



Resource Toolkit

Novice Infection Preventionists in Long-Term Care

A guide to assist the Infection Preventionist in their role



IDAHO DEPARTMENT OF
HEALTH & WELFARE
DIVISION OF PUBLIC HEALTH



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Healthcare Associated Infections Program

Division of Public Health

Idaho Department of Health and Welfare

The Centers for Disease Control and Prevention (CDC) funds Healthcare Associated Infections (HAI) programs in all 50 states and U.S. territories to support infection control in healthcare facilities.

Goal 1: To prevent and contain healthcare-associated infections across all healthcare settings in Idaho

- Provide education, training, and support for healthcare workers and facilities
- Coordinate efforts with state, public health districts, and local partners

Goal 2: To prepare Idaho's healthcare facilities to recognize and contain the spread of antibiotic resistant organisms and urgent public health threats

- Prevent healthcare-associated infections
- Reduce the emergence of antibiotic resistance through antibiotic stewardship program promotion

How can Idaho's Healthcare Associated Infections (HAI) Program support you?

- Technical assistance (questions, resources, guidance, and information).
- Conduct Infection control assessment and response (ICAR) and provide a discussion framework to assess a facility's infection control and/or antimicrobial stewardship programs in order to identify program strengths, gaps, and share recommendations.
- Provide ongoing public and professional HAI and antibiotic resistance education and information.
- Share Project Firstline - a CDC curriculum to educate all healthcare employees, patients, and families on the why behind infection control best practices.

Contact Information:

(HAI) Program: HAI@dhw.idaho.gov

Phone number: 208-334-5871

www.healthandwelfare.idaho.gov

Idaho Project Firstline: PFL@dhw.idaho.gov

Phone number: 208-908-8429

<https://healthandwelfare.idaho.gov/providers/idaho-project-firstline/about-idaho-project-firstline>

INTRODUCTION

The responsibilities of an Infection Preventionist may vary by location, practice setting, job descriptions or other factors. The materials in this toolkit may or may not be applicable based on the functions of your role. The content of this toolkit is merely a resource to aid the novice IP in their role.

INFECTION PREVENTION TASKS

Getting Started

There is no one-size fit all when starting a new role as an Infection Preventionist. However, it is important to familiarize yourself with specific facility information such as:

- ✓ Annual Documents
 - Infection Prevention Plan
 - Infection Control Risk Assessment
- ✓ Committee Minutes
 - Committee structures may vary by location. Infection Prevention activities may be addressed in the following committees i.e., Infection Prevention, Quality Assurance, Performance Improvement, etc.
- ✓ Infection Prevention Departmental Reports and Data
- ✓ Facility Surveys
 - Identify survey findings specific to Infection Prevention that may be pending and/or resolved.
 - State Survey
 - Centers for Medicare and Medicare (CMS) Survey
 - Accreditation Survey
- ✓ Policies and Procedures
- ✓ Reporting Requirement
 - Internal Reporting Requirements
 - External Reporting Requirements i.e., National Healthcare Safety Network (NHSN), CMS, etc.



Daily Tasks

- ✓ Informational Review
 - McGeer Criteria checklists – Notify nurse of missing assessments
 - Patient Vital Signs – Report significant outliers to the nurse on duty
 - 24-hour Report – all nursing notes for past 24 hours (PointClickCare report)
 - Employee Call-In Log
- ✓ Reporting
 - Point of Care Testing (POC) to National Healthcare Safety Network (NHSN)
- ✓ Surveillance
 - Complete Facility Infection Prevention Surveillance
 - Review and document any new antibiotic prescriptions
 - Obtain cultures results
 - Notify nurses of missing McGeer Criteria checklists



Weekly Tasks

- ✓ Internal Audits
 - COVID-19
 - Hand Hygiene
 - Personal Protective Equipment (PPE)
 - Peri-Care
 - Medication Pass
 - POC – Compare weekend POC tests and alert administrator of any late reports
(Please note – Late reports are subject to fines i.e., \$1,000 the first day and \$500 for each subsequent day)
 - COVID-19 screening or routine testing for staff missing tests
 - Send a notice to department leaders of noncompliant staff and/or contractors that have missed regulatory required COVID-19 testing
- ✓ Informational Review – Updated Guidance and Trending Issues

[Idaho Public Health Districts information](#)



[Idaho Covid-19 information](#)

[Resources for Long Term Care and Covid 19](#)

[Centers for Disease Control and Prevention](#)



Bi-Monthly Tasks

- ✓ Participate in Bureau of Facility Standards call (State CMS)



Monthly Tasks

- ✓ Prepare Reports
 - Quality Assurance/Performance Improvement
 - Infection Map
 - Data Tables
 - Policy Updates
 - Education
- ✓ Actions
 - Observe for concerning trends and develop a Plan-Do-Study-Act to mitigate



Annual Tasks

- ✓ Conduct an Annual Infection Prevention Risk Assessment with interdisciplinary team
 - Typically, within the first quarter
- ✓ Obtain Local and/or Regional Antibigram
 - Typically, within the first quarter-contact local Hospital microbiology lab for report
 - Provide copies to the Quality Assurance/Performance Improvement committee and providers
 - Observe for concerning trends (compare to previous antibiogram(s))
- ✓ Review and Update Infection Prevention Policies and Procedures
 - Ensure changes are reflected in Infection Prevention Trainings



Event Triggered Tasks

- ✓ New Admissions
 - Update Immunization Documentation
 - Review Infection Prevention Transfer Form, observe recurrent infection and possible colonization
 - Audit infection prevention orders such as PPD testing and COVID-19 Orders (testing, infection assessment, etc.)
 - Review vaccination records, assess for needed vaccinations
- ✓ Outbreak
 - Definition:
 - One (1) case of a reportable disease
 - Three (3) cases with the same symptoms within 72 hours i.e., a case is two or more episodes of diarrhea, vomiting, etc. within a 24-hour period
 - Investigate patient zero or potential cause of outbreak and assess the situation for further mitigation strategies
 - Report potential/confirmed outbreak to the local Health Department
 - Place resident(s) on appropriate isolation precautions
 - Perform contact tracing for contagious disease
 - Assess the effects on pregnant, unvaccinated and/or disease naïve individuals information found in CDC – Types and Duration of Precautions Recommended for Selected Infections and Conditions
 - Educate staff and residents on the disease and necessary precautions



[CDC – Types and Duration of Precautions Recommended for Selected Infections and Conditions](#)

- ✓ New Employee Orientation
 - Infection Prevention Policies and Procedures
 - Hand Hygiene Education and Demonstration with skills sign off
 - Personal Protective Equipment (PPE) Donning and Doffing
 - Hands-on practice is recommended with skills sign off
- ✓ Health Alert Network (HAN) (*CDC's primary method of sharing cleared information about urgent public health incidents*)
 - Share received alerts with appropriate staff i.e., administration, providers, nursing, etc.
- ✓ Review Centers for Medicare & Medicaid Services Updates



[CMS Quality Safety and Oversight Memoranda](#)



SURVEILLANCE

Surveillance is a fundamental component of an effective Infection Prevention Program. An effective surveillance should be based on sound epidemiological and statistical principles, designed in accordance with current recommended practices and based on activities that help to identify risk factors for infection or other adverse events and that provide a means to monitor the effectiveness of interventions (Arias, 2020).

