and oversight of the LTC survey process | CMS
- CMS Memo # QSO -25-07-NH
  - CMS description of the changes
  - Advanced copy of Appendix PP (State Operations Manual for Long Term Care)
  - Advanced copy of all updated survey pathways

Introduction

- March 24, 2025
- Admission, Transfer and Discharge
- Unnecessary Medication
- Pain Management

Admission, Transfer Discharge

- F620: Admission Agreement
- F622-F626 and F660-F661 are deleted, and guidance has been incorporated into two new tags.
- F627: NEW citation for Inappropriate Transfers and Discharges
- F628: NEW citation for Transfer and Discharge Process

F620 Admission Agreement

- New guidance clarify prohibition of language in admission agreements that specifically requests or requires a third part to personally guarantee payment to the facility.
- Guidance includes examples of admission agreement language that would not be compliant.

F627 Inappropriate Transfer or Discharge

Guidance in F627 combines regulations and guidance previously found in:

- F622: Transfer and discharge requirements
- F624: Preparation for safe/orderly transfer/discharge
- F626: Permitting residents to return to facility
- F660: Discharge planning process
- F661: Discharge summary

Facility and Resident-initiated language has been removed from the guidance.

F628 Transfer/Discharge Process

Combines the regulation and guidance previously found in:

- F622:Transfer and Discharge Requirements
- F623: Notice Requirements Before Transfers and Discharge
- F625: Notice of Bed Hold Policy Before/Upon Transfer
- F661: Discharge Summary

Updated Discharge and Hospitalization Pathways

- Survey staff will review with the Ombudsman prior to survey about concerns with discharges.
- Resident and representatives will be asked more specific questions related to the rational of the resident discharge.
  - Inability to meet the resident needs.
  - Discharge from the hospital or therapeutic leave.
  - Endangering the health or safety of others.
  - Nonpayment.
  - Health improved and the resident no longer requires services of the facility.

Unnecessary Medications

- Chemical Restraints
- Unnecessary Psychotropic Medications
- Accuracy of Assessments
- Professional Standard

F757 Unnecessary Medications

- In the past F757 and F758 (psychotropic medications) interpretive guidance was combined.
- CMS has separated the two.
- F757 interpretive guidance has been revised and reorganized to include guidance only for unnecessary medication. All guidance for unnecessary psychotropic medications has been removed from F757.

F605 Chemical Restraints/Unnecessary Psychotropic Medications

- The regulation and guidance at F758 has been incorporated into and will now be cited at F605 (Right to be free from chemical restraints).
- F758 has been deleted.
- This change will streamline the survey process and increase consistency and accuracy of citations.
- The Critical Element pathway has been renamed and updated to reflect the guidance revisions.

F605 continued

- Additional guidance emphasizes the resident right to be fully informed of and participate in or refuse treatment.
- Before initiating or increasing a psychotropic medication, the resident must be notified of the change and have the right to participate in their treatment, including the right to refuse treatment.

Medical Record Documentation Guidance in F605, F641, and F658

Guidance related to citing noncompliance when a concern related to documentation to support a diagnosed mental disorder, has been revised and expanded at:

- F605: Chemical Restraints/Unnecessary Psychotropic Medications
- F641: Accuracy/Coordination/Certification
- F658:Services Provided Meet Professional Standards

Note the regulations and guidance as F642 have been incorporated into and will now be cited at F641. F642 (Coordination/Certification of Assessment) has been removed from Appendix PP.

F841 Responsibilities of the Medical Director

- F841 has been revised to address the role of the medical director in the implementation of policies on diagnosing and prescribing medications.
- The medical director is responsible for intervention when medical care is inconsistent with current accepted standards of care.

F697 Pain Management

- Added CDC definitions for acute, chronic and subacute pain.
- Clinicians may consider prescribing immediate-release opioids instead of extended-release and long-0acting opioids.
- Opioid treatment for pain needs to be appropriately assessed and individualized for each residents
- Updated links and provided additional resources on opioid use.

Definitions Added

- **Acute Pain**: pain that is usually sudden in onset and time-limited with a curation of less than one month and often is caused by injury, trauma, or medication treatments such as surgery.
- **Chronic Pain**: Pain that typically lasts greater than three months and can be the result of an underling medical disease or condition, injury, medical treatment, inflammation, or unknown cause.
- **Subacute Pain**: pain that has been present for 1-3 months.

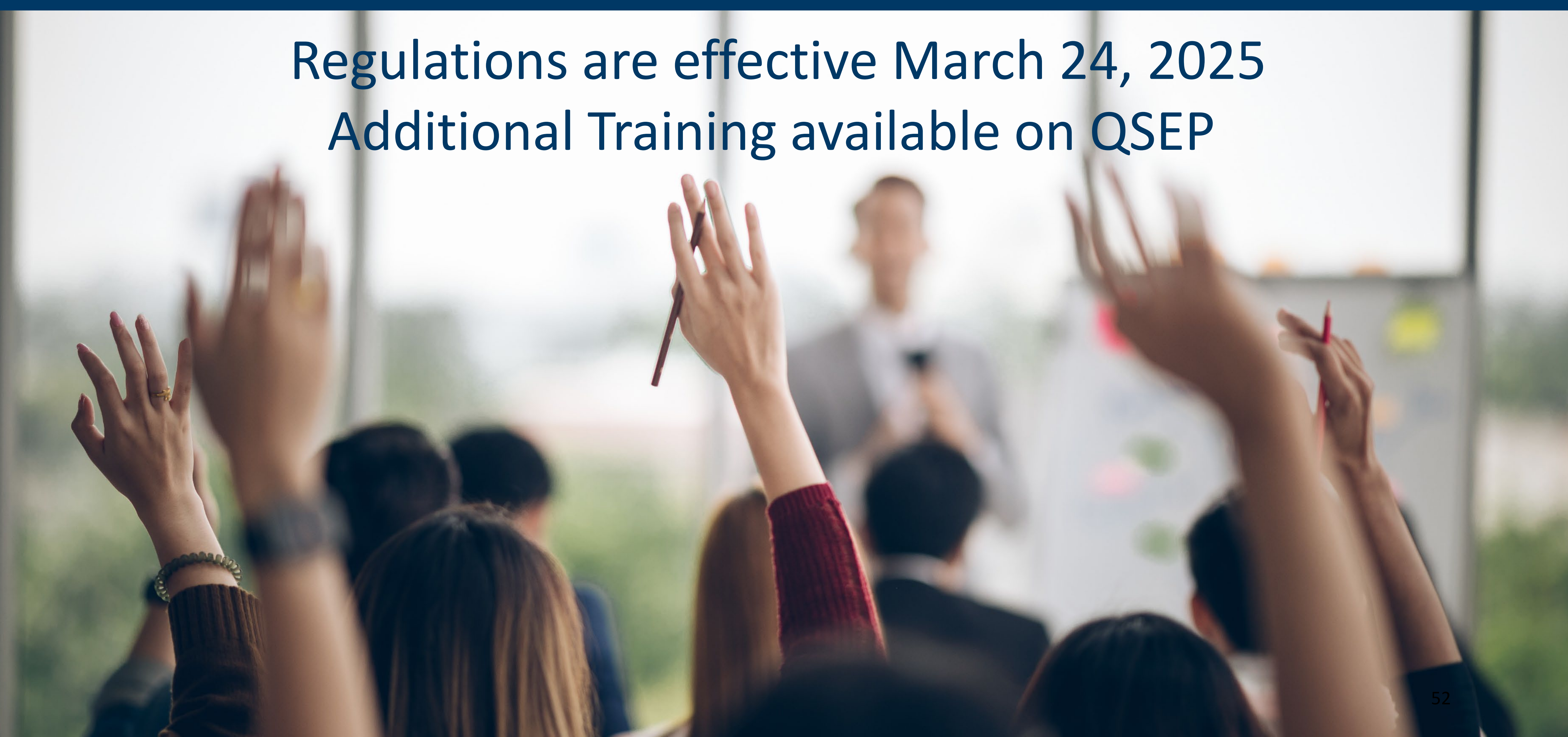
Opioids for Pain Management

- Opioid treatment for pain needs to be appropriately assessed and individualized for each resident.
- When staring opioid therapy for acute, subacute or chronic pain, clinicians may consider prescribing immediate-release opioids instead of extended-release and long-acting opioids.

