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Policy Area Infection
Prevention

Applicability UNC Medical

Center

Infection Prevention Guidelines for Perioperative Services

I. Description

Describes the Infection Prevention policies and procedures to reduce the risk of a healthcare-associated infection in the perioperative environment at UNC Medical Center, Ambulatory Surgical Center and Hillsborough Hospital

II. Rationale

Infection is a well-recognized risk of surgical and invasive procedures. Strict adherence to the evidence-based recommendations in this policy can reduce the risk of infection for the surgical patient.

III. Policy

A. General Information

- 1. Education
 - Infection Prevention education via LMS including OSHA Bloodborne Pathogen and TB Training is required initially upon employment and annually thereafter.
- 2. Environment/Cleaning
 - a. Pre-Op and PACU should be cleaned according to the Infection Prevention policy: <u>Environmental Services</u>.
 - b. Routine daily cleaning of floors with an EPA-registered germicide is required as specified in the Infection Prevention policy: Environmental Services.

- c. Cubicle curtains are changed by Environmental Services on a routine basis and when visibly soiled.
- d. All permanent equipment in patient bed spaces (e.g., bedside tables, monitors) should be cleaned daily with an EPA-registered disinfectant (e.g., Sani-Cloths, MetriGuard, Oxivir TB). Equipment positioned close to the patient or used between patients should be cleaned after each patient.
- e. After each patient transport on a surgical stretcher, linens are changed and surfaces are wiped with an EPA-registered disinfectant. The entire stretcher will be cleaned with an EPA-registered disinfectant when visibly soiled and at the end of the day.
- f. In the Operating Rooms, the environment will be maintained by daily, intraoperative, interim, and weekly terminal cleaning routine. (Refer to Attachment 1 Environmental Cleaning and Disinfection in the Operating Room).
- g. All blood spills should be cleaned up immediately and the spill area decontaminated with an EPA-registered disinfectant or a 1:10 solution of bleach and water. If the spill is large, flood the spill area with the disinfectant prior to cleaning up. Take care to avoid sharp injuries during clean up.

3. Hand Hygiene

Personnel must adhere to the Infection Prevention policy: <u>Hand Hygiene and Use of Antiseptics for Skin Preparation</u>.

4. Laboratory Specimens

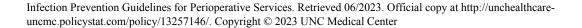
 Lab specimens including those from the operating rooms are placed in appropriate leak-resistant containers taking care not to contaminate the outside of the container. Specimens sent via the tube system or for pick-up by laboratory personnel/robot are placed in a sealed specimen bag with a biohazard label. Specimens transported by OR staff to the lab (e.g. pathology) must be in a secondary container (e.g. sealed specimen bag, bath basin, cooler) displaying a biohazard label.

5. Personnel

- a. Personnel should adhere to guidelines established by the Occupational Health Service (OHS). Refer to the Occupational Health Services policy: <u>Infection Prevention and Screening Program: Occupational Health</u> Service.
- Surgical personnel who are colonized with organisms such as S. aureus
 (nose, hands, or other body site) or group A Streptococcus are not routinely
 excluded from duty unless such personnel have been linked

epidemiologically to dissemination of the organism in the healthcare setting.

- 6. Precautions / Communicable Diseases
 - Isolation Precautions / Communicable Diseases
 - i. Elective inpatient admissions should be deferred if possible when patients have a communicable infectious disease.
 - Patients on isolation precautions will be managed per the Infection Prevention policies: <u>Isolation Precautions</u> and the <u>Tuberculosis Control Plan.</u>
 - iii. Patients requiring an airborne isolation room shall not be scheduled in the Ambulatory Surgical Center (ASC).
 - iv. Pre-Op Area: Patients on Contact/Enteric Precautions in Pre-Op are not required to be in an isolation room. They may be managed in individual bed spaces. Ensure that the requirement for Contact or Enteric Precautions is communicated to Anesthesia and OR personnel prior to the patient leaving for the OR.
 - v. Intra-Op: OR personnel should wear clean gloves and an isolation gown during procedures such as positioning the patient on the OR table. Anesthesia personnel should wear gloves and gown for procedures such as intubation and placement of peripheral venous catheters that does not require the use of sterile cover gown. During the surgical procedure, isolation attire is not necessary unless personnel not scrubbed in for the case need to have direct contact with the patient. Ensure that the requirement for Contact Precautions/Enteric Precautions is communicated to PACU personnel.
 - vi. PACU: PACU patients on Contact/Enteric Precautions are not required to be in an isolation room. They can be managed in the individual patient bed spaces. Ensure that the requirement for Contact/Enteric Precautions is communicated to the Floor/ICU prior to the patient leaving the PACU.
- Reuse of Single Use Devices
 Single use devices may not be reused except those remanufactured by an FDA-registered third party reprocessing company. Refer to the Infection Prevention policy: Reuse of Single Use Devices.
- 8. All allograft human tissues should be stored and handled according to the Perioperative Services policy: <u>Allograft and Autograft Tissue Storage and Handling</u>. Aseptic technique will be maintained when tissues are placed on the sterile field.



