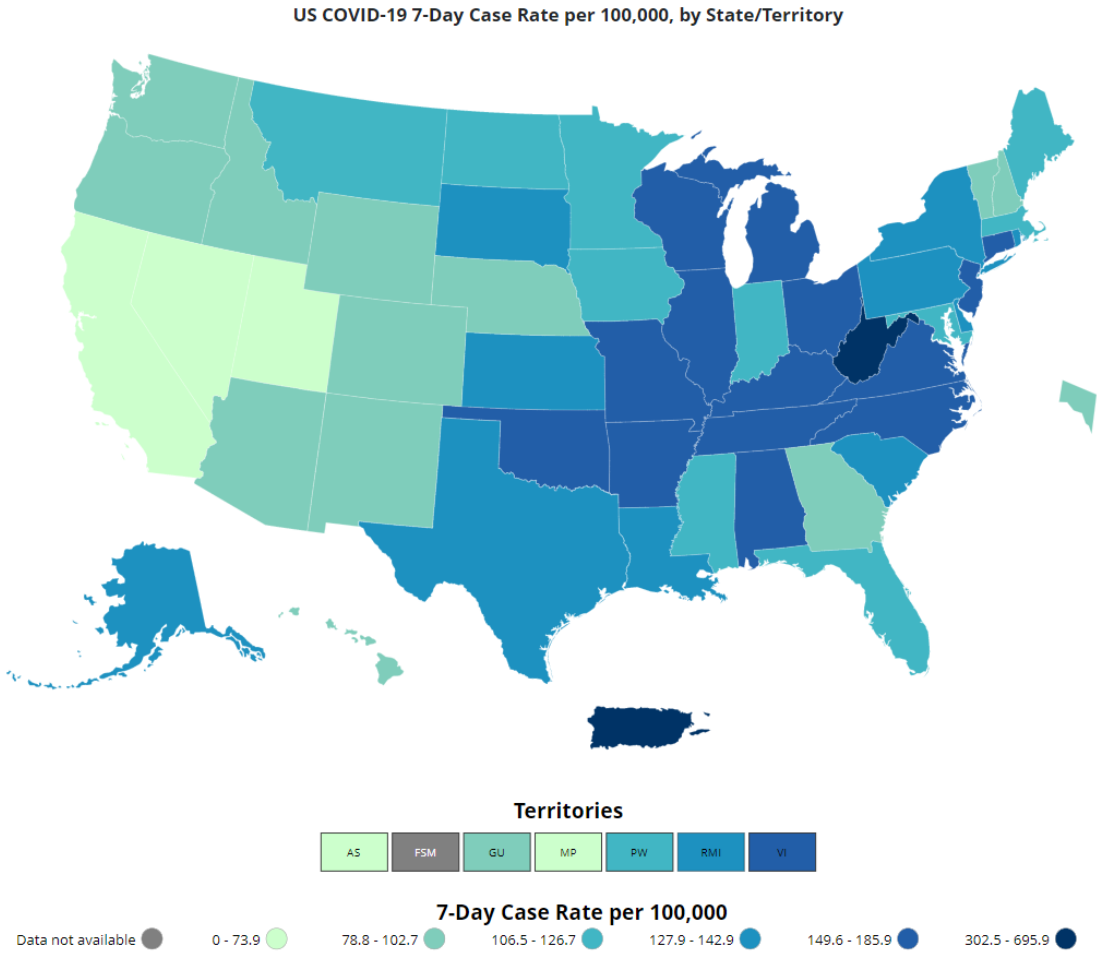
PDPH/LTCF Conference Call – Friday, 9/16/2022

Agenda

- **SARS-CoV-2 Surveillance Update**
- **COVID Bivalent Boosters**
- **Updated Guidance**
  - **PDPH Health Advisory 8/31/22: Monovalent (Original Formulation) mRNA COVID-19 Vaccines No Longer Authorized for Boosters**
  - **PAHAN 659 9/14/2022: Recommendations Regarding the Bivalent COVID-19 Booster Vaccine**
  - **PADOH Letter 9/12/2022: Interim Up to Date Definition**
- **Multi-drug Resistant Organisms and the Role of the Environment in Transmission**

Department of Public Health
CITY OF PHILADELPHIA

United States COVID-19 Cases and Deaths



TOTAL CASES	CASES IN LAST 7 DAYS	TOTAL DEATHS
95,314,517	418,989	1,047,020
+85,976 New Cases		+714 New Deaths

CDC | Data as of: Thursday, September 15, 2022 6:45 PM ET. Posted: Thursday, September 15, 2022 7:45 PM ET

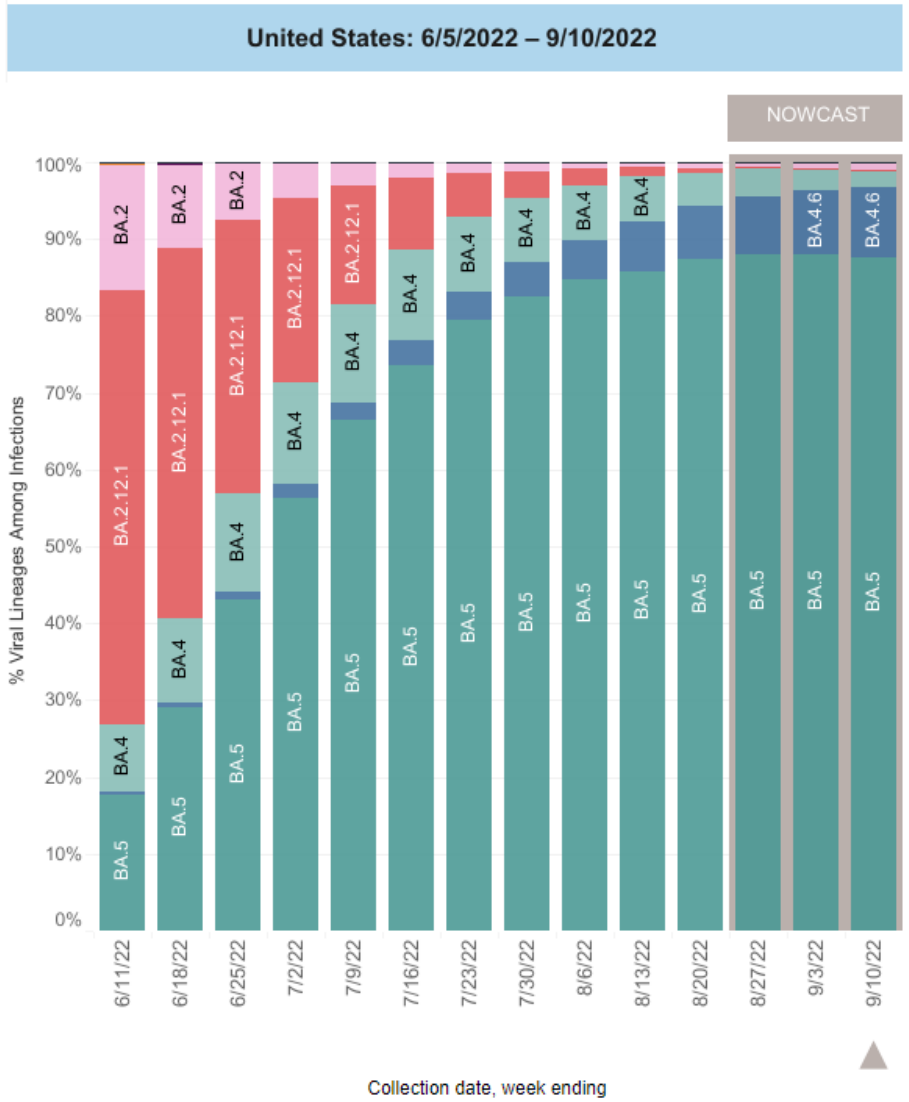
Pennsylvania, last 7 days:

- 17,506 new cases
- 136.7/100K
- PCR % Positivity: 10-14.9

Variants

Omicron

- The only variant circulating in the United States
- BA.5 the main subvariant 87.5%
- BA.5, BA.4.6, BA.4 98.9%



United States: 9/4/2022 – 9/10/2022 NOWCAST

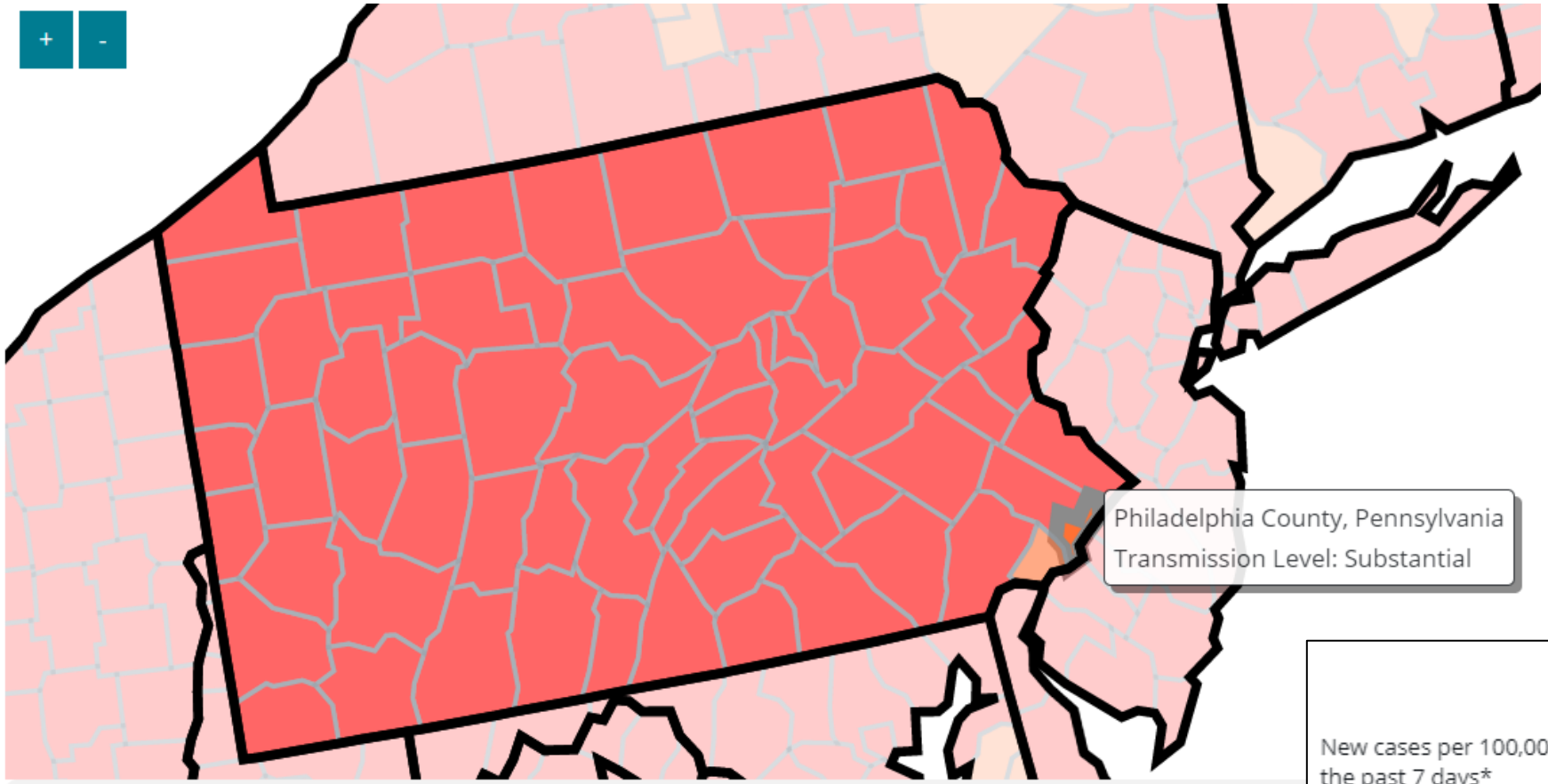
USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.5	VOC	87.5%	86.2-88.7%
	BA.4.6	VOC	9.2%	8.1-10.4%
	BA.4	VOC	2.2%	2.1-2.4%
	BA.2	VOC	1.0%	0.6-1.7%
	BA.2.12.1	VOC	0.1%	0.1-0.1%
	B.1.1.529	VOC	0.0%	0.0-0.0%
	BA.1.1	VOC	0.0%	0.0-0.0%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.0%	0.0-0.0%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# AY.1-AY.133 and their sublineages are aggregated with B.1.617.2. BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. For regional data, BA.1.1 and its sublineages are also aggregated with B.1.1.529, as they currently cannot be reliably called in each region. Except BA.2.12.1, BA.2 sublineages are aggregated with BA.2. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Sublineages of BA.5 are aggregated to BA.5.