F552 Resident Rights

For concerns related to informing the resident or resident representative of the risks of opioid use for pain, Refer to F552 for Resident rights.

Training



Independent Informal Dispute Resolution (IIDR) Statute Updates

Ben Hanson | Reconsiderations Supervisor

Informal Dispute Resolution

- Deadline for IDRs changed in statute to **10 calendar days** from receipt of notice.
- Previously was 30 calendar days from exit date.
- Change reflects federal guidance and ties appeal timelines to notice.

Independent IDR

- Independent IDR can be requested following issuance of Civil Money Penalty.
- Timelines established for Independent IDR process to meet 60-day requirement.
- Removed references to formal hearing or arbitration proceedings.

Carbapenem Resistant Organisms and Carbapenemase-Producing Organisms

Laura Tourdot | Senior Epidemiologist, IDEPC

Presenter

Epidemiology

- Laura Tourdot, MPH, Epidemiologist
  - Infectious Disease Epidemiology, Prevention and Control (IDEPC) Division
  - Healthcare-Associated Infections/Antimicrobial Resistance Section

Carbapenem Resistant Organisms

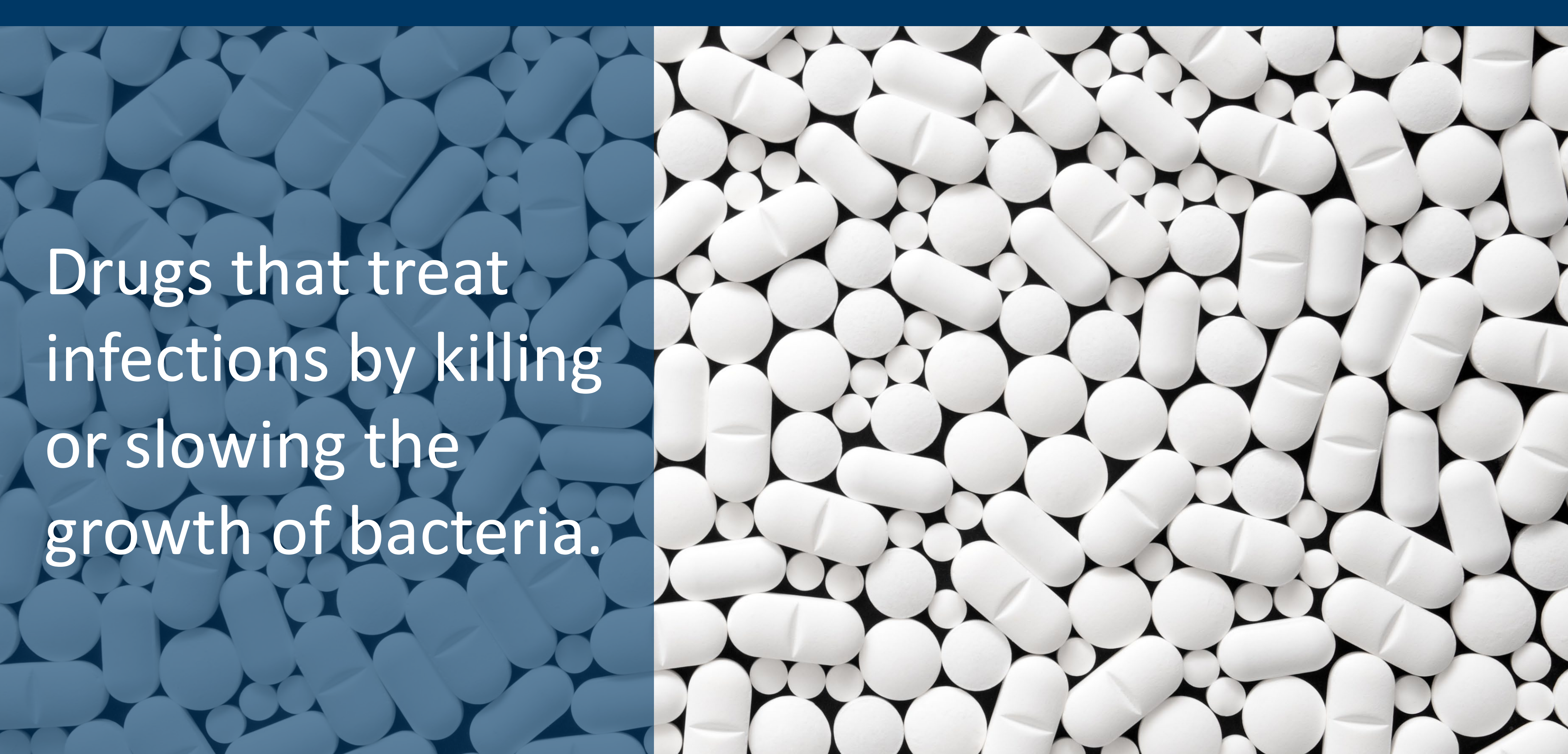
Carbapenem Resistant Organisms (CROs)

- Carbapenem-resistant Enterobacterales (CRE)
- Carbapenem-resistant *Pseudomonas* spp (CRPA
- Carbapenem-resistant *Acinetobacter baumannii* (CRPA)

CRO "C" is for CARBAPENEM

- Carbapenems are a type of antibiotic reserved to treat serious multidrug-resistant infections.
  - Examples: Doripenem, Ertapenem, Imipenem, Meropenem
- These antibiotics are often considered antibiotics of last resort to treat infections, often prescribed after other antibiotics have failed to treat infections.