Hand Hygiene

Hand Hygiene is a simple and effective intervention to prevent the transmission of organisms within a healthcare facility. Hand hygiene compliance can be monitored using a “secret shopper” methodology in which unknown, trained observers monitor hand hygiene practices and document their findings. Programs may also utilize a direct feedback methodology in which observers monitor hand hygiene and provide real-time feedback to staff at the moment of observation (Johns Hopkins Medicine, n.d.).



[Example: Johns Hopkins Medicine](#)

[Observation of Hand Hygiene Provision of Supplies](#)

Role of observed person					Hand Hygiene Measures	Observed Behavior					
OBS #	Unknown	Nurse (RN, LPN, CA, student)	Provider (Attending, resident, NP, PA, student)	Environmental Assistant (EVS, SA)	OTHER 1=unknown 2=phlebotomy 3=social work 4=transport 5=respiratory 6=PT/OT 7=Nutrition 8=Clergy 9=Visitor/family 10=Radiology 11=Purple People	CIRCLE ONE	Blocked view/ unsure	Hand cleaning with Alcohol-based rub	Hand wash with Soap & Water	No hand hygiene	For additional comments use back page referencing OBS # if need be.
1						ENTRY EXIT					
2						ENTRY EXIT					



Healthcare-Associated Infections (HAIs)

Quick Observation Tools (QUOTs) are easy to use checklists to assist Infection Preventionist or other users to establish a baseline of observation, to periodically ensure continued vigilance or detect problems and to perform targeted monitoring if performance falls below the expectation. The Centers for Disease Control and Prevention (CDC) has multiple tools available use.



Quick Observation Tools for Infection Prevention

- [Central Venous Catheters](#)
- [Urinary Catheters](#)
- [Centralized Medication Areas](#)
- [Point of Care Testing \(Injection Safety\)](#)

Additional Observation Tools

- Wound Dressing Change Observations

Wound Dressing Change Observations										
All supplies are gathered before dressing change ¹	HH performed before dressing change	Clean gloves donned before dressing change ²	Multi-dose wound care meds are used appropriately ³	Dressing change performed in manner to prevent cross-contamination ⁴	Gloves removed after dressing change completed	HH performed after dressing change completed	Reusable equipment cleaned and/or disinfected appropriately ⁵	Clean, unused supplies discarded or dedicated to one resident	Wound care performed /assessed regularly ⁶	Wound care supply cart is clean ⁷
<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes
<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No	<input type="radio"/> No
<input type="radio"/> NA*	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA	<input type="radio"/> NA

Surveillance Tools



- [NHSN – Long-Term Care Facilities \(LTCF\) Component](#)
- Revised McGeer Criteria for Infection Surveillance Checklist (Appendix 1)
 - **Helpful Hint:** McGeer Criteria is used retrospectively to assess the appropriateness of antibiotics and the criteria is to be applied without the use diagnostic criteria that was not available at the time the antibiotics were started (Minnesota Department of Health, 2019)

ANTIMICROBIAL STEWARDSHIP

On average, 25-75 percent of antibiotic used in nursing homes do not meet clinical guidelines for prescribing. Inappropriate use of antibiotics can lead to adverse drug events for patients and drug-resistant bacteria. Urinary tract infections, lower respiratory tract infections and skin and soft tissue infections are the most common conditions in which antibiotics are prescribed in nursing homes (Agency for Healthcare Research and Quality [AHRQ], 2017). The AHRQ has developed a toolkit titled *Minimum Criteria for Common Infections Toolkit* to aid prescribing clinicians determine when antibiotics are truly needed.



[Minimum Criteria for Common Infections Toolkit](#)

- Sample Policies [\[PDF\]](#) [\[Word\]](#)
- Suspected Infection SBAR Forms
 - Urinary Tract Infection (UTI) [\[PDF\]](#)
 - Lower Respiratory Tract Infection (LRI) [\[PDF\]](#)
 - Skin and Soft Tissue Infection (SST) [\[PDF\]](#)
- A Letter for Prescribing Clinicians [\[PDF\]](#) [\[Word\]](#)
- Training [\[PowerPoint\]](#) [\[Word\]](#)

Loeb Criteria (Appendix 2)

- Used for clinical decision-making to determine if a resident likely has an infection in which an antibiotic might be indicated. This criterion is often used for clinical decision making i.e., to start an antibiotic, when clinical information (diagnostic test results) are not available (Minnesota Department of Health, 2019).

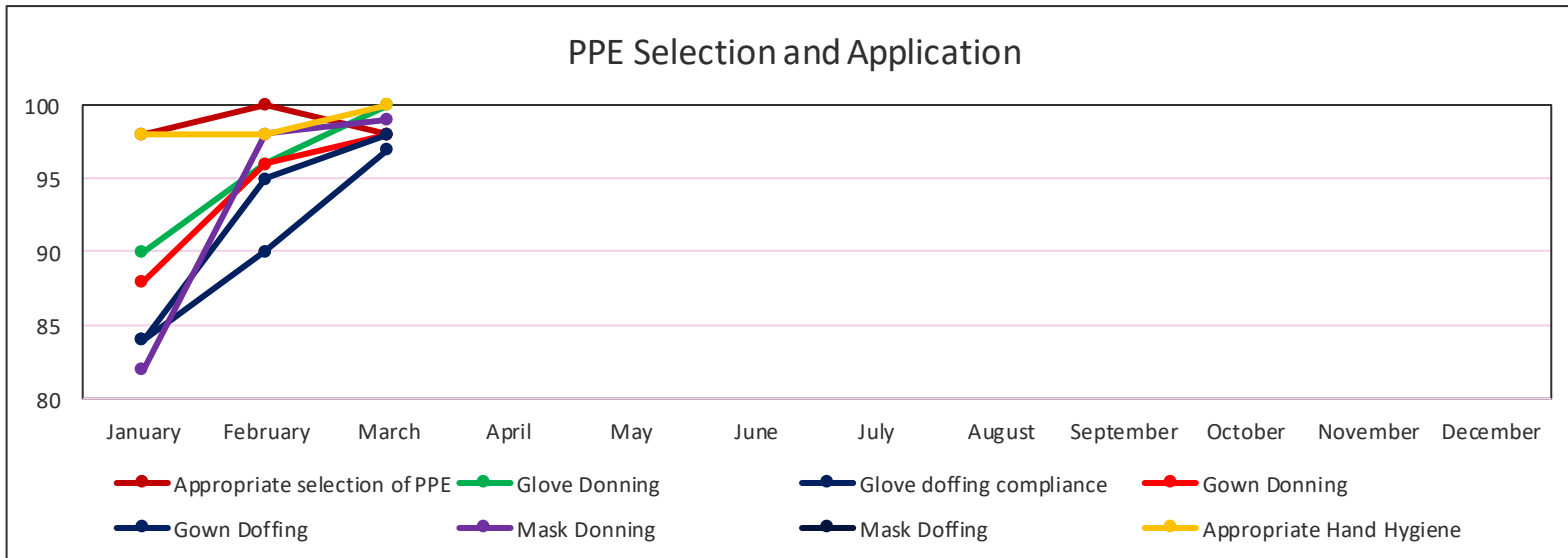


Observation Audit Tracking Tools Examples:

PPE Selection and Application

Month	Appropriate selection of PPE	Glove Donning	Glove doffing compliance	Gown Donning	Gown Doffing	Mask Donning	Mask Doffing	Appropriate Hand Hygiene
January	98	90	84	88	84	82	NA	98
February	100	96	90	96	95	98	NA	98
March	98	100	97	98	98	99	NA	100
April								
May								
June								
July								
August								
September								
October								
November								
December								