Community Transmission

Philadelphia



Data through Tue Sep 13 2022

Total Cases	1215
Case Rate (last 7 days)	76.70
% Change (last 7 days)	-15.51

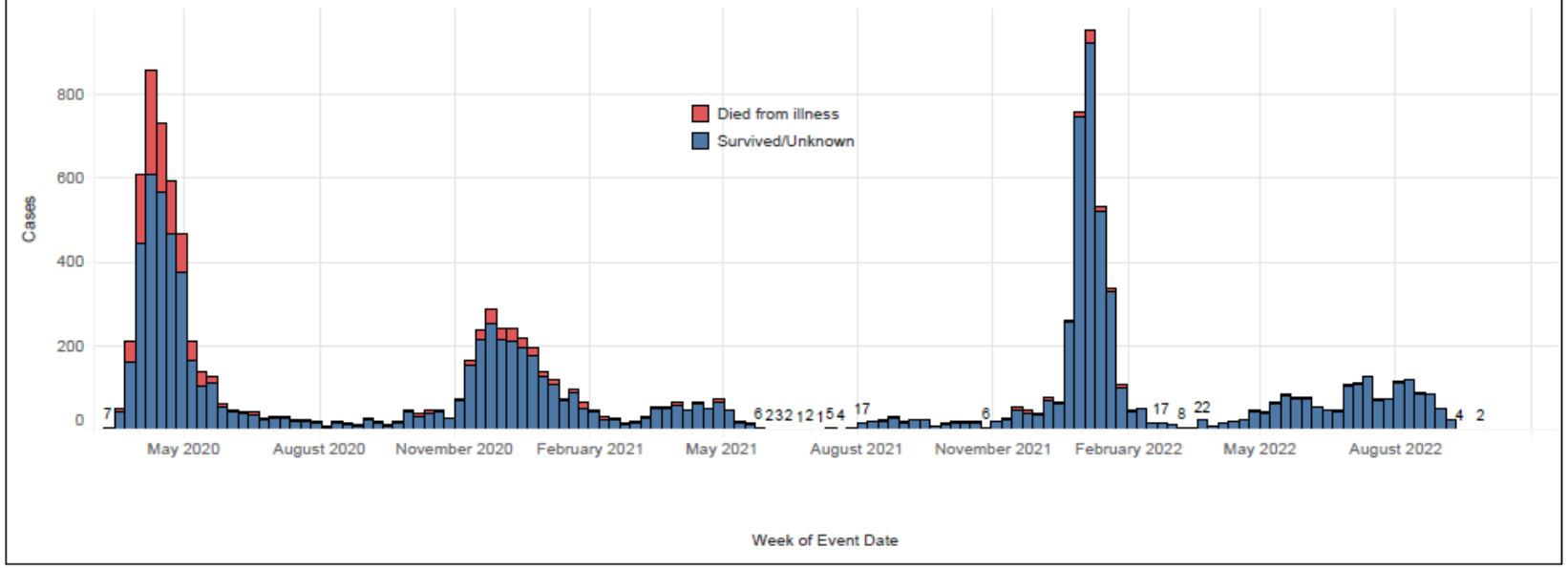
Data through Mon Sep 12 2022

% Positivity	8.73
% Change (last 7 days)	-0.61

	Low	Moderate	Substantial	High
New cases per 100,000 persons in the past 7 days*	<10	10-49.99	50-99.99	≥100
Percentage of positive NAATs tests during the past 7 days**	<5%	5-7.99%	8-9.99%	≥10.0%

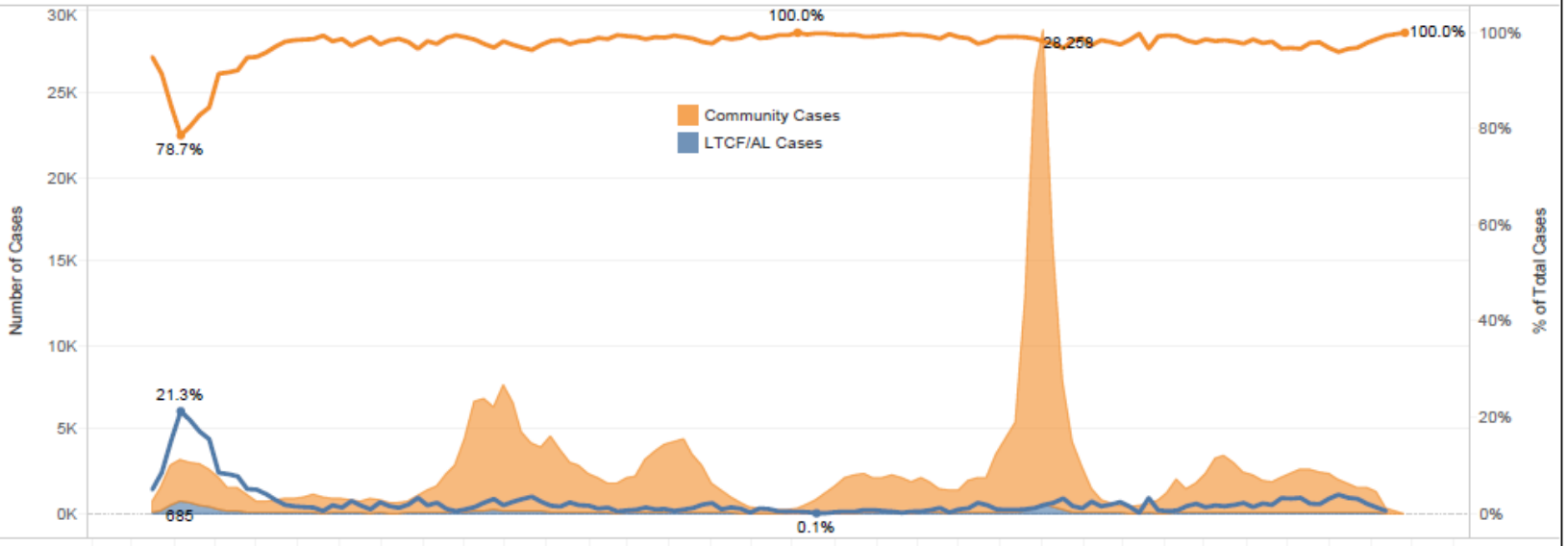
Licensed Long Term Care Facility Epi. Curve

*All Cases (Confirmed & Probable) for Facility Type LTCF
*Includes Staff who could live out of jurisdiction
Updated: 9/14/2022



LTCF vs Community Cases

Note: Area represents count, line represents %



COVID Bivalent Boosters Update

Kiara Benson

Philadelphia Department of Public Health

Immunization Program

Bivalent Boosters Approval

- On August 31, 2022:
  - Moderna COVID-19 Vaccine, Bivalent authorized for use in people ages 18 years and older.
  - Pfizer-BioNTech COVID-19 Vaccine, Bivalent authorized for use in people ages 12 years and older
- Authorized as single booster dose administered at least 2 months after either:
  - Completion of primary vaccination with any authorized or approved monovalent COVID-19 vaccine, or
  - Receipt of the most recent booster dose with any authorized or approved monovalent COVID-19 vaccine

Clinical Trial Summary

- Bivalent booster doses of both Moderna & Pfizer-BioNTech COVID-19 vaccines increase immune response in those who have completed a primary series and a previous booster
  - Compared with ancestral booster dose
    - Demonstrated superior response to Omicron
- Similar reactogenicity profile to primary series (and ancestral booster dose)
- Data from clinical trial limited in size, age, and bivalent booster type

Bivalent Boosters Summary

- Over 200 million people would be eligible for the bivalent COVID-19 vaccine
- While nearly 22 million adults >50 years have received a second booster dose, most individuals ages 5 years and older are at least 6 months out from their last COVID-19 vaccine dose
- There will be a sufficient but finite supply of bivalent COVID-19 vaccines

Bivalent Boosters: What We Know

- COVID-19 vaccines have a high degree of safety
  - Rare events of myocarditis seen after mRNA COVID-19 vaccines in post-authorization studies
- COVID-19 vaccines provide high levels of protection against severe disease
- COVID-19 booster doses further increase protection against severe disease
- Bivalent COVID-19 vaccines expand immune response after vaccination
  - Vaccines that contain Omicron will improve antibody response to Omicron
  - Bivalent vaccines appear to provide more diverse response overall, likely improving response to future variants
- Studies have shown that increased time between infection and vaccination may result in an improved immune response to vaccination
  - Those with recent SARS-CoV-2 infection may consider delaying a vaccine dose by 3 months from symptom onset or positive test

72% of respondents "definitely" or "probably" will get an updated booster that protects against Omicron variants

'Probably' or 'Definitely' will get an updated booster

Unsure

'Probably' or 'Definitely' will not get an updated booster

CDC and University of Iowa/RAND survey, August 2022, unpublished

n=171

63% of respondents were “extremely” or “somewhat” willing get an annual flu shot and updated COVID booster at the same visit this Fall

‘Somewhat’ or ‘Extremely’ willing to get both vaccines in the same visit this Fall

Unsure

‘A bit’ or ‘Not at all’ willing to get both vaccines in the same visit this Fall

CDC and University of Iowa/RAND survey, August 2022, unpublished

n=171

Bivalent Booster Recommendations

- Everyone ages 12 years and older is recommended to receive 1 age appropriate bivalent mRNA booster dose after completion of any FDA approved or FDA-authorized monovalent primary series or last monovalent booster dose.
  - People cannot get a bivalent booster without first completing at least a primary series
  - Age-appropriate homologous and heterologous boosters allowed; there is no preference
- At this time, no changes to schedules for children ages 6 months through 11 years.

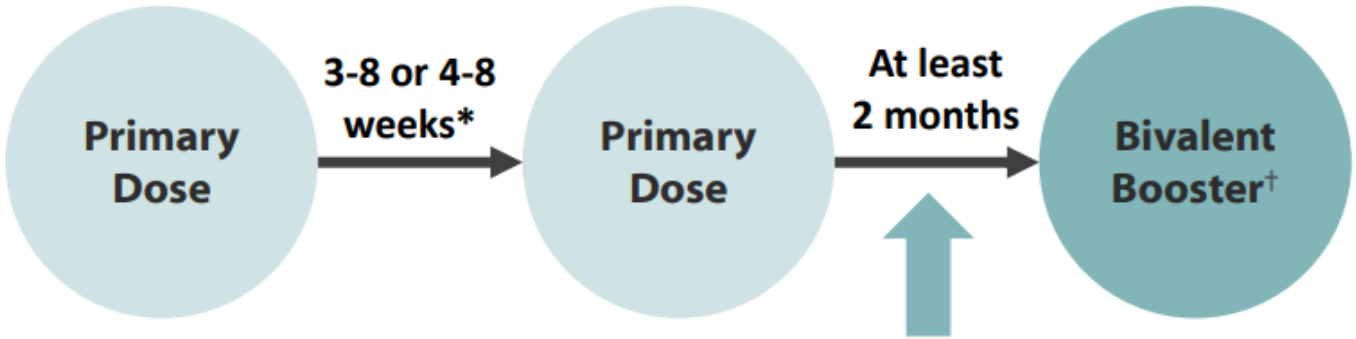
Bivalent Booster Recommendations

- The bivalent booster recommendation replaces previous booster recommendations for people ages 12 years and older.
  - Monovalent mRNA COVID-19 vaccines are no longer authorized as booster doses and cannot be given as booster doses to individuals ages 12 years and older.
- This means that everyone ages 5 years and older who are eligible for a booster dose will now only be eligible for ONE booster dose.
  - People ages 5 through 11 years (who received Pfizer-BioNTech primary series): 1 monovalent booster dose
  - People ages 12 years and older: 1 bivalent booster dose