Antibiotics



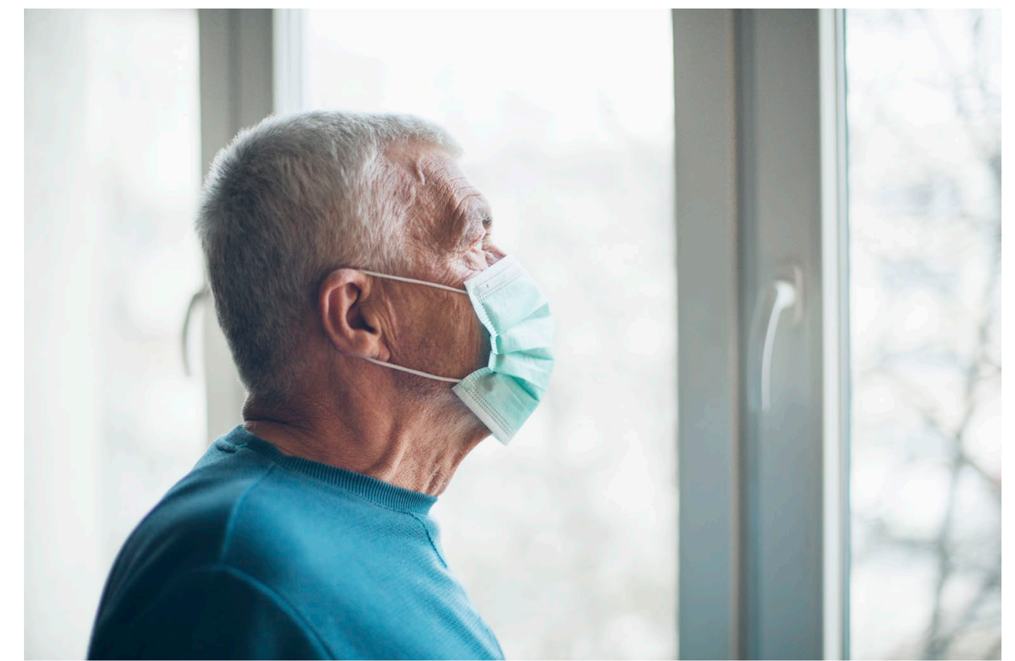
Carbapenem Antibiotics

- Antibacterial agents with a broad range of antimicrobial activity and a critical place in therapy.
- Increasingly important due to increase in resistance to other antibiotics.
- Relied on to treat sickest patients and most resistant bacteria for over 20 years.
- Reserved for serious, resistant infections.
- Ertapenem, Meropenem, Imipenem.

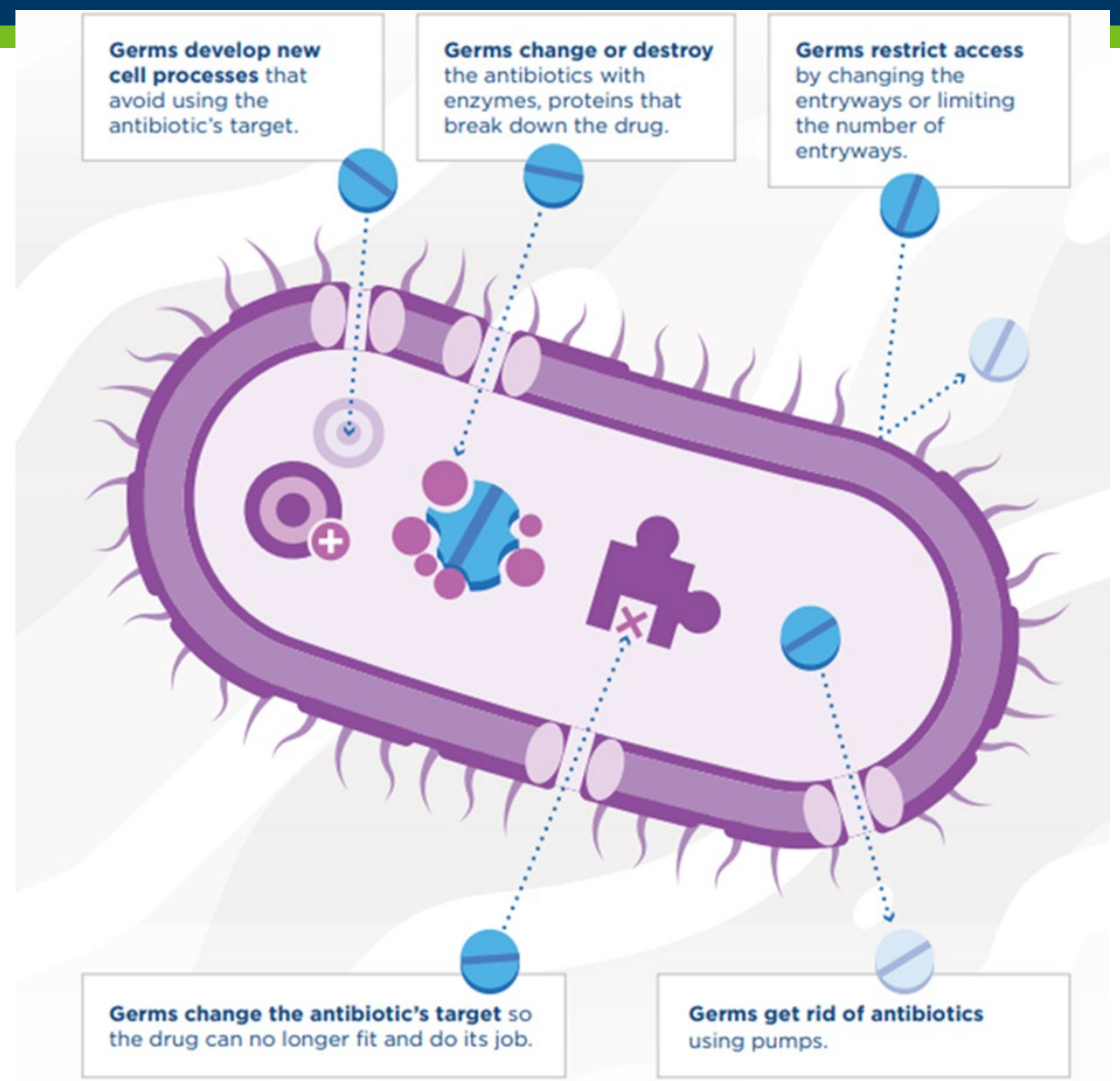
Carbapenem Use

Used for different infections

- Pneumonia
- Intra-abdominal infections
- Meningitis



"R" is for RESISTANCE



[CDC: Antibiotic Resistance Threats in the United States, 2019 (www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf)](www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf)

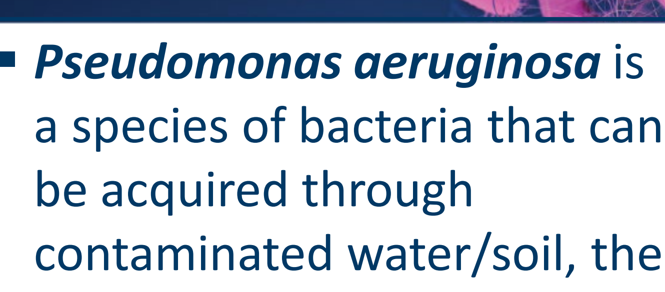
CRO "O" is for Organism

Carbapenem-resistant Enterobacterales (CRE)

- **Enterobacterales** are an order of bacteria commonly found in the gastrointestinal tract
- Infections caused by these organisms are associated with high mortality, up to 50%
- 25-30% are carbapenemase producing
- CRE

Carbapenem-resistant *Acinetobacter species*

- ***Acinetobacter*** is a genus of bacteria that can survive a long-time on surfaces
- One of the 15 most frequently reported pathogens in health care settings
- >90% are carbapenemase producing
- CRAB



Multidrug-resistant (MDR) *Pseudomonas aeruginosa*

- ***Pseudomonas aeruginosa*** is a species of bacteria that can be acquired through contaminated water/soil, the hands of health care workers, or a contaminated health care environment
- <5% are carbapenemase producing
- CRPA

When these bacteria develop resistance to the group of antibiotics called carbapenems, the bacteria are call Carbapenem-resistant Organisms (CRO).