**Numbers included in the example table are percentages (e.g., 9 out of 10 glove donning observations met criteria).

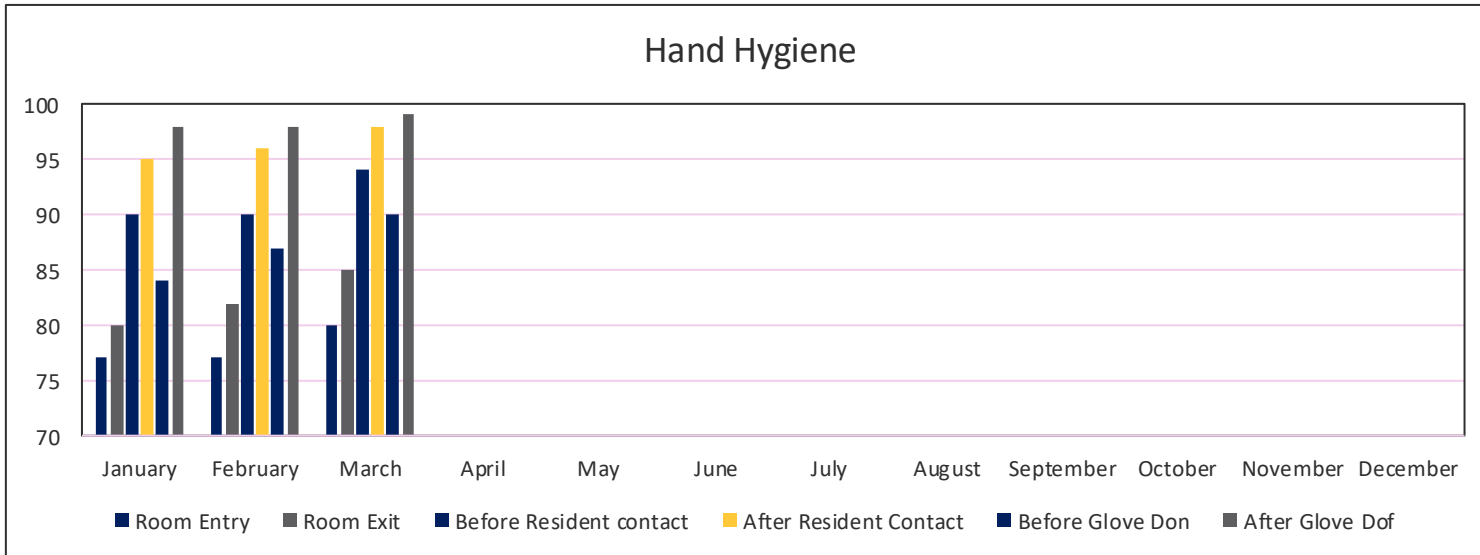




Hand Hygiene

Month	Room Entry	Room Exit	Before Resident contact	After Resident Contact	Before Glove Don	After Glove Doff
January	77	80	90	95	84	98
February	77	82	90	96	87	98
March	80	85	94	98	90	99
April						
May						
June						
July						
August						
September						
October						
November						
December						

**Numbers included in the example table are percentages (e.g., 77% of the time hand hygiene was completed upon room entry).

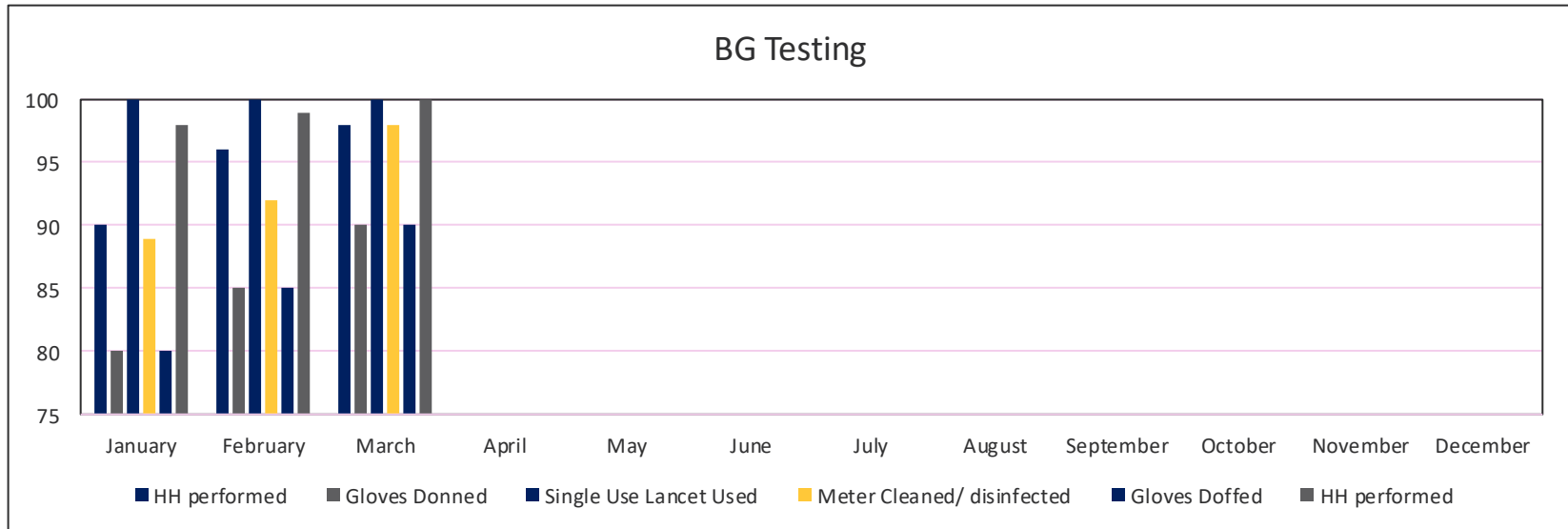




Blood Glucose Testing

Month	HH performed	Gloves Donned	Single Use Lancet Used	Meter Cleaned/ disinfected	Gloves Doffed	HH performed
January	90	80	100	89	80	98
February	96	85	100	92	85	99
March	98	90	100	98	90	100
April						
May						
June						
July						
August						
September						
October						
November						
December						

**Numbers included in the example table are percentages (e.g., 90% of the time hand hygiene was observed prior to blood glucose testing).