COVID-19 Vaccination Schedule for People who are NOT Moderately or Severely Immunocompromised

People ages 12 years and older

Moderna, Novavax, or Pfizer-BioNTech Primary Series



Regardless of previous monovalent booster doses given

People ages 18 years and older

Janssen Primary Series Dose

Regardless of previous monovalent booster doses given

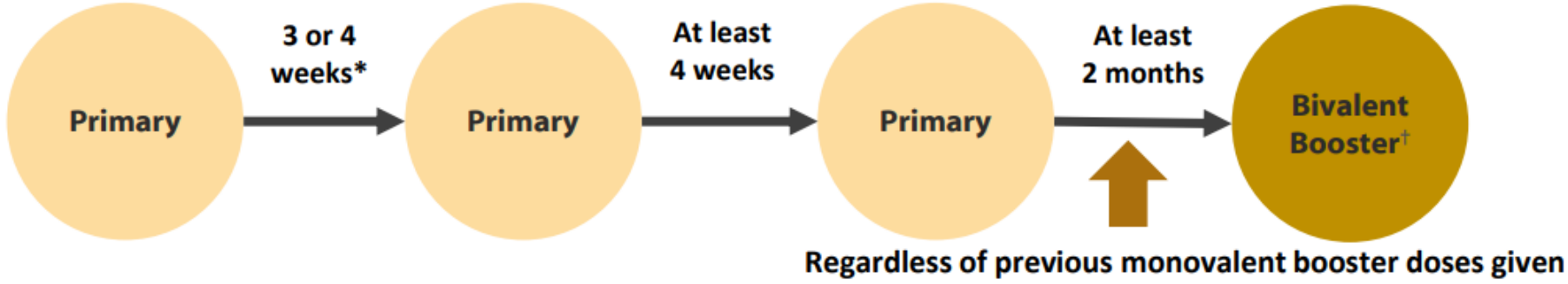
*3-8 week interval for Novavax and Pfizer-BioNTech; 4-8 week interval for Moderna

†The bivalent booster dose is administered at least 2 months after completion of the primary series. For people who previously received a monovalent booster dose(s), the bivalent booster dose is administered at least 2 months after the last monovalent booster dose. The bivalent booster should be age appropriate; Pfizer-BioNTech is authorized for people ages 12 years and older and Moderna is authorized for people ages 18 years and older.

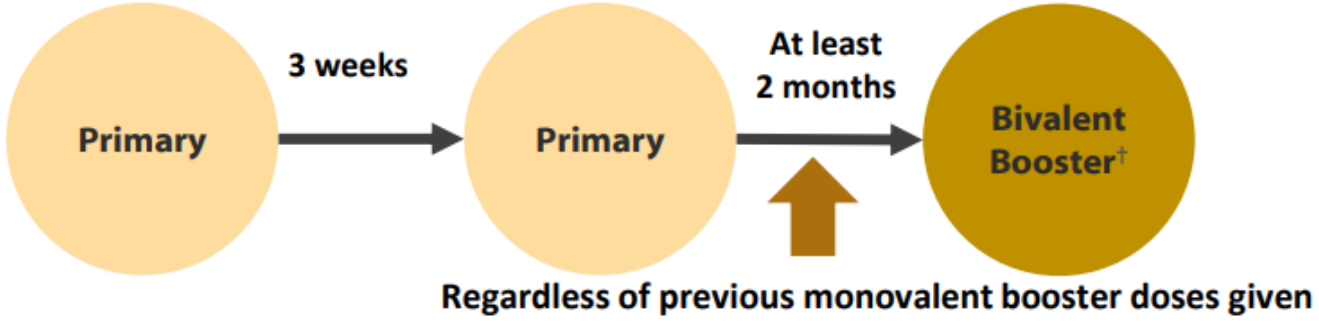
COVID-19 Vaccination Schedule for People who ARE Moderately or Severely Immunocompromised

People ages 12 years and older

Moderna or Pfizer-BioNTech Primary Series

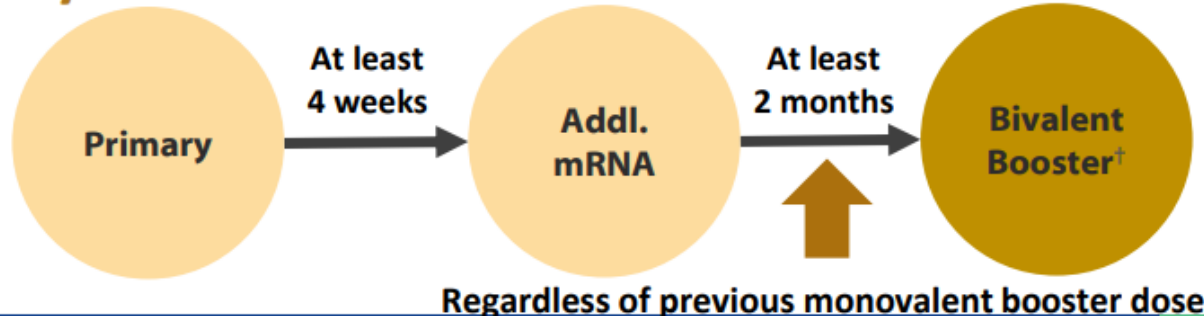


Novavax Primary Series



People ages 18 years and older who received Janssen

Janssen Primary Series Dose



*3-week interval for Pfizer-BioNTech; 4-week interval for Moderna

† The bivalent booster dose is administered at least 2 months after completion of the primary series. For people who previously received a monovalent booster dose(s), the bivalent booster dose is administered at least 2 months after the last monovalent booster dose. The bivalent booster should be age appropriate; Pfizer-BioNTech is authorized for people ages 12 years and older and Moderna is authorized for people ages 18 years and older.

Bivalent Boosters Co-administration

- Routine administration of all age-appropriate doses of vaccines simultaneously is recommended as best practice for people for whom no specific contraindications exist at the time of the healthcare visit.
- Providers should offer all vaccines for which a person is eligible at the same visit.

- You are up to date if you have completed a primary series and received the most recent booster dose recommended for you by CDC.

Bivalent Boosters Co-administration with Flu

- Providers should offer influenza and COVID-19 vaccines at the same visit, if eligible.
  - This includes adjuvanted or high-dose influenza vaccines; administer in separate limbs.
- With both influenza and SARS-CoV-2 circulating, getting both vaccines is important for prevention of severe disease, hospitalization, and death.
- Getting both vaccines at the same visit increases the chance that a person will be up to date with their vaccinations.

Pfizer-BioNTech COVID-19 Vaccines

	Monovalent Product	Bivalent Product
Authorized for ages	12 years and older	12 years and older
Authorized for doses	Primary series doses	Booster doses
Vial cap color	Gray	Gray
Dose (mRNA concentration)	30 mcg	30 mcg (15 mcg original, 15 mcg Omicron BA.4/BA.5)
Vaccine composition	Monovalent—Original	Bivalent—Original and Omicron BA.4/BA.5
Injection volume	0.3 mL	0.3 mL
Dilution required	No	No
Beyond-use date	12 hours after puncture	12 hours after puncture
Storage	Ultra-cold freezer until expiration; Refrigerator (2°C-8°C) up to 10 weeks	Ultra-cold freezer until expiration; Refrigerator (2°C-8°C) up to 10 weeks

Moderna COVID-19 Vaccines Formulations

Monovalent Product

Bivalent Product

	Monovalent Product	Bivalent Product
Authorized for ages	12 years and older	18 years and older
Vial cap color	Red	Dark blue
Label border color	Light blue	Gray
Dose (mRNA concentration)	100 mcg (primary dose)	50 mcg (booster dose) (25 mcg original, 25 mcg Omicron BA.4/BA.5)
Injection volume	0.5 mL	0.5 mL
Dilution required	No	No
Beyond-use date	12 hours	12 hours
Storage	Freezer (-15°C to -50°C) until expiration; Refrigerator (2°C to 8°C) up to 30 days	Freezer (-15°C to -50°C) until expiration; Refrigerator (2°C to 8°C) up to 30 days

Accessing Bivalent Boosters

Vaccines.gov:

- can search by zipcode for local providers based on which vaccines they currently have in stock

Federal Pharmacy Program:

- Many pharmacies are enrolled federally and able to access bivalent boosters
- Ask your partnering pharmacy if they are enrolled federally

Matchmaking Program:

- PDPH partners COVID vaccine providers with community organizations to host vaccine events
- https://redcap.phila.gov/surveys/?s=LPXLP8RDN7

Guidance Updates

PDPH Health Advisory on Bivalent Booster-8.31.2022

PA HAN 659- 9.14.2022

PA DOH Letter Interim Up to Date Definition- 9.12.2022

CDC COVID-19 Booster and Variant Information

People over the age of 50 who have received 2 booster doses:

- 4x less likely to die from COVID-related complications than those with 1 booster
- 42x less likely to die from COVID-related complications than those who are unvaccinated

Nowcast feature is estimating in HHS Region 3 for week ending 09/10/2022:

- BA.5 comprises 87.5% of cases
- BA.4.6 comprises 9.2% of cases, BA.4 comprises 2.2% of cases
- Only 0.1% of all COVID cases were due to BA.2.12.1

PDPH Health Advisory: COVID-19 Bivalent Booster Information

Department of Public Health
CITY OF PHILADELPHIA

Philadelphia Department of Public Health
Division of Disease Control

CHERYL BETTIGOLE, MD, MPH
Health Commissioner

SHARA EPSTEIN, MD
Medical Director, Division of Disease Control

SARA ENES
Acting Director, Division of Disease Control

Health Advisory

Monovalent (Original Formulation) mRNA COVID-19 Vaccines No Longer Authorized for Boosters

August 31, 2022

SUMMARY POINTS

- Monovalent mRNA COVID-19 vaccines are NO LONGER authorized for use as boosters in people ages 12 years and older.
- Bivalent vaccines have been authorized by the FDA and are anticipated to become available in the next couple of weeks.
- Individuals aged 12 and over are anticipated to be eligible for a single dose of the bivalent vaccine if it has been at least two months since they have completed primary vaccination or have received the most recent booster dose with any authorized or approved monovalent COVID-19 vaccine.

PA DOH: COVID-19 Bivalent Booster Information

PENNSYLVANIA DEPARTMENT OF HEALTH
2022 – PAHAN –659 – 09 – 14 - ADV

pennsylvania
DEPARTMENT OF HEALTH

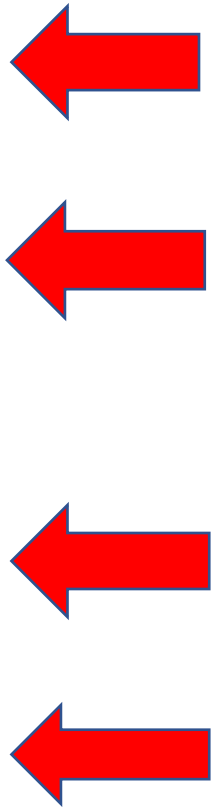
Recommendations Regarding the Bivalent COVID-19 Booster Vaccine

DATE:	09/14/2022
TO:	Health Alert Network
FROM:	Denise A. Johnson, M.D., FACOG, FACHE, Acting Secretary of Health
SUBJECT:	Recommendations Regarding the Bivalent COVID-19 Booster Vaccine
DISTRIBUTION:	Statewide
LOCATION:	n/a
STREET ADDRESS:	n/a
COUNTY:	n/a
MUNICIPALITY:	n/a
ZIP CODE:	n/a

PA HAN 659

SUMMARY

- CDC Guidance released on September 1, 2022 recommends that patients 12 and older who received the primary series of any of the authorized COVID-19 vaccines should receive a booster dose of a mRNA bivalent COVID-19 vaccine.
- The mRNA bivalent booster dose should occur at least 2 months after the last dose of a COVID-19 vaccine.
- The bivalent Pfizer BioNTech booster is approved for patients aged 12 years and older
- The bivalent Moderna booster is approved for patients aged 18 years and older.
- The mRNA bivalent vaccines are only available for booster vaccinations. The original monovalent COVID-19 vaccine must be used for the primary series. The original monovalent COVID-19 vaccine can no longer be used for booster doses except for children aged 5-11 who are not eligible for the booster dose of the bivalent COVID-19 vaccine.
- Since there are now multiple formulations of the mRNA COVID-19 vaccines it will be extremely important for vaccine providers to make sure that the correct vaccine is given to each patient.
- The CDC definition of up to date with COVID-19 vaccine is someone who has completed their primary vaccine series and received the most recent COVID-19 booster vaccine recommended for them by the CDC
- It is highly recommended that patients also receive their Influenza vaccine this fall and can receive both the COVID-19 bivalent booster and the influenza vaccine during the same visit
- If you have any questions, please call PA DOH at 1-877-PA-HEALTH (1-877-724-3258) or your local health department.