CRE

"E" is for ENTEROBACTERALES

- Gram-negative bacteria
- Found in gastrointestinal tract
- Cause infection in both health care and community settings
- Common Enterobacterales: *Klebsiella, Escherichia coli, Proteus, Citrobacter, Enterobacter*
- CRE are a common cause of healthcare-associated infections

When these bacteria develop resistance to the group of antibiotics called carbapenems, the germs are called **Carbapenem-resistant Enterobacterales (CRE)**.

CRA

"A" is for Acinetobacter

- Gram-negative bacteria – these bacteria are very hearty in the patient care environment and can survive on surfaces for a significant amount of time
- Can be found in gastrointestinal tract, skin, respiratory tract, and wounds
- Cause infection in both health care and community settings
- Common Acinetobacter: *Acinetobacter baumannii* (CRAB)
- CRA are a common cause of healthcare-associated infections

When these bacteria develop resistance to the group of antibiotics called carbapenems, the germs are called **Carbapenem-resistant Acinetobacter (CRA)**.

CRP

"P" is for *Pseudomonas species*

- Gram-negative bacteria
- Commonly found in the environment, like in soil and water
- Can be found in gastrointestinal and respiratory tract and cause infections in the blood, lungs, etc.
- Common *Pseudomonas: Pseudomonas aeruginosa*
- Cause infection in both health care and community settings
- CRPA are a cause of healthcare-associated infections

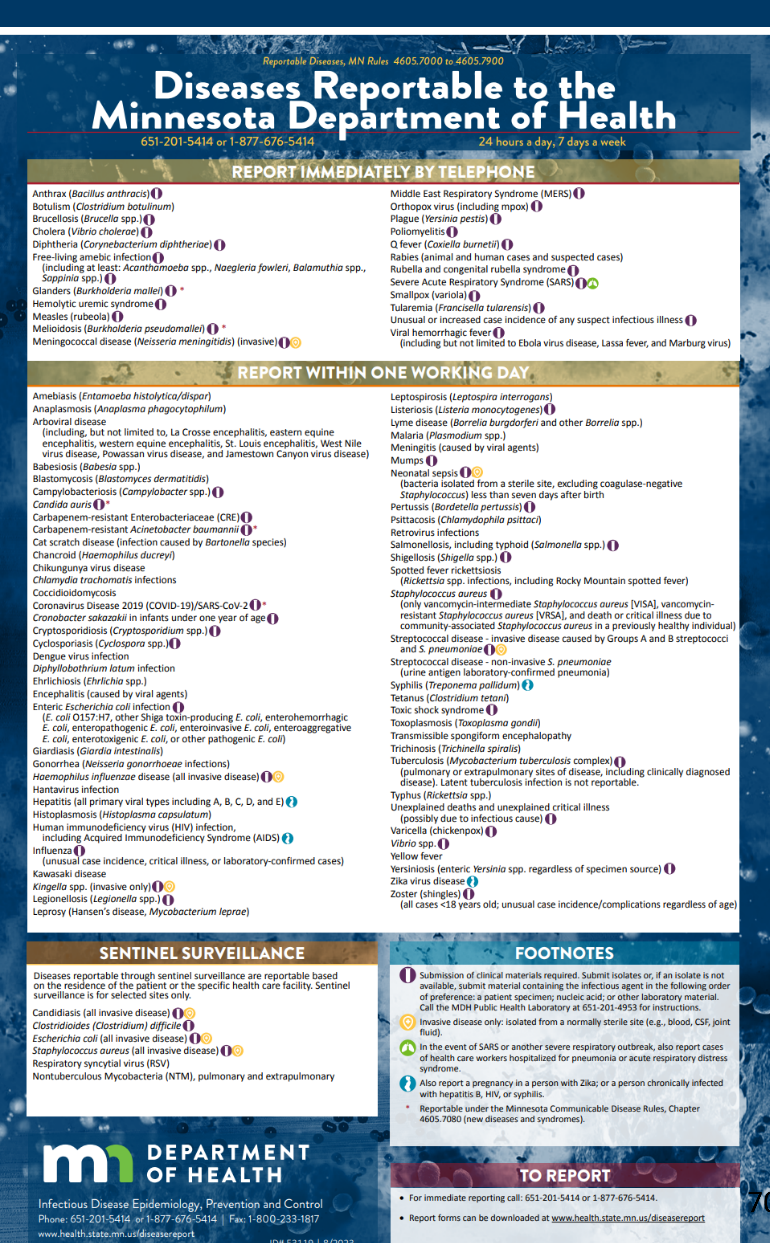
When these bacteria develop resistance to the group of antibiotics called carbapenems, the germs are called **Carbapenem-resistant *Pseudomonas aeruginosa*** (**CRPA**).

What is reportable

- Carbapenem-resistant Enterobacterales (**CRE**) and carbapenem resistant *Acinetobacter baumannii* (**CRAB**) are reportable statewide to the Minnesota Department of Health (MDH). For more information on disease reporting please see: Reportable Disease Rule (Communicable Disease Reporting Rule) Infectious Disease Reporting - MN Dept. of Health (state.mn.us)
- At this time, carbapenem resistant *Pseudomonas aeruginosa* (CRPA) is not reportable statewide, but samples can be voluntarily submitted to MDH for carbapenemase testing at any time.

CRE and CRAB are Reportable Statewide

- **CRE** and **CRAB** are reportable statewide in MN
- Clinical CRE and CRAB isolates need to be sent to our public health laboratory
- For more information on disease reporting please refer to the [Reportable Disease Poster Infectious Disease Reporting (www.health.state.mn.us/diseases/reportable/rule/poster.html)](www.health.state.mn.us/diseases/reportable/rule/poster.html)



Carbapenem Resistant Organism (CRO) Submission criteria

Enterobacterales (CRE)

Antibiotic	MIC (ug/ml)	Zone diameter (mm)
Ertapenem	≥2, R or >1, R	≤18
Imipenem	≥4, R	≤19
Meropenem	≥4, R	≤19
Doripenem	≥4, R	≤19

Imipenem MICs for *Proteus* spp., *Providencia* spp., and *Morganella morganii* tend to be higher than meropenem or doripenem, which is typically due to a mechanism other than production of a carbapenemase.

Acinetobacter (CRA)

Antibiotic	MIC (ug/ml)	Zone diameter (mm)
Imipenem	≥8, R	≤18
Meropenem	≥8, R	≤14
Doripenem	≥8, R	≤14

Pseudomonas aeruginosa (CRPA)*

Antibiotic	MIC (ug/ml)	Zone diameter (mm)
Imipenem	≥8, R	≤15
Meropenem	≥8, R	≤15
Doripenem	≥8, R	≤15
Cefepime	≥16	≤14
Ceftazidime	≥16	≤14

*Voluntary submission; non-cystic fibrosis isolates

- OR -

Carbapenemase gene POSITIVE (KPC, NDM, OXA-48, VIM, IMP) by:

- real-time PCR
- conventional PCR
- Cepheid GeneXpert CarbaR
- other molecular method

Who is responsible for reporting?

The facility collecting the specimen.

- ✓ A resident is transferred to an ACH and CRE is detected. The ACH is responsible for reporting.