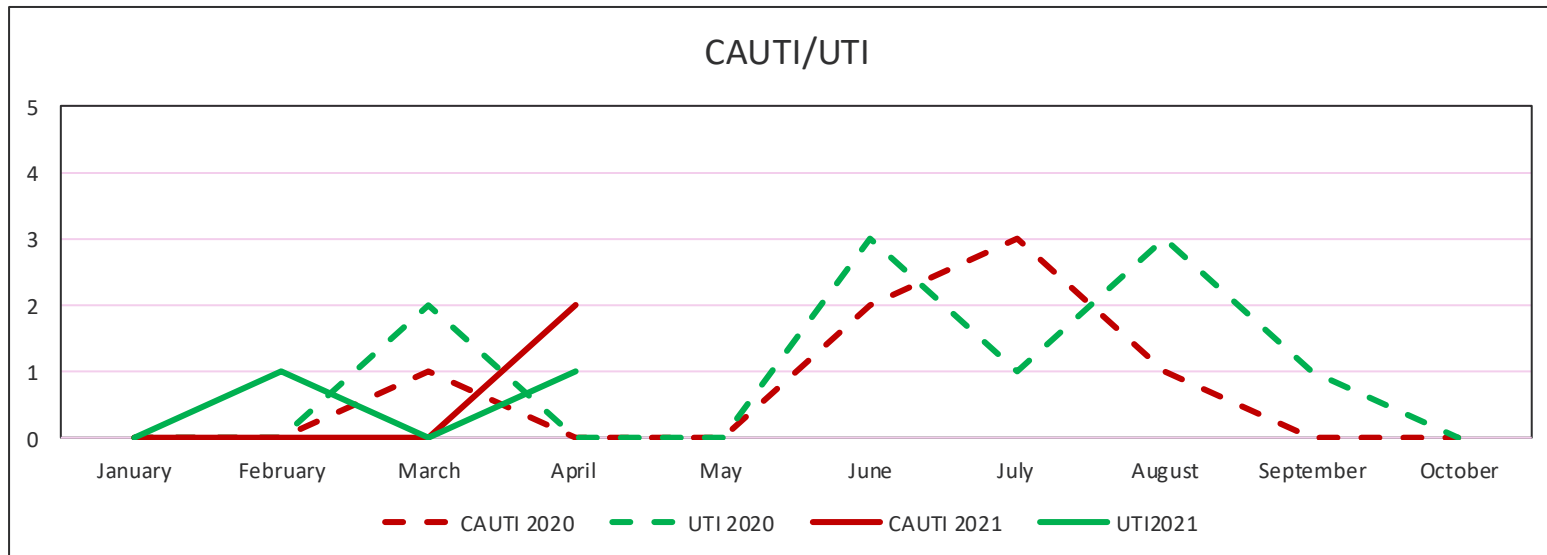


Infection and Symptomology Surveillance Examples:

**Catheter Associated Urinary Tract Infection (CAUTI)
vs Urinary Tract Infection (UTI)**

Month	CAUTI 2020	UTI 2020	CAUTI 2021	UTI2021
January	0	0	0	0
February	0	0	0	1
March	1	2	0	0
April	0	0	2	1
May	0	0		
June	2	3		
July	3	1		
August	1	3		
September	0	1		
October	0	0		
November				
December				

Numbers reflect actual case counts (e.g., 1 CAUTI in March)

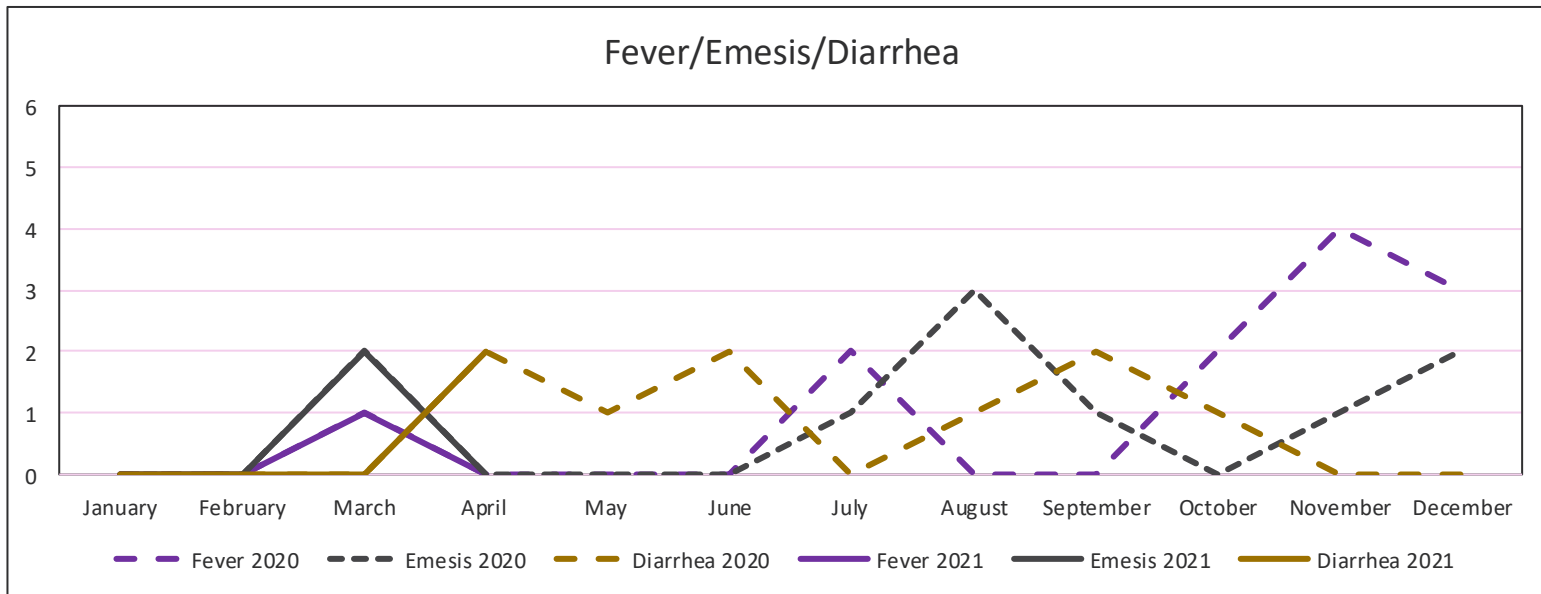




Fever/Emesis/Diarrhea Symptom Tracking

Month	Fever 2020	Emesis 2020	Diarrhea 2020	Fever 2021	Emesis 2021	Diarrhea 2021
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	1	2	0	1	2	0
April	0	0	2	0	0	2
May	0	0	1			
June	0	0	2			
July	2	1	0			
August	0	3	1			
September	0	1	2			
October	2	0	1			
November	4	1	0			
December	3	2	0			

Numbers reflect actual case counts (e.g., 1 Fever in March)