PA HAN 659: Key Messages

Heterologous (Mix and Match) Dosing:

- Heterologous (mix and match) dosing may occur for the bivalent booster dose. In other words, a different COVID-19 mRNA vaccine product from the original vaccination series can be used for the booster dose.
- The determination of whether to use a different product from the original series is decided between the provider and the patient.

Up to Date with COVID-19 Vaccinations

- The CDC definition of up to date with COVID-19 vaccine is someone who has completed their primary vaccine series and received the most recent booster recommended for them by the CDC

COVID-19 Bivalent Booster vaccines and the Influenza Vaccine

- It is highly recommended that patients also receive their Influenza vaccine this fall and can receive both the COVID-19 bivalent booster and the influenza vaccine during the same visit

PADOH Letter: Interim Up to Date Definition

pennsylvania
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September 12, 2022

- On 9/1/22 CDC released a new statement about the importance of receiving updated versions of COVID-19 boosters
- Updated boosters have added components to protect against Omicron BA.4 and BA.5
- FDA is no longer authorizing monovalent boosters for persons ≥12 yo and CDC is recommending bivalent booster for these persons if due for a booster according to CDC Stay Up to Date Guidance

PADOH Letter: Interim Up to Date Definition

- CDC Stay Up to Date Guidance website now says that to be considered Up to Date, one must have received an updated (bivalent) booster dose, if eligible
- An individual is eligible if it has been more than 2 months since completing a primary COVID-19 vaccination series or receiving a COVID-19 booster
- This change in recommendations comes at a time when the bivalent booster doses are not yet as widely available
- The PADOH anticipates updated guidance may be released from CMS, CDC, or both regarding the implications of this change for long-term care facilities, hospitals, and other healthcare settings

PADOH Letter: Interim Up to Date Definition

- In the interim, COVID-19 prevention activities (e.g., weekly testing; quarantine on admission) based on the Up to Date vaccination status of an individual can be conducted based on previous standards for booster doses for Pennsylvania facilities
- As a temporary measure, an individual who has received either monovalent booster(s) as previously recommended or a bivalent booster dose can be treated as Up to Date, at this time
- This can be thought of as a “grace period” until more of the long-term care population can receive a bivalent booster dose
- As bivalent vaccine doses become more widely available, this guidance is expected to change; more information will be forthcoming

Audience Poll #1

Q. Does your facility currently have access to the bivalent COVID-19 booster vaccine?

- ❑ **Yes**
- ❑ **No**
- ❑ **Uncertain**

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CITY OF PHILADELPHIA

Multi-drug Resistant Organisms and the Role of the Environment in Transmission

Beth Schroeder, MPH
Susy Rettig, BSN, RN, CIC
PDPH HAI/AR Program

Department of Public Health
CITY OF PHILADELPHIA

Objectives

Define

- Multi-drug resistant organisms (MDRO) and provide examples

Identify

- The role colonization plays in MDRO transmission

Emphasize

- The importance of cleaning and disinfecting the healthcare environment to prevent MDRO transmission

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What are Multi Drug Resistant Organisms (MDRO)?

- In general, MDROs are defined as microorganisms, predominantly bacteria, that are resistant to more than 1 class of antimicrobial agents
- MDROs are a public health problem because they can spread easily and can be difficult to treat

https://www.cdc.gov/vitalsigns/pdf/2018-04-vitalsigns.pdf

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).

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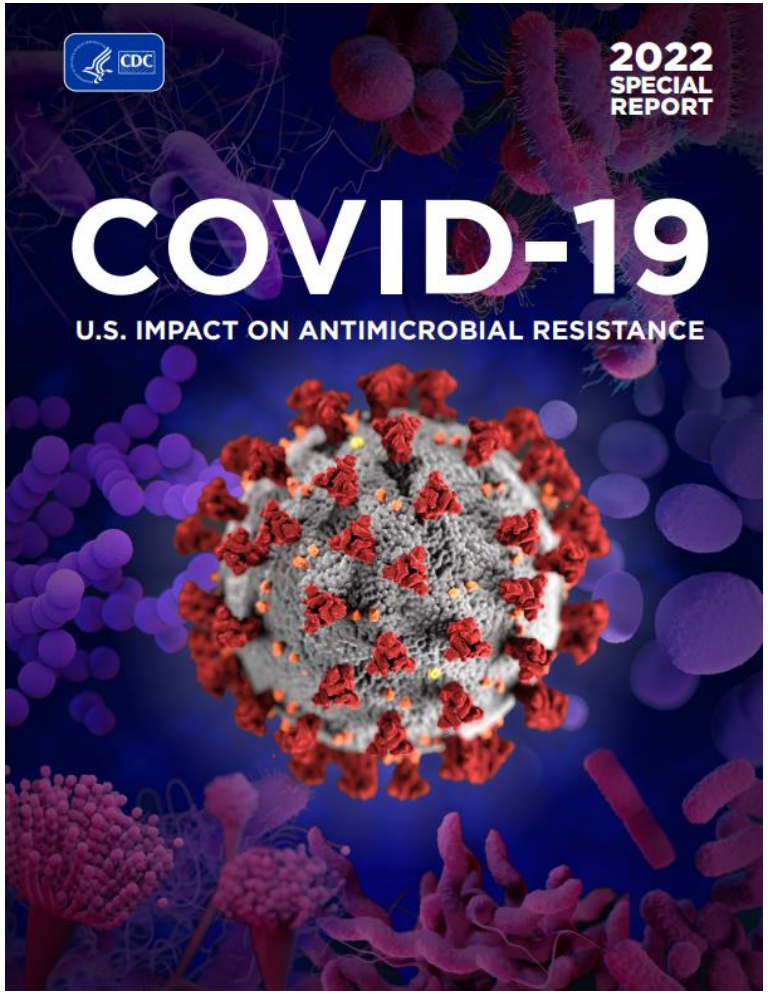
MDROs and the COVID-19 Pandemic



https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf

CDC's COVID-19 Impact Report indicates:

- A significant increase in antimicrobial use since 2020
- Difficulty in following infection prevention and control guidance

Resulting in a **15% increase** in healthcare-associated antimicrobial-resistant **infections and deaths** during the first year of the pandemic

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Colonization vs. Infection with MDROs

Colonization

Colonization is when organisms are on or in the body but do not make you sick

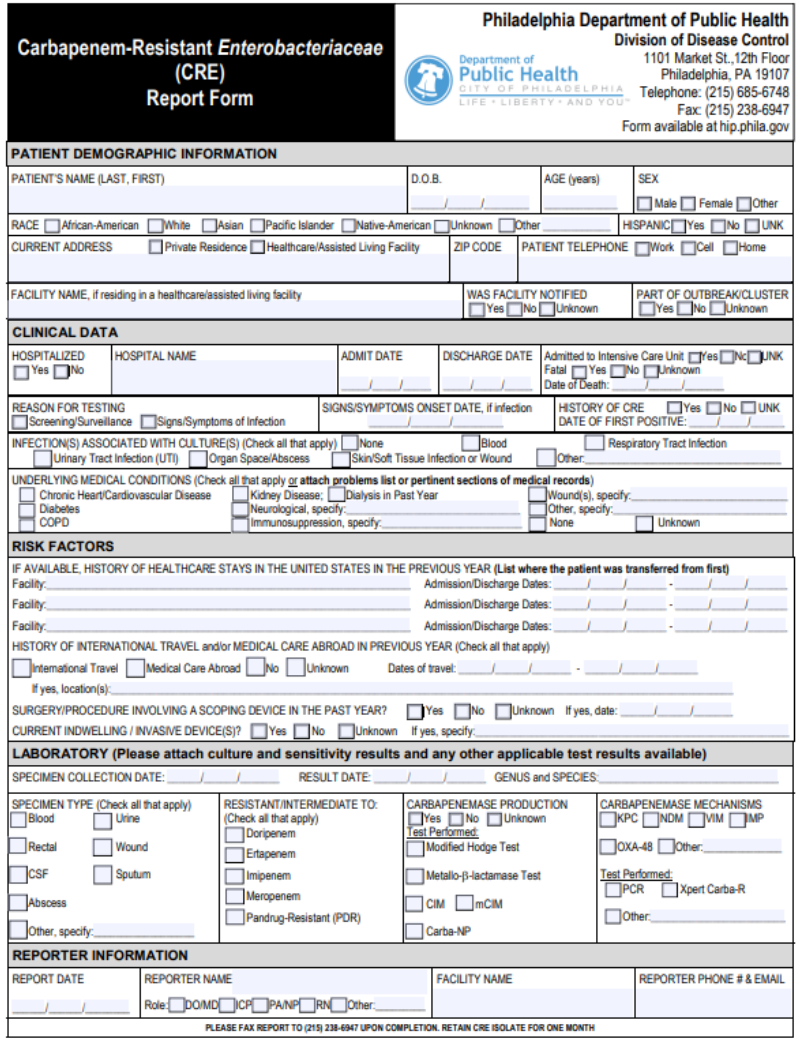
Infection

Infection is when organisms are in or on the body and make you sick

Sherry L, et al. 2017. *Emerging Infectious Diseases*

Wysocki AACN *Adv Crit Care* (2002)

Examples of MDROs



Carbapenem-Resistant *Enterobacteriaceae* (CRE) Report Form

Philadelphia Department of Public Health
Division of Disease Control
1101 Market St.,12th Floor
Philadelphia, PA 19107
Telephone: (215) 685-6748
Fax: (215) 238-6947
Form available at hip.phila.gov

PATIENT DEMOGRAPHIC INFORMATION

PATIENT'S NAME (LAST, FIRST) | D.O.B. | AGE (years) | SEX ☐ Male ☐ Female ☐ Other

RACE ☐ African-American ☐ White ☐ Asian ☐ Pacific Islander ☐ Native-American ☐ Unknown ☐ Other | HISPANIC ☐ Yes ☐ No ☐ UNK

CURRENT ADDRESS ☐ Private Residence ☐ Healthcare/Assisted Living Facility | ZIP CODE | PATIENT TELEPHONE ☐ Work ☐ Cell ☐ Home

FACILITY NAME, if residing in a healthcare/assisted living facility | WAS FACILITY NOTIFIED ☐ Yes ☐ No ☐ Unknown | PART OF OUTBREAK/CLUSTER ☐ Yes ☐ No ☐ Unknown

CLINICAL DATA

HOSPITALIZED ☐ Yes ☐ No | HOSPITAL NAME | ADMIT DATE | DISCHARGE DATE | Admitted to Intensive Care Unit ☐ Yes ☐ No ☐ UNK; Fatal ☐ Yes ☐ No ☐ Unknown; Date of Death:

REASON FOR TESTING ☐ Screening/Surveillance ☐ Signs/Symptoms of Infection | SIGNS/SYMPTOMS ONSET DATE, if infection | HISTORY OF CRE ☐ Yes ☐ No ☐ UNK; DATE OF FIRST POSITIVE:

INFECTION(S) ASSOCIATED WITH CULTURE(S) (Check all that apply) ☐ None ☐ Blood ☐ Respiratory Tract Infection ☐ Urinary Tract Infection (UTI) ☐ Organ Space/Abscess ☐ Skin/Soft Tissue Infection or Wound ☐ Other:

UNDERLYING MEDICAL CONDITIONS (Check all that apply or attach problems list or pertinent sections of medical records)
☐ Chronic Heart/Cardiovascular Disease ☐ Diabetes ☐ COPD ☐ Kidney Disease; ☐ Dialysis in Past Year ☐ Neurological, specify: ☐ Immunosuppression, specify: ☐ Wound(s), specify: ☐ Other, specify: ☐ None ☐ Unknown

RISK FACTORS

IF AVAILABLE, HISTORY OF HEALTHCARE STAYS IN THE UNITED STATES IN THE PREVIOUS YEAR (List where the patient was transferred from first)
Facility: Admission/Discharge Dates: -
Facility: Admission/Discharge Dates: -
Facility: Admission/Discharge Dates: -

HISTORY OF INTERNATIONAL TRAVEL and/or MEDICAL CARE ABROAD IN PREVIOUS YEAR (Check all that apply)
☐ International Travel ☐ Medical Care Abroad ☐ No ☐ Unknown Dates of travel: -
If yes, location(s):

SURGERY/PROCEDURE INVOLVING A SCOPING DEVICE IN THE PAST YEAR? ☐ Yes ☐ No ☐ Unknown If yes, date:

CURRENT INDWELLING / INVASIVE DEVICE(S)? ☐ Yes ☐ No ☐ Unknown If yes, specify:

LABORATORY (Please attach culture and sensitivity results and any other applicable test results available)

SPECIMEN COLLECTION DATE: RESULT DATE: GENUS and SPECIES:

SPECIMEN TYPE (Check all that apply)
☐ Blood ☐ Urine ☐ Rectal ☐ Wound ☐ CSF ☐ Sputum ☐ Abscess ☐ Other, specify:

RESISTANT/INTERMEDIATE TO: (Check all that apply)
☐ Doripenem ☐ Ertapenem ☐ Imipenem ☐ Meropenem ☐ Pandrug-Resistant (PDR)

CARBAPENEMASE PRODUCTION ☐ Yes ☐ No ☐ Unknown
Test Performed:
☐ Modified Hodge Test ☐ Metallo-β-lactamase Test ☐ CIM ☐ mCIM ☐ Carba-NP

CARBAPENEMASE MECHANISMS ☐ KPC ☐ NDM ☐ VIM ☐ IMP ☐ OXA-48 ☐ Other:
Test Performed:
☐ PCR ☐ Xpert Carba-R ☐ Other:

REPORTER INFORMATION

REPORT DATE | REPORTER NAME Role: ☐ DO/MD ☐ CP ☐ PA/NP ☐ RN ☐ Other: | FACILITY NAME | REPORTER PHONE # & EMAIL

PLEASE FAX REPORT TO (215) 238-6947 UPON COMPLETION. RETAIN CRE ISOLATE FOR ONE MONTH

- Carbapenem-resistant Enterobacterales (CRE)
- *Candida auris (C. auris)*
- Pan-drug resistant organisms (PDRO)
- Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA)
- Carbapenem-resistant *Acinetobacter baumannii* (CRAB)
- Vancomycin Intermediate/Resistant *Staphylococcus aureus* (VISA/VRSA)
- & many more

Organisms in red are reportable to PDPH. All unusual disease clusters, outbreaks, and occurrences are also reportable.

https://hip.phila.gov/document/943/CRE_ReportForm_Final_Fillable_8CnHfpL.pdf/

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Carbapenem-Resistant Enterobacterales (CRE)

- Enterobacterales are commonly found in the GI tract.
- Enterobacterales that are resistant to at least one carbapenem antibiotic (i.e., ertapenem, meropenem, doripenem, or imipenem) are called CRE.
- Infections with CRE are difficult to treat and have been associated with **mortality rates of up to 50%** for hospitalized patients.
- In 2020, CRE caused an estimated **12,700 infections** in hospitalized patients and **1,100 deaths** in the US
- CRE is transmitted from person to person, often via the hands of HCP or through contaminated medical equipment or environmental surfaces.

https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf

CREs in Philadelphia

CRE Counts by Genus Species: April-June 2022

Genus Species	Total CRE n (%)
Klebsiella pneumoniae	19 (50)
Escherichia coli	8 (20)
Enterobacter cloacae	7 (18)
Citrobacter freundii	1 (3)
Citrobacter koseri	1 (3)
Serratia marcesens	1 (3)
Raoultella Spp.	1 (3)
Total	**38**

- Cases of CRE continue to be a concern in Philadelphia
- From July 2021 - June 2022, a total of 206 CRE cases were identified and confirmed in Philadelphia
- The most common types of CRE seen in Philadelphia are *Klebsiella pneumonia* and *Escherichia coli* which is consistent throughout other regions

CRE Resources

- PDPH CRE HIP Page
- HAI Newsletter with CRE Surveillance Report
- IPC Highlight on CRE (coming soon)

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Carbapenem-Resistant *Acinetobacter baumannii* (CRAB)

- *Acinetobacter* is a bacteria commonly found in soil and water.
- *Acinetobacter baumannii* is the most common *Acinetobacter* species to cause human infections
- *A. baumannii* can cause infections in the blood, urine, wounds, or lungs. It can also colonize mucosal surfaces, especially in the respiratory tract, and open wounds.
- In 2020, CRAB caused an estimated **7,500 infections** in hospitalized patients and **700 deaths** in the US.
- CRAB can spread in healthcare settings from person to person through contaminated hands, equipment, or surfaces.

https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf

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Carbapenem-Resistant *Pseudomonas aeruginosa (CRPA)*

https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf

- *Pseudomonas* is a bacteria that is found in soil and in water
- *Pseudomonas aeruginosa* is the most common *Pseudomonas* species to cause human infections
- *P. aeruginosa* can cause infections in the blood, lungs (pneumonia), or other parts of the body after surgery
- In 2020, CRPA caused an estimated **28,800 infections** in hospitalized patients and **2,500 deaths** in the US
- CRPA can spread in healthcare settings from person to person through contaminated hands, equipment, or surfaces.
- Those most at risk include patients in hospitals, especially those:
  - on ventilators
  - with indwelling devices
  - with wounds or burns

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Candida auris (C. auris)

C. auris is a type of yeast that has become more common in healthcare facilities:

- Often multidrug-resistant
- Colonized patients can contaminate the healthcare environment, leading to silent spread
- Many common healthcare disinfectants are not effective at eliminating *C. auris*
- **Mortality of invasive infections is ~40%** within the first 30 days.

https://www.cdc.gov/drugresistance/pdf/threats-report/candida-auris-508.pdf

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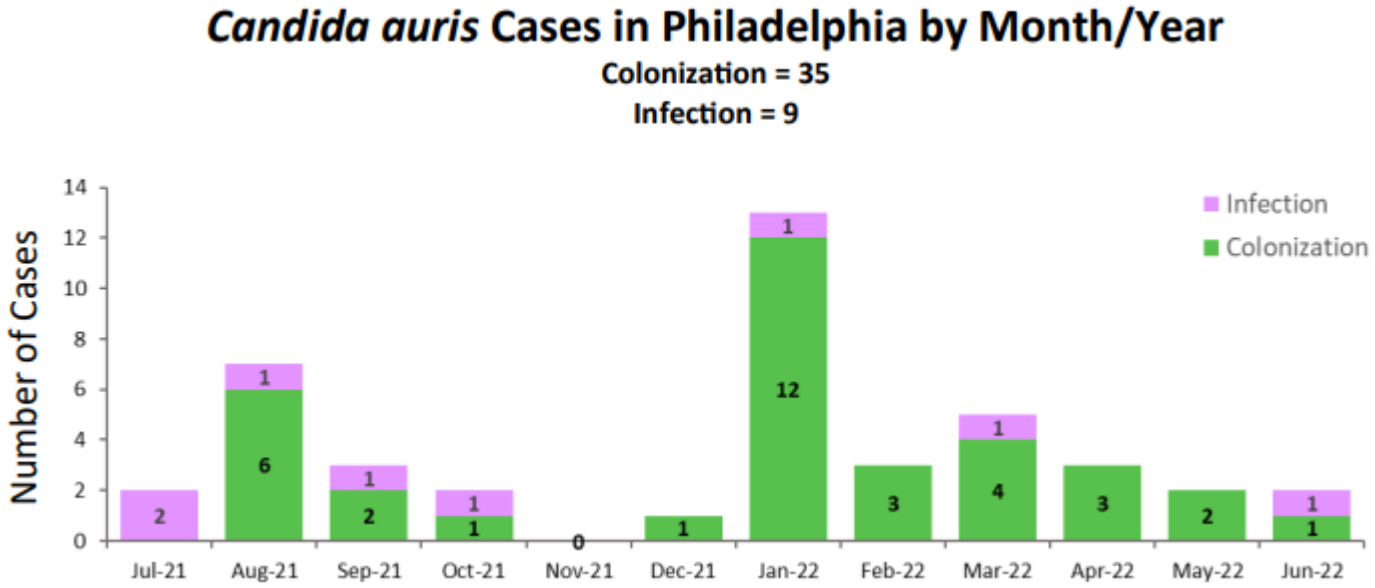
C. auris in Philadelphia

- Cases of *C. auris* are rising in Philadelphia and throughout the region
- Between March 2020 and July 31, 2022, **144 cases of *C. auris*** infection and colonization have been identified in patients in **24 healthcare facilities** across Allegheny, Bucks, Dauphin, Delaware, Lehigh, Montgomery, and Philadelphia Counties.



https://hip.phila.gov/data-reports-statistics/healthcare-associated-infections/

C. auris **Resources**

- PDPH *C. auris* HIP Page
- PDPH *C. auris* Toolkit
- PDPH/PADOH *C. auris* HAN
- HAI Newsletter with *C. auris* Surveillance Report
- IPC Highlight on *C. auris*