CRE Specimens Reported for MN Residents, 2016-2022

Number of Specimens

700
600
500
400
300
200
100
0

2016
2017
2018
2019
2020
2021
2022

Year of Specimen Culture

E. cloacae complex
E. coli
Klebsiella pneumoniae
Klebsiella aerogenes
Klebsiella oxytoca
Other Enterobacterales

Carbapenem Resistant Acinetobacter Specimens, 2016 -2022

Number of Specimens

35
30
25
20
15
10
5
0

2016 2017 2018 2019 2020 2021 2022

Year of Specimen Collection

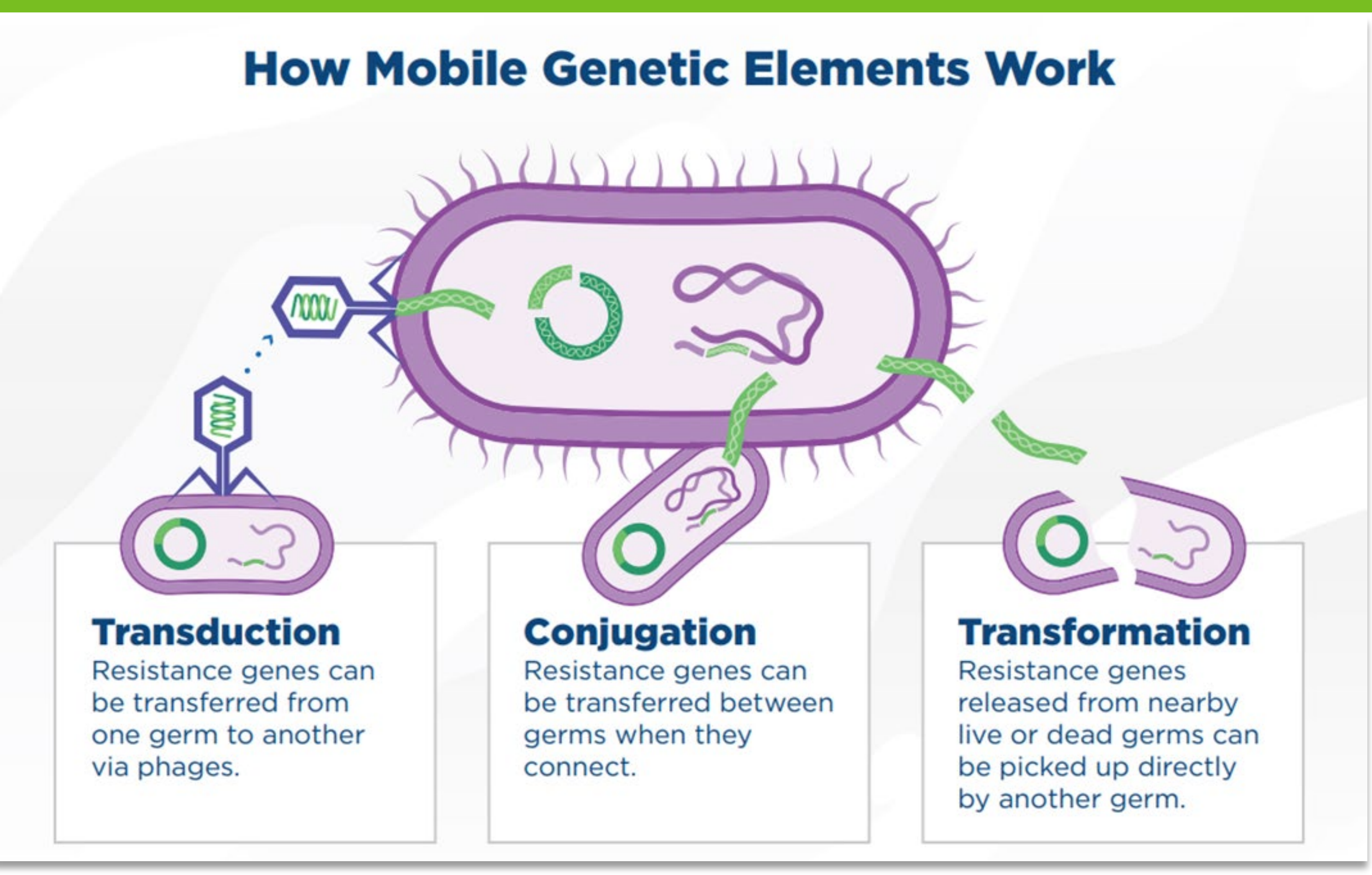
A. baumanii complex · A. radioresistens · Other A. species · A. ursingii · A. lwoffii · A. pittii

Carbapenemase-Producing Organisms

What is CP-CRO?

"CP" is for CARBAPENEMASE PRODUCING

- CROs can make enzymes called carbapenemase that break down carbapenem antibiotics leading to antibiotic resistance.
- Carbapenemase-producing bacteria are more likely to spread their resistance to other bacteria.
- Many carbapenemase genes are on a mobile genetic element, plasmids, that can transfer from one bacteria to another.



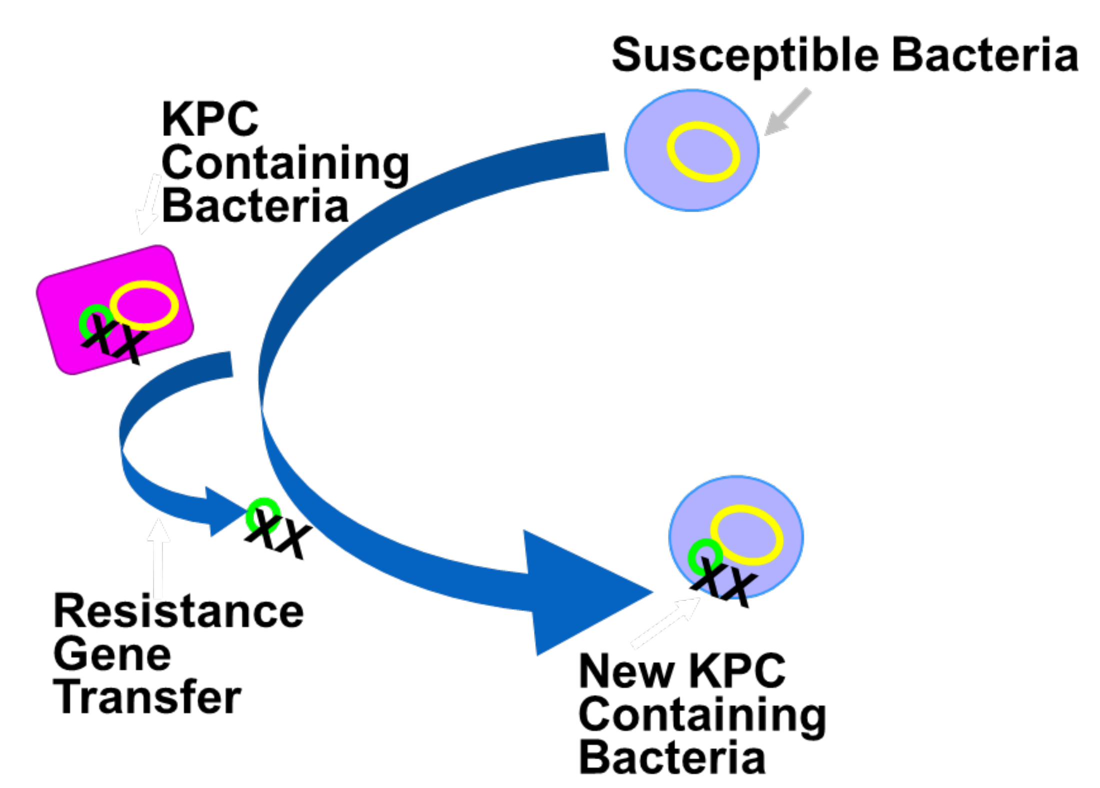
CDC: Antibiotic Resistance Threats in the United States, 2019 (www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf)

Carbapenem Resistance Mechanisms

- Acquired genes that change the cell to reduce how much antibiotic gets in or stays out of the bacterial cell.
- Enzymes called carbapenemases:
  - Inactivates carbapenems and other **β-lactam antibiotics, including penicillins and cephalosporins.**
  - Most common carbapenemase genes:
    - KPC, NDM, VIM, IMP, and OXA.
  - Pan-resistant strains have been identified.