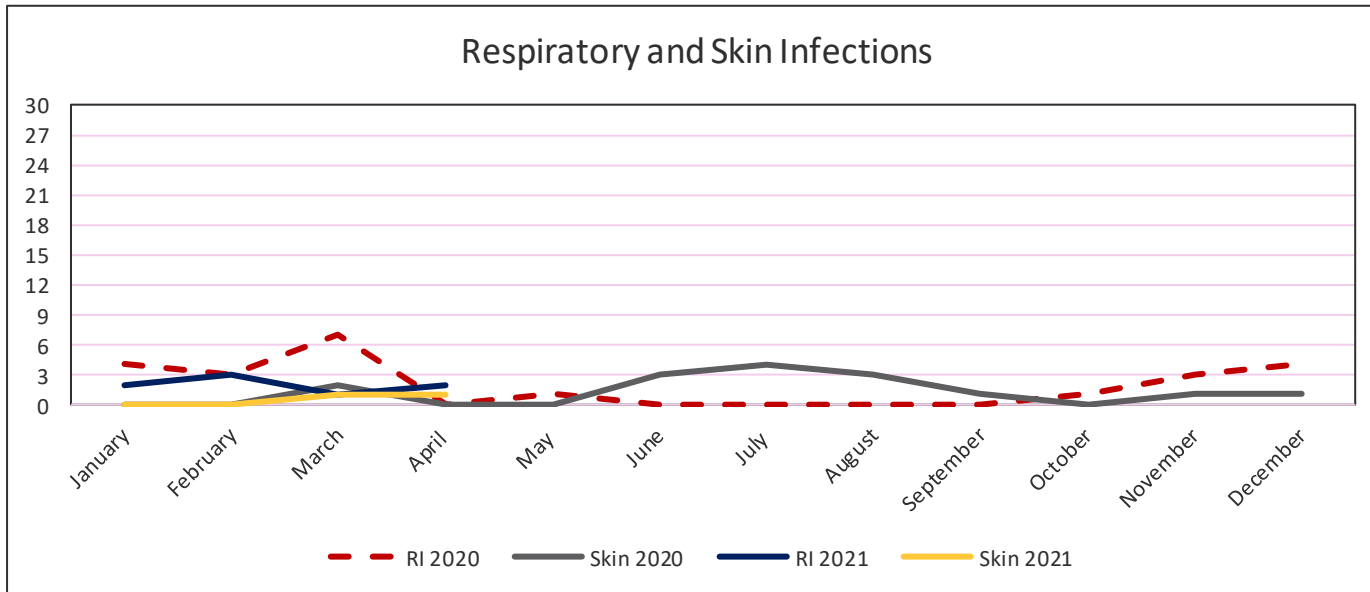




Respiratory Infection (RI) and Skin Infections

Month	RI 2020	Skin 2020	RI 2021	Skin 2021
January	4	0	2	0
February	3	0	3	0
March	7	2	1	1
April	0	0	2	1
May	1	0		
June	0	3		
July	0	4		
August	0	3		
September	0	1		
October	1	0		
November	3	1		
December	4	1		

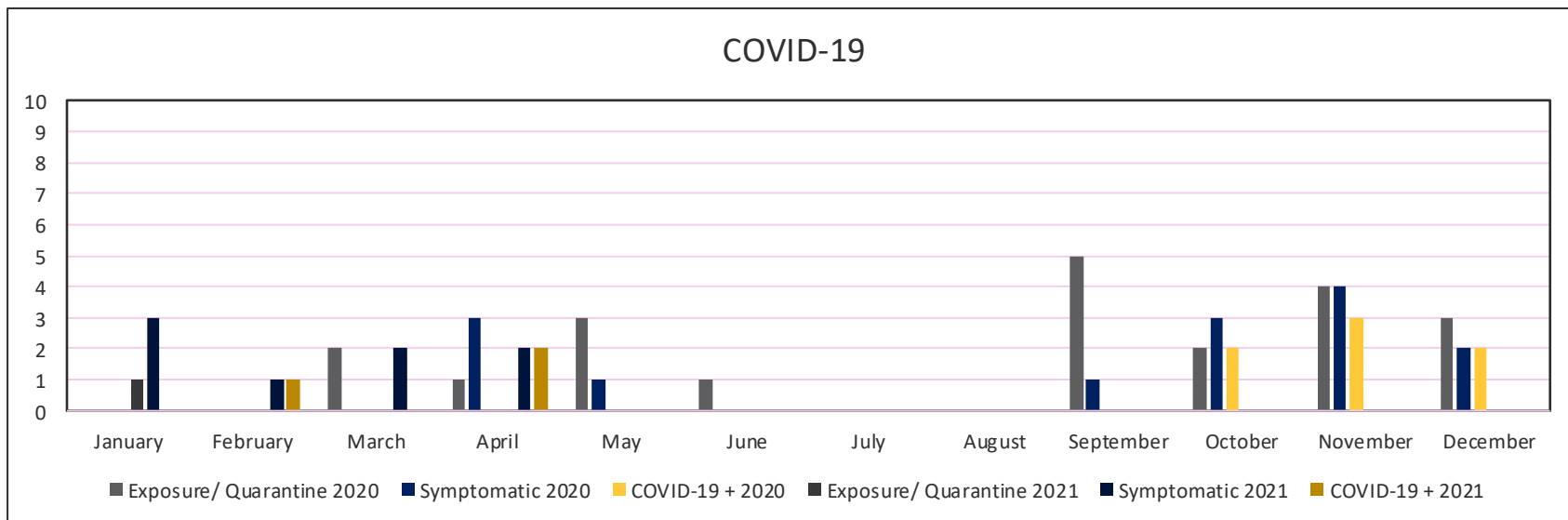
Numbers reflect actual case counts (e.g., 1 Respiratory Infection in January)



•••
COVID-19 Surveillance

Month	Exposure/ Quarantine 2020	Symptomatic 2020	COVID-19 + 2020	Exposure/ Quarantine 2021	Symptomatic 2021	COVID-19 + 2021
January	0	0	0	1	3	0
February	0	0	0	0	1	1
March	2	0	0	0	2	0
April	1	3	0	0	2	2
May	3	1	0			
June	1	0	0			
July	0	0	0			
August	0	0	0			
September	5	1	0			
October	2	3	2			
November	4	4	3			
December	3	2	2			

Numbers reflect actual case counts (e.g., 1 Exposure/Quarantine in April)



RESOURCES

GENERAL INFECTION PREVENTION TOPICS

Environmental Infection Control

- [Options for Evaluating Environmental Cleaning](#)
- [List K: EPA's Registered Antimicrobial Products Effective against Clostridium difficile Spores](#)

Hand Hygiene

- [Guidelines for Hand Hygiene in Healthcare Settings](#)
- [Hand Hygiene in Healthcare Settings](#)
- [Measuring Hand Hygiene Adherence: Overcoming the Challenges](#)

Injection Safety

- [CDC Injection Safety Web Materials](#)
- [CDC One & Only Campaign to eliminate unsafe medical injections](#)
- [Frequently Asked Questions \(FAQs\) Regarding Assisted Blood Glucose Monitoring and Insulin Administration](#)
- [Occupational Safety & Health Administration \(OSHA\) Bloodborne Pathogen and Needlestick Prevention](#)
- [Infection Prevention During Blood Glucose Monitoring and Insulin Administration](#)

Immunizations

- [Recommended Vaccines for Healthcare Workers](#)
- [CDC Influenza Vaccination Toolkit for Long-Term Care Employees](#)
- [Recommended Vaccines for Residents](#)

Infection Control Breaches

- [Steps for Evaluating an Infection Control Breach](#)

Isolation Precautions

- [Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings \(2007\)](#)
- [Recommendations for Preventing the Spread of Influenza](#)
- [Respiratory Hygiene and Cough Etiquette in Healthcare Settings](#)

Multidrug Resistant Organisms

- [Multidrug-Resistant Organisms \(MDRO\) Management](#)
- [Core Elements of Antibiotic Stewardship for Nursing Homes](#)

Personal Protective Equipment

- [Guidance for the Selection and Use of Personal Protective Equipment in Healthcare Settings](#)

GUIDES

Agency for Healthcare Research and Quality

- [A Unit Guide to Infection Prevention for Long-Term Care Staff](#)

PROFESSIONAL ORGANIZATIONS

Association for Professionals in Infection Control and Epidemiology (APIC)

- Professional association for Infection Preventionists whose mission is to advance the science and practice of infection prevention and control
 - www.apic.org
 - [APIC Text \(Subscription\)](#)
 - [APIC Chapter Map](#)
 - APIC Chapter 102 – Inland-Northwest (Eastern WA, ID, and Western MT)
 - APIC Chapter 123 – Intermountain Region (ID and border areas of MT, OR, NV, WA, and UT)

