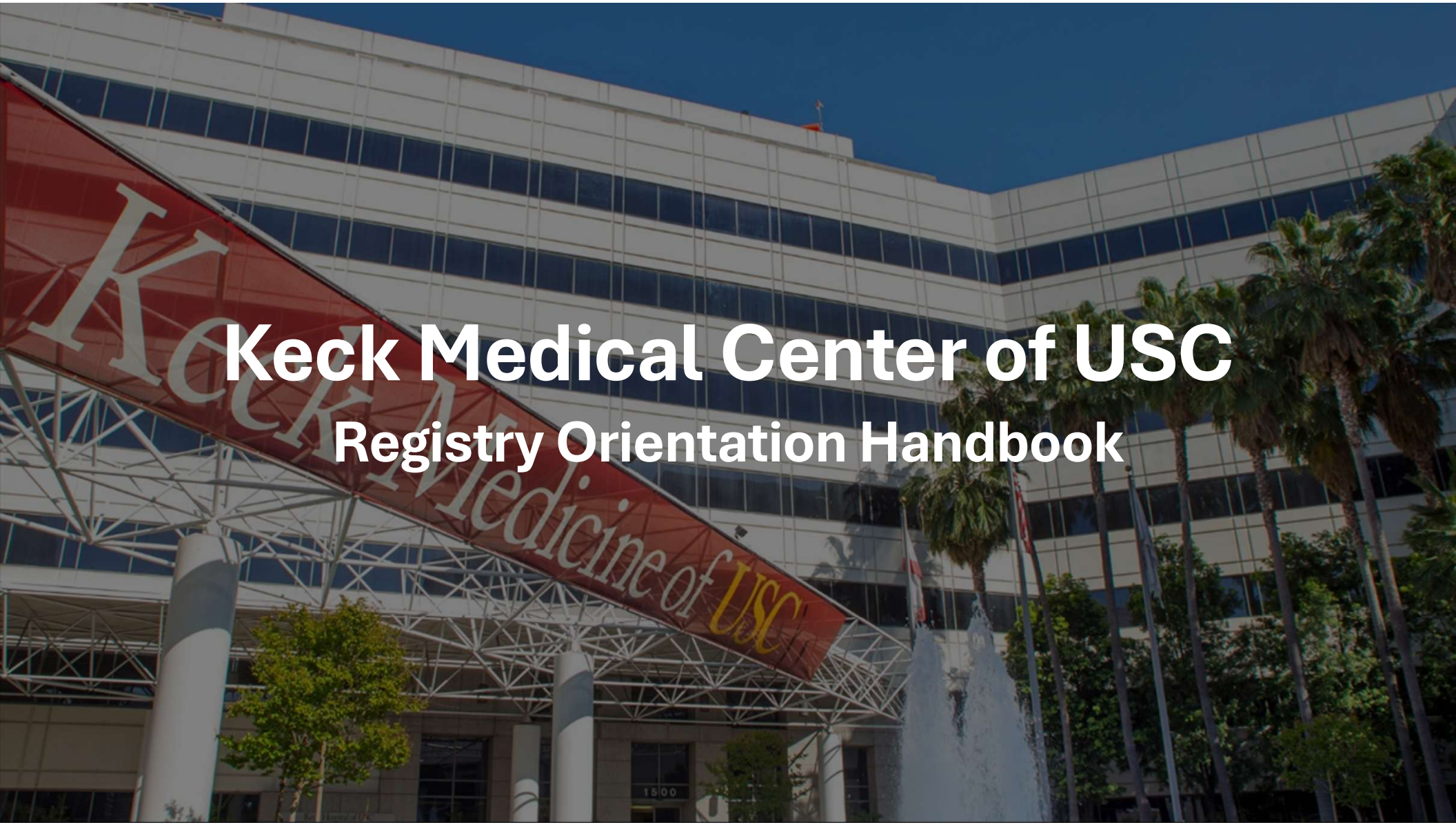


Keck Medical Center of USC

Registry Orientation Handbook

Keck Medical Center of USC

Registered Nurse Job Description

The clinical practice of a Registered Nurse (RN) is to manage a complex process that requires an orderly method and adherence to scientific practice standards. The RN manages the physiological and behavioral functioning combined with psychological and social support as related to the recovery process. The priority of the professional activity is toward the improvement and/or maintenance of this state. The RN classifies the patient's condition based on physiological, psychological, and social risk morbidity and mortality to predict the amount of work required based on the application of the steps of the professional process. The professional process is composed of six core steps (data collection, data assessment, and nursing diagnosis, plan, implementation, evaluation and patient teaching) used to manage the patient condition for the purpose of the treatment of human responses to actual or potential health problems, with the characteristics of altered functional ability and altered lifestyle, reducing risk of morbidity and mortality, and increasing the opportunity for recovery. The professional RN practices according to the RN scope of practice and demonstrates respectful teamwork and delegation.

JOINT COMMISSION

2026 Hospital National Performance Goals (NPGs)

Goal 1	The hospital ensures that the correct patient receives the correct care at the correct time.
Goal 2	The governing body and leadership team foster a culture of safety.
Goal 3	The hospital has an emergency management program.
Goal 4	The hospital prioritizes excellent health outcomes for all.
Goal 5	The hospital prioritizes infection prevention and control.
Goal 6	The hospital prioritizes pain management and safe prescribing practices.
Goal 7	The hospital respects the patient's right to safe, informed care.
Goal 8	The hospital reduces the risk for suicide.
Goal 9	The hospital develops and implements safe transplant practices.
Goal 10	The hospital performs waived testing in a safe and consistent manner. *Note: Waived tests are categorized by CLIA as "simple laboratory examinations and procedures that have an insignificant risk of an erroneous result." The Food and Drug Administration (FDA) determines which tests meet these criteria when it reviews a manufacturer's application for test system waiver. The list of FDA-approved waived tests can be accessed at the following link: https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfClia/analyteswaived.cfm.*
Goal 11	The hospital maintains workplace and patient safety.
Goal 12	The hospital is staffed to meet the needs of the patients it serves, and staff are competent to provide safe, quality care.
Goal 13	The hospital safely performs imaging services.
Goal 14	The hospital has a medication management program that focuses on safety.

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Advance Healthcare Directives

The patient Self Determination Act became law in 1990. In order to comply with the law USC-UH must ask every patient if they have an Advance Healthcare Directive (AHCD) during the admission process. An individual is not required to have an AHCD in order to receive treatment.

An AHCD is a legal document. It allows an individual to name a surrogate decision marker for health care decision and to describe wishes for medical treatment, such as under what conditions life support measures would or would not be initiated. An AHCD does not apply to financial or property matters.

If a patient wants to complete an AHCD while in the hospital forms are available through Social Services, CAS or Admitting. In order to complete the document the patient must be lucid, and their signature must be notarized or witnessed by two people meeting the requirements for witnesses outlined in the AHCD from. NO HOSPITAL EMPLOYEE MAY ACT AS A WITNESS.

If a patient provides a copy of their AHCD during hospitalization, the document should be placed in the medical records behind the red "Advanced Directive" tab. A copy of the document is as valid as the original; do not take the patients original copy.

In California, even without a written AHCD, patients may verbally state whom they want as a surrogate decision maker and this may be documented in the medical record and followed as needed.

An AHCD is not equivalent to a DNR. A DNR requires a physician's order. A patient can have an AHCD and still be a full code.

Cultural Diversity and Clinical Care

Here at Keck Hospital of USC/USC Norris Cancer Hospital, we care for culturally diverse populations who come from around the world seeking innovative and expert medical care that is unique to this quaternary care facility. It is imperative that we understand that healthcare and health practices differ from one culture to the next. Being sensitive to and understanding culturally diverse needs and beliefs gives us greater insight into providing excellent healthcare in a matter that is relevant and accepted by the individual and their families.

This includes but is not limited to: perception/management of pain, communication styles, behavioral patterns, family dynamics, educational and psycho-social needs.

Due to the diversity of populations we serve, it is impossible to be aware of all of the differences at any given time. For this reason, we have made available for your reference, a book titled *Culture and Clinical Care (Lipson & Dibble).* This book will guide you with the information you will need to provide culturally sensitive care for your patient and their families. In it, you will find a list of cultures and ethnicities with outlined information on their health practices, communication, rituals, and family relationships. This reference book is located on every unit in the charge nurse office.

Please review the *Culture and Clinical Care (Upson & Dibble)* and complete the Post Test titled: Cultural Diversity and Clinical Care.

Age Appropriate Care

Age appropriate care reflects attention to growth and development, socialization and other issues relevant to the age of the patient. The healthcare provider (i.e. physician, nurses, and patient care technician) who is competent in age appropriate care possesses the knowledge and skills required for planning and providing care based on the age-related development of the patient.

We primary serve the adult population. However, patient or visitors of all age groups may be encountered in the various hospital areas.

Primary Age Group

- Young Adult (19 -44 years of age)
- Middle Adult (45 -64 years of age)
- Older Adult (65 years of age and older)

The following age grouping tables are one of many ways to divide human growth and development into various categories. They are intended only as a general guideline.

Table 1: Young Adult (19 -44 years of age)

Healthy Growth and Development

Physical	Mental	Psychosocial
Reaches physical and sexual maturity Skin begins to lose moisture	Mental abilities reach their peak Acquires new skills and information	Searching for and finding a place for self in society Finds a partner; develops relationships; marriage; family Responsible for children and aging parents

Healthcare Issues

Communication	Health	Safety
Be supportive and honest Respect personal values Involve individual in plan of care Recognize commitments	Encourage regular check-ups Promote healthy lifestyle, proper nutrition and exercise Provide information on health risks	Encourage safe habits at work and home

Table 2: Middle Adult (45-64 years of age)

Health Growth and Development

Physical	Mental	Psychosocial
Begins to age Women experience menopause Slowing of reflexes Visual changes Loss of hearing	Decrease short term memory or recall Decrease in mental performance speed Uses life experiences in decision making	May experience mid-life crisis Plans for future retirement Measures accomplishment against goals

Key Healthcare Issues

Communication	Health	Safety
Encourage self-care Allow choices Focus on strengths not limitations Address worries about future Encourage talking	Encourage health check-ups Focus on prevention of illness Address age related changes such as vision and hearing Monitor health risks	Address age related changes and the effect on senses and reflexes

Table 3: Older Adult (65 years of age and older)

Health Growth and Development

Physical	Mental	Psychosocial
Decline in physical abilities At risk for chronic illness and major health problems	Decreased memory Sharing wisdom with others Slowing of mental function	Retirement Death of spouse and or friends Adapting to change of social role Pursuing new hobbies Life review

Key Healthcare Issues

Communication	Health	Safety
Encourage sharing of feelings of loss, grief, achievements Encourage acceptance of aging Use Humor Stay positive	Monitor health closely Guard against depression, apathy Promote independence, self-care Promote proper nutrition, rest	Ensure safe living environment Prevent falls, injury Provide support for coping with any physical impairments

APPENDIX A

KECK HOSPITAL OF USC AND NORRIS CANCER HOSPITAL

Reporting Requirements - List of Indicators

CHILD ABUSE INDICATORS*	DEPENDENT ADULT/ELDER ABUSE INDICATORS*	DOMESTIC VIOLENCE INDICATORS*
▪ Head injuries ▪ Bruises, welts, swelling ▪ Cuts, lacerations, puncture wounds, burns ▪ Injury inconsistent with history ▪ Dehydration, malnourishment ▪ Inadequate care: – Poor hygiene – Inappropriate dress – Unsafe surroundings ▪ Inappropriate administration of drugs, medications or ingestion of poisons ▪ Any fracture in child under two years of age ▪ Multiple fractures in multiple stages of healing ▪ Failure-to-thrive ▪ Sexual abuse: – Difficulty in walking or sitting – Lacerations, bruises, or injuries to genitals – Venereal disease	▪ Bruises, welts, discoloration, swelling ▪ Cuts, lacerations, puncture wounds ▪ Pale appearance ▪ Sunken eyes, hollow cheeks ▪ Dehydration, malnourishment ▪ Burns ▪ Signs of confinement ▪ Inadequate/inappropriate administration of medication ▪ Inadequate care: – Untreated fractures – Untended bed sores – Poor skin hygiene ▪ Soiled clothing or bed ▪ Injury/illness inconsistent with history ▪ Caregiver demonstrates abusive behavior/ language ▪ Accumulation of numerous unpaid bills, when someone is supposed to be paying them	▪ Abdominal or pelvic injuries, back or spine injuries (no fall or MVA) ▪ Injuries to face, neck, throat, chest, breasts ▪ Multiple injuries in various stages of healing ▪ Injury inconsistent with history ▪ Sexual assault by partner ▪ Fractures in various stages of healing ▪ Burns (cigarettes, friction, splash, chemical) ▪ Head injuries

* The above listed indicators do not always mean abuse or neglect has occurred, but they can be clues to the need for further abuse investigation. If you suspect abuse or neglect of a patient, advise your supervisor who will follow the hospital's policy on abuse reporting.

KECK HOSPITAL OF USC AND NORRIS CANCER HOSPITAL
Reporting Requirements

	CHILD ABUSE	DEPENDENT ADULT/ ELDER ABUSE	DOMESTIC VIOLENCE (SPOUSAL ABUSE)
1. Who Must Report	▪ Medical Practitioners ▪ Non-Medical Practitioners ▪ Child Care Custodians ▪ Law Enforcement Personnel	▪ Medical Practitioners ▪ Non-Medical Practitioners ▪ Law Enforcement Personnel ▪ County Welfare (DPSS) Personnel ▪ Elder Care Custodians	▪ Medical Practitioners ▪ Non-Medical Practitioners ▪ Healthcare Professionals
2. What is Reported	▪ Physical Abuse ▪ Sexual Abuse/Assault ▪ Neglect ▪ Mental/Emotional Abuse ▪ Corporal Punishment ▪ Abuse in Out-of-Home Care ▪ Willful Cruelty or Unjustifiable Punishment	▪ Physical Abuse/Sexual Abuse ▪ Neglect ▪ Mental Abuse ▪ Financial Abuse ▪ Isolation ▪ Abandonment	▪ Physical wound or injury by means of a fire arm, knife or other deadly weapon (self inflicted or at hands of another) ▪ Wound or other physical injury which is a result of assaultive/abuse conduct
3. Where to Report a. Telephone Report – report immediately or as soon as practically possible	▪ Department of Children and Family Services/Child Abuse Hotline: (800) 540-4000 – *24 hours a day*	▪ No telephone report required for Adult Protective Services ▪ Elder Abuse Hotline: (877) 477-3646 – *for consultation or emergencies* ▪ Long-term Care Ombudsman Program: (800) 231-4024	▪ Local Police Department (where event occurred)
b. Written Report	▪ Department of Children and Family Services (official to provide mailing address – send within 36 hours of telephone report)	▪ Long-term Care Ombudsman (official to provide mailing address – send within two working days of telephone report) ▪ Mail APS 3333 Wilshire Blvd. Suite 400 Los Angeles, CA 90010 • On-line https://apslive.lacss.harmonyis.net/LACSSLiveIntake/	▪ Local Police Department (official to provide mailing address - send within two working days of telephone report)

Policy # **CP 1-101**

Interpreter Services



MANUAL:	Clinical Practice	POLICY #:	CP 1-101		
SUBJECT:	**Interpreter Services**	EFFECTIVE DATE:	03/22/1991		
		REVISED DATE:	05/23/2024		
		AUTHORIZED APPROVAL:			
PERSONNEL COVERED:	All	PAGE:	1	OF	9

PURPOSE

To outline the organization's process of providing interpreter services and/or communication assistance to patients that is in compliance with federal and state regulations, thus ensuring a patient's right to participate in health care decisions in their preferred language. This will advance effective communication, cultural competence, and patient and family-centered care.

POLICY

Translation of clinical conversations by Interpreters[1] or bilingual professional staff members should be offered and provided when a language-related communication barrier exists between caregivers and patients.[2] [3] [4]

GUIDELINES

1. The patient's **Preferred Language** should be captured and documented in their medical record.
2. When English is not specified as the patient's Preferred Language, **Interpretation Services** should be:
   a. provided when requested by the patient or their representative and
   b. offered
      i. when requested by a hospital representative, and
      ii. for the following communications:
         (1) obtaining the patient's past medical or surgical history,

[1] "Interpreter" means a person fluent in English and in the necessary second language who can accurately speak, read, and readily interpret the necessary second language, or a person who can accurately sign and read sign language. Interpreters shall have the ability to translate the names of body parts and to describe competently symptoms and injuries in both languages. Interpreters may include members of the medical staff.

[2] This policy is required by California Health and Safety Code [HS] §1259(c)(2)(A)(i) "[General acute care hospitals shall:] adopt and review annually a policy for providing language assistance services to patients with language or communication barriers" that complies with HS §1259. Also see Joint Commission requirements for interpretation at PC.02.01.21 EP01 and HR.01.01.01 EP01, and the CMS Conditions of Participation for Hospitals at 42 CFR 482.13(b).

[3] HS §1259(c)(2)(B)(i) requires the Hospitals to "transmit to the [California Department of Public Health] a copy of the updated [interpretation] policy and shall include a description of its efforts to ensure adequate and speedy communication between patients with language or communication barriers and staff."

[4] A notice of the availability of interpreter services is posted at https://www.keckmedicine.org/interpreter-services/.

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(2) obtaining the patient's report of their current complaints and symptoms, including any related events,

(3) explaining any diagnosis, recommended treatment, or prognosis,

(4) explaining the patient's current or recommended treatment plan,

(5) explaining the risks, benefits, and alternatives to any recommended procedures to obtain their informed consent,

(6) requesting the patient's signature on a form that is not written in their Preferred Language, and

(7) explaining dosage, side effects, and rationale for use of a medication or other therapy.