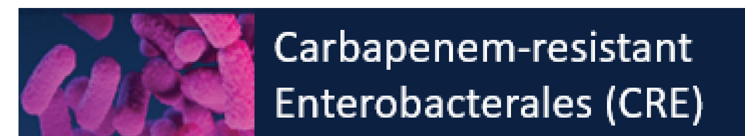
Carbapenemase-Producing CRE (CP-CRE)

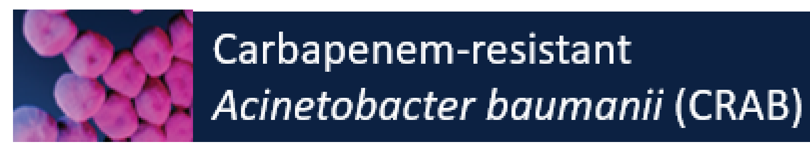
- **Carbapenemase:** enzyme that breaks down carbapenems and other antibiotics
- **CP-CRE:** Carbapenem-resistant enterobacterales that carries genes for carbapenemase production
  - Can spread the genes to other bacteria, making them resistant
  - Can cause major outbreaks in health care facilities

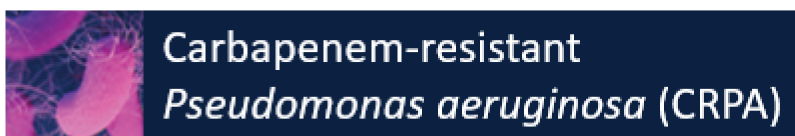


Carbapenemase Producing Organism Characteristics

- **Carbapenemase producing organism (CPO):** Any organism resistant to carbapenems due to the production of a carbapenemase enzyme.
- Why are CPOs concerning?
  - Can cause invasive infections associated with high mortality.
  - Limited treatment options.
  - Spread quickly through health care settings.
  - Genes that produce the carbapenemase can be easily transferred to other bacteria.



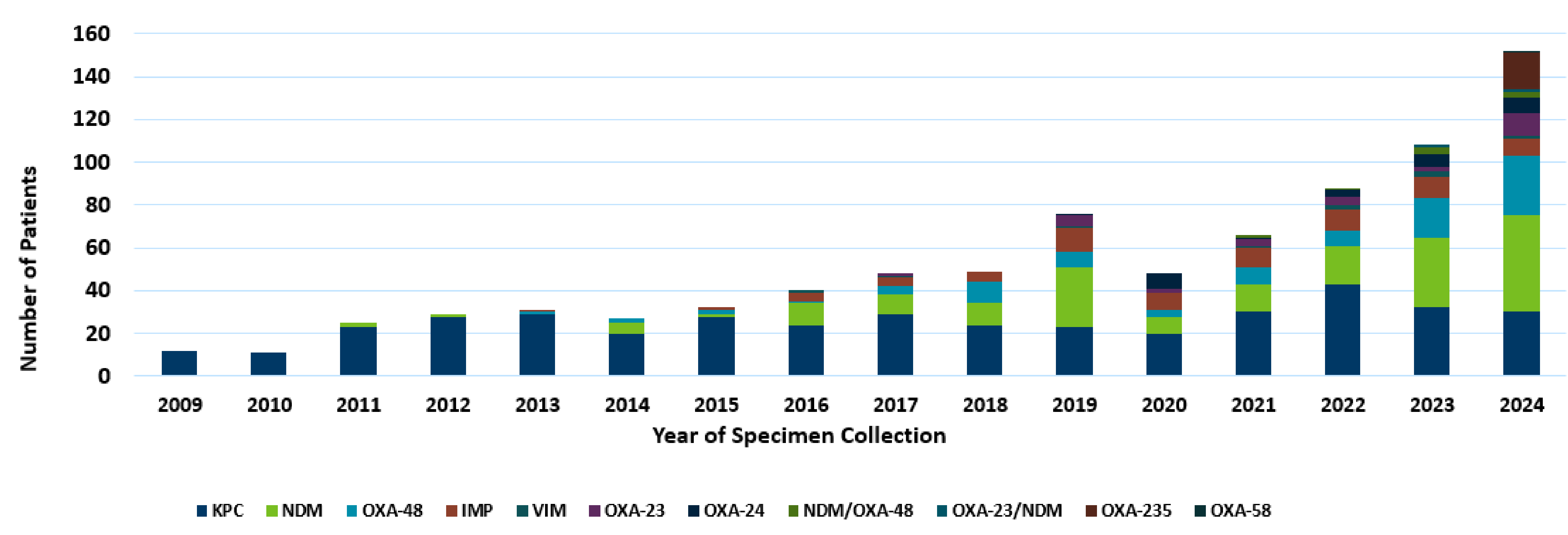




Current CPO Reporting Requirements

- **CRA:** an *Acinetobacter* species isolate resistant to any 1 carbapenem (imipenem ≥8, meropenem ≥8, doripenem ≥8) by current CLSI breakpoints **or** positive by a carbapenemase test, such as: Carba-R, or PCR (KPC, NDM, IMP, VIM, OXA, etc.)
  - CRA are reportable and submittable per the MN Reportable Disease Rule (https://www.health.state.mn.us/diseases/reportable/rule)
- **CRE:** an Enterobacterales isolate resistant to any 1 carbapenem (imipenem ≥4, meropenem ≥4, doripenem ≥4, ertapenem ≥2) by current CLSI breakpoints or positive by a carbapenemase test, such as: mCIM, Carba-R, or PCR (KPC, NDM, IMP, VIM, OXA, etc.).
  - Note: Imipenem MICs for *Proteus* spp., *Providencia* spp., and *Morganella morganii*, tend to be higher and, therefore, a carbapenem other than imipenem must be resistant for these organisms to meet the CRE definition.
  - CRE are reportable and submittable per the MN Reportable Disease Rule (https://www.health.state.mn.us/diseases/reportable/rule)
- **CRPA:** a *Pseudomonas aeruginosa* isolate resistant to any 1 carbapenem (imipenem ≥8, meropenem ≥8, doripenem ≥8) by current CLSI breakpoints or positive by a carbapenemase test, such as: mCIM, Carba-R, or PCR (KPC, NDM, IMP, VIM, OXA, etc.).
  - CRPA is not currently reportable in Minnesota. However, voluntary submission of *Pseudomonas aeruginosa* and other *Pseudomonas* sp. isolates is encouraged from non-cystic fibrosis patients for antibiotic resistance surveillance testing.