9. Visitation and OR Observers

a. Pre-Op and PACU

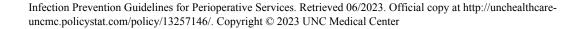
- i. Visitors with communicable diseases should not accompany patients to the Pre-Op waiting rooms, nor be admitted to ASC/HBH as the patient's "responsible adult."
- ii. Ideally, visitors under the age of 12 will be screened during each visit for contagious illnesses. Refer to the Nursing policy: <u>Hospital Visitation</u> and the Perioperative Services policy: <u>Visitation in PreOp and PACU</u>.
- iii. The visitation policies will be monitored and implemented by the nursing staff.
- iv. Visitors should perform hand hygiene before approaching the bedside and upon leaving the patient care area.

b. Operating Room

- Observers with purposeful visits, including product consultants, professors, unit nurses, student nurses, and allied health students will be permitted to visit the surgical suite on an individual basis for a limited time.
- ii. The attending surgeon, Patient Service Manager, or educator of the department will authorize observers. The purpose of the visit must be stated and approved in advance.
- iii. Observers will receive an orientation to pertinent protocols, as necessary, and comply with Attachment 2 - Surgical Services/ Operating Room - Observers Protocol.
- iv. Corrections officers will comply with the Hospital Police policy: Prisoners/Forensic Patients while in the surgical suite.

c. OR Visitation By Parents

- With anesthesiologist approval, one parent of a pediatric patient will be allowed to accompany their child to the Operating Room and Pre-Op areas.
- ii. In the Operating Room, the parent must wear a cover (e.g., bunny suit) over their clothes, a hair cover, and a surgical mask.
- iii. The parent will be accompanied into the Operating Room by the anesthesia team and will be directed out of the Operating Room by a nursing staff member to wait in an appropriate area (e.g., ICU waiting room, patient room, or PCS waiting room).



- iv. The parent will leave the child after induction is complete and prior to intubation and line insertion or any time deemed appropriate by the attending anesthesiologist.
- v. Children will be considered appropriate candidates for parent accompaniment to OR.

10. Waste Disposal

 Perioperative Services personnel will comply with the Infection Prevention policy: <u>Guidelines for the Disposal of Regulated Medical Waste</u>.

B. Preoperative Care / Patient Preparation

1. General Guidelines

- a. Encourage tobacco cessation.
- b. Whenever possible, identify and treat all infections remote to the surgical site before elective operations and postpone elective operations on patients with remote site infections until the infection has resolved.
- c. During the perioperative phase, control serum blood glucose levels in all diabetic patients.
- d. Before elective colorectal operations when indicated the agreed upon preoperative mechanical and oral antimicrobial bowel prep should be ordered and patient educated on the procedure.
- e. An OR disposable cap will be applied to contain the patient's hair and to prevent temperature loss while in surgery.
- f. For inpatients, a Preoperative Checklist will be completed on the electronic medical record by unit nurses. The Pre-Op nurse will review and verify that the checklist has been completed upon arrival Pre-Op. For outpatients, a Preadmission Assessment is completed.

2. Preoperative CHG treatments

- Upon admission to Pre-Op, verify and document if the patient performed whole body CHG treatment with CHG-containing wipes the night before their surgery.
- b. On the day of surgery, and no longer than 6 hours prior to surgery, staff should apply a second whole body treatment using CHG-containing wipes.
- Refer to Nursing policy <u>Operative/Procedural Management</u> for contraindications, exceptions, and specific instructions regarding application of wipes.

d. Document that this was performed in the Pre-Op area.