Centers for Disease Control and Prevention (CDC)

- Provides information on diseases and conditions, healthy living, traveler's health, emergency preparedness, environmental health, injury, violence and safety, workplace safety and health, global health and more.
 - www.cdc.gov
 - [Long Term Care](#)
 - [Covid-19 Updates](#)

Centers for Medicare & Medicaid Services (CMS)

- www.cms.gov
- [Regulations and Guidance](#)
- [Nursing Homes](#)

Environmental Protection Agency (EPA)

- Provides information on pesticides and disinfectants i.e., contact times, etc.
 - www.epa.gov



Healthcare Infection Control Practices Advisory Committee (HICPAC)

- Federal advisory committee appointed to provide advice and guidance on infection control strategies and practices for surveillance, prevention, and control of healthcare-associated infection, antimicrobial resistance, and related events in United States healthcare settings.
 - <https://www.cdc.gov/hicpac/index.html>

Idaho's Immunization Reminder System (IRIS)

- [Request an IRIS Account](#)

Idaho Public Health Districts

- 7 regional districts
 - <http://idahopublichealthdistricts.org/>

Infectious Disease Society of America (IDSA)

- [Clinical practice guidelines for infectious disease](#)

Institute for Healthcare Improvement (IHI)

- Innovator in health and healthcare improvement.
 - www.ihl.org

National Healthcare Safety Network (NHSN)

- [NHSN page](#)
- If you are new to NHSN you must complete the required training and review and accept the NHSN Rules of Behavior, after which you will receive an email invitation from Secure Access Management Service (SAMS) (SAMS No-Reply (CDC).” This is a valid and official email from CDC.
- All NHSN users are invited to register for access to SAMS. Registration is a 3-step process:
 1. Online Registration – First, you will receive an ‘Invitation to Register’ email. This invitation will include instructions for the online registration process. During registration, you will be asked to supply some basic information about yourself. You will choose your personal SAMS password to help keep your account private and secure.
 2. Identity Verification– Once NHSN user has completed the online registration, you will receive an email with instructions for Identity Verification. In order to provide individuals with access to non-public information, U.S. law requires that the identity of potential users is first verified – this step is critical in helping to protect people’s private data and in helping to prevent information misuse. Please be assured that NHSN has made every effort to keep this necessary process as



simple and non-intrusive as possible. Also be assured that your registration materials will only be used to help determine your suitability for information access and that these materials will not be shared outside of NHSN.

3. Access Approval – Once your Identity Verification is complete, the access level most appropriate for your role will be determined and your SAMS account will be activated. SAMS will send you an account activation email with a link to the SAMS portal page where you can begin using your applications.

- [NHSN Long-Term Care Facility COVID-19 Module](#)

National Institutes of Health (NIH)

- The NIH is part of the U.S. Department of Health and Human Services
- Largest biomedical research agency in the world
 - www.nih.gov

Occupational Safety and Health Administration (OSHA)

- [Respiratory Protection](#)
- OSHA Emergency Temporary Standard (ETS)

The Society for Healthcare Epidemiology of America (SHEA)

- Promotes the prevention of healthcare-associated infections and antibiotic resistance.
 - www.shea-online.org

TRAINING

Centers for Disease Control and Prevention

- [Nursing Home Infection Preventionist Training Course](#)

REFERENCES

Arias, K. M. (2020, September 21). *Surveillance*. Association for Professionals in Infection Control and Epidemiology. <https://text.apic.org/toc/epidemiology-surveillance-performance-and-patient-safety-measures/surveillance?token=6EA32264BB44D056>

Agency for Healthcare Research and Quality. (2017). *Toolkit 3. Minimum criteria for common infections toolkit*. <https://www.ahrq.gov/nhguide/toolkits/determine-whether-to-treat/toolkit3-minimum-criteria.html>

Johns Hopkins Medicine. (n.d.). *Hand Hygiene*. https://www.hopkinsmedicine.org/heic/infection_surveillance/hand_hygiene.html

Minnesota Department of Health. (2019). *Loeb and McGeer criteria: A practical guide for use in long-term care*. <https://www.health.state.mn.us/diseases/antibioticresistance/hcp/asp/ltc/loebmcgeer.pdf>

APPENDICES

Appendix 1
Revised McGeer Criteria for Infection Surveillance Checklist

[Facility Logo]

Patient Name: _____ MRN: _____ Location: _____

Date of Infection: _____ Date of Review: _____ Reviewed by: _____

UTI: evaluated criteria metRTI: evaluated criteria metSSTI: evaluated criteria metGITI: evaluated criteria met

Table 1. Constitutional Criteria for Infection

Fever	Leukocytosis	Acute Mental Status Change	Acute Functional Decline
Single oral temp >37.8 °C (100 °F), OR Repeated oral temp >37.2 °C (99 °F), OR Repeated rectal temp >37.5 °C (99.5 °F), OR Single temp >1.1 °C (2 °F) from baseline from any site	>14,000 WBC / mm ³ , OR >6% band, OR ≥1,500 bands / mm ³	Acute onset, AND Fluctuating course, AND Inattention, AND Either disorganized thinking, OR altered level of consciousness	3-point increase in baseline ADL score according to the following items: 1. Bed mobility 2. Transfer 3. Locomotion within LTCF 4. Dressing 5. Toilet use 6. Personal hygiene 7. Eating [Each scored from 0 (independent) to 4 (total dependence)]

Table 2. Urinary Tract Infection (UTI) Surveillance Definitions

Syndrome	Criteria	Selected Comments*
UTI without indwelling catheter	<p>Must fulfill both 1 AND 2.</p> <p><input type="checkbox"/> 1. At least one of the following sign or symptom</p> <ul style="list-style-type: none"> <input type="checkbox"/> Acute dysuria or pain, swelling, or tenderness of testes, epididymis, or prostate <input type="checkbox"/> Fever or leukocytosis, and ≥ 1 of the following: <ul style="list-style-type: none"> <input type="checkbox"/> Acute costovertebral angle pain or tenderness <input type="checkbox"/> Suprapubic pain <input type="checkbox"/> Gross hematuria <input type="checkbox"/> New or marked increase in incontinence <input type="checkbox"/> New or marked increase in urgency <input type="checkbox"/> New or marked increase in frequency <input type="checkbox"/> If no fever or leukocytosis, then ≥ 2 of the following: <ul style="list-style-type: none"> <input type="checkbox"/> Suprapubic pain <input type="checkbox"/> Gross hematuria <input type="checkbox"/> New or marked increase in incontinence <input type="checkbox"/> New or marked increase in urgency <input type="checkbox"/> New or marked increase in frequency <p><input type="checkbox"/> 2. At least one of the following microbiologic criteria</p> <ul style="list-style-type: none"> <input type="checkbox"/> ≥ 10⁵ cfu/mL of no more than 2 species of organisms in a voided urine sample <input type="checkbox"/> ≥ 10² cfu/mL of any organism(s) in a specimen collected by an in-and-out catheter 	<p>The following 2 comments apply to both UTI with or without catheter:</p> <ul style="list-style-type: none"> • UTI can be diagnosed without localizing symptoms if a blood isolate is the same as the organism isolated from urine and there is no alternate site of infection • In the absence of a clear alternate source of infection, fever or rigors with a positive urine culture result in the non-catheterized resident or acute confusion in the catheterized resident will often be treated as UTI. However, evidence suggests that most of these episodes are likely not due to infection of a urinary source. • Urine specimens for culture should be processed as soon as possible, preferably within 1-2 h • If urine specimens cannot be processed within 30 min of collection, they should be refrigerated and used for culture within 24 h
UTI with indwelling catheter	<p>Must fulfill both 1 AND 2.</p> <p><input type="checkbox"/> 1. At least one of the following sign or symptom</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fever, rigors, or new-onset hypotension, with no alternate site of infection <input type="checkbox"/> Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis <input type="checkbox"/> New-onset suprapubic pain or costovertebral angle pain or tenderness <input type="checkbox"/> Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate <p><input type="checkbox"/> 2. Urinary catheter specimen culture with ≥ 10⁵ cfu/mL of any organism(s)</p>	<ul style="list-style-type: none"> • Recent catheter trauma, catheter obstruction, or new onset hematuria are useful localizing signs that are consistent with UTI but are not necessary for diagnosis • Urinary catheter specimens for culture should be collected after replacement of the catheter if it has been in place >14 d