MN CPO Epidemiology



CRO vs CPO

	CRO: Not CPO	CPO: Carbapenemase-Producing Organism
Mechanism	**Intrinsic:** Organism is resistant due to repeated exposure to antibiotics and/or intrinsic genetic makeup.	**Acquired:** Organism carries a **mobile carbapenemase** gene that produces an enzyme for breaking down carbapenems.
Concern	• Possible treatment issues. • Outbreaks (outbreaks of CRO are rarely detected in MN).	• **Very** resistant (treatment failures) • Carbapenemase genes can spread to other organisms • Outbreaks.
Infection Control	Enhanced Barrier precautions (unless meets criteria for Contact Precautions). private room, as able.	Enhanced Barrier precautions (unless meets criteria for Contact Precautions), private room, additional measures usually warranted.
MDH Response	No, unless outbreak.	Always (Containment Strategy)
Frequency in MN	~400-450 cases per year CRE, ~30 CRAB	~120 cases per year

Enhanced Barrier Precautions Criteria

Examples of MDROs Targeted by CDC include:

- Pan-resistant organisms,
- Carbapenemase-producing carbapenem-resistant Enterobacterales,
- Carbapenemase-producing carbapenem-resistant *Pseudomonas* spp.,
- Carbapenemase-producing carbapenem-resistant *Acinetobacter baumannii*, and
- *Candida auris*

Additional epidemiologically important MDROs may include, but are not limited to:

- Methicillin-resistant *Staphylococcus aureus (MRSA)*,
- ESBL-producing Enterobacterales,
- Vancomycin-resistant *Enterococci (VRE)*,
- Multidrug-resistant *Pseudomonas aeruginosa*,
- Drug-resistant *Streptococcus pneumoniae*

CDC: Implementation of Personal Protective Equipment (PPE) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms (MDROs) (https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html)

The Containment Strategy

- **Goal:** slow the spread of novel or targeted multidrug-resistant organisms.
- **Systematic public health response to single cases of highly concerning resistant organisms.**
- **Main components:**
  - Infection prevention and control (IPC) implementation.
  - IPC assessment.
  - Screening for asymptomatic colonization among health care contacts.
  - Communication of MDRO status during transfer to another facility.

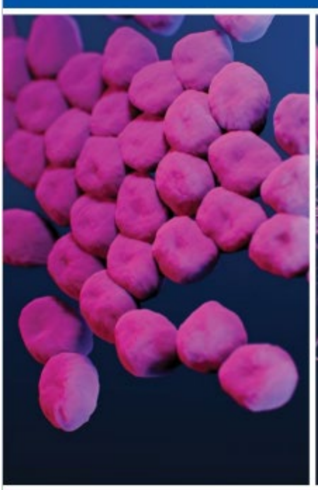
[CDC VitalSigns: Containing Unusual Resistance (www.cdc.gov/vitalsigns/containing-unusual-resistance/)](http://www.cdc.gov/vitalsigns/containing-unusual-resistance/)

“Containing” the spread of CPOs

- Goal: prevent the spread to other patients.
- Infection control recommendations for all cases.
  - Transmission-based precautions.
  - Environmental cleaning.
  - Dedicated patient equipment.
  - Situation-specific infection control recommendations.
  - Notify receiving facilities if transferring patient.
- Onsite visit by Infection Control Assessment and Response (ICAR) and Epidemiology team.
- Screening for asymptomatic colonization.

CDC Interim Guidance for a Public Health Response to Contain Novel or Targeted Multidrug-resistant Organisms (MDROs): Updated December 2022 (www.cdc.gov/hai/pdfs/mdro-guides/Health-Response-Contain-MDRO-H.pdf)

Interim Guidance for a Public Health Response to **Contain** Novel or Targeted Multidrug-resistant Organisms (MDROs)



Updated December 2022

Colonization vs Infection

Colonization

- Organisms inhabit a specific body site (e.g., skin, urinary tract, respiratory tract) without signs or symptoms of infection.
- CPOs can be a colonizer of the GI tract. Individuals can be colonized for months to years. Colonization increases an individual's risk for infection.
- Does not require antibiotic therapy.

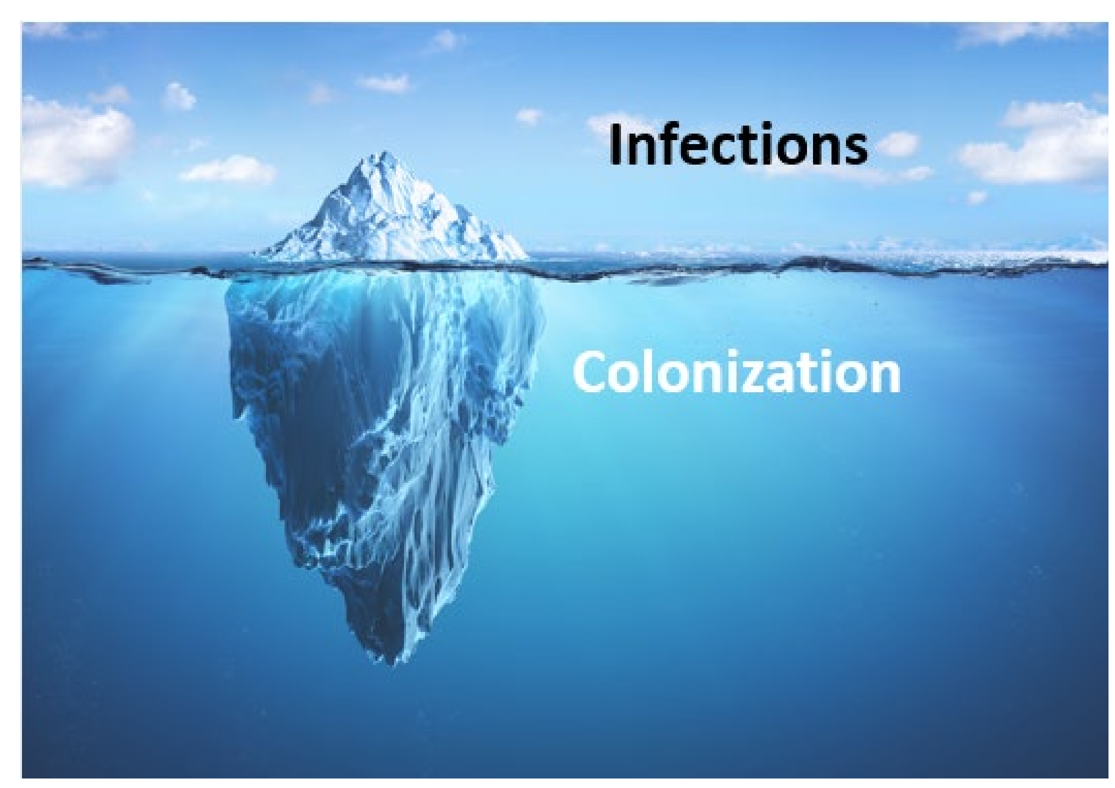
Infection

- Clinical signs of illness or inflammation due to tissue damage caused by invasion of organism.
- Invasive CPOs can cause infections in almost any body part, including bloodstream infections, ventilator-associated pneumonia, and intra-abdominal abscesses.
- Requires antibiotic therapy.