3. **Patient Preference**:
   a. **Use of Family or Friends to Interpret**: California law provides that the patient, after being informed of the availability of the Hospitals' Interpretation Services, may choose to use a family member or friend who volunteers to interpret for them. However, should the patient or representative choose to use a family member or friend for translation, Hospital staff members may use Interpretation Services to validate that the volunteer's translation is complete and accurate.
   b. The patient has the discretion to hold clinical communications in a language in which they are fluent that is not their "Preferred Language."
4. "**Interpretation Services**" include but are not necessarily limited to the following:
   a. a staff member or contractor who successfully complete the LLU interpreters skills test,[5]
   b. a physician or other clinical professional with current Medical Staff privileges or a resident physician who attests to their fluency in one or more languages other than English, or
   c. an alternate interpretation service, including but not necessarily limited to those described in Guidelines Section of this document.
5. **Documentation**: The provision of interpretation services should be captured in the patient's medical record.

[5] Language Line University (LLU) Interpreter Skills Test: A comprehensive testing process designed to ascertain an interpreter's competency.
See Section: "Process for Becoming a Qualified Staff Interpreter."
The Nursing Professional Development and Nursing Education Department maintains a list of qualified staff interpreters and provides it to Clinical Administrative Supervisors (CAS).

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SITUATIONAL INSTRUCTIONS

1. **Process for Becoming a Qualified Staff Interpreter**
   a. The Language Line® Interpreter Skills Test will determine if the test candidate has the professional skill and expertise needed to adequately serve as an interpreter.
   b. The Language Line® Interpreter Skills Test evaluates the following criteria in assessing an interpreter's competence:
      i. Language fluency in English and test language;
      ii. Interpreting skills;
      iii. Interpreting protocols
      iv. Healthcare terminology and professionalism.
   c. Department/unit managers will refer potential staff translators via email to nursesofusc.submit@med.usc.edu. The email should include name of staff member and the test language.
   d. Nursing Professional Development and Nursing Education Department personnel will coordinate with the employee to confirm an appointment via LLU for competency validation.
   e. Appointment availability is dependent on language and LLU staff availability and the work schedule of the employee.
   f. Nursing Professional Development and Nursing Education Department personnel will provide employee with the following in advance of the competency validation:
      i. Test taking tips;
      ii. Medical scenario sample;
      iii. Frequently Asked Questions.
   g. If an appointment is cancelled less than 5 days prior to the appointment, LLU assesses a cancellation fee.
   h. The LLU validator will call the staff at the appointed time at the predetermined phone number.
   i. This phone must be a landline phone with a handset. Exams CANNOT be taken on cell or speaker phone.
   j. The phone call must be answered or returned within 15 minutes of the appointed time or the validation will be considered cancelled and LLU will assess the cancellation fee.

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   b. Competency validation takes from 30 to 60 minutes.
   c. The employee must agree to a confidentiality statement to not discuss the test with others.
   d. The Nursing Education Department will receive the competency validation results electronically, then contact the individual to communicate pass or fail status.
   e. The Nursing Education Department will email the results and a copy of the passing certificate to the employee and their manager.
   f. The Nursing Education Department will also maintain competency-validated staff names.
2. **Using Interpretation Service**
   a. Orient and update the interpreter: Introduce yourself and state the goal of the encounter.
   b. Orient the patient: State your name and role; and introduce the interpreter.
   c. Communicate with the patient.
   d. Speak directly to the patient, in the first person (e.g., "Where is your pain?"). This helps avoid confusion and shortens the length of the call.
   e. Speak in short sentences and pause at the end of a complete thought.
   f. Everything you and the patient say will be interpreted without addition, omission or revision.
   g. Check with the patient for understanding.
   h. State "End of call" when interpretation needs have been met.
   i. Documentation
      i. Personnel will document the following in the patient's medical record:
         (1) Assessed impaired communication and intervention(s).
         (2) Requests for interpretation (live or online).
         (3) Dates and times of interpreter services utilization.
         (4) Identification number of interpreter services personnel who respond to request.
3. **Interpretation Services Methods**
   a. **Hearing Impaired** patients.

i. **Live Closed Captioning**:

(1) Submit a ticket to USC Interpretation Services (UIS) to request an on-site interpreter (captioner) through Interpretation Solutions for Telemedicine (usc.edu).

(2) Select Yes" for "Do you need an interpreter in another language or system (Zoom/Teams)?

(3) Select the language you need as "ASL (Closed Captioning)" and the type of interpretation as "Video Scheduled".

(4) Complete all required fields and submit the ticket.

(5) UIS team will reach out to the requestor with the link for the Closed Captioning encounter once a captioner is confirmed.

(6) At the time of an ambulatory care appointment, click the link and join the meeting in any connected electronic device with a microphone (e.g., workstation on wheels, personal computer, smart tablet or phone) with a microphone to be connected to the captioner and show captions to the patient on the same device.

ii. **Communication via the Written Word**:

(1) Provide the patient with a clipboard, pencil, and a supply of paper.

(2) Language boards for inpatients are available in Nursing Administration to allow the patient to point at symbols for various needs including presence of pain, toileting, and hunger/thirst. These boards are available in the most common languages of our patient population.

(3) Additional writing tools such as smart tablets may be provided at the request of the patient.

iii. **Sign Language**: If hearing impaired patient prefers to communicate via sign language:

(1) **Remote Sign Language Interpretation**: Use the mobile Language Line Solution® to obtain remote interpretations.

(a) Select the American Sign Language option (ASL) in the applications.

(b) An ASL interpreter will respond to the request on line via a video link.

(c) If additional communication devices are needed, contact Nursing Administration or Patient Experience or;

(d) **In Person Sign Language Interpretation** should be requested in advance of the need and may be requested through the Mobile Language Line Solution application.

iv. **Telephone Communication Device Service for the Deaf (TDD)**:

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(1) If it is necessary to call a hearing impaired patient at home who has TDD, call the California Relay Service at:

(a) Customer Service: (866) 934-4288

(b) TDD User Calls: (866) 660-4288

(c) Voice User Calls: (866) 461-4288

b. **Visually Impaired** Patients

i. Personnel make magnifiers available when appropriate.

ii. Personnel will direct patient s to signage that includes Braille interpretation as required by the Americans with Disabilities Act.

iii. Personnel will inquire if/what type of assistance the patient requires (e.g., offering arm, opening doors, verbal instructions etc.) to support patient independence as needed.

iv. The patient's service animal may be used as described in POLICY.

c. **Over Phone Interpretation (OPI)** language interpretation is available 24 hours per day, 7 days per week.[6]

i. **inpatient rooms with analog telephone connections**. Plug the OPI device into a phone jack in patient's room. No phone adaptor needed.

ii. For **non-inpatient areas** and HC1, HC2, HC3, HC4, Norris Cancer Hospital utilize a device with a speakerphone

iii. **Dual Handset Phone** – Automated Response

(1) Lift the main handset from the cradle or press the speaker phone button.

(2) Dial "9" to connect to outside line, if necessary.

(3) Press Red "Interpreter" Button.

(4) Select language:

(a) Press 1 for Spanish.

(b) Press 2 for all other languages.

[6] Although interpretation in many languages is readily available, special accommodations may be necessary for the interpretation of uncommon languages.

(c) System will request language needed.

(d) State the name of the language clearly (e.g., "Armenian" or "Korean").

(e) Press 1 to confirm language.

(f) Say "Help" if a problem is encountered and the call will be transferred to a representative; or

(5) Press 0 for assistance if you do not know the language needed.

(6) Press Client ID when requested - there will be a short pause.

(7) Enter personal code – department/unit cost center number (four digit number).

(8) The call will be placed on hold while an interpreter is placed onto the call. Do Not Hang Up.

(9) Once on the line, brief the interpreter about what you want to accomplish.

(10) If not using speaker phone, give the second handset to the person requiring interpretation.

(11) When the interpretation needs are met tell the interpreter, "End of call."

iv. **Dual Handset – Live Answer Response**

(1) Lift the main handset from the cradle or press the speaker phone button.

(2) Dial an outside line, if necessary.

(3) Press Live Answer button.

(4) A Language Line Representative will ask:

(a) The language needed.

(b) Client ID: 201173.

(c) Organization Name: Keck Medicine of USC.

(d) Personal Code – unit/department cost center for tracking purposes.

(5) You will be placed on hold briefly while an interpreter is connected to the call. Do Not Hang Up.

(6) Once on the line, brief the interpreter about what you want to accomplish.

(7) If not using speaker phone, give the second handset to the person requiring interpretation.

(8) When the interpretation needs are met tell the interpreter, "End of call."

v. **Standard telephone** (includes digital wireless handset)

(1) Dial 1-866-874-3972 or extension 56333 (323-865-6333).

(2) Provide language requested, Client ID (LanguageLine) and cost center for tracking purposes.

(3) Once on the line, brief the interpreter about what you want to accomplish.

(4) If not using speaker phone, give the second handset to the person requiring interpretation.

(5) When the interpretation needs are met tell the interpreter, "End of call."

vi. Request for **on-site interpretation**

(1) Call Language Line at (800) 246-2686.

(2) Request line open 0700 – 1700, Monday - Friday, Pacific Standard Time.

(3) Request to include:

(a) Date (includes weekends)

(b) Time

(c) Patient name

(d) Location

(e) Language

(f) Contact person and phone number

(g) Purpose

(4) Advance notification of need for on-site interpretation is required to ensure availability.

(5) Requests will be filled based on availability.

RELATED POLICY AND PROCEDURE(S)

- Administration Manual
  - Service Animals

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Effective/Revision Dates for Policy # CP 1-101		
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Keywords:	Interpreter, translator, interpretation, sign, language, communication, impairment, language line, TDD	

Handoff Communication

- Policy # CP 5-101 - Handoff Communication

Manual:	Clinical Practice	Policy #:	CP 5-101		
Subject:	**Handoff Communication**	Effective Date:	06/27/2006		
		Revised Date:	08/21/2025		
		Level of Evidence:	Level: E		
Personnel Covered:	All	Page:	1	of	2

PURPOSE

The purpose of this policy is to outline the organization's standard for transferring essential information and the responsibility for the care of the patient from one or a set of health care providers/staff to another.

DEFINITION

Handoff – A mechanism for transferring information, primary responsibility, and authority from one or a set of healthcare professionals/staff, to oncoming healthcare professionals/staff.[1]

POLICY

1. All healthcare professionals and staff will utilize a standardized approach to handoff communication whenever responsibility for a patient is being transferred between healthcare professionals and between other staff. Handoff will include, but is not limited to the following individuals and/or situations:
   a. Levels of care (e.g., ICU to telemetry or a general care unit; telemetry to inpatient rehab unit; general care unit to ICU)
   b. Procedural areas and inpatient units (e.g., interventional radiology to telemetry, ICU to cath lab)
   c. Lateral transfers (e.g., One ICU to another ICU)
   d. Shift change (e.g., RN to RN, provider to provider, RN to PCT, Monitor tech to Monitor tech)
   e. Change in staffing assignments on same unit (e.g., PACU RN to PACU RN)
   f. Temporary change in responsibility (e.g., covering for primary RN while they are off floor with another patient or for lunch break)
   g. Surgical phases of care (e.g., pre-operative area to surgical suite, pre-operative RN to provider, anesthesia provider to PACU or ICU RN)
   h. Transports (Orderly/PCT/Transporter to RN)
   i. Facility to Facility
   j. Case transfer from one pathologist to another
2. Handoff will be performed at the bedside, to include shift-to-shift handoff.
3. A physical verification will be conducted to intravenous medications are running per provider orders utilizing the I-TRACE process.

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   a. **Illuminate** the patient care area whenever invasive medical lines and tubes are manipulated.
   b. **Touch** the line or tube and trace it from the insertion point on the patient back to the point of origin.
   c. **Review** and consider the purpose and expected outcome of the actions you are about to perform. When line access or connection involves medication delivery, use defined BCMA process to ensure medication is checked against the medication administration record/provider order.
   d. **Act** if any mismatch between the planned activity and desired outcome is discovered, either through BCMA alerts, independent double checks, or a cognitive review.
   e. **Clarify** and correct. Concerns expressed by primary caregivers, colleagues, patients, or family members are valid reasons to seek clarification before proceeding with a task involving lines and tubes. Correct any discrepancies before proceeding with the intervention.
   f. **Expect** to use the I-TRACE process each time a line or tube is accessed, manipulated, or discontinued and when care is handed off to another clinician or care team.
4. Handoff must address pertinent up-to-date information regarding the patient's care, treatment and services (example pending specimens and tests) as well as the patient's current condition and any recent or anticipated changes.
5. Interactive communication is expected between handoff participants and includes review of electronic health information.
   a. The recipient of the information will have the opportunity to review the patient's relevant historical data, which may include previous care, treatment or service.
   b. A real-time in-person opportunity for questions to be asked and answered will be provided. When not possible, video conferencing, communication book, notes, telephone, fax, e-mail, or communication board may be used. Ensure written sign-outs are clear and legible.
6. Interruptions during the interaction between the caregivers should be minimized.
7. The SBAR tool (**S**ituation, **B**ackground, **A**ssessment, **R**ecommendation) will be utilized for all handoffs unless an alternate standardized handoff tool has been identified and approved for use by a specific profession or discipline. The SBAR Mpage in KeckCare will be utilized when appropriate.

REFERENCE(S)

- Perry S. Transitions in care: Studying safety in emergency department signovers. Focus on Patient Safety. 2004;7(2)

RELATED POLICIES AND PROCEDURES

- Anesthesia Team to Intensivist Care Team Handoff Communication

MANUAL:	Clinical Practice	POLICY #:	CP 5-101
SUBJECT:	**Handoff Communication**	EFFECTIVE DATE:	06/27/2006
		REVISED DATE:	08/21/2025
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AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # CP 5-101		
Effective:	06/27/2006	Governing Board
Revised:	06/29/2007	Governing Board
Revised:	05/18/2010	Policy Committee
Revised:	09/10/2013	Policy Committee
Revised:	09/23/2016	Policy Committee
Reviewed:	10/22/2019	Policy Committee
Revised:	10/25/2022	Policy Committee
Revised:	08/21/2025	Quality Committee of the Governing Board
	00/00/0000	
Keywords:	Hand off communication, SBAR	

Medication Administration

- Prohibited Abbreviations
- Medication Administration Record Job Aid
- Policy # CP 4-133 - Administration of Medication
- Policy # CP 4-117 - Medication Safety – “High Alert” Medication
- Material Safety Data Sheet

DO NOT USE ANY OF THE PROHIBITED ABBREVIATIONS

IN ANY MEDICATION-RELATED DOCUMENTATION

Use of PROHIBITED abbreviations may delay patient treatment until the order is CLEAR AND COMPLETE by the prescriber.

HELP PREVENT ERRORS

PROHIBITED ABBREVIATION/DOSE DESIGNATION	POTENTIAL PROBLEM FOR PATIENT SAFETY	APPROVED ABBREVIATION/DOSE DESIGNATION
U or u	Mistaken as zero, 4 or cc	"Unit"
IU	Mistaken as IV (intravenous) or 10 (ten)	"International Unit"
Q.D.	Mistaken for QOD or QID	"daily"
Q.O.D.	Mistaken for QD or QID	"every other day"
Zero after decimal point (1.0) *(Prohibited only for medication-related notations)*	Decimal point is missed and mistaken for 10 mg	Never write zero by itself after a decimal point (X mg)
No zero before decimal dose (.5 mg) *(Prohibited only for medication-related notations)*	Decimal point is missed and mistaken for 5 mg	Always use a zero before a decimal point (0.X mg)
MS MSO4 MgSO4	Confused for one another. Can mean morphine sulfate or magnesium sulfate	"morphine sulfate" or "magnesium sulfate"

JOB AID

Keck Medicine of USC

APPLICATION: PowerChart
IMPACTED USERS: Medication Administration Record/Wizard Users

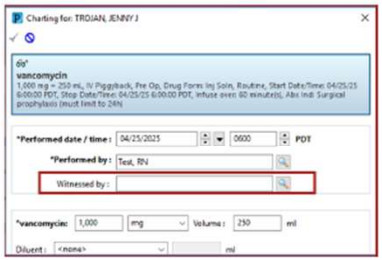
Medication Administration Record/Medication Administration Wizard

Description: Pharmacy – Changes in Medication Administration Record (eMAR) and Medication Administration Wizard (MAW)

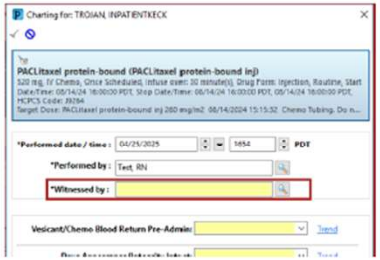
Optional "Witnessed by" field:

- In the charting window, the "Witnessed by" field is now displayed for all medications.
  - If a witness is not required – field is white
  - If a witness is required – field is highlighted yellow (same as current state)

Available but not required:



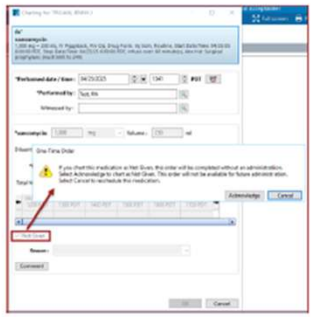
Required:



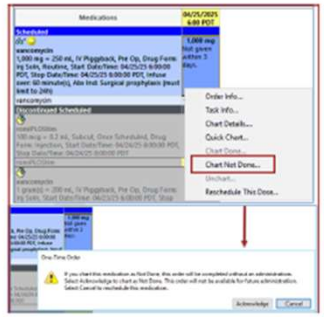
Alert for when charting a "Once" Medication as Not Given/Not Done

- When charting a "Once" dose as Not Given or Not Done, an alert is displays to inform the user that order will be discontinued.
  - Applies to orders with frequency: Once Scheduled, Pre-Op, NOW, STAT, Today, NOW, Day of Tx

Chart Not Done:



Not Given:



INTERNAL

MANUAL:	Clinical Practice	POLICY #:	CP 4-133		
SUBJECT:	**Administration of Medication**	EFFECTIVE DATE:	05/02/1991		
		REVISED DATE:	06/20/2024		
		LEVEL OF EVIDENCE:	Level: B		
PERSONNEL COVERED:	Pharmacists, Registered Nurses, Licensed Vocational Nurses, Physical Therapist, Speech Therapist, Respiratory Care Practitioners, Nuclear Medical Techs, Radiology Techs	PAGE:	1	OF	12

PURPOSE

The purpose of this policy is to outline the organization's standard for administering medications and blood derivatives safely and efficiently, as per the physician's order in the hospital setting.