 UTI criteria met UTI criteria NOT met

* Refer to original article (Stone ND, et al. Infect Control Hosp Epidemiol 2012;33:965-77) for full comments



Table 3. Respiratory Tract Infection (RTI) Surveillance Definitions

Syndrome	Criteria	Selected Comments*
Common cold syndrome or pharyngitis	<p>Must fulfill at least 2 criteria.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Runny nose or sneezing <input type="checkbox"/> Stuffy nose or nasal congestion <input type="checkbox"/> Sore throat, hoarseness, or difficulty in swallowing <input type="checkbox"/> Dry cough <input type="checkbox"/> Swollen or tender glands in the neck (cervical lymphadenopathy) 	<ul style="list-style-type: none"> • Fever may or may not be present • Symptoms must be new and not attributable to allergies
Influenza-like illness	<p>Must fulfill both 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Fever <input type="checkbox"/> 2. At least three of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Chills <input type="checkbox"/> New headache or eye pain <input type="checkbox"/> Myalgias or body aches <input type="checkbox"/> Malaise or loss of appetite <input type="checkbox"/> Sore throat <input type="checkbox"/> New or increased dry cough 	<ul style="list-style-type: none"> • If both criteria for influenza-like illness and another upper or lower RTI are met, only record diagnosis of influenza-like illness
Pneumonia	<p>Must fulfill 1, 2, AND 3.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Chest X-ray with pneumonia or a new infiltrate <input type="checkbox"/> 2. At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> New or increased cough <input type="checkbox"/> New or increased sputum production <input type="checkbox"/> O₂ sat <94% on room air, or >3% decrease from baseline O₂ sat <input type="checkbox"/> New or changed lung exam abnormalities <input type="checkbox"/> Pleuritic chest pain <input type="checkbox"/> Respiratory rate ≥25 breaths/min <input type="checkbox"/> 3. At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Fever <input type="checkbox"/> Leukocytosis <input type="checkbox"/> Acute mental status change <input type="checkbox"/> Acute functional decline 	<ul style="list-style-type: none"> • Conditions mimicking the presentation of RTI (e.g., congestive heart failure or interstitial lung diseases) should be excluded
Bronchitis or Tracheo-bronchitis	<p>Must fulfill 1, 2, AND 3.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Chest X-ray not performed, or negative for pneumonia or a new infiltrate <input type="checkbox"/> 2. At least two of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> New or increased cough <input type="checkbox"/> New or increased sputum production <input type="checkbox"/> O₂ sat <94% on room air, or >3% decrease from baseline O₂ sat <input type="checkbox"/> New or changed lung exam abnormalities <input type="checkbox"/> Pleuritic chest pain <input type="checkbox"/> Respiratory rate >25 breaths/min <input type="checkbox"/> 3. At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Fever <input type="checkbox"/> Leukocytosis <input type="checkbox"/> Acute mental status change <input type="checkbox"/> Acute functional decline 	<ul style="list-style-type: none"> • Conditions mimicking the presentation of RTI (e.g., congestive heart failure or interstitial lung diseases) should be excluded
<input type="checkbox"/> RTI criteria met		<input type="checkbox"/> RTI criteria <u>NOT</u> met

* Refer to original article (Stone ND, *et al.* Infect Control Hosp Epidemiol 2012;33:965-77) for full comments

Table 4. Skin and Soft Tissue Infection (SSTI) Surveillance Definitions

Syndrome	Criteria	Selected Comments*
Cellulitis, soft tissue, or wound infection	<p>Must fulfill at least 1 criteria.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pus at wound, skin, or soft tissue site <input type="checkbox"/> At least four of the following new or increasing sign or symptom <ul style="list-style-type: none"> <input type="checkbox"/> Heat (warmth) at affected site <input type="checkbox"/> Redness (erythema) at affected site <input type="checkbox"/> Swelling at affected site <input type="checkbox"/> Tenderness or pain at affected site <input type="checkbox"/> Serous drainage at the affected site <input type="checkbox"/> At least one of the following <ul style="list-style-type: none"> <input type="checkbox"/> Fever <input type="checkbox"/> Leukocytosis <input type="checkbox"/> Acute changed in mental status <input type="checkbox"/> Acute functional decline 	<ul style="list-style-type: none"> • More than 1 resident with streptococcal skin infection from the same serogroup (e.g., A, B, C, G) may indicate an outbreak • Positive superficial wound swab culture is not sufficient evidence to establish a wound infection
Scabies	<p>Must fulfill both 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Maculopapular and/or itching rash <input type="checkbox"/> 2. At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Physician diagnosis <input type="checkbox"/> Lab confirmation (scraping or biopsy) <input type="checkbox"/> Epidemiologic linkage to a case of scabies with lab confirmation 	<ul style="list-style-type: none"> • Must rule out rashes due to skin irritation, allergic reactions, eczema, and other non-infectious skin conditions • Epidemiologic linkage refers to geographic proximity, temporal relationship to symptom onset, or evidence of common source of exposure
Oral candidiasis	<p>Must fulfill 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Presence of raised white patches on inflamed mucosa or plaques on oral mucosa <input type="checkbox"/> 2. Medical or dental diagnosis 	
Fungal skin infection	<p>Must fulfill 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. Characteristic rash or lesions <input type="checkbox"/> 2. Physician diagnosis or lab confirmation of fungal pathogen from skin scraping or biopsy) 	
Herpes simplex or Herpes zoster infection	<p>Must fulfill 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. A vesicular rash <input type="checkbox"/> 2. Physician diagnosis or lab confirmation 	<ul style="list-style-type: none"> • Reactivation of herpes simplex (cold sore) or herpes zoster (shingles) is not considered a healthcare-associated infection
Conjunctivitis	<p>Must fulfill at least 1 criteria.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pus from one or both eyes for ≥ 24 h <input type="checkbox"/> New or increased conjunctival erythema +/- itching <input type="checkbox"/> New or increased conjunctival pain for ≥ 24 h 	<ul style="list-style-type: none"> • Conjunctivitis symptoms (pink eye) should not be due to allergy or trauma
<input type="checkbox"/> SSTI criteria met		<input type="checkbox"/> SSTI criteria <u>NOT</u> met

* Refer to original article (Stone ND, *et al.* Infect Control Hosp Epidemiol 2012;33:965-77) for full comments