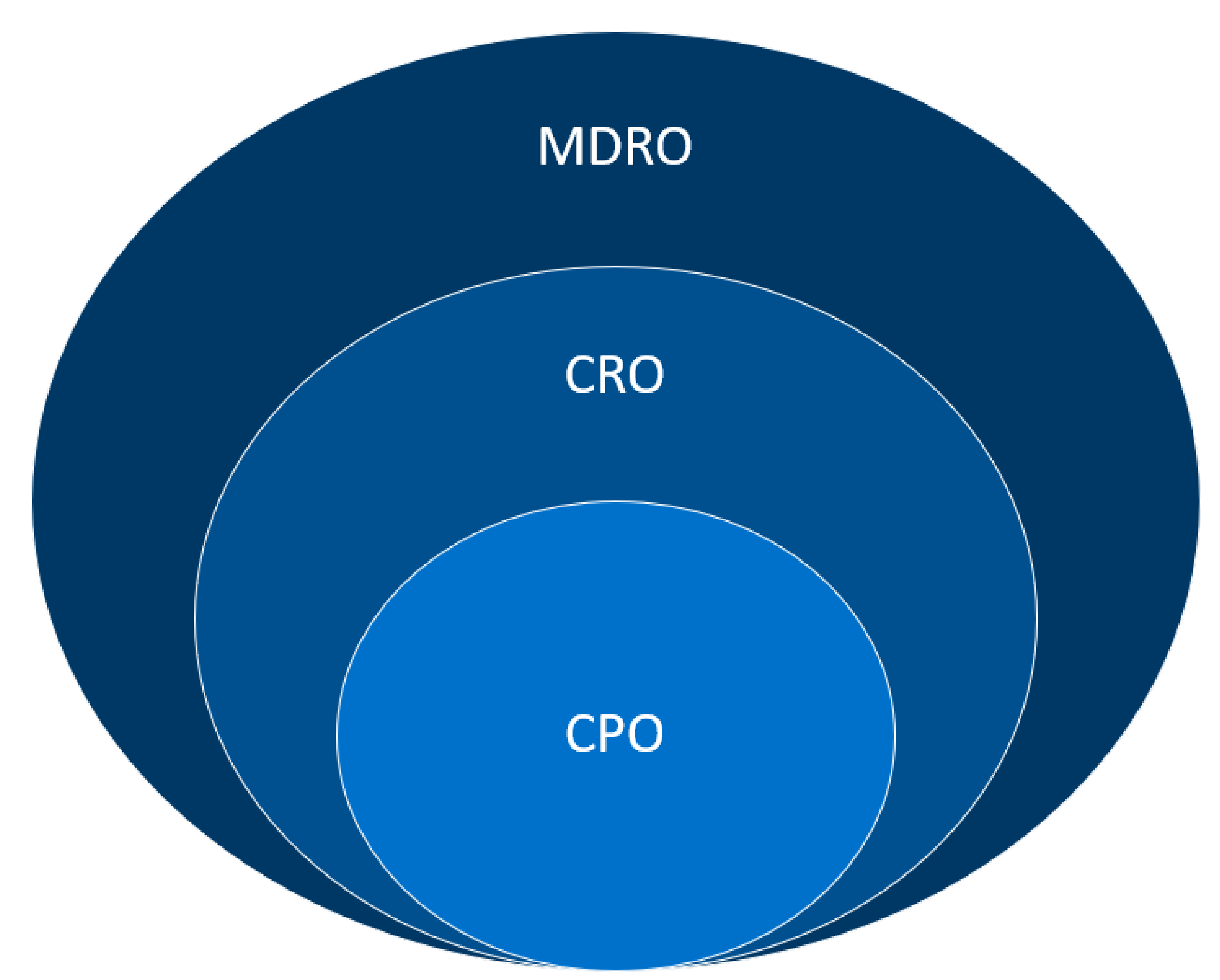
FOR CPOs, BOTH COLONIZATION **AND** INFECTION REQUIRE **INFECTION CONTROL MEASURES.** No current established decolonization strategies for CPOs. Colonization is considered indefinite.

CPO Infections and Colonization

- Infections are only a fraction of the total burden of CPOs.
- **Colonization**: the presence of the bacteria on or in the body without symptoms of an infection.
  - Can lead to infection.
  - Requires infection prevention precautions to prevent spread in health care facilities.
  - Can be a source of transmission.



Big Picture Comparison



Thank You!

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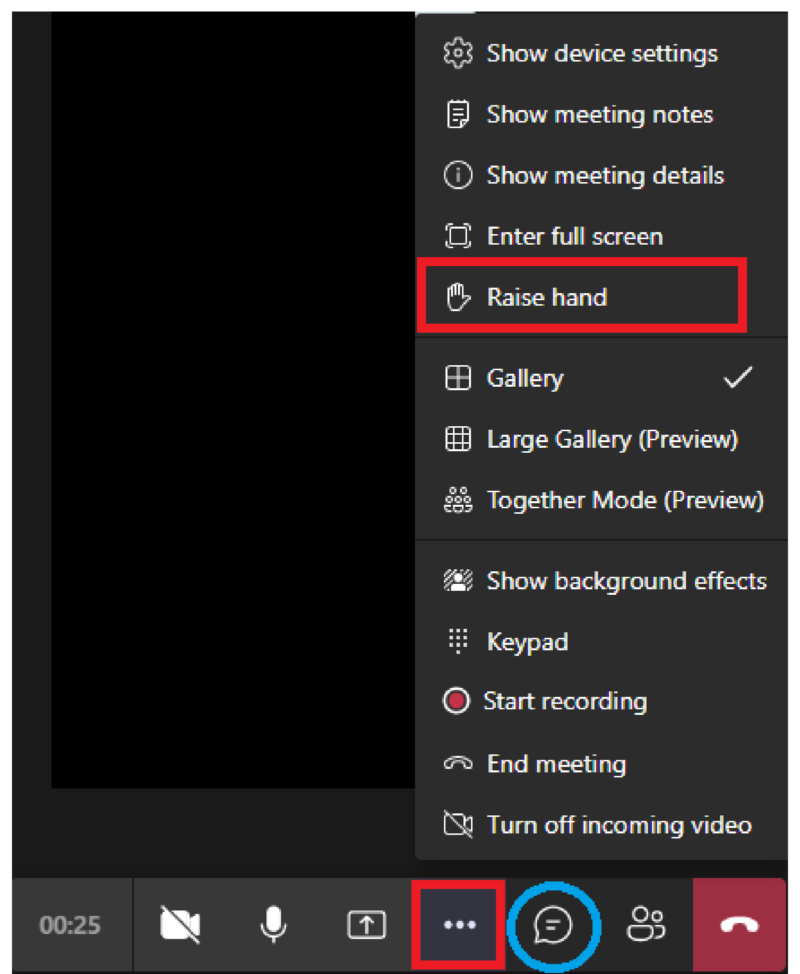
How to Ask a Question for Q & A

- **Participants are muted.** We will answer as many questions as we can at the end of the presentation.
- **Two ways to ask a question** or provide a comment:
  1. Raise your hand (**outlined in red**).
  2. Click the Chat bubble (**circled in blue**) to open the chat.
- For phone attendees, press ***5** to raise your hand, and ***6** to unmute/mute yourself.
- **We will select speakers** in order and add questions from the chat at the end of the presentation.



Thank You!!!

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