DEFINITION

- **Blood derivatives** are pooled blood products such as albumin, gamma globulin, Rh immune globulin, factor VIII, factor IX, immune globulin, and cytomegalovirus immune globulin.
- **Dosing Weight** – measured actual body weight, in kilograms (kg), that is documented in the patient's chart in the electronic medical record (EMR) upon admission or visit. This weight is used as the basis for calculating the proper dosing weight for weight-based medications.

POLICY

1. Refer to policy CP 4-156 "Administration and Titration of Intravenous Medications" for information specific to administration of intravenous medications.
2. Medications and blood derivatives shall be administered only upon the order of a member of the medical staff, an authorized member of the house staff, or other individuals who have been granted privileges to prescribe or write such orders. Authorized prescribers are defined in the Medical Staff Rules and Regulations.
3. The pharmacy shall supply all medications, and all medications shall be administered by, or under the supervision of, appropriately licensed personnel in accordance with laws and governmental rules and regulations governing such acts, and in accordance with approved medical staff rules and regulations.
4. Clinical staff administering medication shall verify the prescribing practitioner's orders and properly prepare medications for administration. Clinical staff will identify the patient prior to medication administration and will properly record each dose of medication administered in the patient's medical record.
5. The Bar-Code Medication Administration (BCMA) system will be used to confirm appropriate medication administration.
    a. The only exception to this is during an emergency situation or in areas in which BCMA system has not been implemented. Medications administered during a Code Blue will be documented on the Code Blue flowsheet.

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MANUAL:	Clinical Practice	POLICY #:	CP 4-133		
SUBJECT:	**Administration of Medication**	EFFECTIVE DATE:	05/02/1991		
		REVISED DATE:	06/20/2024		
		PAGE	2	OF	11

PROCEDURE

1. Medications shall be administered only by individuals who are licensed and permitted by law and regulation to do so, or by individuals who are qualified, competent, and directly under the supervision of individuals who are licensed and permitted by law or regulation to administer medication. Persons authorized to administer medications shall include:
    a. Licensed physicians who have been granted privileges to administer applicable medications.
    b. Registered Nurses (RNs) who may administer all medications including investigational drugs (except those approved for administration only by a physician via routes restricted to only those certified).
    c. Licensed Vocational Nurses (LVNs) may administer oral, intramuscular injections, topical or rectal medications, subcutaneous, and intradermal injections.
    d. IV Certified LVNs may administer plain IV fluids, dextrose, electrolytes, vitamins, or blood and blood products.
    e. Physical Therapists may administer topical medications that are within their scope of practice or as approved by Hospital policy.
    f. Respiratory Care Practitioners (RCP) may administer only those medications that are within their scope of practice or as approved by Hospital policy.
    g. Radiology Technicians may administer certain medications, within their scope of practice, and under proper physician supervision.
    h. Nuclear Medical Technologists may inject radiopharmaceuticals upon satisfying competency criteria and upon approval by the Director of Nuclear Medicine.
    i. Speech Therapists may administer oral contrast for swallow exams.
2. Clinical staff may enter food and drug allergies into the medical record.
3. Clinical staff shall check patient allergies and verify no contraindications exist.
4. Clinical staff should ensure a dosing weight is entered in EMR prior to the administration of any weight-based medication.
    a. For hospitalized adult patients dosing weight may be adjusted periodically as deemed clinically appropriate by the provider (e.g., patient experiencing a weight change of >10%).
    b. Changes to dosing weight must be accompanied by the provider's evaluation of patient's medication regimen to assess impact on any existing weight-based medications ordered for the patient.
        i. In general, continuous infusions titrated to effect do not necessitate a change in dose due to weight fluctuations.

5. Clinical staff shall verify that the medication is not expired before administration.
6. Clinical staff shall visually inspect the medication packaging to ensure that it is intact and has not been tampered.
7. Clinical staff shall visually inspect the medication for signs of loss of integrity such as particulates or discoloration.
8. Clinical staff shall read the medication label three times during administration and verify that the medication selected matches the medication order and product label:
   a. When picking up the medication
   b. Just prior to administration
   c. Just after administration
9. Clinical staff shall check the medication and dosage against the Medication Administration Record ("MAR") before administration to a patient. The pharmacist shall verify the physician order for appropriateness prior to the administration of a medication. (See policy "Pharmacist Order Verification") Before administration of any drug, the licensed practitioner should review the "eight rights:"
   a. Right patient (2 patient identifiers)
   b. Right drug
   c. Right dose
   d. Right route
   e. Right time
   f. Right reason
   g. Right monitoring/documentation
   h. Right response
10. **The workflow of the administration using barcode medication:**
    a. Obtain medications.
    b. Visual inspect medication.
    c. Transport medication directly from the medication room to the patient's bedside.
       i. Medication should NOT be transported in pockets.

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   d. Check for right patient by asking patient for hospital approved identifiers.
   e. Barcode scan the patient id band.
   f. Barcode scan the manufactures barcode when available or the KeckCare barcode.
   g. Administer medication to patient.
11. Standard Drug Administration Times in the hospital (exception for Respiratory Therapy, see (11) below):

Frequency	**Administration Times**
Daily	0900
Daily (Warfarin)	1800
BID	0900, 1700
TID	0900, 1300, 1700
QID	0900, 1300, 1700, 2100
Every 2 Hours	administer at even hours
Every 3 Hours	administer beginning at 0300
Every 4 Hours	0400, 0800, 1200, 1600, 2000, 2400
Every 6 Hours	0600, 1200, 1800, 2400
Every 8 Hours	0600, 1400, 2200
Every 12 Hours	0900, 2100
HS	2100
AC	30 minutes before meals
PC	30 minutes after meals

12. Drug Administration Times for Respiratory Therapy Medications in the hospital (includes albuterol, ipratropium bromide, levalbuterol, mucomyst); these administration times are to accommodate Respiratory Therapy Department's hours of operation:

Frequency	**Administration Times**
Daily	0900
BID	0900, 2000
TID	0900, 1400, 2000
QID	0800, 1200, 1600, 2000

Every 2 Hours	administer at even hours
Every 3 Hours	administer beginning at 0200
Every 4 Hours	0800, 1200, 1600, 2000, 2400, 0400
Every 6 Hours	0700, 1300, 1900, 0100
Every 8 Hours	0700, 1500, 2200
Every 12 Hours	0900, 2100
HS	2100
AC	30 minutes before meals
PC	30 minutes after meals

13. Unless the prescriber indicates otherwise, clinical staff shall administer drugs at standard times in the hospital. Orders started on non-standard administration times or orders that deviate from standard administration times should be brought back to standard dosing times within two (2) dosing intervals, if possible. Medications will be administered not more than 60 minutes before or 60 minutes past the scheduled administration time. In instances where drug levels are measured, no delays will be acceptable. A pharmacist shall notify nursing if a drug should be administered at other than standard times.

14. Time-critical scheduled medications identified below must be administered within 30 minutes before or after their scheduled dosing time, for a total window of 1 hour:

    a. Meal-time insulin

    b. Other medications prescribed for administration within a specified period of time of the medication order.

15. Clinical staff shall leave only those medications at the bedside or in the patient's room that are so ordered by the prescriber. Clinical staff will instruct the patient that if medication is used, the patient should inform the nursing staff. See "Bedside Medications – For Patient Administration" policy.

16. To reschedule medication administration times because the patient is unavailable (i.e., not on the unit), clinical staff will:

    a. Document the reason in eMAR.

    b. Notify Pharmacy via med request to reschedule subsequent doses.

17. If a medication is refused or omitted, clinical staff will:

    a. Notify physician if refused or omitted.

    b. Refused Medications

    i. Destroy refused medications if contaminated or if a unit dose medication is unwrapped.

    c. Medications not given

        i. If a drug is held according to certain parameters (i.e., apical pulse below 60, or hold if systolic blood pressure below 140, or the patient is NPO), it will be indicated in eMAR and the reason selected from the drop-down list. Comments may also be entered.

        ii. If medication is wrapped and intact, return to automated dispensing system or Pharmacy Return Box.

    d. Document "Not given" on the MAR and state the reason.

18. Pre-Op Medication Procedure

    a. Clinical staff shall give and chart pre-op medication promptly at time ordered. **NOTE: If medication error occurs, notify prescribing physician immediately.**

    b. The most current pre-op orders supersede others.

19. NPO-Special Test

    a. For all patients that are NPO for any procedure, clinical staff shall verify whether patient's medications should or should not be administered.

20. PRN Medication

    a. All PRN orders must include an indication and frequency.

    b. Assess the patient to determine if the PRN medication is appropriate.

    c. Clinical staff shall check the medication administration record to determine when the medication was last given.

    d. If the prescribed interval has elapsed and the nursing assessment determines that the medication is required, clinical staff shall administer the medication.

    e. If multiple PRN medications for the same indication are ordered, without sequence of use directions from the prescriber, the nurse shall use the medications in the order listed below:

        i. Route Sequence: First = Oral (if patient is able to tolerate oral intake), Second = Intravenous, Third = Rectal, Fourth = Intramuscular or Subcutaneous (If no IV access).

    f. For duplicate (same medication/route) orders, the pharmacist may discontinue the older order.

    g. Document the patient's response to the medication.

h. If the PRN medication is for pain control, refer to the Pain Assessment and Management Policy.

21. Preparation of PO Medications

a. Tablets and Capsules – Clinical staff shall:

i. Administer medications directly from unit dose packages. If a medicine cup is used, transfer of pills to the cup should be done at the patient's bedside.

ii. Partial pills or tablets are prepared and dispensed by pharmacy.

iii. Check with pharmacy before crushing any pills or tablets. Crushing may increase or decrease its effectiveness.

iv. Check with pharmacy before opening capsules.

22. Administering Medications via enteral feeding tubes – Clinical staff shall:

a. Perform eight rights of medication administration (described above) and BCMA.

b. Wash hands, then apply gloves.

c. Elevate head of the bed greater than 30 degrees, unless contraindicated.

d. Stop continuous feeding, if needed.

e. Attach syringe to the end of the tube.

f. Check placement of nasogastric and orogastric tube per Clinical Practice Nutrition Support Policy.

g. Clamp tube and remove syringe.

h. Crush tablet or open capsule.

NOTE: Extended-release and enteric-coated medications should not be crushed.

i. Mix the crushed tablet or liquid medication with diluent. Stir well.

NOTE: Ensure that the particles are small enough to pass through holes at the distal end of the feeding tube.

j. If the patient is receiving enteral feeding, flush feeding tube with at least 15 mL of water prior to administering medications.

k. Aspirate the medication into syringe. Each medication should be administered separately.

l. Reattach the syringe. Deliver the medication slowly and steadily.

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m. Flush the feeding tube with at least 15 mL of water.

n. Restart enteral feeding.

NOTE: Tube feedings must be held 1 hour before and 1 hour after phenytoin administration.

23. If gastric tube is to suction, clinical staff shall restart suction in 30 to 60 minutes.

24. Clinical staff shall refer to the MAR prior to each dose administration and pay close attention to special comments on the MAR and auxiliary label (examples: Black Box warning alerts, high risk-high alert drugs).

25. **Medication Administration by students**

a. Student nurses may administer medications with RN present and document in eMAR with a co-signature for validation. Either the primary nurse/charge nurse or the clinical instructor can co-sign a student nurse's eMAR entry.

26. Usage guidelines and procedures for safe administration and monitoring are provided in the Administration of Intravenous Medications policy and in the formulary.

DOCUMENTATION

1. Clinical staff shall chart medications given in real time using the BCMA system or as soon as possible in the MAR.

2. Clinical staff shall chart medicine, dosage, route of administration, and time.

3. Clinical staff shall chart site of all injections, using accepted abbreviations.

4. Clinical staff shall not chart a medication before it is given.

5. Second nurse verification of the accuracy of medication administration will occur upon the administration of those medications requiring a witness. Witness co-signatures will be documented in eMAR at the time of medication administration.

6. If a medication error occurs, clinical staff shall notify the physician and complete an Occurrence Report as per "Medication Errors" policy. Clinical staff shall chart any untoward effects in nurse's notes.

7. Clinical staff shall record all medications given by a physician on the MAR provided the clinical staff witness the administration.

8. Clinical staff shall document the patient's response to each prn medication given.

9. Ancillary units/areas of the hospital may utilize other documents to record drug administration (i.e., imaging, anesthesia, special diagnostic labs, etc.).

10. **Take Home Medication**

a. In rare cases where a patient is unable to obtain discharge prescription medication from an outside, retail pharmacy, the inpatient pharmacy will perform the following:

   i. A limited quantity of medication will be supplied to the patient until he or she is able to get the outpatient prescription filled by an outside pharmacy.

   ii. All take home medications must be properly re-labeled in accordance with applicable laws by a pharmacist.

   iii. Patients and/or families will be instructed on the use of their medications at home. The documentation is to appear in the discharge instruction form.

11. **Inter-Facility Transfer of Medications**

b. When patients are transferred from another facility to our hospital with medications and IVs from the other facility, the following procedures will be followed:

   i. For any IV solution that is infusing when the patient arrives, continue with that particular IV until the IV container can be replaced by the pharmacy.

   ii. Any unopened IV solution or medication sent with the patient will be sent to the Pharmacy to be destroyed/discarded.

12. **Intra-facility Transfer of Medications**

c. When patients are transferred from one unit to another within the facility, clinical staff will send all medications not stocked in the automated dispensing cabinet with the patient.

13. **Obtaining Discharge Medication**

d. To assist the patient in obtaining medications and supplies ordered by physician upon discharge of patient:

   i. The patient may elect to have USC Plaza Outpatient Pharmacy, which is open during business hours, fill outpatient prescriptions.

   ii. The ordering provider will send an eScrip via KeckCare, if available, to the patient's preferred pharmacy.

   iii. Clinical staff shall route all schedule II prescriptions to a printer in the location of the patient.

14. **Storage**

e. All spaces and areas used for the storage of drugs will be kept locked at all times so that only authorized persons have access to drugs. Medications will be stored in accordance with applicable laws.

f. Persons authorized to access the appropriate medication rooms are listed in the Clinical Policy, Medication Security.

g. Authorized persons shall only have access to medications that are used within their scope of practice.

15. Charting by proxy is permissible under the following:

h. The clinician performing the proxy witnessed the actual medication administration.

i. The clinician performing the proxy is licensed to or allowed to administer medication as per this policy.

j. The clinician performing the proxy performed the 8 rights of medication administration.

k. The clinician administering the medication is unable to document.

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MANUAL:	Clinical Practice	POLICY #:	CP 4-133
SUBJECT:	**Administration of Medication**	EFFECTIVE DATE:	05/02/1991
		REVISED DATE:	06/20/2024
		PAGE 10 OF 11	

REFERENCE(S)

- Effect of Bar-Code Technology on the Safety of Medication Administration. *The New England Journal of Medicine*, 2010. http://www.nejm.org/doi/full/10.1056/Nejmsa0907115
- Nursing Practice Act – California Business and Professions Code sections 2725-25.2 and 2860.5
- Joint Commission MM.06.01.01
- Craven, R.F., & Hirnle, C.J., Jensen, S. *Fundamentals of Nursing: Human Health and Function,* 7th ed. Philadelphia: Lippincott Williams & Wilkins, 2013.
- Enteral Nutrition Practice Recommendations. *Journal of Parenteral and Enteral Nutrition*, 2009. 33(2), 122-167.
- Institute for Safe Medication Practices (ISMP), List of High Alert Medications

RELATED POLICIES AND PROCEDURES

- Administration Manual
  - Medication Errors
  - Occurrence Reporting Requirements for Hospital Staff Members
- Ambulatory Care Services Manual
  - Medication Administration in the Clinic Setting
- Clinical Practice Manual
  - Administration of Intravenous Medications

- Bedside Medications – For Patient Administration
- Dispensing/Administration of Medications Prior to First Dose Review
- Nutrition Support
- Pain Assessment and Management Policy
- Medication Safety Policies – "High Risk, High Alert" Medications

- Nursing Manual
  - Physician Orders
- Pharmaceutical Services Manual
  - Pharmacist Order Verification

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
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Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # CP 4-133		
Effective:	05/02/1991	MEC
Revised:	06/18/2002	Governing Board
	06/07/2002	Professional Practice Committee
	01/12/1999	MEC
	04/09/1996	MEC
	06/18/2002	Transferred from Nursing Manual
	04/15/2003	Governing Board
	07/22/2003	Governing Board
	06/29/2007	Governing Board
Revised:	07/29/2010	Governing Board (Transferred from Administration Manual # 2-173)
Revised:	01/18/2011	Medical Executive Committee
Revised:	06/28/2012	Governing Board
Revised:	07/09/2013	Policy Committee
Revised:	09/13/2016	Medical Executive Committee
Revised:	02/23/2017	Governing Board
Revised:	10/26/2017	Governing Board
Revised:	05/21/2019	Quality Committee of the Governing Board
Revised:	04/21/2022	Quality Committee of the Governing Board
Revised:	06/20/2024	Quality Committee of the Governing Board
	00/00/0000	
Keywords:	Administration, administering, medication, BCMA, 8 rights, barcode, EHR	

MANUAL:	Clinical Practice	POLICY #:	CP 4-117
SUBJECT:	**Medication Safety – "High Alert" Medication**	EFFECTIVE DATE:	01/15/2002
		REVISED DATE:	07/17/2025
		LEVEL OF EVIDENCE:	Level: D
PERSONNEL COVERED:	Pharmacy and Nursing	PAGE: 1	OF 5

PURPOSE

To outline the organization's standard for medication safety for "High-Alert" medications and to avoid preventable medication errors and medication-related injuries as recommended by the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP)[1], the Institute for Safe Medication Practices (ISMP)[2] and the Joint Commission[3].