3. Hair Removal

- a. Hair should not be removed from the operative site unless it may interfere with the surgical procedure. If hair removal is necessary, remove immediately before the operation with electric clippers. The use of razors is prohibited except for scrotal surgery when use of clippers are found to cause excessive damage to the skin; only a single use disposable razor may be used.
- b. Pre-operative clipping ideally should be performed outside the OR (e.g. in the patient's room or Pre-Op). A new disposable clipper head is used for each patient. The clipper handle should be cleaned with an EPA-registered disinfectant between patients. Children and occasionally adults may require hair removal in the OR. (e.g., a child may be uncooperative with hair removal until after sedation has been administered).
- Prophylactic Antibiotic Administration
 Please refer to the section entitled: "Protocol for Administration of First (Preoperative)
 Dose of Prophylactic Antibiotics to Prevent Surgical Site Infections," of the Infection Prevention policy: Anesthesiology.
- 5. Marking of the Surgical Site
 - Discard markers used on patient's skin if used on a patient on Contact, or Enteric Precautions, or if visibly contaminated.

C. Intraoperative Care (Operating Room)

Environment

- a. Ventilation: Recirculated filtered air with exchange rates of 15 (range 13-16) air changes/hour will be measured and verified at least annually by Plant Engineering. All air is introduced at the ceiling and exhausted near the floor. Static, positive air pressure within each operating room will be monitored by Perioperative Services. To keep pressure constant, doors to operating rooms are to remain closed except as needed for passage of equipment, personnel, and the patient. Air-conditioning system is not to be turned off and on while surgery is in progress. Deviations in these exchange rates or pressure differentials will be reported to Infection Prevention by OR staff. Infection Prevention will offer recommendations based on the clinical scenario (e.g., add portable HEPA units to the OR).
- b. Temperature and humidity should be maintained suitable for the care, treatment and services provided. Variation within normal comfort to staff and patients poses no infection risk and requires no Infection Prevention

follow-up. From an Infection Prevention perspective, air changes and pressure differentials need a monitoring frequency but temperature and relative humidity monitoring is not necessary so long as temperature and relative humidity are not excessive, i.e., temperature >90°F, relative humidity >80% for longer than 48 hours. When temperature and humidity is out of range, staff should follow workflow outlined in UNC Medical Center Perioperative Workflow for Temperature and Humidity.

- c. Vents: Surfaces of output and intake vent grilles will be inspected daily, cleaned and kept free of dust by Environmental Services. If removal of an intake grille face is required for performing behind-the-grille cleaning, Environmental Services will submit a work request to Plant Engineering requesting behind-the-grille cleaning for the room. Changing of supply air filters is performed on a preventative maintenance schedule by Plant Engineering (at Hillsborough Hospital and Main Hospital) and by the UNC Facilities Services (at Ambulatory Surgical Center at the ACC Building).
- d. Storage of patient care items in the OR rooms will be in cabinets with doors or appropriately covered carts. These doors must be kept closed at all times except when accessing supplies within. Open shelving carries a risk of contamination of supplies during cases and as personnel are moving about the room.
- e. Dress Code
 - See related Infection Prevention policy: <u>Infection Prevention</u>
 Guidelines for Attire in Semi-Restricted and Restricted Zones.
- f. Zones
- Perioperative Services is divided into 3 zones to orient personnel to aseptic protocols. The designated areas should be separated:
 - by sign-age indicating the attire required for entering the area and who may access the area;
 - by doors separating the restricted area from the semirestricted area; and
 - by doors, sign-age, or a line of demarcation to identify the separation between the unrestricted and semirestricted areas.
- g. Unrestricted Zone: Defined as Pre-Op, PACU, administrative offices, lounges, and classrooms. Street clothes are permitted.
- h. Semi-Restricted Zone: Defined as the main surgical suites which include Main, Women's and Children's operating rooms, ASC operating rooms, HBH

operating rooms, utility rooms, scrub rooms, labs, instrument processing rooms, sterile supply rooms/sterile core, and connecting corridors. Personnel entering the Semi-Restricted Zone must dress in hospital laundered scrubs or disposable, single use jumpsuits (bunny suits) provided by the department. Hair must be contained in a disposable cap or hood. Personally-owned cloth head coverings (i.e., caps, hijabs) are permitted. Personal head coverings must not be worn for more than one day without laundering. Shoe covers are worn when there it is anticipated splashes or splatters of blood or other potentially infectious materials may soil shoes. Disposable jumpsuits are provided for certain visitors (i.e., photographers, police guards, a parent invited to accompany a child to an operating room, or others with short, purposeful visits). Outpatients undergoing eye surgery are permitted to wear street clothes from the waist down that are covered with a hospital gown.