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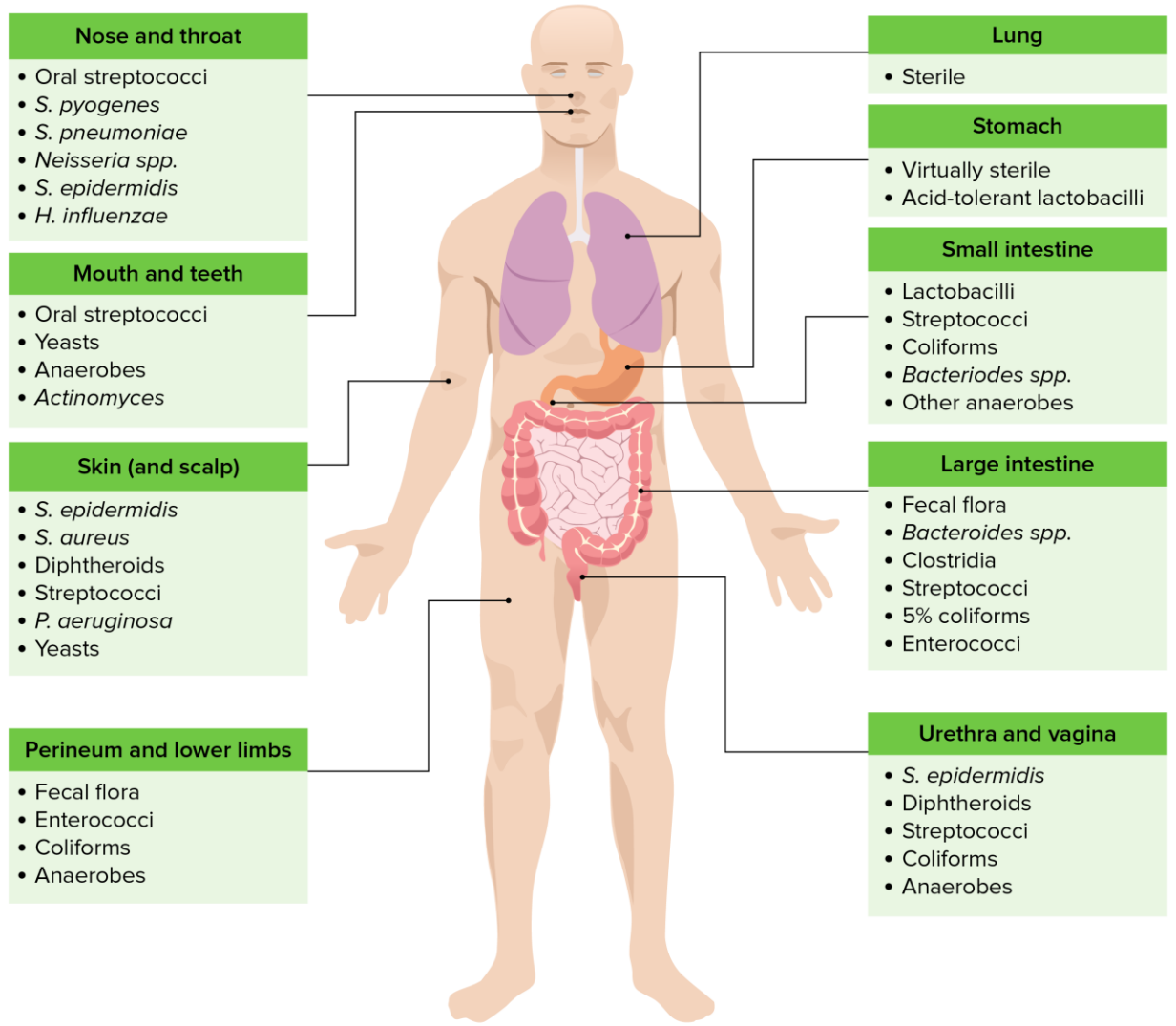
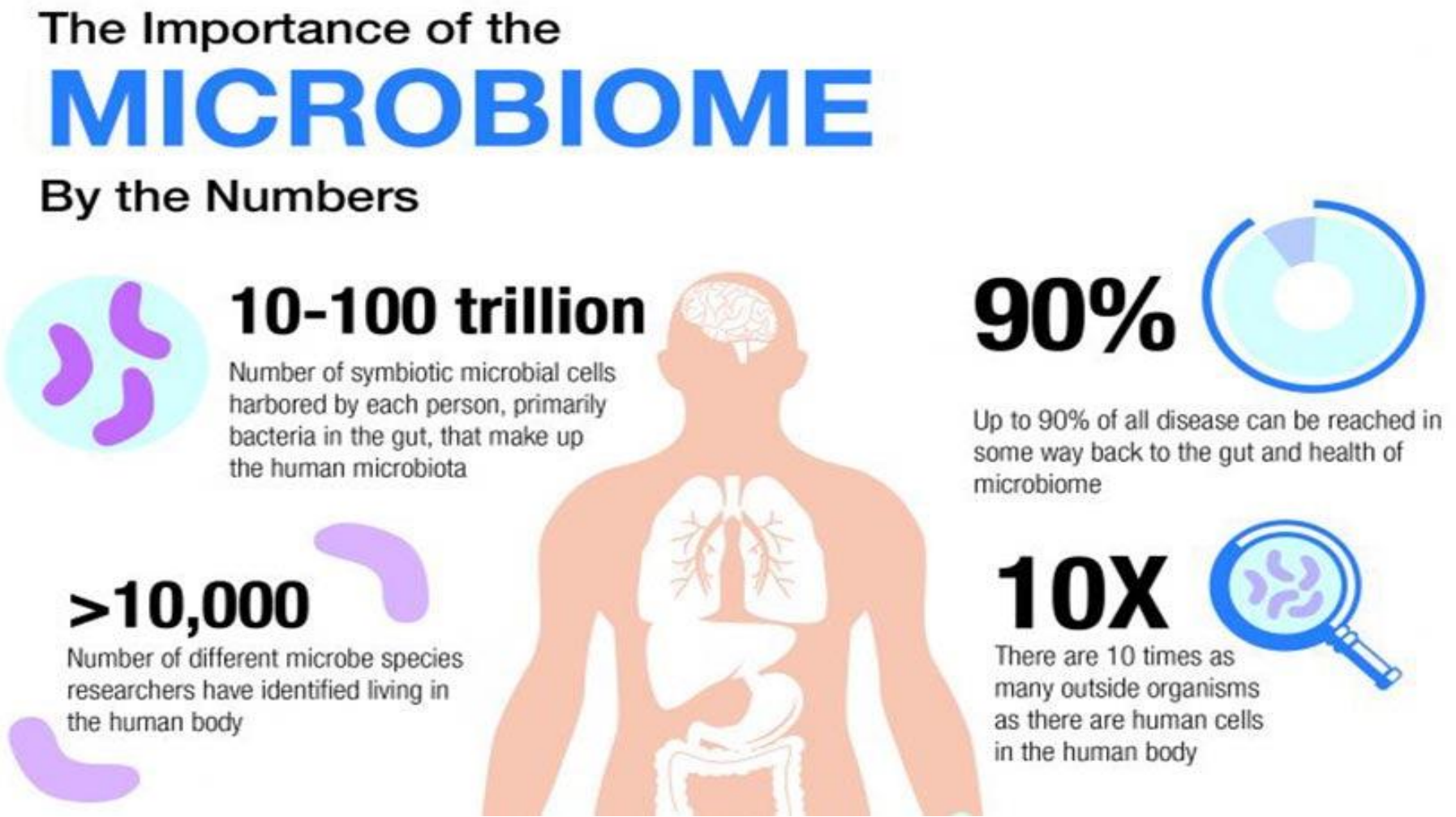
Colonization and MDRO Transmission

Sites of bacterial colonization and common colonizers

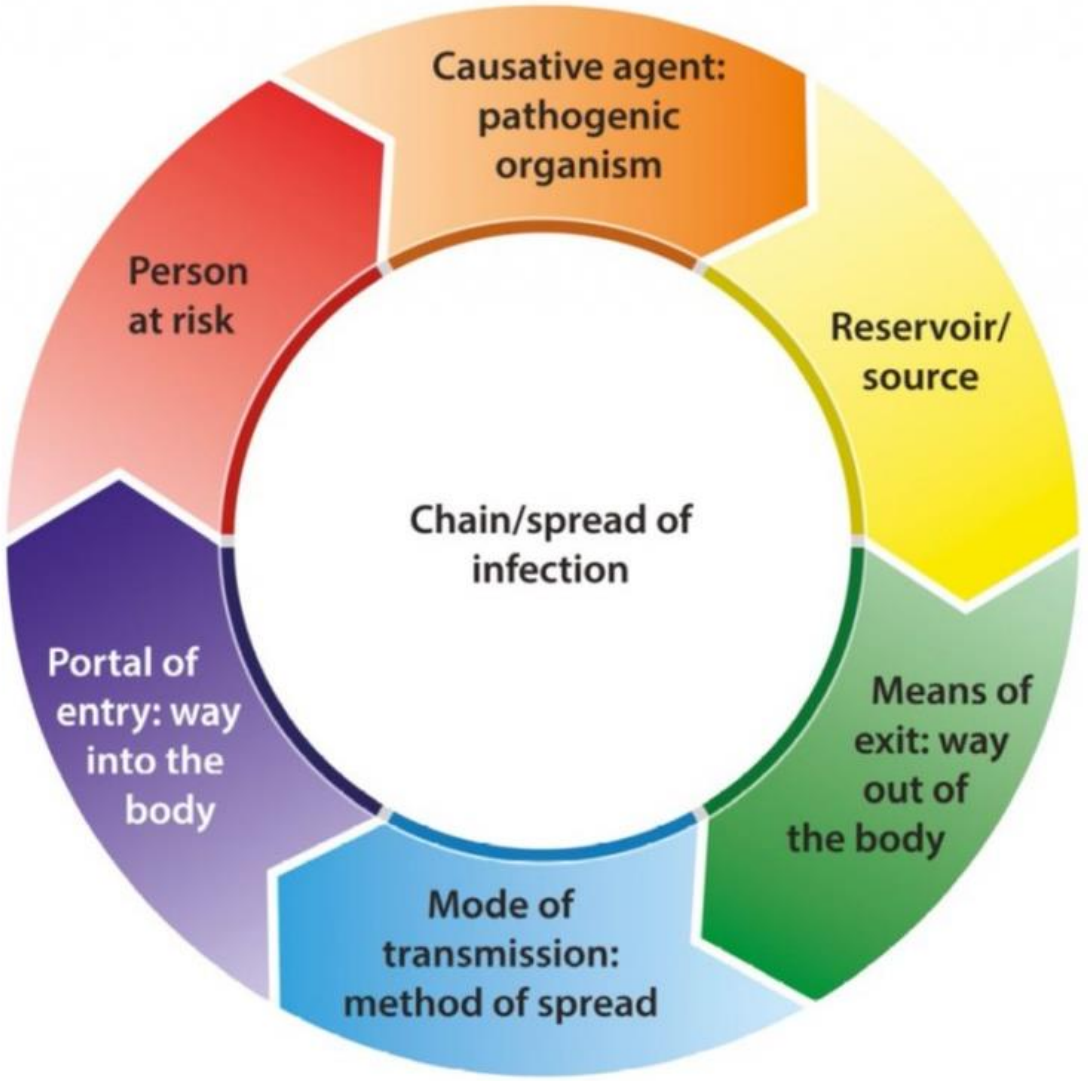


https://www.lecturio.com/concepts/surgical-infections/



https://www.scdprobiotics.com/blogs/news/the-importance-of-the-microbiome

- https://activesocialcare.com/handbook/infection-prevention-and-control/the-chain-of-infection



Key Infection Prevention Strategies **Healthcare Environment**

Audience Poll #2

Q. Can you identify some high-touch surfaces in your healthcare environment?

- ❑ **Yes**
- ❑ **No**
- ❑ **Uncertain**

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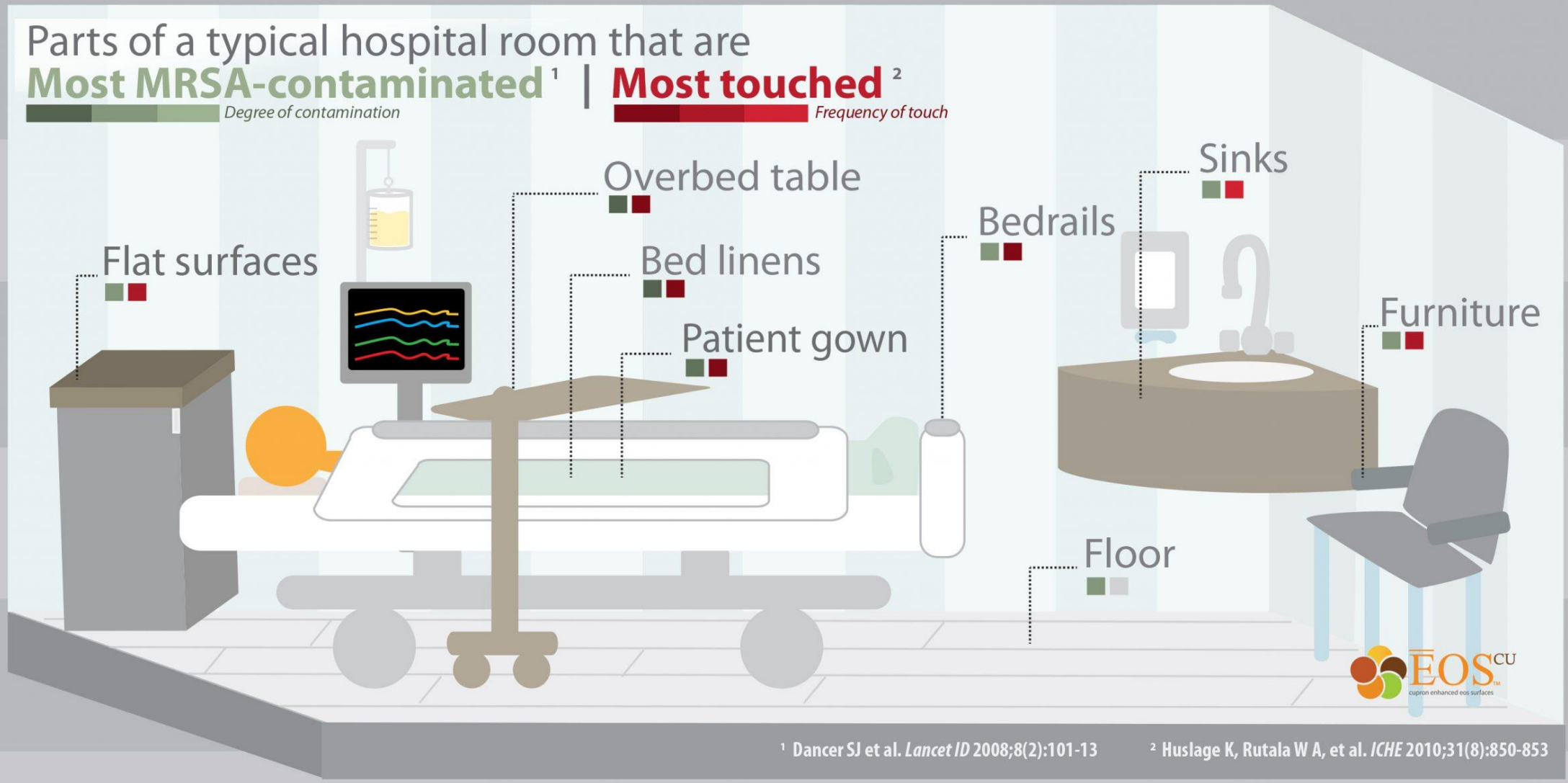
Clean Environment