DEFINITION

High-Alert Medications[4]

- **High-alert medications are drugs that bear a heightened risk of causing significant patient harm when they are used in error.[2]**

1. Insulin
2. Opiates
3. Injectable Potassium Chloride or Potassium Phosphate Concentrate
4. Intravenous Heparin
5. Sodium Chloride Solutions above 0.9%, referred to as "Concentrated Sodium Chloride"
6. Magnesium Sulfate injection
7. Neuromuscular Blocking Agents (NMBAs)
8. Medications with Narrow therapeutic index
9. "Look-alike sound alike" medications
10. Antineoplastic agents
11. Pentobarbital

POLICY

High-Alert Medication Safety Policies

1. **Insulin[5]**

   a. Insulin products shall not be transported via the pneumatic tube system.

   b. A blood glucose test shall be performed no more than 30 minutes prior to insulin administration. This test shall be performed with the Hospital approved Point of Care (POC) meter.

      i. Refer to Policy: Point of Care: Blood Glucose Determination (CP4-117)

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   c. The blood glucose POC test and the patient's glycemia treatment should be performed by the same nurse.

   d. Whenever a nurse prepares a dose of INSULIN, a second nurse must double-check the accuracy of dose preparation[5,6]

      i. The second nurse shall independently review the actual vial from which the insulin dose was drawn, or the pen device, if the patient is receiving insulin with an insulin pen device.

      ii. The second nurse shall verify the type of insulin, the amount of the dose drawn or dialed on the insulin pen device.

      iii. The second nurse shall verify the blood glucose value to be treated in KeckCare POC blood glucose results or on the Hospital POC meter window to determine the accuracy.

      iv. The second nurse shall also verify the provider order.

   e. For infusions via controlled infusion devices:

      i. Second nurse shall verify that the correct product and the concentration is selected, and the correct dosage is entered.

      ii. Second nurse shall verify the initial set up of the infusion device.

      iii. Second nurse shall verify the above every time a new insulin infusion bag is hung.

      iv. Second nurse shall verify correct product, concentration and dosage each time the insulin dose is changed.

      v. Any discrepancies regarding drug, dosage, concentration, or calculation shall be reported to the pharmacist for correction or clarification prior to administration of insulin.

   f. INSULIN and HEPARIN will not be stored near each other on a nursing unit.

   g. Orders for INSULIN shall be written in "units", the abbreviation of "U" will not be accepted and will be clarified with the physician prior to administration.

   h. A standard volume and concentration of INSULIN for infusion shall be adopted. The standard volume and concentration will be 100 Units per 100 mL.

   i. Pharmacists will monitor Insulin drips for those patients where the Insulin infusion rate equals or exceeds 20 Units/hour.

   j. Patients whose Insulin infusion rate equals or exceeds 20 Units/hour must have their blood glucose results verified by at least two independent tests. One of these tests must include lab chemistry analysis of blood glucose which shall be performed at least every 6 hours.

k. Pharmacists monitoring of Insulin continuous infusion must include documentation of correlation between at least two independent blood glucose tests, one of which must include lab chemistry analysis of blood glucose. The physician will be notified of any results that do not correlate.

2. **Opiates**

a. Opiates will be limited in nursing areas. Those opiates used infrequently (e.g. less than once per month) will be stored in the automatic dispensing cabinet on the nursing unit only while needed.

b. Limited concentrations of opiates will be available for hospital inventory.

c. Long-acting transdermal opioids (i.e. fentanyl transdermal patch) shall not be used for the treatment of acute, post-operative or breakthrough pain. Additionally, these agents shall only be used in opioid-tolerant patients, defined as tolerating at least 60 mg of oral morphine daily or equianalgesic dose of another opioid for at least 1 week.[7]

d. For continuous intravenous infusion of opioid medications, a second nurse shall verify the initial setup of the infusion device, and verify the correct product, concentration and dosage each time the bag is changed.

i. NOTE: This requirement shall also apply to continuous intravenous infusions of benzodiazepine medications.

e. Discontinued infusions should be removed from the infusion pump, disconnected from the patient, and promptly discarded, to minimize risk of inadvertently restarting the infusion.

f. Opioid medications shall not be transported via the pneumatic tube system.

3. **Concentrated Injectable Potassium Chloride and Potassium Phosphate**

a. Concentrated potassium chloride / phosphate will not be stored outside of pharmacy.

b. Only commercially available, pre-mixed, ready-to-use solutions of injectable potassium may be available on nursing units.

c. Extemporaneous preparation of a potassium chloride / phosphate solution will occur in the pharmacy.

d. Refer to the following polices:

i. "Administration and Titration of Intravenous Medications" (CP4-156).

ii. Refer to Medication Safety Policy-Injectable Concentrated Electrolyte (RX-06011)

4. **Intravenous Heparin**

a. Standard heparin concentrations **(100 Units/mL)** for continuous infusion will be utilized in this facility.

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b. The IV label shall clearly and obviously display concentration and total volume.

c. Whenever a nurse prepares individual doses of heparin for IV administration, a second nurse must double-check the accuracy of dose preparation. The second nurse will review the actual container from which the dose was taken and actual amount of the dose using the actual physician order.

d. For infusions via controlled infusion devices:

i. Second nurse shall verify that the correct product and the concentration is selected, and the correct dosage is entered.

ii. Second nurse shall verify the initial set up of the infusion device.

iii. Second nurse shall verify the above every time a new heparin infusion bag is hung.

iv. Second nurse shall verify correct product, concentration and dosage each time the heparin dose is changed.

e. Any discrepancies regarding drug, dosage, concentration, or calculation should be reported to the pharmacist for correction or clarification prior to administration of heparin.

5. **Concentrated Sodium Chloride Solution**

a. Sodium Chloride solutions greater than 0.9% will not be stored on nursing units. Solutions will be stored in the pharmacy.

b. Solutions greater than 0.9% will be stored in a distinctly different location in the pharmacy than those solutions that are 0.9% or less.

c. When using Sodium Chloride solutions greater than 0.9% a second nurse will verify the accuracy of infusion rate and drug concentration.

6. **Magnesium Sulfate Injection**

a. Outside of the pharmacy, access to magnesium sulfate vials will be limited only to automated dispensing cabinets that are in patient care areas with monitored beds or to the emergency medication (crash) carts.

b. Magnesium sulfate injection will be labeled with the auxiliary warning "Must be diluted in a minimum of 10 mL of normal saline" when stored in the automated dispensing cabinet or in emergency medication trays found in the crash cart.

7. **Neuromuscular Blocking Agents (NMBAs)**

a. Automated Dispensing Cabinet (ADC) storage of NMBAs will be limited to critical care ICUs and procedural areas.

b. A witness will be required for emergency access to NMBAs via the ADCs override function.

c. NMBA shall be stored segregated from other medications.

d. Standardized concentrations will be used for continuous intravenous infusions of NMBAs in accordance with the hospital IV administration guidelines.

e. NMBAs shall not be transported via the pneumatic tube system.

8. **Medications with Narrow Therapeutic Indices**

a. Medications with the potential for toxicities which have identifiable narrow therapeutic indices should be considered for pharmacy protocol development or pharmacy monitoring. Examples include phenytoin, aminoglycosides, vancomycin, and TPN.

9. **Labeling of High Alert Intravenous Fluids/Drips**

a. All intravenous admixture medications will be labeled in accordance with Labeling Standards set forth by policy and will be in compliance with state and federal requirements.

b. Additionally, the pharmacy will affix auxiliary labels alerting staff to the high-alert nature of the medication

i. Vasoactive Agents
ii. Paralytic Agents
iii. Sedatives
iv. Anti-arrhythmics
v. Bleeding Risk
vi. Insulin
vii. Antineoplastic Agents

c. A list of High Alert intravenous medications will be available for reference.

10. Look alike/Sound Alike Medications[4,8]

a. Refer to policy: "Look alike and Sound alike medication" (CP 4-118)

11. **Antineoplastic Agents Administration**

a. System of double checks by two pharmacists and two chemotherapy competency validated registered nurses.

i. Refer to policy: Administration of Chemotherapy, Immunotherapy, and Related Agents for Treatment of Cancer or Malignancies (CP 4-141).

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b. Pharmacists verify regimens and lab values.

c. Pharmacy maintains a chemo flow sheet for all patients on chemotherapy.

d. Vinca alkaloids shall be dispensed by pharmacy in a small IV bag and NOT in a syringe to minimize the risk of inadvertent intrathecal administration.

12. **Pentobarbital Administration**

a. For infusions via controlled infusion devices:

i. Second nurse shall verify that the correct product and the concentration is selected, and the correct dosage is entered.

ii. Second nurse shall verify the initial set up of the infusion device.

iii. Second nurse shall verify the above every time a new pentobarbital infusion bag is hung.

iv. Second nurse shall verify correct product, concentration and dosage each time the pentobarbital dose is changed.

v. Any discrepancies regarding drug, dosage, concentration, or calculation shall be reported to the pharmacist for correction or clarification prior to administration of pentobarbital.

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MANUAL:	Clinical Practice	POLICY #:	CP 4-117
SUBJECT:	**Medication Safety – "High Alert" Medication**	EFFECTIVE DATE:	01/15/2002
		REVISED DATE:	07/17/2025
		PAGE 7 OF 8	

- Institute for Safe Medication Practice (ISMP). 2018. FDA and ISMP Lists of Look-Alike Drug Names with Recommended Tall Man Letters. FDA and the ISMP TallManLetters-v3_revised8-31-16_highAlert07-31-08-v1.qxd. Accessed June 8, 2025.

RELATED POLICIES AND PROCEDURES

- Clinical Practice Manual
  - Administration of Medication (CP4-133)
  - Medication Safety – Look-Alike and Sound-Alike Medications (CP4-118)
  - Administration and Titration of Intravenous Medications. (CP4-156)
  - Point of Care: Blood Glucose Determination (CP3-402)
- Ambulatory Care Services Manual, General
  - Medication Administration in the Clinic Setting (ACS 1-117)
- Pharmacy Manual
  - Medication Safety Policy-Injectable Concentrated Electrolyte (RX-06011)
  - Labeling Standards (RX-03202)

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MANUAL:	Clinical Practice	POLICY #:	CP 4-117
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AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # CP 4-117		
Effective:	01/15/2002	Pharmacy & Therapeutics Committee
Revised:	06/28/2002	Pharmacy & Therapeutics Committee
	07/16/2002	Governing Board (Transferred from Pharmacy Manual)
	06/28/2005	Governing Board (Divided into 2 separate policies; see 2-182.2)
	01/29/2008	Governing Board (Transferred from Administration Manual #2-182.1)
	03/26/2009	Governing Board
	05/18/2010	Medical Executive Committee
Revised:	08/27/2013	Policy Committee
Revised:	10/29/2015	Governing Board
Revised:	01/23/2018	Policy Committee
Revised:	05/24/2018	Governing Board
Revised:	07/16/2019	Quality Committee of the Governing Board
Revised:	03/18/2021	Quality Committee of the Governing Board
Revised:	06/23/2022	Quality Committee of the Governing Board
Revised:	07/17/2025	Quality Committee of the Governing Board
	00/00/0000	
Keywords:	Medication, safety, error, drug insulin	

MSDS

Material Safety Data Sheets

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Information you should have when calling:

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Pain Management

- Policy # CP 1-202 - Pain Assessment and Management

Manual:	Clinical Practice	Policy #:	CP 1-202
Subject:	**Pain Assessment and Management**	Effective Date:	09/19/2000
		Revised Date:	06/22/2023
		Level of Evidence:	Level: D
Personnel Covered:	All	Page: 1	of 6

Purpose

The purpose of this policy is to outline the organization's standard for the assessment and management of patients' pain.

Definitions

- **Pain** – an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.[1]
- **Patient Stated Goal for Pain Relief** – defined by the patient as the acceptable level of pain as rated on a standardized scale (Appendix A). Progress towards pain management goals include functional ability (for example to take deep breath, turn in bed, and walk with improved pain control).
- **Pain Screening** – identifying the presence or absence of pain, which may be done by non-licensed personnel.[2]
- **Pain Assessment** – comprehensive assessment of pain that includes location of pain, onset, pattern, intensity, description/quality, radiation, alleviating factors (including non-pharmacological therapies) aggravating factors, associated symptoms, effects of pain on quality of life, and questions about pain relief methods that have been effective or attempted in the past including non-pharmacological therapies.[3]
- **Licensed Health Care providers** – include the physician, RN, Advanced Practice Nurse, Physician Assistant, Pharmacist, Case Manager, Registered Dietitians, Physical Therapist, Occupational Therapist, Speech Therapist, and Respiratory Care Practitioners.
- **Physical Dependence** – physiologic response manifested by withdrawal syndrome when opioid administered is abruptly stopped, drastically reduced or opioid antagonist (naloxone) is administered.
- **Tolerance** – physiologic process characterized by decreasing effects of a drug at a constant dose or need for an increased dose to achieve the same effect. Tolerance is manifested first, by a decrease in duration of pain relief for a given dose followed by the inability of the dose to provide the same amount of pain relief.
- **Opioid Addiction** – characterized by a compulsive need to use a substance despite the risk of harm to oneself.
- **Nociceptive Pain** – results from activation of nociceptors in somatic and visceral structures often relating to tissue damage.[3]
- **Breakthrough Pain** – transitory increase in pain that occurs on a background of otherwise controlled chronic pain.[3]

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Policy

1. Pain management will be tailored to the individual's cognitive ability, cultural background, growth and developmental level, clinical condition, past medical history, and pain management goals.[2]
2. Pain management will be evidence-based, using interdisciplinary multi-faceted approach.
3. Self-report will be used as the most reliable indicator of the presence and intensity of pain (See Appendix A - Standardized Pain Assessment tools).
   a. For patients who can self-report pain, the 0-10 Numeric Rating Scale or the Wong-Baker Faces Scale are the preferred pain assessment scales at the hospital.
   b. For non-English speaking patients, instructions in multiple languages for using the Numeric Rating Scale are available. (Appendix A).
4. Health care providers will perform and document pain screening:
   a. Upon initial intake assessment and as needed when there is a new onset of pain and/or change in the character of pain during ambulatory visits.
   b. Upon initial admission assessment, once a shift, and as needed when there is new onset of pain and/or change in the character of pain during inpatient visits (e.g., admitted to the hospital).
   c. Before and within15-60 minutes after a pain management intervention is performed, and as needed:
5. A comprehensive pain assessment will be completed and documented by licensed health care providers
   a. When pain is the reason for the patient's ambulatory visit
   b. Once a shift when pain present
   c. As needed when there is a new onset of pain and/or change in the character or pain
6. Reassessment and documentation of pain should be done 15-60 min after pain intervention:
   a. Intravenous (IV) – 15-30 minutes
   b. Epidural/PCA bolus – 15-30 minutes
   c. Oral pain medications – within 60 minutes
   d. Non-pharmacological – within 60 minutes
      - Relaxation – deep breathing, massage, guided meditation, hypnosis, biofeedback
      - Distraction – music therapy, TV/Audio, visitors, humor, ambulation

- Promote comfort – positioning, decrease noxious stimuli, heat and cold therapy.

7. Considerations for the Patients Unable to Provide Self-Report of Pain.
   a. Health Care Provider will use Pain Assessment in Advanced Dementia (PAINAD) or Critical Care Pain Observation Tool (CPOT) for the patient who is unable to provide self-report (See Appendix B and Appendix C).[3]
   b. Family member may have greater knowledge related to the patient's expression of pain and may assist with pain assessment.[4]
   c. When assessing pain in patients who cannot give self-report and who are not able to respond to pain with behaviors, use knowledge of pathology and procedures that usually cause pain. Thus, nurses should Assume Pain is Present (APP)[5].
8. The same pain rating scale should be used consistently for the same patient.
9. It is the responsibility of the health care team to facilitate the pain-relieving process and expedite interventions, within their scope of practice.
   a. Non-licensed staff and Licensed Vocational Nurses (LVN) may collect data and document data contributing to the comprehensive pain assessment. This data will be reported to the RN and/or provider.
   b. RN assessing the patient for the presence of pain should initiate and develop the Pain Management Plan of Care, using the patient's, family and significant other input.
   c. Pain management should be pro-active, focusing on anticipation and management of pain.
   d. Pain interventions that are deemed ineffective will be reported, addressed by contacting the primary physician team, or the pain management team (i.e., epidural, ketamine, and/or nerve blocks pain management). As a patient advocate, the health care provider has the option of utilizing the chain of command.
   e. The primary service should consider Pain Service referral for patients with complex pain management issues or as appropriate.
10. All health care providers (within their scope of practice) will be responsible for the education of the patient, their family, and/or significant others as appropriate. Education content may include but is not limited to:
    a. Definition and cause of pain.
    b. Pain scale tool and patient stated goal for pain relief
    c. Patient and/or family role in managing pain and goal setting

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   d. Barriers to successful pain management (fear of addiction, dependence, tolerance)
   e. Importance of good communication and not letting pain escalate out of control. It is the responsibility of the patient to notify the staff members of any increase or change in the type of pain he/she experiences.
   f. Pain management plan
   g. Treatment options including nonpharmacologic alternative interventions or measures
   h. Importance of adhering to therapeutic regimens for effective pain management
   i. Safe and effective use of pain management equipment (i.e., PCA)
   j. Medication information, including purpose, side effects, and potential drug interactions
   k. Actions to take for patients experiencing inadequate analgesia, medication side effects, wet and/or loose dressing, and loose connections
   l. Follow up care, discharge instruction (i.e., safe use, storage and disposal of opioids when prescribed)
11. Health care providers will include the pain management plan as part of the discharge planning process.
12. Placebos will not be used in management of pain, except in research and controlled studies and only with informed patient consent.
13. Age Specific Considerations
    a. The dose and/or frequency of pain medications may need to be adjusted based on age, weight, and general health status.
    b. Older patients may not use the word pain to describe their discomfort. Initiate discussions about pain, and do not assume that pain will automatically be reported. Be alert for other terms including soreness, discomfort, hurt, ache, or pressure.
    c. For patients who are able to self-report over the age of 3, use the Wong-Baker Faces Scale.
14. Pain Management Principles of Analgesic Management
    a. Choose an appropriate route and drug, individualized to the patient.
       - The route and dose for as needed (PRN) medications for pain management may be based on patient preference. Patient preference is considered when:
         1. The patient is requesting a **lesser** prescribed dose as part of an existing order.
         2. An administration note regarding administration of a PRN medication for pain management based on patient preference must be documented in the medical record.