Table 5. Gastrointestinal Tract Infection (GITI) Surveillance Definitions

Syndrome	Criteria	Selected Comments*
Gastroenteritis	<p>Must fulfill at least 1 criteria.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Diarrhea: ≥ 3 liquid or watery stools above what is normal for the resident within 24 h <input type="checkbox"/> Vomiting: ≥ 2 episodes in 24 h <input type="checkbox"/> Both of the following sign or symptom <ul style="list-style-type: none"> <input type="checkbox"/> Stool specimen positive for a pathogen (e.g., <i>Salmonella</i>, <i>Shigella</i>, <i>E coli</i> O157:H7, <i>Campylobacter</i> species, rotavirus) <input type="checkbox"/> At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Nausea <input type="checkbox"/> Vomiting <input type="checkbox"/> Abdominal pain or tenderness <input type="checkbox"/> Diarrhea 	<ul style="list-style-type: none"> • Exclude non-infectious causes of symptoms such as new medications causing diarrhea, nausea, or vomiting or diarrhea resulting from initiation of new enteral feeding • Presence of new GI symptoms in a single resident may prompt enhanced surveillance for additional cases • In the presence of an outbreak, stool specimens should be sent to confirm the presence of norovirus or other pathogens (e.g., rotavirus, <i>E coli</i> O157:H7)
Norovirus gastroenteritis	<p>Must fulfill both 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Diarrhea: ≥ 3 liquid or watery stools above what is normal for the resident within 24 h <input type="checkbox"/> Vomiting: ≥ 2 episodes in 24 h <input type="checkbox"/> 2. A stool specimen positive for norovirus detected by electron microscopy, enzyme immunoassay, or molecular diagnostic testing 	<ul style="list-style-type: none"> • In the absence of lab confirmation, a norovirus gastroenteritis outbreak (≥ 2 cases in a LTCF) may be assumed if all of the Kaplan Criteria are present <ul style="list-style-type: none"> ○ Vomiting in >50% of affected persons ○ A mean or median incubation period of 24-48 h ○ A mean or median duration of illness of 12-60 h, and ○ No bacterial pathogen is identified in stool culture
<i>Clostridium difficile</i> infection	<p>Must fulfill 1 AND 2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1. At least one of the following criteria <ul style="list-style-type: none"> <input type="checkbox"/> Diarrhea: ≥ 3 liquid or watery stools above what is normal for the resident within 24 h <input type="checkbox"/> Presence of toxic megacolon (radiologic finding of abnormal large bowel dilatation) <input type="checkbox"/> 2. At least one of the following diagnostic criteria <ul style="list-style-type: none"> <input type="checkbox"/> Stool sample positive for <i>C difficile</i> toxin A or B, or detection of toxin-producing <i>C difficile</i> by culture or PCR in stool sample <input type="checkbox"/> Pseudomembranous colitis identified in endoscopic exam, surgery, or histopathologic exam of biopsy specimen 	<ul style="list-style-type: none"> • Individual previously infected with <i>C difficile</i> may continue to be colonized even after symptoms resolve • In the setting of an outbreak of GI infection, individuals could be <i>C difficile</i> toxin positive because of ongoing colonization and also be co-infected with another pathogen. Other surveillance criteria should be used to differentiate between infections in this scenario
<input type="checkbox"/> GITI criteria met		<input type="checkbox"/> GITI criteria <u>NOT</u> met

* Refer to original article (Stone ND, *et al.* Infect Control Hosp Epidemiol 2012;33:965-77) for full comments

Appendix 2

Loeb's Minimum Criteria for Initiating Antibiotic Therapy

[Facility Logo]

Patient Name: _____ MRN: _____ Location: _____

Date of Infection: _____ Date of Review: _____ Reviewed by: _____

UTI: evaluated criteria metLRTI: evaluated criteria metSSTI: evaluated criteria metFUO: evaluated criteria met

Suspected Infection Syndrome	Minimum Criteria for Starting Antibiotic Therapy
Urinary tract infection <i>without catheter</i>	Either one of the following criteria <input type="checkbox"/> Acute dysuria, OR <input type="checkbox"/> Temp >37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline, AND ≥1 of the following new or worsening symptoms <input type="checkbox"/> Urgency <input type="checkbox"/> Suprapubic pain <input type="checkbox"/> Urinary incontinence <input type="checkbox"/> Frequency <input type="checkbox"/> Gross hematuria <input type="checkbox"/> Costovertebral angle tenderness
<i>with catheter</i>	At least one of the following criteria <input type="checkbox"/> Rigors <input type="checkbox"/> New onset delirium <input type="checkbox"/> Temp >37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline <input type="checkbox"/> New costovertebral angle tenderness
Note: Residents with intermittent catheterization or condom catheter should be categorized as 'without catheter' Urine culture should be sent prior to starting antibiotics Antibiotics should not be started for cloudy or foul smelling urine	
Lower respiratory tract infection <i>with temp >38.9 °C (102 °F)</i>	At least one of the following criteria <input type="checkbox"/> Productive cough <input type="checkbox"/> Respiratory rate >25 breaths / minute
<i>with temp >37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline</i>	Both of the following criteria <input type="checkbox"/> Cough, AND <input type="checkbox"/> At least one of the following criteria <input type="checkbox"/> Pulse >100 beats / minutes <input type="checkbox"/> Rigors <input type="checkbox"/> Delirium <input type="checkbox"/> Respiratory rate >25 breaths / minute
<i>afebrile with COPD and >65 years old</i>	Both of the following criteria <input type="checkbox"/> New or increased cough <input type="checkbox"/> Purulent sputum production
<i>afebrile without COPD</i>	All of the following criteria <input type="checkbox"/> New cough <input type="checkbox"/> Purulent sputum production <input type="checkbox"/> At least one of the following criteria <input type="checkbox"/> Delirium <input type="checkbox"/> Respiratory rate >25 breaths / minute
<i>with new infiltrate on chest X-ray consistent with pneumonia</i>	At least one of the following criteria <input type="checkbox"/> Productive cough <input type="checkbox"/> Respiratory rate >25 breaths / minute <input type="checkbox"/> Temp >37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline
Note: Consider ordering chest X-ray and CBC with differential for febrile residents with cough and any of these criteria (HR >100, worsening mental status, or rigors) Antibiotics should not be used for up to 24 h after large-volume aspiration in those without COPD but with temp ≤38.9°C (102 °F) and non-productive cough	
Skin and soft-tissue infection	Either one of the following criteria <input type="checkbox"/> New or increasing purulent drainage, OR <input type="checkbox"/> At least two of the following criteria <input type="checkbox"/> Redness (erythema) <input type="checkbox"/> Tenderness <input type="checkbox"/> Warmth <input type="checkbox"/> Temp >37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline <input type="checkbox"/> New or increasing swelling at affected site
Note: These criteria do not apply to residents with burns Surgical consultation and hospitalization are required for certain soft-tissue infections (e.g., necrotizing fasciitis or gas gangrene)	
Fever where the Focus of Infection is Unknown	Both of the following criteria <input type="checkbox"/> Temp >37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline, AND <input type="checkbox"/> At least one of the following criteria <input type="checkbox"/> Rigors <input type="checkbox"/> Delirium
Note: Antibiotic should not be started in residents with fever and altered mental status that does not meet delirium criteria (e.g., reduced functional activities, withdrawal, loss of appetite)	

Reference: Loeb M, et al. Infect Control Hosp Epidemiol 2001;22:120-4.