- i. Restricted Zone: (Refer to the Infection Prevention policy: Infection Prevention Guidelines for Attire in Semi-Restricted and Restricted Zones) Defined as each operating room within the Semi-Restricted Zone, where surgery is performed including OR-17. Limit the number of personnel entering the operating room to necessary personnel. Personal items such as backpacks should not enter the operating room. In addition to OR attire, a mask that fully covers the mouth and nose and is secured in a manner that prevents venting will be applied before entering an operating room, if an operation is about to begin or is already underway, or if sterile instruments are exposed. If scrubbed, eye protection is provided and must be worn as specified in the Infection Prevention policy: Exposure Control Plan for Bloodborne Pathogens. Impervious sterile gowns are provided, as well as impervious boots, if needed.
- j. Exiting: When leaving Perioperative Service areas for public areas, personnel will change scrubs if soiled. Mask, disposable hat, and shoe covers will be removed upon leaving the department and discarded into regular trash receptacles. If returning to the Semi-Restricted Zone, OR scrubs ideally should be changed. Signs will be posted at exits stating dress requirements.

2. Patient Care in Operating Room

- a. Patient care within the Restricted Zone will be performed using strict surgical aseptic practices and confining patient contamination to the center of an OR where surgery is performed. Extreme care will be taken to prevent spread of patient contamination to the periphery and outside of the room.
- b. Personnel moving within or around the sterile field should do so in a manner that prevents contamination of the sterile field.
- c. Sterile ink (e.g., sterile marker) is used to mark skin or tissue on the sterile

field.

- d. Prior to the surgical skin prep, the incision site should be thoroughly cleaned to remove any gross contamination.
- e. A surgical skin prep of the operative site will be performed in the assigned operating room before surgery using standard aseptic technique and manufacturer's instructions for use.
- f. Draping of the operative site with sterile, disposable, non-woven drapes will be performed using sterile technique.
- g. When indicated, use impervious plastic wound protectors for gastrointestinal surgery.

3. Sterile Field Preparation

- a. All surgical procedure setups will be prepared by personnel trained in aseptic principles and techniques.
- b. All sterile packages will be assessed for sterility before opening and dispensing to the sterile field. If an item in a sterile package or tray is noted to be visibly soiled or moisture is noticed on instruments or packaging, the entire tray should be removed from the sterile field and a new tray obtained. Sterile equipment and solutions should ideally be assembled immediately prior to use.
- c. Sterile fields should be prepared as close as possible to the time of use. The potential for contamination increases with time because dust and other particles present in the ambient environment settle on horizontal surfaces over time.
- d. Once a sterile field is prepared, it should not be left unattended or moved from one room to another. Once the patient enters the room, the sterile setup cannot be used for another patient should surgery be canceled.
- e. At the conclusion of surgery, the sterile team will remove gown and gloves, and deposit in the appropriate container inside the room. Hand hygiene should then be performed with an antimicrobial handwashing agent.

4. Postoperative Incision Care

- a. Protect an incision closed primarily with a sterile dressing for 24-48 hours postoperatively unless the physician orders a different dressing routine.
- b. Site specific sterile dressings should be applied in the Operating Room when indicated (e.g., peritoneal dialysis catheter, VP shunts dressings).
- c. Perform hand hygiene before and after dressing changes and before any contact with the surgical site.