3. Patient requests for a **higher** prescribed dose shall NOT be considered for pain management under the patient preference clause outlined in point (a) above.
4. The patient is requesting a less intrusive route of administration if both routes are prescribed by the provider.
5. The inclusion of patient preference into the medication to be administered cannot subsequently result in administration of the medication prior to the prescribed interval has elapsed for the medication.

- PRN pain medications ordered for moderate and severe pain must be utilized first prior to administering ordered breakthrough pain medication.

b. Administer the drug at appropriate intervals.

c. Titrate dose to effect or side effects.

d. Use appropriate adjuvant analgesics.

e. Be aware of conversion ratios.

f. Anticipate and manage side effects. Medications to minimize drug side effects will be ordered as appropriate, such as bowel care regimens, anti-pruritic, and anti-emetics.

g. Understand the concept of tolerance and consider previous dosing requirements when initiating therapy in opioid-experienced patients. Determine baseline pain and character, assist patient in setting realistic pain goal, and use clinical judgment in adjusting analgesia.

h. Differentiate between physical and psychological dependence. Differentiate between nociceptive pain, and pain due to psychological affective disorders such as anxiety, depression, and suffering.

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ATTACHMENT(S)

- Appendix A – Translations of 0-10 Pain Rating Scales
- Appendix B – The Critical – Care Pain Observation Tool (CPOT)
- Appendix C – Pain Assessment in Advanced Dementia Scale (PAINAD)

RELATED POLICIES AND PROCEDURES

- Clinical Practice Manual
  - Pain Management: Continuous Intravenous and/or Patient Controlled Analgesia (PCA) Opioid Infusion (CP 3-603)
  - Pain Management: Continuous Local Anesthetic Pump (CP 3-601)
  - Pain Management: Continuous Peripheral Nerve Block (CP 3-604)
  - Pain Management: Epidural Analgesia (CP 3-602)
  - Pain Management: Ketamine Intravenous Infusion (CP 3-609)
  - Pain Management: Lidocaine Intravenous Infusion (CP 3-605)
  - Pain Management: Subcutaneous Opioid Infusion (CP 3-607)
  - Pain Management: Continuous Ketamine/Fentanyl Intravenous Infusion (CP 3-606)
  - Pain Management: Ketamine Intravenous Infusion Therapy, Outpatient Therapy (CP 3-608)

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	05/24/2005	
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Reviewed	09/22/2015	Policy Committee
Revised:	11/27/2018	Policy Committee
Revised:	05/14/2019	Policy Committee
Revised:	03/19/2020	Quality Committee of the Governing Board
Revised:	06/22/2023	Quality Committee of the Governing Board
	00/00/0000	
Keywords:	Pain assessment, pain management, pain scales, CPOT tool, Wong-Baker Faces	

Appendix B

The Critical - Care Pain Observation Tool (CPOT)

Adult Validated tool that can be used for the intubated or non-intubated cognitively impaired patient.

Indicator	Score		Description
Facial Expression  Caroline Arbour, RN, B.Sc., M.Sc.A(c) School of Nursing, McGill University	Relaxed, neutral	0	No muscular tension observed
	Tense	1	Presence of frowning, brow lowering, orbit tightening, and levator contraction or any other change (e.g. opening eyes or tearing during nociceptive procedures)
	Grimacing	2	All previous facial movements plus eyelid tightly closed (the patient may present with mouth open or biting the endotracheal tube
Body Movements (Puntillo et al., 1997; Devlin et al., 1999)	Absence of movements of normal position	0	Does not move at all (does not necessarily mean absence of pain) or normal position (movements not aimed toward the pain site or not made for the purpose of protection)
	Protection	1	Slow, cautious movements, touching or rubbing the pain site, seeking attention through movements
	Restlessness	2	Pulling tube, attempting to sit up, moving limbs/ thrashing, not following commands, striking at staff, trying to climb out of bed
Compliance with the ventilator (intubated patients) (Harris et al. 1991. Payen et al., 2001)	Tolerating ventilator or movement	0	Alarms not activated, easy ventilation
	Coughing but tolerating	1	Coughing, alarms may be activated but stop spontaneously
	Fighting ventilator	2	Asynchrony: blocking ventilation, alarms frequently activated
or			
Vocalization (extubated patients) (Mateo et Krenzischek, 1992)	Talking in normal tone or no sound	0	Talking in normal tone or no sound
	Sighing, moaning	1	Sighing, moaning
	Crying out, sobbing	2	Crying out, sobbing
Muscle tension Evaluation by passive flexion and extension of upper limbs when patient is at rest (Ambuel et al., 1992) or when patient is being turned	Relaxed	0	No resistance to passive movements
	Tense, rigid	1	Resistance to passive movements
	Very tense or rigid	2	Strong resistance to passive movements, incapacity to complete them
	Total Score:		**— / 8**

Directions for use of the CPOT:

1. The patient must be observed at rest for one minute to obtain a baseline value of the CPOT.
2. The patient should be observed during nociceptive procedures (e.g., turning, endotracheal suctioning, wound dressing) to detect any changes in the patient's behaviors to pain.
3. The patient should be evaluated before and at the peak effect of an analgesic agent to assess if the treatment was effective in relieving pain.
4. For the rating of the CPOT, the patient should be attributed the highest score observed during the observation period.
5. The patient should be attributed a score for each behavior included in the CPOT and **muscle tension should be evaluated last**, especially when the patient is at rest because just the stimulation of touch (passive flexion and extension of the arm) may lead to behavioral reactions.

As appears in Pasero, C., McCaffery, M. (2011). Pain assessment and pharmacologic management, p. 145, St. Louis, Mosby.
Instructions © 2011, Gelinas C. Form modified from Gelinas, C., Fillion, L. Puntillo, KA et al (2006).
Validation of the Critical-care Pain Observation Tool (CPOT) in adult patients. *Last Revision 6/04/2011*

Appendix C

Pain Assessment in Advanced Dementia Scale (PAINAD)

Instructions: Observe the patient for five minutes before scoring his or her behaviors. Score the behaviors according to the following chart. Definitions of each item are provided on the following page. The patient can be observed under different conditions (e.g., at rest, during a pleasant activity, during caregiving, after the administration of pain medication).

Behavior	0	1	2	Score
Breathing Independent of vocalization	• Normal	• Occasional labored breathing • Short period of hyperventilation	• Noisy labored breathing • Long period of hyperventilation • Cheyne-Stokes respirations	
Negative vocalization	• None	• Occasional moan or groan • Low-level speech with a negative or disapproving quality	• Repeated troubled calling out • Loud moaning or groaning • Crying	
Facial expression	• Smiling or inexpressive	• Sad • Frightened • Frown	• Facial grimacing	
Body language	• Relaxed	• Tense • Distressed pacing • Fidgeting	• Rigid • Fists clenched • Knees pulled up • Pulling or pushing away • Striking out	
Consolability	• No need to console	• Distracted or reassured by voice or touch	• Unable to console, distract, or reassure	
			TOTAL SCORE	

(Warden et al., 2003)

Scoring:

The total score ranges from 0-10 points. A possible interpretation of the scores is: 1-3=mild pain; 4-6=moderate pain; 7-10=severe pain. These ranges are based on a standard 0-10 scale of pain, but have not been substantiated in the literature for this tool.

Source:

Warden V, Hurley AC, Volicer L. Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) scale. *J Am Med Dir Assoc*. 2003;4(1):9-15.

PAINAD Item Definitions

(Warden et al., 2003)

Breathing

1. *Normal breathing* is characterized by effortless, quiet, rhythmic (smooth) respirations.
2. *Occasional labored breathing* is characterized by episodic bursts of harsh, difficult, or wearing respirations.
3. *Short period of hyperventilation* is characterized by intervals of rapid, deep breaths lasting a short period of time.
4. *Noisy labored breathing* is characterized by negative-sounding respirations on inspiration or expiration. They may be loud, gurgling, wheezing. They appear strenuous or wearing.
5. *Long period of hyperventilation* is characterized by an excessive rate and depth of respirations lasting a considerable time.
6. *Cheyne-Stokes respirations* are characterized by rhythmic waxing and waning of breathing from very deep to shallow respirations with periods of apnea (cessation of breathing).

Negative Vocalization

1. *None* is characterized by speech or vocalization that has a neutral or pleasant quality.
2. *Occasional moan or groan* is characterized by mournful or murmuring sounds, wails, or laments. Groaning is characterized by louder than usual inarticulate involuntary sounds, often abruptly beginning and ending.
3. *Low level speech with a negative or disapproving quality* is characterized by muttering, mumbling, whining, grumbling, or swearing in a low volume with a complaining, sarcastic, or caustic tone.
4. *Repeated troubled calling out* is characterized by phrases or words being used over and over in a tone that suggests anxiety, uneasiness, or distress.
5. *Loud moaning or groaning* is characterized by mournful or murmuring sounds, wails, or laments in much louder than usual volume. Loud groaning is characterized by louder than usual inarticulate involuntary sounds, often abruptly beginning and ending.
6. *Crying* is characterized by an utterance of emotion accompanied by tears. There may be sobbing or quiet weeping.

Facial Expression

1. *Smiling or inexpressive*. Smiling is characterized by upturned corners of the mouth, brightening of the eyes, and a look of pleasure or contentment. Inexpressive refers to a neutral, at ease, relaxed, or blank look.
2. *Sad* is characterized by an unhappy, lonesome, sorrowful, or dejected look. There may be tears in the eyes.
3. *Frightened* is characterized by a look of fear, alarm, or heightened anxiety. Eyes appear wide open.
4. *Frown* is characterized by a downward turn of the corners of the mouth. Increased facial wrinkling in the forehead and around the mouth may appear.
5. *Facial grimacing* is characterized by a distorted, distressed look. The brow is more wrinkled, as is the area around the mouth. Eyes may be squeezed shut.

Body Language

1. *Relaxed* is characterized by a calm, restful, mellow appearance. The person seems to be taking it easy.
2. *Tense* is characterized by a strained, apprehensive, or worried appearance. The jaw may be clenched. (Exclude any contractures.)
3. *Distressed pacing* is characterized by activity that seems unsettled. There may be a fearful, worried, or disturbed element present. The rate may be faster or slower.
4. *Fidgeting* is characterized by restless movement. Squirming about or wiggling in the chair may occur. The person might be hitching a chair across the room. Repetitive touching, tugging, or rubbing body parts can also be observed.
5. *Rigid* is characterized by stiffening of the body. The arms and/or legs are tight and inflexible. The trunk may appear straight and unyielding. (Exclude any contractures.)
6. *Fists clenched* is characterized by tightly closed hands. They may be opened and closed repeatedly or held tightly shut.
7. *Knees pulled up* is characterized by flexing the legs and drawing the knees up toward the chest. An overall troubled appearance. (Exclude any contractures.)
8. *Pulling or pushing away* is characterized by resistiveness upon approach or to care. The person is trying to escape by yanking or wrenching him- or herself free or shoving you away.
9. *Striking out* is characterized by hitting, kicking, grabbing, punching, biting, or other form of personal assault.

Consolability

1. *No need to console* is characterized by a sense of well-being. The person appears content.
2. *Distracted or reassured by voice or touch* is characterized by a disruption in the behavior when the person is spoken to or touched. The behavior stops during the period of interaction, with no indication that the person is at all distressed.
3. *Unable to console, distract, or reassure* is characterized by the inability to soothe the person or stop a behavior with words or actions. No amount of comforting, verbal or physical, will alleviate the behavior.

INTERNAL

Dressings and Wound Vac

- Policy # NASP20 - Standardized Procedure for Polymem Dressing Application
- Policy # NA 10-208 - Single Use Compression Wound and Surgical Site Management Systems/Dressings

MANUAL:	Nursing	**Standardized Procedure # 20**			
SUBJECT:	**Standardized Procedure for Polymem Dressing Application**	EFFECTIVE DATE:	08/19/2021		
		REVISED DATE:	08/27/2024		
		LEVEL OF EVIDENCE:	Level: D		
PERSONNEL COVERED:	Competency Validated RNs	PAGE:	1	OF	6

PURPOSE

To establish and provide criteria for Polymem dressing selection and application for treatment of partial thickness or superficial wounds and as an initial dressing for other wounds/tissue injuries (see exclusions below).

LOCATION

Acceptable locations are:

- Rehabilitation Unit
- MedSurg Units
- Telemetry Units
- Intensive Care Units
- PACU
- OR
- Same Day Surgery

POLICY

1. Competency validated Registered Nurses (RNs) may provide wound care to patients meeting any of the following criteria without provider supervision:
   a. When a non-moisture related partial thickness or superficial wound is discovered (ex. Skin tears, Stage 2 pressure injury, abrasion).
   b. When a new lower extremity or full thickness wound/tissue injury (Deep Tissue Pressure Injury, Stage 3 Pressure Injury, Stage 4 Pressure Injury, Unstageable Pressure Injury, Arterial Ulcer, Venous Ulcer, Diabetic Ulcer, etc.) is discovered and is pending a Wound Team Consult for further treatment orders.
   c. Exclusions from Standardized Procedure
      i. Burns
      ii. Dry/intact/stable (leathery, dry, hard) eschar
      iii. Surgical incisions
      iv. Possible infected wounds (Malodorous after cleansing, increased drainage, increased periwound temperature, increased pain at wound site, increasing erythema of surrounding tissue, new onset edema at wound site, and fever of unknown source)

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MANUAL:	Nursing	**Standardized Procedure # 20**			
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      v. Wounds surrounding a tracheostomy
      vi. Wounds with "Wound Care Instruction" orders in place
      vii. IAD- Incontinence Associated Dermatitis
      viii. MASD -Moisture Associated Skin Damage
      ix. Dermatologic conditions (Disease of the skin)
      x. Actively bleeding wounds (Sanguinous drainage)
      xi. Sensitivity or allergies to Polymem or additional supplies held within this standardized procedure
2. Nurses will choose type/size of Polymem product and secondary dressing if indicated, based on Polymem Guide below.
3. Nursing will continue Polymem treatment for partial thickness and superficial wounds until resolved, new orders received, or if adverse reaction/decline is noted.
4. Dressing changes will occur weekly (at least every 7 days[4]) and PRN saturation (75% of pink grid) and/or dislodgement.
5. Nursing may place an initial dressing based on this standardized procedure until Wound Team evaluates and new treatments orders are placed.
6. A provider's order under "Wound Care Instructions" is required to use any additional wound supplies not held in this standardized procedure.
7. Standard precautions and aseptic technique will be observed when providing wound care using this standardized procedure.[1]
8. Wounds noted with signs and symptoms of infection, vascular compromise (ischemia and/or necrosis), actively bleeding, and/or decline will be immediately referred to provider for assessment and treatment orders.
9. If Polymem dressing is unavailable through-out the hospital, Primary RN to reach out to the Interprofessional Wound Team for recommendations on alternate dressing and obtain order from provider.

EQUIPMENT

1. Appropriate waste container (refer to Hazardous Materials and Waste Management policy 6-125)
2. Fluid impermeable barrier (to place on table)
3. Sterile normal saline or sterile water
4. Non- sterile Gloves

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5. Disposable chux (to place beneath patient)
6. 4 x 4 gauze (May need several depending on size of wound)
7. Polymem Dressing (select appropriate size/type based on Polymem Guide)
8. Secondary cover dressing (if needed-refer to Polymem guide)
9. Scissors (if needed-refer to Polymem guide)
10. Tape (if needed-refer to Polymem guide)
11. Ruler with green dot
12. Tissue Analytics mobile device
13. Optional: prescribed pain medication, gown, mask and goggles or mask with face shield, protective skin barrier, cotton-tipped applicator

PROCEDURE

1. Enter order for wound care instructions into the medical record.
2. Bring equipment to patient's room.[1]
3. Confirm the patient's identity using at least two patient identifiers.
4. Provide privacy to patient, explain procedure to the patient/primary decision maker according to their individual communication and learning needs. [2]
5. Screen for and assess the patient's pain[3] using Pain Assessment and Management policy CP 1-202.
6. Premedicate with the prescribed pain medication as needed allowing adequate time for the medication to take effect. Also use nonpharmacologic pain management strategies, as needed.[3]
7. Prepare a clean, dry work area at bedside. Cover work surface with clean, dry, fluid impermeable barrier to prevent contamination of supplies.[3]
8. Place appropriate waste container at end of bed or within easy reach of working area.[1]
9. Wash hands, apply gloves and, as needed, other personal protective equipment
10. Prepare/open dressing items on table. If dressings need to be cut to size, use clean or sterile scissors. If using clean scissors, clean with alcohol wipe prior to and after use. Open packages and cut tape (if needed).[1]
11. Place initials, date, and a circled "T" (for treatment) on the grid-side of the Polymem dressing or on the secondary cover dressing/tape.
12. Reposition patient to expose area to be dressed. While the same position should be attempted at each encounter to standardize care and assessment, assist the patient to a position that maximizes comfort

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while allowing easy access to the wound. Avoid exposing the patient unnecessarily to promote patient dignity.[1] Expose only the wound and surrounding area to maintain warmth and privacy.