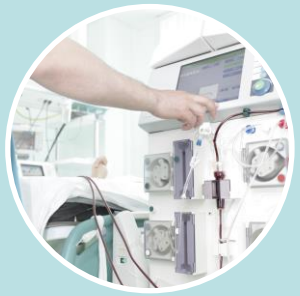


[1] Dancer SJ et al. *Lancet ID* 2008;8(2):101-13 [2] Huslage K, Rutala W A, et al. *ICHE* 2010;31(8):850-853

Core Principles to Prevent Transmission

Hand Hygiene

Standard and Contact Precautions



Clean Equipment and environment

Opportunities to prevent transmission

www.mdpi.com/journal/microorganisms

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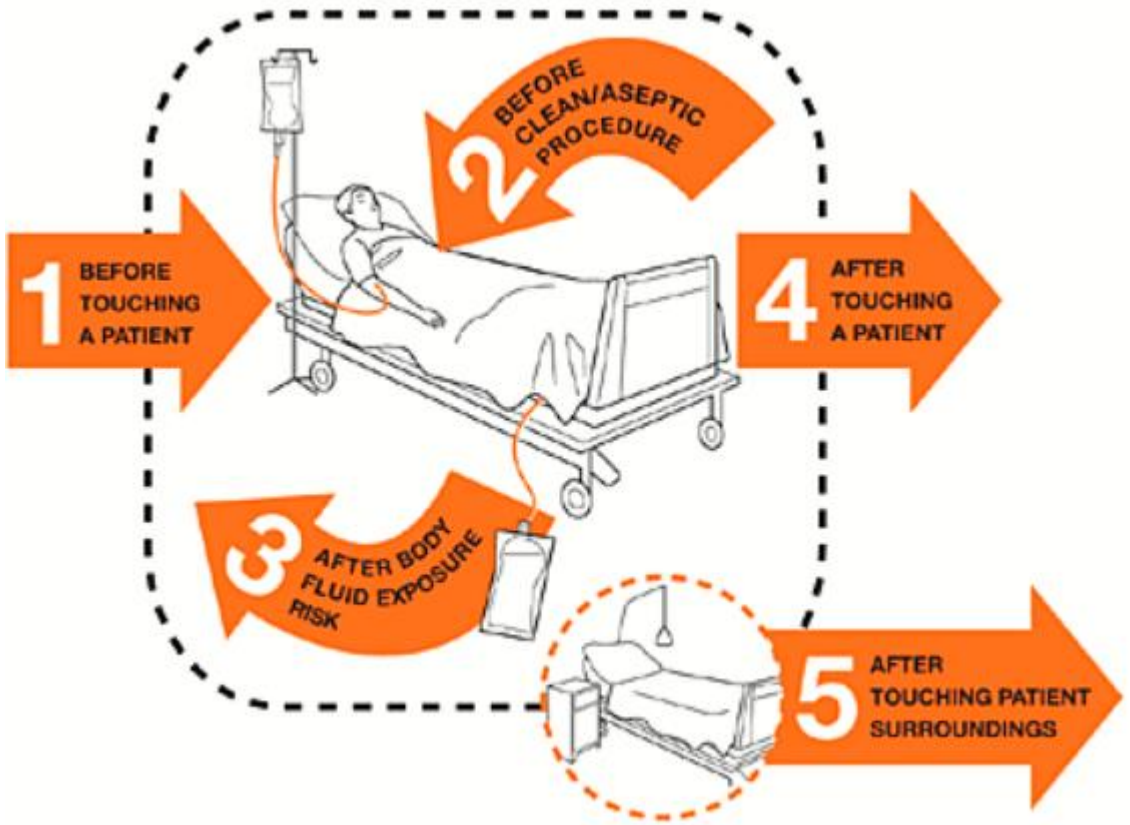
WHO's 5 Moments of Hand Hygiene



"At least 20 hospital-based studies of the impact of HH on the risk of healthcare associated infections have been published between 1977- June 2008.

Despite study limitations, most reports showed a temporal relation between improved hand hygiene practices and reduced infection and cross-transmission rates"

https://www.who.int/gpsc/5may/tools/who_guidelines-handhygiene_summary.pdf

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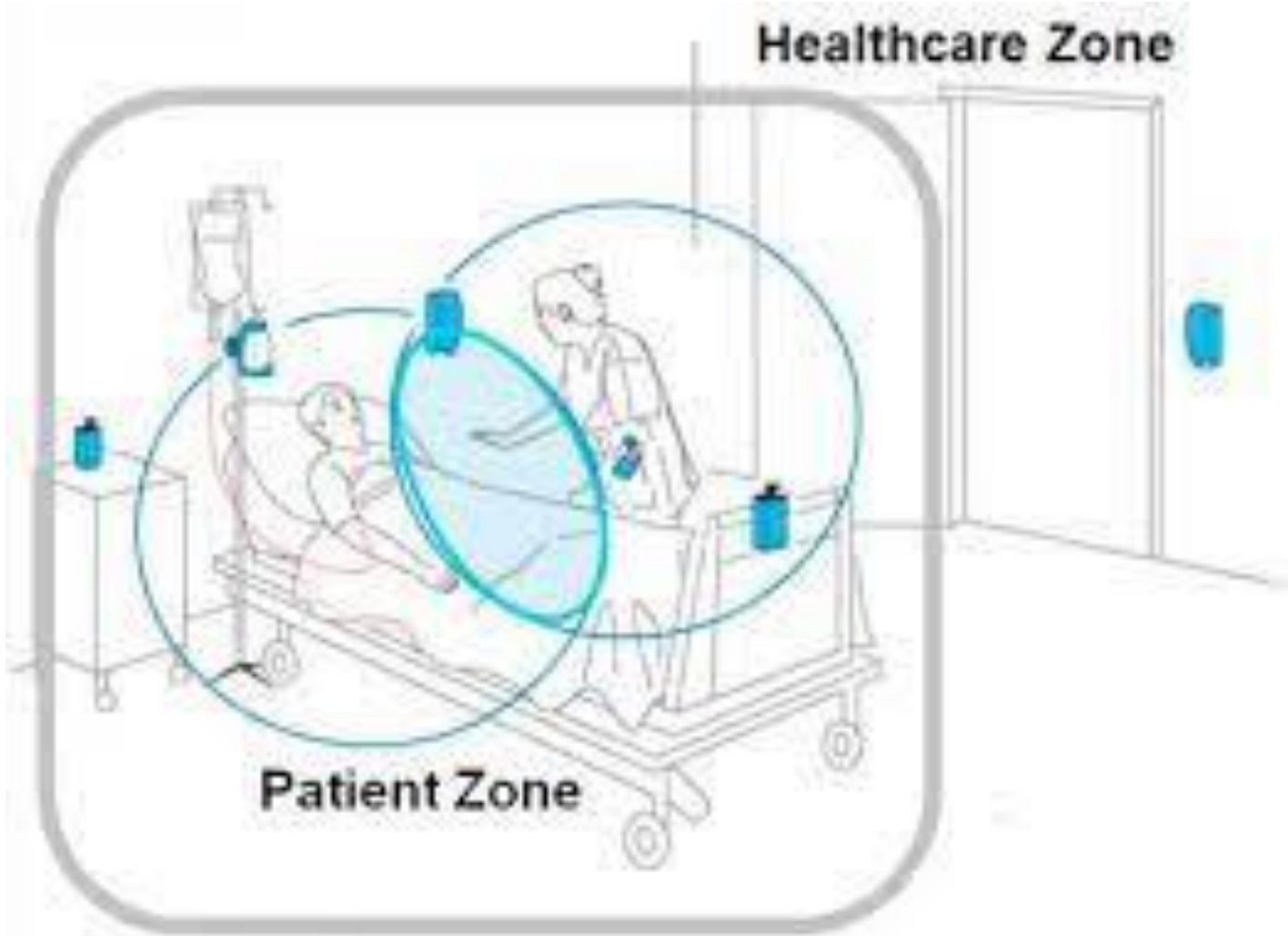
Healthcare Zone
Patient Zone

Common Hand Hygiene Gaps in SNFs

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- Staff prefer to use soap and water instead of alcohol-based hand sanitizer (ABHS)
- ABHS is not readily available, or dispensers are empty
- Only handwashing sink is in the resident's bathroom
- Gloves take the place of hand hygiene
- Misinformation regarding ABHS
- Hand hygiene audits are lacking

Audience Poll #3

Q. Does your facility have a process in place to ensure that every item in a healthcare environment is somebody's responsibility to clean, with the responsible HCW type identified?

- ❑ **Yes**
- ❑ **No**
- ❑ **Uncertain**

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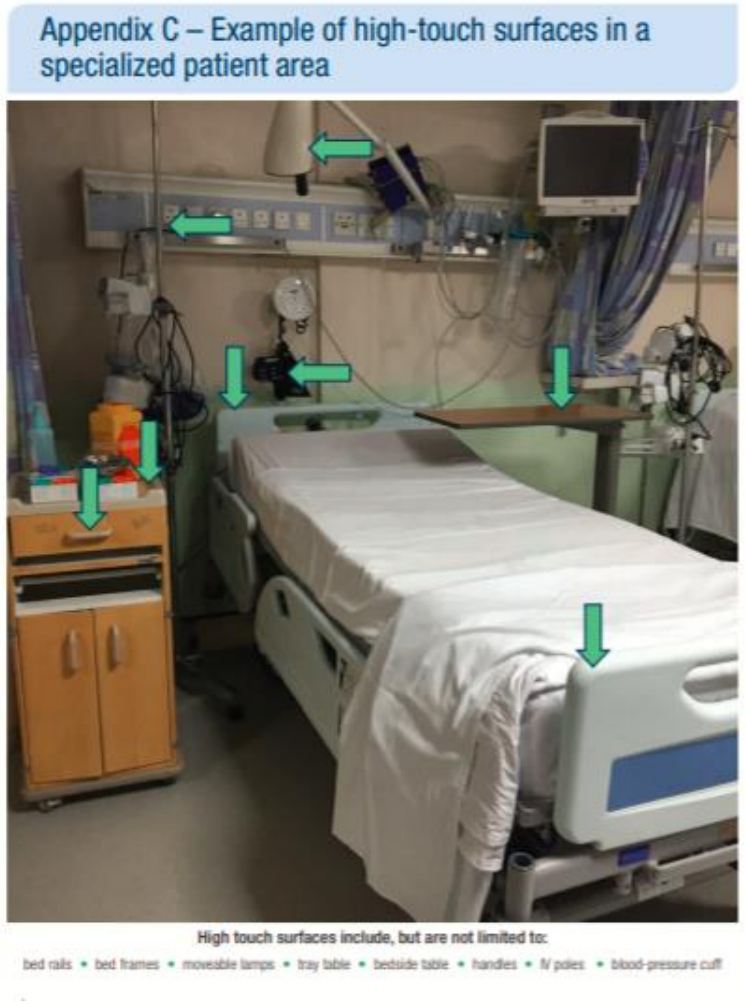
Everyone Should be Aware of



- High-touch surfaces in their area
- Correct cleaning/disinfection products
- Contact/wet times for cleaning/ disinfection products
- Importance of using good friction e.g., elbow grease
- Who cleans what
- Cleaning frequency

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Cleaning and Disinfection

An official website of the United States government Here's how you know

EPA United States Environmental Protection Agency

Search EPA.gov

Environmental Topics | Laws & Regulations | About EPA

Pesticide Registration CONTACT US

List P: Antimicrobial Products Registered with EPA for Claims Against Candida Auris

On this page:

- Products on List P
- How to use List P products effectively
- How to check if a prodcut is on List P
- Additional Resources

Products on List P

The following products are registered for use with *Candida auris (C. auris)*. EPA has reviewed laboratory testing data demonstrating that these products kill *C. auris*.