5. Surgical Instruments and Supplies

- a. Endoscopic Instruments
 - i. Refer to the Infection Prevention policy: <u>Endoscope</u>, for staff competency requirements.
 - ii. Endoscopic instruments (e.g., laparoscopes, arthroscopes) that come in contact with sterile tissue are critical devices and must be sterilized after each use. Refer to the Infection Prevention policy: Endoscope for details.
 - iii. Endoscopic instruments (e.g., GI endoscopes, cystoscopes, bronchoscopes) that come in contact with mucous membranes are semi-critical devices and must be at least high-level disinfected (HLD'd) after each use. Refer to the Infection Prevention policy: <u>Endoscope</u> for details.
 - iv. Endoscopes must be pre-cleaned per manufacturer's instructions for use at the point of use and transported immediately after use to HLD location.
 - v. A green "clean" tag indicates the scope has been appropriately disinfected and is ready for use. Scopes without a green "clean" tag must be considered dirty, not ready to use on a patient and sent immediately for reprocessing. After use on a patient, a yellow "dirty" tag is attached to the scope indicating the need for reprocessing.

b. Implantable Devices

- i. All implantable devices will be sterile prior to insertion. Many devices are received pre-sterilized. Manufacturer recommendations and the Operating Room Policy should be followed for use of these objects. Other devices may require sterilization at UNC Medical Center prior to insertion.
- Removed orthopedic implants requested by patients are cleaned, sterilized and placed in a container before being given to a patient.
- c. Instruments for Animal Labs
 - See Infection Prevention policy: Research Animals in UNC Health Facilities

d. Ultrasound Probes

 If ultrasound is used intraoperatively on sterile tissue, the probe is classed as a critical device and therefore must be cleaned and

- sterilized (according to the manufacturer's IFU) before patient use.
- ii. An ultrasound probe that is used on mucous membranes must be cleaned and high-level disinfected according to manufacturer's recommendation. The above reprocessing guidelines must be followed even if a sterile probe cover was used. This recommendation in the CDC guidelines is reinforced with findings that ultrasound probe covers have a high rate of perforation even before use.

e. Pre-sterilized Manufactured Products

- Products may be unpacked from shipping cartons in semirestricted zones. Shipping cartons or boxes are not stored in the semi-restricted zone.
- ii. CD supplies in the Sterile Supply Room will be routinely rotated and restocked by Central Distribution. Specialty supplies will be routinely rotated by the Inventory Technicians.
- iii. Before opening products, packages containing sterile items should be inspected for integrity.

f. Reusable Items

- i. Reusable surgical instruments and materials must be reprocessed according to manufacturer's instructions for use.
- ii. Fiberoptic equipment (e.g., laparoscopes, arthroscopes) should be reprocessed according to manufacturer's instructions for use.
- iii. If not disposable, laryngoscopes blades and handles should be minimally high-level disinfected and packaged between patients.

g. Supplies unused during case:

- Dispose of any unused supplies that are opened, wet, or visibly soiled/contaminated. (Any unused supplies that can be used by the patient may be sent with the patient.)
- ii. Patient care supplies in cabinets, carts, and drawers should be retrieved with clean hands.

h. Immediate Use Sterilization

i. Please refer to the Perioperative Services policy: <u>Immediate Use</u>
 <u>Steam Sterilization</u> and the Infection Prevention policy:
 <u>Sterilization of Reusable Patient-Care Equipment</u> for guidance and details on immediate use sterilization.

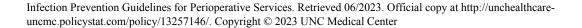
- ii. For guidance on sterilizer quality controls, monitoring, and documentation, please refer to the Infection Prevention policy: Sterilization of Reusable Patient-Care Equipment.
- iii. Sterilizers (outside and chamber) will be cleaned on a routine basis (e.g., monthly) according to manufacturer recommendations for cleaning.

i. Packaged, Sterilized Items

- i. Items sterilized in the CPD will not have an expiration date. These items may be used as long as the integrity of the package is not compromised by becoming torn, wet, punctured, opened, or having an unsealed or broken seal/lock. (For the complete policy on indefinite shelf life, refer to the Infection Prevention policy: Central Processing Department (CPD) and Other Surgical Services Support Areas Using Sterilizers or Storing CPD Sterilized Items.
- ii. Prior to use each sterile package or tray must be checked for tears, evidence of moisture, punctures, compromised integrity, and unsealed, or broken seals, or locks. Metal trays with perforated tops must be checked for the presence of intact filters.
- iii. Verify that the sterilizer tape or the tamper-proof indicator has changed to proper color.
- iv. Verify that the inside indicator has changed to proper color.
- v. Any package that has fallen or been dropped on the floor must be inspected for damage to the packaging or contents. If the package is heat-sealed in impervious plastic and the seal is still intact, the package should be considered not contaminated. If undamaged, items packaged in plastic need not be reprocessed. Paper wrapped items that fall or are dropped on the floor are considered contaminated.
- Creutzfeldt-Jakob Disease (CJD)
 Special precautions are necessary for patients known or suspected to have
 Creutzfeldt-Jakob Disease (CJD). Healthcare personnel should be familiar with and strictly follow the guidelines provided in the Infection Prevention policy: Creutzfeldt-Jakob Disease (CJD).