13. Place a disposable chux under the wound to contain cleansing solution and wound drainage.[2]
14. Instruct the patient to ask for a temporary break if the pain becomes intolerable. Continually monitor patient throughout procedure for response to interventions and episodes of pain.[3]
15. Remove the old dressing carefully by pulling it gently on a horizontal plane away from the patient's skin while simultaneously stabilizing the skin to avoid tearing it. If necessary, loosen the old dressing using adhesive releaser spray/remover pad.[3]
16. Inspect the soiled dressing and note the type and amount of drainage.[3]
17. Discard the soiled dressing in the appropriate trash container.
18. Remove gloves, perform hand hygiene per policy, apply new gloves.[3]
19. Clean wound with room temperature sterile normal saline or sterile water. Pour solution over the wound to prevent trauma and removal of growth factors.[2] Use 4x4 gauze to catch and absorb excess solution.[2]
20. Pat the tissue surrounding the wound dry with a 4 x 4 gauze.[3]
21. Upon completion, discard gauze, remove gloves, perform hand hygiene, and apply new gloves.[1]
22. Assess the wound, wound edges, and surrounding tissue.[1] Compare to previous Tissue Analytics entry to determine if the wound is improving, declining, or remaining stable.
23. Take photo using mobile device and upload to Tissue Analytics per CP3-126 requirements.
24. Trim or clip hair surrounding dressing securement site as needed. Use extreme caution in preventing clippings from falling in wound bed.[1]
25. If needed, apply protective barrier film (Cavilon) to periwound area.[1] Allow to dry completely.
26. When the wound has depth, tunneling or undermining, use cotton tipped applicator to place Polymem WIC to fill dead space (See Polymem Guide below)[4].
27. Ensure adequate seal around the dressing to prevent cooling of wound bed and prevent to contamination.
28. Apply secondary dressing if indicated[4].
29. Ensure adherence of dressing.
30. Reposition patient. Place call light within reach.[1]
31. Discard gloves and all used supplies in appropriate trash container. Remove equipment.[1]

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32. Perform hand hygiene per policy. [3]
33. Document the dressing change in medical record.[1]
34. Reassess and respond to the patient's pain by evaluating the response to treatment and progress toward pain management goals. Assess for adverse reactions and risk factors for adverse events that may result from treatment. [3]
35. Report changes in the patient's condition and progress toward goals to the patient's provider, as appropriate.[3]

DOCUMENTATION

Document dressing change and assessment as required in Skin Care and Tissue Injury Management policy.

EDUCATIONAL & COMPETENCY VALIDATION REQUIREMENTS

1. Initial Competency Evaluation Method:
   a. Completion of competency validation tool during unit-based orientation
2. Ongoing Competency Assessment Method:
   a. Departments or areas provide wound care must select it as a competency validation when the following criteria are evidenced:
      i. It is a new aspect of practice.
      ii. There is a change in procedure or documentation.
      iii. It has shown itself to be a problematic aspect of the work evidence in affected area.
3. A written record of the education and training of the standardized procedure is maintained in Employee File.

DEVELOPMENT AND APPROVAL OF THE STANDARDIZED PROCEDURE

1. This standardized procedure was developed by the nursing department.
2. This standardized procedure will be reviewed every 3 years.
3. This standardized procedure was approved by: Chief Nursing Officer, Policy Committee, Interdisciplinary Practice Committee, Medical Executive Committee, Quality Committee of the Governing Board.

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REFERENCE(S)

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2. Wound Cleansing procedure. Retrieved from https://swrwoundcareprogram.ca//Uploads/ContentDocuments/HCPR-CleansingProcedure.pdf
3. Wound Dressing Application, Home Care. Lippincott Procedures. Retrieved from https://procedures.lww.com/lnp/view.do?pId=5323871&hits=cleaning,wound,cleaner,cleanser,cleansing,clean,wounds&a=false&ad=false&q=wound%20cleaning
4. Polymem Use's Guide. Retrieved from MKL-009.R13 DFU.pdf (polymem.com)

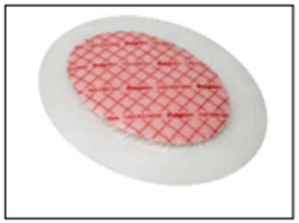
RELATED POLICIES AND PROCEDURE(S)

- Clinical Practice Manual
  - Skin Care and Tissue Injury Management CP3-126
  - Pain Assessment and Management CP 1-202
- Administration Manual
  - Hand Hygiene 6-143
  - Hazardous Materials and Waste Management Plan 6-125
- Hospital & Epidemiology and Infection Prevention
  - Standard Precautions 3001

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Standardized Procedure #20		
Effective:	08/19/2021	Quality Committee of the Governing Board
Revised:	08/27/2024	Policy Committee
	00/00/0000	
	00/00/0000	
Keywords:	Polymem, Wound Care, Tissue injury, Pressure injury, Partial thickness, Full thickness, Pressure Injury, Skin Tear, DTI, Deep Tissue Pressure Injury, Stage 1, Stage 2, Stage 3, Stage, Dressing application, cleanser	

PolyMem foam dressings are for **Treatment** of wounds/tissue injuries. Use **Mepilex** foams for pressure injury **prevention**.

POLYMEM OVAL SILICONE BORDER DRESSING	**POLYMEM #3 1"x 2"** **POLYMEM #5 3" x 2"**		For minimum to moderate draining wounds	1. Select size ensuring dressing is at least ¼-2" greater than affected area. 2. After cleansing the wound with normal saline or sterile water and for the periwound, use alcohol to cleanse away oils and lotions in the area where the silicone border will contact the skin. Allow to dry completely (Do not use on open skin) 2a. Consider 3M skin barrier in periwound space instead of alcohol if adherence has been an issue. 3. Must allow to skin barrier to dry completely. Cover with Polymem ensuring grid-Side Up 4. Obtain a good seal around the border. 5. Place gloved hand over dressing to warm silicone for better adherence. 6. Label dressing with date, initials, and T (for treatment)
POLYMEM WIC 3" x 3" Cavity Wound Filler **POLYMEM WIC 7.8" x 7.8" Cavity Wound Filler**			For wounds with depth or wounds over a boney prominence or extremities (ex. Sacrum, coccyx, multiple skin tears on arm, etc.). Do not place in blind tunnels. *Does not have grid on either side of foam and has perforations	1. Separate dressing along perforation to obtain the appropriate size to fill wound bed (if there is depth) and/or cover injury plus ¼-2" greater than affected area. For Wound with depth, fluff, don't stuff, WIC foam into wound bed up to 70-75% of the cavity. Add additional sheets as necessary. 2. Secure with cover dressing such as foam, ABD pad with skin friendly tape, or wrapping gauze on extremities to secure dressing. Label dressing with date, initials, and T (for treatment), and the **number** of WIC pieces placed into wounds with depth. (Ex. BW, 03/14/24T WIC=4)

MANUAL:	Nursing	POLICY #:	NA 10-208		
SUBJECT:	**Single Use Compression Wound and Surgical Site Management Systems/Dressings**	EFFECTIVE DATE:	10/17/2024		
		REVISED DATE:	10/23/2025		
		LEVEL OF EVIDENCE:	Level: M		
PERSONNEL COVERED:	Nursing	PAGE:	1	OF	4

PURPOSE

The purpose of this policy is to outline the organization's standard for the maintenance of single-use compression wound and surgical site therapy systems/dressings.

DEFINITION

- Single Use Negative Pressure Wound Therapy System – A disposable technology designed to improve healing of acute wounds (e.g. new incision) or chronic wounds (e.g. pressure injury, dehiscence) through controlled suction obtained by application/use of specialized dressings with electric or manual pump features. This policy outlines the care of Prevena™, PICO™, and NP Seal® systems.
- SafeGuard Focus™ Compression Device- a sterile single use disposable device providing compression over closed surgical sites (to and including pacemaker and ICD pockets) in the immediate post operative period.

POLICY

1. This policy does not outline management of reusable negative pressure wound therapy (e.g., wound vacs).
2. This policy does not outline the management of circumferential compression systems (e.g., radial compression device and Femostop).
3. A provider order is required for maintenance of single-use compression wound and surgical site therapy systems/dressings.
4. The application/activation, removal, and/or replacement of a Single Use Negative Pressure Wound Therapy System will be performed by the provider.
5. RNs may apply, remove, or replace compression devices (SafeGuard Focus™) per provider order.
6. The primary RN will:
   a. assess dressing, site, surrounding skin, drainage, and suction mechanism function at least every four hours or as ordered and when alerted by an audio or visual warning.
   b. notify the provider for any of the following:

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SUBJECT:	**Single Use Pressure Wound and Surgical Site Management Systems/Dressing**	EFFECTIVE DATE:	10/17/2024		
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When to notify the provider	
Single Use Negative Pressure Systems/Dressings (Prevena, PICO, NP Seal)	**Single-use Non-Circumferential Compression Systems/Dressings (SafeGuard Focus)**
Sudden change of color or wound exudate (e.g. frank blood)	Presence of localized bleeding
Pain (including numbness)	
Allergic reaction (e.g. sensitization)	
Signs of infection such as redness, inflammation, or odor	
Damaged device	
Blistering	Localized venous thrombosis
Suction not present	Embolism Hematoma Soft tissue injury Vasoconstriction Venous fistula Pseudoaneurysm Nerve damage

   c. In the event of sudden or significant active bleeding:
      i. NPseal® – seek medical immediate medical assistance and take appropriate measures to stop bleeding.
      ii. Pico™ – immediately disconnect pump, leave dressing in place, take appropriate measures to stop bleeding and seek medical assistance.
      iii. Prevena™ – or frank blood is seen in the tubing or cannister leave the Prevena™ Dressing in place, turn off the Prevena 125 Therapy Unit and seek immediate emergency medical assistance.
      iv. SafeGuard Focus™ – notify provider
7. If dressing becomes soiled:
   a. PICO™ – dressing need to be changed by the provider.
   b. NPseal® – clean and dry with a soft cloth. Do not use any chemicals.
   c. Prevena™ – therapy unit may be cleaned with mild soap and a damp cloth. No bleach.
   d. SafeGuard Focus™ – once adhesive is removed, from the skin, do not attempt to place back on patient; if compression is still needed after removal, a new device should be used.
8. Showering:

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SUBJECT:	**Single Use Pressure Wound and Surgical Site Management Systems/Dressing**	EFFECTIVE DATE:	10/17/2024
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a. PICO™ – pump should be disconnected and placed in a safe location where it will not get wet. While disconnected, ensure the end of the tubing attached to the dressing is facing down.

b. Prevena™ – therapy unit should be placed in a safe location where it will not get wet.

c. NPseal® – showering is permissible but avoid direct spray. Do not immerse device in fluid.

d. SafeGuard Focus™ – Do not shower, dressing should be kept dry. If patient showers with dressing, need to be taken off immediately after shower.

9. Do not place occlusive dressings over single use negative pressure wound therapy systems.

10. Suction Maintenance

a. PICO™ leak alerts – visual

b. Prevena™ leak alerts – audio and visual. To maintain suction, ensure tubing is in a position where it will not be kinked or obstructed.

c. NP seal® – No alert system. The RN will ensure suction is maintained by pinching the middle of the pump 1-5 times (until pump walls are touching) using thumb and one finger every eight hours.

NOTE: The product is working properly if the pump walls remain touching in the middle (visual inspection or touch). NOTE: If pump walls do not remain touching after pinches, it may be an indication the system was not placed properly.

NOTE: do not:

- Pinch the ends of the pump
- Flatten entire pinch area
- Pinch if there is wound drainage in the pump

11. MRI compatibility:

a. PICO™ pump is not compatible with MRI but dressing is compatible

b. Prevena™ pump and dressing are not compatible

c. NP Seal® dressing is not compatible with MRI

d. SafeGuard Focus™ is compatible with MRI.

12. Troubleshooting single use negative pressure wound dressing (Prevena™) – When correcting a leak condition: press down on dressing to ensure seal and use fingers to smooth out creases or wrinkles. Notify provider if leak condition does not resolve.

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13. For further information on each system, refer to instructions for use for each individual system (links in attachments).

DOCUMENTATION

Document per Policy CP3-126 – Skin Care and Tissue Injury Management

REFERENCE(S) – SEE ATTACHMENTS

ATTACHMENTS

- Prevena™ IFU
- PICO™ IFU
- NP SEAL ® IFU
- SafeGuard Focus™ IFU

RELATED POLICIES AND PROCEDURE(S)

- Clinical Practice Manual
  - CP3-124 Negative Pressure Wound Therapy
  - CP3-126 Skin Care and Tissue Injury Management
- Nursing Manual
  - NA 10-132 FemoStop
  - NA 10-199 Radial Compression Device

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # NA10-208		
Effective:	10/17/2024	Quality Committee of the Governing Board
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	00/00/0000	
	00/00/0000	
Keywords:		

Enteral Feeding Tube

- Policy # CP 3-218 - Maintenance Care, Medication Administration via Small Bowel Feeding Tube; Flushing and Unclogging of Small Bowel Feeding Tubes

MANUAL:	Clinical Practice	POLICY #:	CP 3-218		
SUBJECT:	**Maintenance Care, Medication Administration via Small Bowel Feeding Tube; Flushing and Unclogging of Small Bowel Feeding Tubes**	EFFECTIVE DATE:	04/27/2017		
		REVISED DATE:	04/17/2025		
		LEVEL OF EVIDENCE:	Level: D		
PERSONNEL COVERED:	Dietitians, Nursing and Pharmacists	PAGE:	1	OF	5

PURPOSE

The purpose of this policy is to outline the organization's standard for small bowel feeding tube maintenance, medication administration and unclogging of small bowel feeding tubes.

DEFINITION

Small Bowel Feeding Tubes (SBFT) – also known as Post-Pyloric Feeding Tube, Dobhoff Tube, J Tube, JPEG Tube, or PEGJ Tube.

POLICY

1. Do not use a syringe smaller than 60 mL for medication administration via feeding tubes or for flushing of feeding tubes (smaller syringes create more pressure and could potentially puncture tube and bowel).
2. Flush with 30ml of bottled or sterile water prior to giving medications and again after administration of all medications.[1,4]
3. SBFT must be flushed with at least 10-15 mL of bottled or sterile water between each medication, if more than one is given.[4,5]
4. Each medication must be placed in separate medication cups and administered separately; do not mix medications together when administered via feeding tube.
5. SBFT must be flushed with 30 mL bottled or sterile water every four hours during continuous feeds, and before and after every intermittent (bolus) feeding.[1]
6. Medications may be delivered via feeding tubes.[3] Consult a pharmacist for assistance in selecting appropriate dosage formulations or therapeutic equivalents.
7. The pharmacist should interchange medications between oral and liquid formulations, when possible, to avoid tube clogging. If a liquid form is not available, some medications can be crushed to a fine powder and mixed with 15-30 mL sterile water.[5]
8. Do not crush buccal or sublingual preparations, sustained-release, enteric-coated or microencapsulated medications to be administered through feeding tubes.[5]
9. Check centimeter marking at exit of nare every 4 hours and document on nursing flow sheet. If there is a change in external tube length or patient has vomited, obtain order for x-ray to check placement. If tube is no longer past the pylorus, contact provider for further orders.[1,2,3]
10. Do **NOT** use carbonated liquids or juice to flush feeding tubes.[1]

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SUBJECT:	**Maintenance Care, Medication Administration via Small Bowel Feeding Tube; Flushing and Unclogging of Small Bowel Feeding Tubes**	EFFECTIVE DATE:	04/27/2017		
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11. Do **NOT** check residuals in Small Bowel Feeding Tubes (acidic gastric contents may cause proteins in enteral formulas to precipitate.
12. Always keep head of bed greater than 30 degrees, or position patient upright in a chair. If contraindicated consider the reverse Trendelenburg position or as ordered by provider. [3].

PROCEDURE FOR MEDICATION ADMINISTRATION VIA FEEDING TUBES AND FLUSHING OF FEEDING TUBES

1. Perform hand hygiene.
2. Confirm the patient's identity using at least two patient identifiers. [2,3]
3. Explain procedure to patient and family including medication to be given,[2,3]
4. Perform medication administration rights (see "Administration of Medication" policy)
5. Apply gloves.
6. Verify enteral tube placement using two of the following techniques: [2,3]
   1. Observe for a change in external length or the incremental marking on the enteral tube at the exit site or by assessing the centimeter mark at the exit of the nare for tube migration.[2,3] If there is a change in external tube length or patient has vomited, obtain orders for radiography to check for placement. If tube is no longer past the pylorus, contact provider for further orders.
   2. Observe for a change in volume of aspirate from the enteral feeding tube because a large increase in volume may signal an upward dislocation of a small bowel feeding tube into the stomach.
   3. Review routine chest and abdominal X-ray reports.[2,3]
   4. Aspirate the enteral tube contents and inspect the visual characteristics of the tube aspirate, Fasting gastric secretions often appear grassy green, brown, or clear and colorless.[2]

   NOTE: If tube placement is in doubt, notify provider. Obtain order for x-ray.[2,3]
7. After verifying placement, flush the tube with 30 mL bottled or sterile water using a 60ml syringe. Monitor patient closely throughout instillation. Stop the procedure immediately notify provider if patient shows signs of distress. [3]
8. With a 60 mL syringe, draw up the medication and instill into the SBFT.
9. Flush with 10-15 mL of bottled or sterile water in between each medication[4,5]
10. When all medications have been administered, flush with 30 mL of bottled or sterile water.[2,3]

MANUAL:	Clinical Practice	POLICY #:	CP 3-218		
SUBJECT:	**Maintenance Care, Medication Administration via Small Bowel Feeding Tube; Flushing and Unclogging of Small Bowel Feeding Tubes**	EFFECTIVE DATE:	04/27/2017		
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PROCEDURE FOR UNCLOGGING SMALL BOWEL FEEDING TUBES

1. Perform hand hygiene
2. Identify patient with two identifiers.
3. Explain to patient and family procedure
4. Apply gloves
5. Pull the SBFT 5 to 10 centimeters while rotating slightly and try to flush using the 60 mL syringe. If still unable to flush the tube, it may be clogged. Proceed to the next step.
6. With a 60 mL irrigation syringe, attempt to aspirate as much liquid as possible from the feeding tube and discard the fluid.
7. Instill 10 mL of warm water with that same syringe under manual pressure for 1 minute, using a gentle back-and forth motion to help dislodge the clog.[1]
8. If the clog does not immediately allow for the back- and forth motion, clamp the tube for 20 minutes after instilling the warm water.[1]
9. Try to aspirate and flush with warm water.
10. If tube is unresponsive to warm water irrigation and remains clogged, obtain a provider order for the "Iowa Declog Combination" and perform the following procedure:
    a. Crush one non-enteric coated sodium bicarbonate tablet (650 mg) and two Viokace10 (pancelipase) tablets. Add to 15 mL of water, mix well and allow to dissolve (10–15 minutes).
    b. Draw up mixture in a 60 mL syringe, attach syringe to the end of the clogged tube, instill into feeding tube using gentle pressure, and clamp the tube for 60 minutes.
    c. Try to aspirate and flush with 20 mL of warm water.
    d. If tube remains clogged, repeat the above procedure up to three attempts.
        i. If tube remains clogged, primary RN will repeat above procedure up to two attempts. After two attempts, the RN will notify the small bowel feeding tube team if available. If unavailable, RN will contact the provider.
    e. If tube remains clogged, notify provider to replace tube.