C. auris is a fungus that can cause severe infections and spreads easily between patients. *C. auris* infections tend to occur in health care settings and can be resistant to antifungal drugs.

Prior to these products being registered, there were no antimicrobial pesticides registered specifically for use against *C. auris*.

- Ensure proper product selection and processes
- Perform periodic audits
- Dedicate medical equipment whenever possible

https://www.cdc.gov/hai/toolkits/evaluating-environmental-cleaning.html

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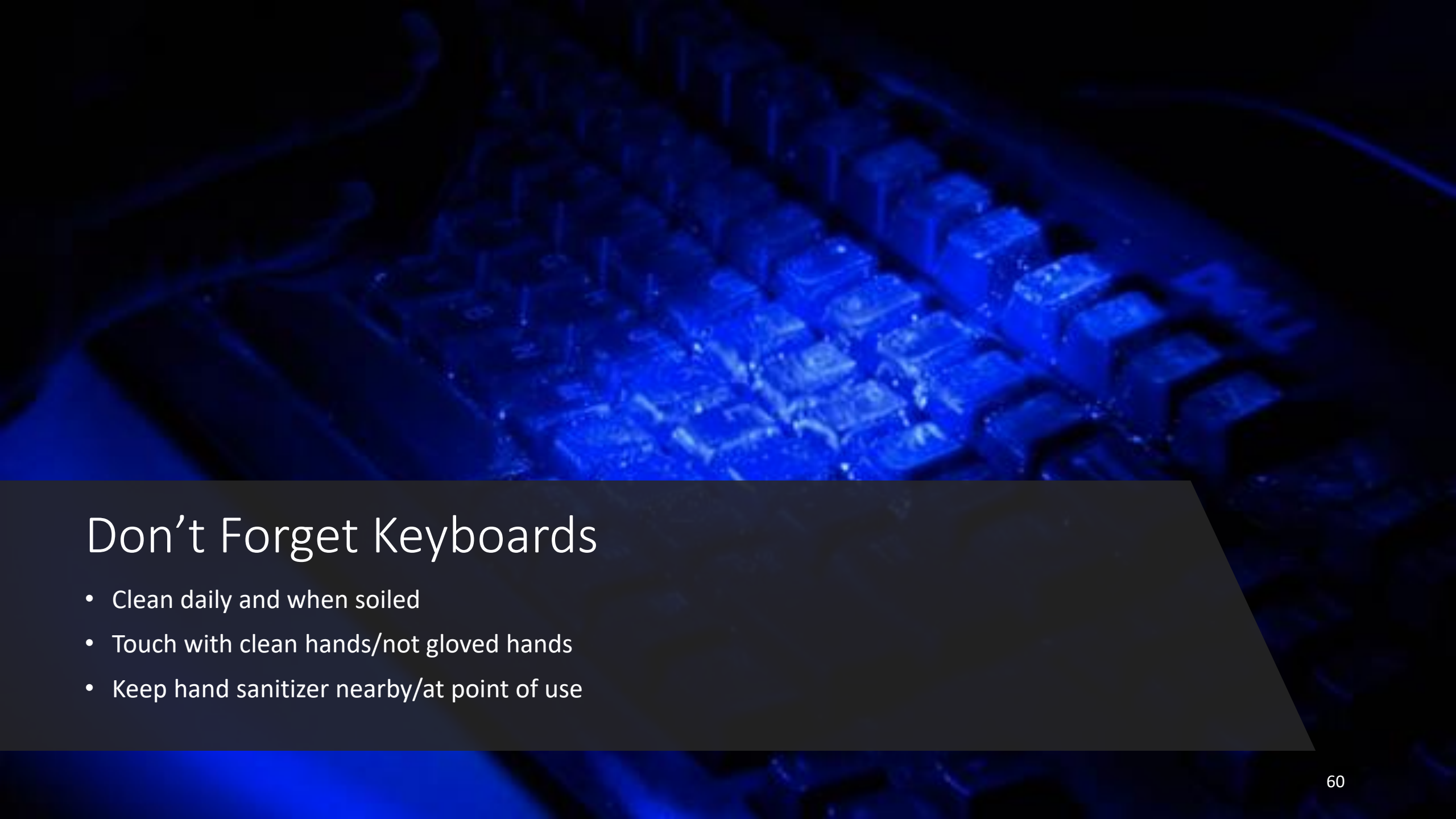
Your Cell Phone is not Part of the Resident Environment

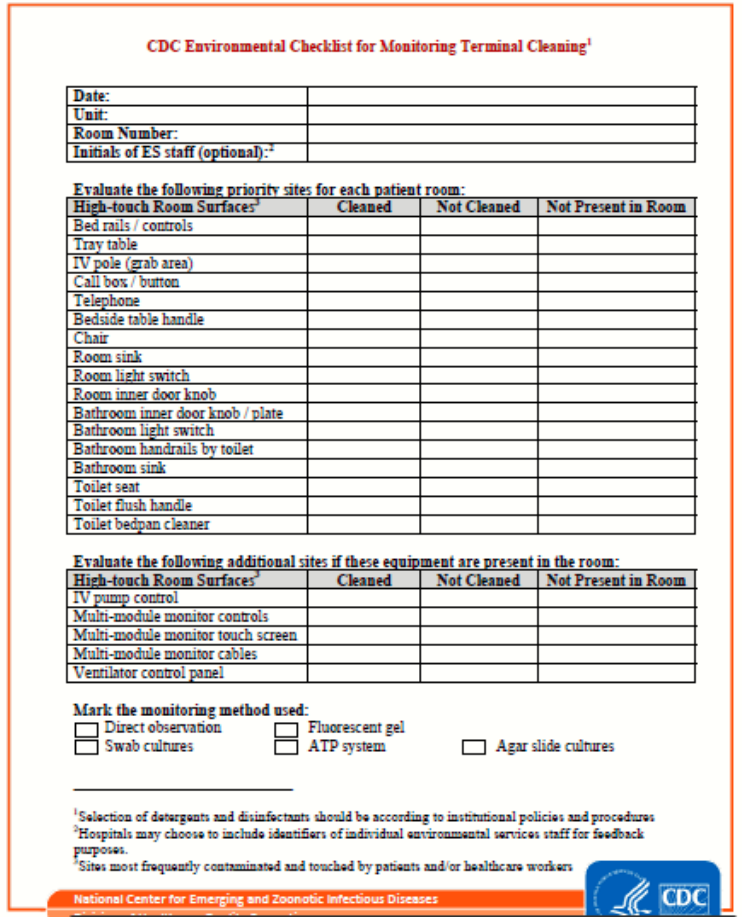
HOW MANY
GERMS
LIVE ON YOUR
CELL PHONE?



Don’t Forget Keyboards

- Clean daily and when soiled
- Touch with clean hands/not gloved hands
- Keep hand sanitizer nearby/at point of use

CDC Audit Tool



CDC Environmental Checklist for Monitoring Terminal Cleaning[1]

Date:	
Unit:	
Room Number:	
Initials of ES staff (optional):[2]	

Evaluate the following priority sites for each patient room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
Bed rails / controls			
Tray table			
IV pole (grab area)			
Call box / button			
Telephone			
Bedside table handle			
Chair			
Room sink			
Room light switch			
Room inner door knob			
Bathroom inner door knob / plate			
Bathroom light switch			
Bathroom handrails by toilet			
Bathroom sink			
Toilet seat			
Toilet flush handle			
Toilet bedpan cleaner			

Evaluate the following additional sites if these equipment are present in the room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
IV pump control			
Multi-module monitor controls			
Multi-module monitor touch screen			
Multi-module monitor cables			
Ventilator control panel			

Mark the monitoring method used:

☐ Direct observation ☐ Fluorescent gel
☐ Swab cultures ☐ ATP system ☐ Agar slide cultures

[1]Selection of detergents and disinfectants should be according to institutional policies and procedures
[2]Hospitals may choose to include identifiers of individual environmental services staff for feedback purposes.
[3]Sites most frequently contaminated and touched by patients and/or healthcare workers

National Center for Emerging and Zoonotic Infectious Diseases

https://www.cdc.gov/infectioncontrol/tools/index.html

- **Direct practice observation: covert, real-time**
- **Fluorescent markers: inexpensive, real-time**
- ATP detects residual bioburden
- Swab cultures: expensive, time-consuming

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Fluorescent marking

- Inexpensive
- Quick results
- Easy to use
- Confirms “elbow grease”
- PDPH provides kit with on-site education

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Monitor the Process - Before

High touch horizontal environmental surface marked with fluorescent marker – before cleaning

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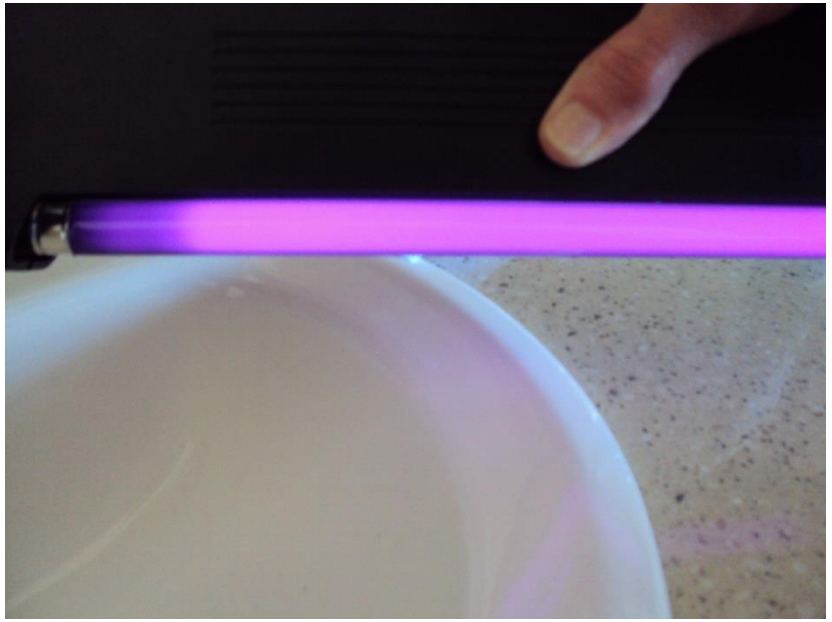
Monitor the Process - After

High touch horizontal environmental surface marked with fluorescent marker – after cleaning



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Common Environmental Gaps in LTCFs

- Disinfectant towelettes not readily available for staff use
- Staff unaware of contact/wet times for disinfectants
- Lots of shared equipment that isn't cleaned in-between use
- EVS monitoring consists of visual inspection only
- Resident belongings impede regular cleaning

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Summary

- MDROs are present on residents' bodies and throughout the environment
- Have a *C. auris* response plan
- Audit the process of environmental cleaning in resident care areas that includes **high-touch surfaces**
- Need for continued education on cleaning and disinfection for all staff
- Include EVS supervisor in your IPC Committee
- Conduct Environment of Care rounds on a regular basis

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Questions?

Sign-Up Form for HAI/AR Services

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Thank you!

Next call Friday, October 21st, 2022