D. Postoperative Care

For general Infection Prevention guidelines for patient care, refer to the Infection Prevention policy: <u>Infection Prevention Guidelines for Safe Patient Care</u>.



1. Dressings

Aseptic technique will be used in handling dressings or incision sites.
 Reinforce the dressing with sterile materials when the dressing becomes saturated. Healthcare Personnel (HCP) should perform hand hygiene with an antiseptic agent before and after dressing changes or any contact with the surgical site. Gloves must be worn for dressing changes.

2. Non-Disposable Equipment

- a. Non-disposable equipment should be returned to the place of origin (e.g., Patient Equipment, Anesthesia Workroom, CPD) for reprocessing. All cables used for patient monitoring (e.g., cardiac cables, EKG cables, pulse oximeter) should be disinfected with an EPA-registered disinfectant between each patient use.
- b. Stretchers should be routinely cleaned between patients using an EPAregistered disinfectant. Clean linens will be used for each patient.

IV. Implementation

It is the responsibility of the Vice President of Perioperative Services and the Chairs of SOM Departments (e.g., Anesthesiology, Orthopedic, ENT, Surgery, Dental, GYN, Neurology) who utilize the surgical service areas to implement this policy.

V. References

CDC Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007.

CDC Guideline for Prevention of Surgical Site Infections 2017.

AORN Recommended Practices for Prevention of Transmissible Infections in the Perioperative Nursing 2014.

AORN Guidelines for Perioperative Practice, 2016

Strategies to Prevent Surgical Site Infections in Acute Care Hospitals: 2014 Update. The Society for Healthcare Epidemiology of America,

Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008

AAMI ST79, 2017

VI. Related Policies

Hospital Police Policy: Prisoners/Forensic Patients

Infection Prevention Policy: Central Processing Department (CPD) and Other Surgical Services Support

Areas Using Sterilizers or Storing CPD Sterilized Items

Infection Prevention Policy: Creutzfeldt-Jakob Disease (CJD)

Infection Prevention Policy: Endoscope

Infection Prevention Policy: Environmental Services

Infection Prevention Policy: Exposure Control Plan for Bloodborne Pathogens

Infection Prevention Policy: Guidelines for Disposal of Regulated Medical Waste

Infection Prevention Policy: Hand Hygiene and Use of Antiseptics for Skin Preparation

<u>Infection Prevention Policy: Infection Prevention Guideines for Attire in Semi-Restricted and Restricted</u>
<u>Zones</u>

Infection Prevention Policy: Infection Prevention Guidelines for Safe Patient Care

Infection Prevention Policy: Isolation Precautions

Infection Prevention Policy: Research Animals in UNC Health Facilities

Infection Prevention Policy: Reuse of Single Use Devices (SUDs)

Infection Prevention Policy: Tuberculosis Control Plan

Nursing Policy: Hospital Visitation

Nursing Policy: Operative/Procedure Management

Occupational Health Services Policy: Infection Control and Screening Program: Occupational Health Service

Perioperative Services Policy: Allograft and Autograft Tissue Storage and Handling

Perioperative Services Policy: Immediate Use Steam Sterilization

Perioperative Services Policy: Visitation in PreOp and PACU

Attachments

- 1: Environmental Cleaning and Disinfection in the Operating Room
- 2: Surgical Services/Operating Room Observers Protocol

UNC Medical Center Staff Workflow (Temp Humidity).pdf

Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Kimberly Novak-Jones: Nurse Educator	03/2023
	Thomas Ivester: CMO/VP Medical Affairs	03/2023
	Emily Vavalle: Dir Epidemiology	03/2023
	Sherie Goldbach: Project Coordinator [KN]	03/2023