Note: Do not use carbonated or acidic liquids to attempt unclogging of tube. They have been shown to coagulate whole protein in tube feeding formula and may perpetuate the clog.[1]

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MANUAL:	Clinical Practice	POLICY #:	CP 3-218		
SUBJECT:	**Maintenance Care, Medication Administration via Small Bowel Feeding Tube; Flushing and Unclogging of Small Bowel Feeding Tubes**	EFFECTIVE DATE:	04/27/2017		
		REVISED DATE:	04/17/2025		
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RELATED POLICIES AND PROCEDURES

- Clinical Practice Manual
    - Medication Administration
    - Patient Identification

MANUAL:	Clinical Practice	POLICY #:	CP 3-218		
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AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # CP 3-218		
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Central Venous Access Devices

- Policy # CP 3-193 - Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal

MANUAL:	Clinical Practice	POLICY #:	CP 3-193		
SUBJECT:	**Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal**	EFFECTIVE DATE:	05/02/1991		
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		LEVEL OF EVIDENCE:	Level: D		
PERSONNEL COVERED:	Competency Validated RNs, Certified Nuclear Medicine Technicians	PAGE:	1	OF	24

PURPOSE

The purpose of this policy is to outline the organization's standard for the care and maintenance of central venous access devices.

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DEFINITIONS

- **Central venous access device:** An indwelling device or catheter inserted into a large, central vein and advanced until the terminal lumen resides within the inferior vena cave, superior vena cava or right atrium. It is used for dialysis, total parenteral nutrition plasmapheresis, medication administration, withdrawal of blood or hemodynamic monitoring.[1]
- **Implantable venous access port (Port-a-Cath, Infusaport and Mediport):** subcutaneous venous access catheter attached to a reservoir.[2]
- **Long-term central venous access device:** an implantable port or a tunneled or cuffed central venous catheter (e.g.: Hickman, Broviac Long Term Dialysis Catheter, Leonard) placed in anticipated need greater than 1 month.[2]
- **Peripherally Inserted Central Catheter (PICC):** a central venous access catheter inserted through veins of the upper extremities with the tip advanced into a vein of the central vasculature.[2]
- **Short-term central venous catheter:** A non-tunneled, non-cuffed, indwelling central venous access device that is percutaneously inserted into a vein of the central vasculature placed in anticipated need for less than 1 month.[2]
- **Needleless connector:** A device that allows for intermittent access to a venous access device with an administration set or syringe without the use of needle.
- **Intermittent Administration Set:** an IV administration set that is detached from the IV site or the primary continuous line, except for temporary disconnections for showers, off-unit procedures (e.g. MRI, PET, CT), or mobility interventions (e.g. ambulation).
- **Rapid Infusion Catheter (RIC):** an intravenous access device used for large-volume resuscitation. The device converts standard peripheral intravenous (PIV) access into a large-volume resuscitation portal.

POLICY

General

1. Registered Nurses (RNs) are responsible for the care and maintenance of central venous access devices.
   a. Direct Care RNs are responsible for assessment of dialysis catheters each shift and for PRN dressing changes.
   b. When dialysis has not been performed for more than 72 hours the direct-care RN is also responsible for routine dressing changes and flushing of dialysis catheters.
2. Certified Technologist, Nuclear Medicine (CTNMs) may access central venous access ports or peripheral inserted central catheter (PICC).
3. The necessity of a central venous access device will be reviewed daily for hospitalized patients[3,4,5,6,7]

4. Daily documentation of the continued necessity of the central venous access device will be done by the provider.

5. Radiographic confirmation of tip location of central venous access devices will be performed prior to initiation of infusion therapy or as indicated by complications.

6. Blood culture samples may be collected via arterial or central line by an RN with a provider order, only if blood specimen cannot be obtained from a peripheral blood draw after two attempts. Blood cultures will not be drawn from central venous access devices unless they are unable to be obtained peripherally after two attempts and a provider's order is obtained (see policy CP3-169 Blood Cultures).

7. The number of times the central venous device is accessed should be limited when possible (e.g., perform non-emergent blood collection at scheduled times, do not disconnect for non-clinically necessary actions, disconnecting IV lines for showering is not preferred).[3,4,5,6,7]

8. The use of introducers outside of critical care and stepdown is restricted. Exceptions may be made according to patient condition by the attending physician. Before patients are transferred to the floor, the introducer must be sutured in place, a SLIC/DLIC or blue obturator cap must be secure, and all IV connections must be luer lock (no stopcocks). When an introducer is used outside of critical care, the introducer must be removed by a provider or critical care nurse.

9. SLIC and DLIC (Single/double lumen introducer catheter) devices may only be inserted by a critical care nurse or provider. NOTE: See Pulmonary Artery Catheter Policy (SCU 10-408) number) for SLIC and DLIC insertion procedure.

Education

1. Patients and/or their care givers will be instructed on the care of their central venous access device including infection prevention and signs and symptoms related to infection in their preferred style of learning.

2. The FAQ (Frequently Asked Questions) about Central Line-Associated Bloodstream Infections handout will be given to every patient and/or their family members by the nurse (when feasible, prior to a central line insertion).

3. Patient education will be documented in the electronic medical record.

Ongoing Assessment, Site Care, and Dressing Change

1. The condition of central venous access device site and dressing will be assessed and documented on patient's medical record at least every shift.

   a. Assess the catheter-skin junction site and surrounding area for redness, tenderness, swelling, and drainage by visual inspection and palpation through the intact dressing and through patient reports about any discomfort including pain, paresthesias, numbness, or tingling.[2,7]

   b. For an intact opaque dressing:

   i. If there are no signs of infection, condition of site may be assessed using inspection and palpation.

   ii. If there is tenderness at the insertion site, fever without obvious source, or other manifestations suggesting local infection or bloodstream infection, the dressing should be removed to allow thorough examination of the site.

2. Sterile dressings will be maintained on all central venous catheters and accessed implantable ports.

3. CHG impregnated dressings will be placed at the insertion site of all central venous catheters or the non-coring needle of implantable port unless the patient has a documented contraindication to its use.

4. Transparent Semipermeable Membrane (TSM) dressings will be used for all central venous device dressings unless there is a documented contraindication to use.

5. For patients with a documented contraindication to TSM the following dressings may be implemented.

   a. For patients with irritant dermatitis: Silicone-faced polyurethane foam island dressing with border (e.g., mepilex) and CHG disc placed on insertion site.

   b. For patients with severe skin sloughing (requires diagnosis of condition i.e., GVHD of the skin): Silicone-faced foam island dressing with silver (e.g., mepilex silver foam).

6. Dressings will be changed:

   a. Upon admission.

   b. When loosened, damp, and/or visibly soiled.[2,7] NOTE: for CHG impregnated dressings this includes if the site is obscured and no longer visible, or if the gel pad is saturated/ remains displaced when pressed with a finger. See Appendix B on additional information on when to change a dressing.

   c. Every 48 hours for dressings containing gauze[2,7] or oxidized cellulose gauze (e.g., surgical™).

   d. Every seven (7) days[2,7] for TSM Dressing or Silicone-faced polyurethane foam island dressing with border.

7. Non-coring needles and dressing for accessed implantable port will be changed on day of admission and every seven days or when damp, loosened or soiled.

8. Chlorhexidine (CHG) will be used as the skin antiseptic for dressing changes and before implantable port non-coring needle placement unless there is a documented contraindication to its use.

9. For patients with documented contraindication to CHG, providone iodine or 70% alcohol may be used for skin antisepsis.

10. Stabilization devices will be used on all non-sutured catheters.

11. Vascular access adhesive glue (i.e. SecurePort IV®) will be used for patients who will have a central line accessed for at least 48 hours unless there is a documented contradiction to its use. See Appendix C for

more information on securement products.

12. Liquid medical adhesive (i.e., Mastisol®) will used as an adhesive adjunct placed ½" line around border of where dressing will lie, do not put on insertion site (allow to dry for 20-30 seconds). See Appendix C for more information on securement products.

13. Secondary securement tape (i.e., Medipore™) will be used at the time of a new dressing around the dressing borders to provide anchoring. See Appendix C for more information on securement products.

14. For the management of actively bleeding or oozing catheter sites the following interventions may be implemented:

    a. Collaborate with provider to optimize platelet count prior to dressing changes as appropriate.

    b. Apply manual pressure to insertion site for at least five (5) minutes with sterile gauze prior to application of new dressing.

    c. Apply a pressure dressing (folded gauze 4x4 in fourths, secure with steri-strip in a crisscross manner) over the TSM dressing. Remove external pressure dressing and reassess within 24 hours.

    d. Apply sterile gauze pressure dressing (folded gauze 4x4 in fourths, secure with steri-strip in a crisscross manner) under TSM dressing. Change dressing within 48 hours or when damp, loosened or soiled.

    e. For continuously bleeding sites requiring frequent unplanned dressing changes despite other interventions, consider use of a hemostatic agent (e.g., surgicel™, bioseal). Apply agent using sterile technique. If cellulose gauze used (e.g., surgicel™) change dressing within 48 hours or when damp, loosened or soiled.

Flushing, Locking and Central Venous Access Device Use

1. Aseptic technique will be maintained during any use of central venous access devices.

2. Needleless connector sites will be manually disinfected using a vigorous 15-second scrub, ensuring to get in the grooves of the cap, with a new 70% alcohol pad prior to each accession and when visibly soiled. Patency of central venous access devices will be verified (e.g., flushed and aspirated for blood return) prior to each use.

3. Central venous access devices should not be forcibly flushed. If resistance is met, verify the line is not kinked. If no kink is visible, see standardized procedure: Declotting Central Venous Catheters and Subcutaneous Access Ports.

4. Central venous access devices will be flushed with 10 mL Normal Saline (NS) before and after each use and flushed and locked at appropriate intervals between uses (refer to Flushing and Locking Recommendations for Central Venous Catheters on Table 1).

    a. Nurses may order Normal Saline per Standardized Procedure for the Ordering of Flushing Vascular Access Devices.

    b. Heparin at concentrations greater than 100 units/mL (high-dose heparin) may only be ordered by providers.

    c. High-dose heparin must be removed from central venous access devices prior to use by withdrawing and discarding at least 5 mL of blood from each catheter lumen containing the product.

5. RN or CTNM will select the most appropriate lumen on a multi-lumen central venous catheter (CVC) for indicated therapy – See Table 2 for Use of Central Venous Catheter Lumens. Central venous catheters will be clamped at all times when not in use.

6. Passive alcohol disinfection caps will be placed on the needleless connector sites of all clamped lines.

7. Single use syringes must never be reused.

8. Rapid Infusion Catheters (RIC) – RICs are for peripheral use only. See policy Clinical Practice policy, Peripheral Intravenous Infusion.

Administration Set Maintenance

1. Tubing will be labeled with date and time it was initiated. Preferred label is a colored day of the week sticker. When day of the week sticker is used, select colored sticker indicating the day of the week the tubing will be changed.

2. Tubing will be labeled with the name of the medication infusing.

    a. Two medication labels will be used per line- one just above the pump and one at the end of the tubing, near the insertion point.

    b. Labels will not be placed on the IV pump.

3. Tubing and any add on devices (i.e., extension sets) will be changed:

    a. Prior to connecting to a new central venous access device site.

    b. If the integrity of the product or system is compromised or suspected to be contaminated.[3]

    c. Every seven (7) days for continuously used administration sets[4,6] (including continuous secondary sets or add on devices).

    d. Every 24 hours for intermittently used administration sets[8,9] (an IV administration set that is detached from the IV site or the primary continuous line, except for temporary disconnections for showers, off-unit procedures (e.g., MRI, PET, CT), or mobility interventions (e.g., ambulation)).

        i. If the administration set has been disconnected for longer than four (4) hours, it shall be maintained as intermittent tubing and changed every 24 hours.

            1. For tubing that has been disconnected for longer than four (4) hours, relabel to 24 hours from time of disconnection unless labeled expiration date is sooner.

e. Every 24 hours and with each new bag for administration sets used for parenteral nutrition solutions.[8,9]

f. Every 12 hours and with each new bag for administration sets used for intravenous fat emulsions.[8,9] For fat emulsions that contain an antimicrobial retardant, such as disodium edetate (EDTA), the administration set will be changed per manufacturer recommendations.

4. Passive alcohol disinfection caps will be placed on all needleless connector sites of IV tubing attached to central venous access devices, except for needleless connector sites on IV tubing that is to be used for less than or equal to 24 hours. (e.g.: IV tubing used for TPN, lipids, etc.)

5. Sterile caps will be placed on the end of all tubing when not in use. Tubing will never be "looped back" on the same administration set.

6. Central line needleless connectors will be changed every seven (7) days, when collecting blood cultures, and when visibly soiled or defective.

   a. Routine change of needleless connector(s) on implantable ports will occur at time of needle change.

Catheters Used for Apheresis and Dialysis

1. Double lumen dialysis vascular catheters will only be used for dialysis and plasmapheresis unless a nephrologist/oncologist provider orders otherwise.

2. When an apheresis/dialysis catheter includes a third port, medications may be infused through the third port without a nephrologist/oncologist order.

3. When ordered by a provider, nurses may place a single lumen or double lumen infusion catheter (primed with Normal Saline) via an already existing introducer. The infusion catheter must be the correct companion product for the introducer type.

Intravenous Infusion Maintenance

1. IV bags with no additive will be changed every 96 hours (e.g., manufacturer packaged IV bags).

2. IV bags with additive will be changed every 24 hours (e.g., IV bags with medications added to bag after manufacturer package has been opened).

3. All IV bags will receive a patient label, time, and date when bag hung. The time that the bag is hung, and rate changes will be documented on patient's medical record, including IV piggybacks. All IV medications and fluids administered will be documented on the eMAR/MAR with dose, rate, date, time, and route given.

4. At least every 2 hours, IV infusions will be observed for the following:

   a. Appropriate solution and rate

   b. Level of fluid remaining in bag

5. Administration of IV fluids, with or without additives, should begin immediately after tubing spike is connected to the IV bag.

6. In procedural/surgical cases where advance preparation may be necessary, plain IV fluids bags (without additives) must be prepared/spiked as close to administration as possible and no earlier than 24 hours in advance. Pre-spiked bags should remain in a secure, observed area and be discarded at the conclusion of the case.

Implanted Vascular Access Port: Accessing and De-accessing[10]

1. Implanted vascular access ports are accessed using only a non-coring safety needle.

2. Choose smallest gauge needle necessary to accommodate the prescribed therapy.

3. Choose the length of the non-coring needle that allows it to sit flush to the skin and securely within the port.

4. Power injection is performed only with implanted vascular access ports and non-coring needles identified and labeled as power-injection compatible.

5. The non-coring needle is replaced or removed at least every seven days[2,7].

Central Venous Access Device Removal

1. Short-term central venous lines may be removed by competency validated RNs with a provider's order.

2. Femoral lines may be removed by RNs validated in the specific removal of femoral lines with a provider's order.

3. Long-term central venous access devices will be removed by a provider.

PROCEDURE

1. **Dressing Changes [2,11,15]**

   EQUIPMENT

   - Non-sterile gloves
   - Masks
   - Sterile gloves
   - CHG Impregnated TSM Dressing (unless documented contraindication- see policy statement)
   - 2% CHG-based preparation sponge (unless documented contraindication-see policy statement)
   - Stabilizing device (for non-sutured lines)
   - Skin protectant
   - Sterile gauze (optional)

- Vascular access adhesive glue

PROCEDURE

1. Explain procedure to the patient in patient's preferred method of communication and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide privacy.
4. Assemble equipment on a clean working surface.
5. Apply masks on self, patient and any individual remaining in patient room during dressing change (ask patient to turn head away from insertion site if not tolerating mask).
6. Perform hand hygiene and apply non-sterile gloves.
7. Remove existing dressing and, if applicable, stabilization device and residual adhesive and discard.
8. Inspect the catheter, insertion site, surrounding skin and, if applicable, sutures. For non-sutured catheters make note external length of catheter.
9. Remove gloves and perform hand hygiene.
10. On a clean surface, prepare sterile field.
11. Apply sterile gloves.
12. Scrub insertion site with 2% CHG preparation for 30 seconds using vigorous back and forth motion then scrub area of skin that will lie under dressing and proximal three inches of catheter[3]. NOTE: to maintain sterility and secure line during scrubbing, may hold/handle catheter with sterile gauze or tweezers.
13. Allow to dry completely. DO NOT fan, blot or blow.
14. Secure catheter with stabilization device if applicable. Omit this step if line is sutured.
15. Apply skin protectant avoiding the area immediately surrounding the insertion site (approximately 2 cm).
16. Apply vascular access adhesive glue (i.e. SecurePortIV®) at the insertion site for patients who will have a central line accessed for at least 48 hours unless there is a documented contradiction to its use. See Appendix C for more information on securement products.
16. Apply liquid medical adhesive (i.e., Mastisol®) in a ½" line around where the white border of where dressing will lie, do not put on insertion site (allow to dry for 20-30 seconds). See Appendix C for more information on securement products.
18. Apply dressing ensuring CHG impregnated gel pad is centered around insertion site.

19. Label dressing with dressing change date and time of when the action was performed.
20. Medipore tape may be used as a secondary securement at the time of the dressing change. (See Appendix C).
21. Secure tubing if applicable.
22. Document activities on patient's medical record.

2. **Needleless Connector Changes**

EQUIPMENT

- Non-sterile gloves
- Needleless connector
- Preservative-free Normal Saline prefilled syringe(s)
- Alcohol pads

PROCEDURE

1. Explain procedure for patient in patient's preferred language and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide privacy.
4. Assemble equipment on clean working surface.
5. Perform hand hygiene and apply gloves.
6. Prime new needleless connector with Normal Saline.
7. Clamp the lumen(s).
8. Swab site where needleless connector meets catheter hub with alcohol for 15 seconds and allow to dry.
9. Remove old needleless connector and discard.
10. Swab catheter hub with alcohol for 15 seconds and allow to dry.
11. Connect needleless connector using aseptic technique.
12. Follow steps for flushing and locking lumen as appropriate.
13. Document activities in medical record.

3. **Flushing and Locking[12,13]**

EQUIPMENT

- None-sterile gloves
- Alcohol pad
- Preservative-free Normal Saline prefilled syringe(s)

PROCEDURE

1. Explain procedure to patient in patient's preferred language and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide privacy.
4. Assemble equipment on clean working surface.
5. Verify the eight rights of medication administration.
6. Perform hand hygiene and apply gloves.
7. Assess central venous access device insertion site for redness, swelling or tenderness.
8. Swab needleless connector with alcohol pad for 15 seconds and allow to dry.
9. Clamp the lumen(s).
10. Connect prefilled Normal Saline syringe to needleless connector of capped lumen with aseptic technique.
11. Unclamp lumen then confirm line patency (slowly inject a small amount of Normal Saline noting resistance or sluggishness of flow and slowly aspirate until blood brisk blood return is obtained).
    a. NOTE: If antimicrobial locking solution or high dose heparin was used, withdraw from central venous access device and discard prior to injecting saline.
12. Flush with 10 mL Normal Saline using push/pause technique[19,20,21,22] (See Appendix A).
13. Maintain pressure on the syringe plunger while clamping lumen. Do not bottom out syringe. Slowly disconnect syringe to prevent syringe-induced blood reflux. Discard syringe appropriately.
14. If line is used continually: swab needleless connector with alcohol with 15 seconds and allow to dry, then apply passive alcohol disinfection cap OR connect to IV administration set.
15. If high dose Heparin (heparin concentration greater than or equal to 1000units/mL) is indicated for locking and line is not in use:
    a. Swab needleless connector with a new alcohol pad for 15 seconds and allow to dry.

    b. Connect syringe containing ordered dose of heparin to needleless connector with aseptic technique then.
    c. Instill heparin with normal saline to equal the volume of the catheter lumen into the line.
    d. Maintain pressure on the syringe plunger while clamping lumen. Do not bottom out syringe. Slowly disconnect syringe to prevent syringe-induced blood reflux. Discard syringe appropriately.
    e. Swab needleless connector with alcohol with 15 seconds and allow to dry then apply passive alcohol disinfection cap.
    f. Wrap line in gauze and apply label stating: "High dose heparin- DO NOT INFUSE"
13. Document in electronic medical record.

4. **Non-Coring Needle Placement, Dressing Application and Needle Removal for Implantable Ports**

EQUIPMENT

- Non-sterile gloves
- Masks
- Sterile gloves
- 2% CHG-based preparation sponge (unless documented contraindication- see policy statement)
- CHG impregnated gel pad or disc
- TSM dressing (unless documented contraindication- see policy statement)
- Skin protectant
- Preservative-free Normal Saline prefilled syringe(s)
- Needleless connector
- Appropriate non-coring needle (see policy statement for needle selection)

PROCEDURE [2,11,13]

1. Explain procedure to the patient in patient's preferred language and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide patient privacy.
4. Determine the type (such as a power-injectable device) and location of the implanted port, whether it has been previously accessed, and the patient's response to the procedure.
5. Obtain equipment including appropriate non-coring needle.
6. Perform the eight rights of medication administration.

7. Assemble supplies on a clean working surface.
8. Don masks on self, patient and any individual remaining in patient room during dressing change (ask patient to turn head away from insertion site when not tolerating mask).
9. Perform hand hygiene and apply non-sterile gloves.
10. If needed, cleanse skin and/or clip hair to remove any adhesive, anesthetic, or excessive hair.
11. Locate port septum by palpation. Assess implantable port, overlying skin and surrounding tissue.
12. Remove non-sterile gloves and perform hand hygiene.
13. Prepare sterile field on a clean surface.
14. Apply sterile gloves.
15. Maintaining sterile technique, connect needleless connector and prefilled Normal Saline syringe to extension tubing of non-coring needle. Prime connector/extension tubing/needle with Normal Saline to remove all air.
16. Prep the needle insertion site and area of skin which will lie under dressing with 2% CHG- based preparation using vigorous back and forth motion for at least 30 seconds. Allow to dry completely DO NOT fan, blot or blow.
17. Palpate for port septum. Triangulate septum between the thumb and first two fingers of non- dominant hand. **NOTE:** Some systems have dual septums. Palpate for the ridge that separates the two septums as a landmark for identifying the port septum desired.
18. Continuing to stabilize device, aim for the center point of the three fingers of non-dominant hand and insert needle perpendicular to port septum. Advance needle through the skin and septum until the needle comes into contact with the back of the implantable port reservoir. **NOTE:** Do not rock or rotate the needle (pictured).



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19. Verify placement by aspirating blood. **NOTE:** If unable to aspirate blood, the catheter may be occluded by the vessel wall. Reposition the patient and check needle placement. If placement cannot be verified by aspirating blood, notify the provider and arrange for imaging to confirm implanted port placement. (See *Table 3* for more Implantable Port Troubleshooting).
20. Follow steps for flushing and locking as appropriate.
21. Apply skin protectant avoiding the area immediately surrounding the insertion site (approximately 2 cm).
22. Apply CHG impregnated gel pad or disc.
23. Apply sterile dressing and secure extension tubing.
24. Label dressing with date and time preforming needle insertion.

5. **De-Accessing the System**[2,12,14]

Equipment

- Non-sterile gloves
- Preservative-free Normal Saline prefilled syringe(s)
- Alcohol pads
- Sterile gauze or adhesive bandage

Procedure

1. Explain procedure to patient in patients preferred language and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide patient privacy.
4. Perform hand hygiene and apply non-sterile gloves.
5. Follow steps for flushing and locking system.
6. Remove dressing and CHG gel pad or disc.
7. Stabilize device with thumb and forefinger of non-dominate hand.
8. Firmly grasp needle in dominate hand, remove from device by pulling perpendicular to site.
9. Discard needle in sharps container.
10. Apply sterile gauze or adhesive bandage if needed.
11. Document activities in medical record.

6. **Blood Withdrawal from a Central Venous Access Device**
(NOTE: Does Not Include Blood Cultures – See 'Blood Cultures' Policy)

EQUIPMENT

- Gloves
- Alcohol pads
- Lab collection tubes (as appropriate for the ordered laboratory tests)
- Preservative-free Normal Saline prefilled syringe(s)
- Needleless transfer device(s)
- For syringe method: Empty 10 ml or larger luer lock syringe(s)

PROCEDURE

Syringe Method

1. Explain procedure to patient in patient's preferred language and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide privacy.
4. Assemble equipment on clean working surface.
5. Stop all infusions, clamp lumen(s). Disconnect IV administration set, if applicable.
6. Perform hand hygiene and apply gloves.
7. Swab needleless connector with alcohol pad for 15 seconds and allow to dry.
8. Connect 10 mL luer lock syringe.
9. Unclamp lumen and withdraw 5 mL blood.
10. Clamp lumen, remove syringe and discard appropriately.
11. Swab needleless connector with new alcohol pad for 15 seconds and allow to dry.
12. Connect to an empty 10 mL or larger volume luer lock syringe.
13. Unclamp lumen, aspirate required blood for specimen.
14. Clamp lumen, remove syringe, and connect syringe to needleless blood transfer device.
15. Swab needleless connector of central venous access device with new alcohol pad for 15 seconds allow to dry.

16. Attach prefilled Normal Saline syringe to needleless connector with aseptic technique.
17. Unclamp lumen and inject 10-20 mL of Normal Saline using push/pause technique (See Appendix A)
18. Maintain pressure on the syringe plunger while clamping lumen. Do not bottom out syringe. Slowly disconnect syringe to prevent syringe-induced blood reflux. Discard syringe appropriately.
19. Swab needleless connector with alcohol with 15 seconds and allow to dry then apply passive alcohol disinfection cap OR reconnect appropriate IV administration set.
20. Insert lab tubes into needleless transfer device to transfer specimen fill to required level for each specimen.
21. Label specimen per Specimen Labeling policy.
22. Document activity in medical record.

Vacutainer Method

1. Explain procedure to patient.
2. Confirm patient identity using two patient identifiers.
3. Provide privacy.
4. Assemble equipment on clean working surface.
5. Stop all infusions, clamp lumen(s). Disconnect IV administration set, if applicable.
6. Perform hand hygiene and apply gloves.
7. Swab needleless connector with alcohol pad for 15 seconds and allow to dry.
8. Connect empty 10 mL luer lock syringe.
9. Unclamp lumen and withdraw 5 mL blood.
10. Clamp lumen, remove syringe and discard appropriately.
11. Swab needleless connector with alcohol for 15 seconds and allow to dry.
12. Connect needleless transfer device to needleless connector.
13. Unclamp lumen, insert lab tubes into needleless transfer device and fill to required level for each specimen.
14. Clamp lumen, remove needleless transfer device.

15. Discard needleless transfer device in sharps container.
16. Swab needleless connector with alcohol pad for 15 seconds and allow to dry.
17. Connect 10 mL prefilled Normal Saline syringe to needleless connector of capped lumen with aseptic technique.
18. Unclamp lumen and inject 10-20 mL of Normal Saline with push/pause technique[19,20,21,22] (See Appendix A).
19. Maintain pressure on the syringe plunger while clamping lumen. Do not bottom out syringe. Slowly disconnect syringe to prevent syringe-induced blood reflux. Discard syringe appropriately.
20. Swab needleless connector with alcohol pad for 15 seconds and allow to dry then apply passive alcohol disinfection cap OR reconnect appropriate IV administration set.
21. Label specimen per Specimen Labeling policy.
22. Document activity in electronic medical record.

7. **Removal of Short Term Central Venous Catheter or PICC (NOTE: Requires Provider's Order)**

EQUIPMENT

- Non-sterile gloves
- Sterile gloves
- Sterile suture removal set (including sterile 2 x 2 gauze)
- 2% Chlorhexidine-based preparation sponge (unless documented contraindication-see policy statement)
- Sterile gauze
- Sterile petroleum gauze
- Transparent tape

PROCEDURE

1. Explain procedure to patient in preferred language and style of learning.
2. Confirm patient identity using two patient identifiers.
3. Provide privacy
   a. Position the patient in a supine flat or in Trendelenburg position. CVCs should only be removed when the patient is lying flat or ideally with head tilted slightly down. The patient MUST be in bed, not in the chair or standing for central line removal.[2,15,16,17,18]
   b. If the patient cannot tolerate lying flat, the head of the bed may be elevated to no more than 30

degrees. Elevate the foot of the bed to 30 degrees also.[2,15,16,17,18]

4. Stop all infusions, flush and clamp lumen. Disconnect IV administration set, if applicable.
5. Apply mask, perform hand hygiene and apply non-sterile gloves.
6. Remove dressing and securement device if applicable.
7. Remove gloves, perform hand hygiene.
8. Prepare sterile field on a clean surface.
9. Apply sterile gloves.
10. Scrub insertion site, with 2% CHG-based preparation for at least 30 seconds using vigorous back and forth motion then proximal three inches of catheter.
11. Allow to dry completely. DO NOT fan, blot or blow
12. Locate suture, if applicable cut below the knot at skin level while holding suture in forceps, remove suture.
13. Cover insertion site with sterile gauze, apply gentle pressure, instruct patient to hold their breath, and slowly remove the catheter regrasping the catheter near the skin every few centimeters **NOTE:** if resistance is met, stop procedure, secure catheter, and notify provider.
    - For catheters inserted in the subclavian or internal jugular veins, ask the patient to take a deep breath and hold it, then remove the catheter and remind the patient to breathe. If the patient is receiving positive pressure mechanical ventilation, withdraw the catheter during the inspiratory phase.[2,15,16,17,18]
14. Maintain manual pressure with sterile gauze for at least five minutes. NOTE: if bleeding persists at five minutes continue pressure for an additional fifteen minutes. If bleeding persists after 15 minutes, continue with pressure dressing and notify physician.
15. Apply occlusive dressing of petroleum gauze covered with sterile gauze dressing and a clear occlusive dressing and secure. Keep occlusive dressing in place for 24 hours, then remove and assess site for closure.
16. Note the length of catheter and verify against documentation on insertion. Inspect the catheter tip. Notify provider if variance in length or if tip is not intact.
17. Have patient remain in flat supine position for 30 minutes following short-term catheter removal. Continue to observe for signs of respiratory distress or hematoma[14,15, 19, 20].
18. Document removal of the catheter, appearance of catheter/tip, length of catheter, patient's response to procedure and monitoring in the patient's medical record.

8. **PULLING BACK THE PICC**

EQUIPMENT

- Manufactured stabilization device
- Mask
- Sterile gloves
- Sterile central line dressing change kit (including chlorhexidine-based preparation)

PROCEDURE

1. **Preparation of Patient**
   a. Verify provider order. Order must state RN to pull back PICC, include the length (in centimeters) for the catheter to be pulled back.
   b. Explain procedure to the patient in preferred language and style of learning.
   c. Confirm patient identity using two patient identifiers.
   d. Provide privacy
2. **Preparation of Skin and Equipment**
   a. Obtain equipment.
   b. Perform hand hygiene, apply mask.
   c. Instruct patient to lie down flat and to turn head away from insertion site or place mask on patient.
   d. Apply clean gloves.
   e. Remove existing dressing and stabilization device.
   f. Assess insertion site (note any drainage or erythema).
   g. Remove clean gloves and perform hand hygiene.
   h. Open sterile central line dressing change kit, manufactured stabilization device kit, and prepare sterile normal saline (if necessary).
   i. Apply sterile gloves.
   j. Clean insertion site with sterile saline and gauze if dried blood is present. Use alcohol swab stick to loosen steri-strips if stuck to line.

   k. Clean exit site with chlorhexidine-based preparation using repeated back and forth strokes until at least two inches around insertion site has been prepped. Allow to dry for approximately 30 seconds. Do not blot or wipe away.
3. **Procedure**
   a. Note length of catheter at insertion site.
   b. Pull back the catheter slowly according to provider order.
   c. Aspirate catheter to ensure blood return.
   d. Flush catheter with NS using the push-pause method. (See Appendix A)
   e. Apply appropriate dressing and stabilization device per 'Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal' Policy.
   f. Note: **Do not push/advance PICC line back into the patient at any time as sterility is compromised.**[18]
4. **Post Procedure**
   a. Chest x-ray to be ordered by provider to confirm repositioning.

   NOTE: Tip verification is required via radiographic confirmation prior to initiation of therapy and a provider's order is required to begin infusing through the PICC line.

DOCUMENTATION

1. Documentation in EHR to include the following:
   a. Original measurement, in centimeters, at insertion site.
   b. Number of centimeters withdrawn.
   c. Measurement at insertion site upon securement with manufactured stabilization device.
   d. Dressing change
   e. CLABSI education provided.

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OPERATING POLICIES

MANUAL:	Clinical Practice	POLICY #:	CP 3-193
SUBJECT:	Central Venous Access Devices: Care. Maintenance, Blood Withdrawal, and Removal	EFFECTIVE DATE:	05/02/1991
		REVISED DATE:	10/23/2025
		PAGE 22 OF 24	

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ATTACHMENT(S)

- Table 1 – Flushing and Locking Standardized Procedure for Central Venous Catheters

- Table 2 – Central Venous Catheter Lumens (Triple Lumen Catheter)
- Table 3 – Troubleshooting Implantable Ports
- Appendix A[2,20,21,22,23]
- Appendix B – When do I change a dressing?
- Appendix C – Securement products

RELATED POLICIES AND PROCEDURES

- Clinical Practice Manual
  - Administration of Intravenous Medications
  - Blood Cultures
  - Specimen Labeling
  - Peripheral Intravenous Infusions
  - Prevention of Central Line-Associated Bloodstream Infections
  - Preparation and Insertion of Central Venous Catheters and PICCs
  - Declotting Central Venous Catheters and Subcutaneous Access Ports
- Nursing
  - Preparation and Insertion of Peripherally Inserted Central Catheters (PICC)

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OPERATING POLICIES

MANUAL:	Clinical Practice	POLICY #:	CP 3-193
SUBJECT:	**Central Venous Access Devices: Care. Maintenance, Blood Withdrawal, and Removal**	EFFECTIVE DATE:	05/02/1991
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AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # NA 10.139.2		
Effective:	05/02/1991	MEC
Revised:	02/09/1999	MEC
	06/07/2002	Professional Practice Committee
	06/18/2002	Governing Board
	07/11/2002	MEC
	02/15/2005	Infection Control/Governing Board
Revised:	01/27/2011	Governing Board
Revised:	04/26/2012	Governing Board
Revised:	07/03/2012	Policy Committee
Revised:	12/01/2016	Governing Board
Revised:	01/10/2017	Policy Committee
Revised:	03/28/2017	Policy Committee
Revised:	01/22/2019	Policy Committee
Revised:	07/16/2019	Quality Committee of the Governing Board
Revised:	03/25/2020	COVID-19 Clinical Protocol Rapid Approval committee
Revised:	09/28/2021	Quality Committee of the Governing Board
Revised:	04/21/2022	Quality Committee of the Governing Board
Revised:	08/17/2023	Quality Committee of the Governing Board
Revised:	06/20/2024	Quality Committee of the Governing Board
Revised:	03/20/2025	Quality Committee of the Governing Board
Revised:	10/23/2025	Quality Committee of the Governing Board (Transferred from Nursing Manual NA10-139.2)
Keywords:	00/00/0000	Flush, CVC, central lines, central venous, central venous catheters, central catheters, vascular access device, CVAD, PICC, ports, port, port a cath, implantable ports, Huber needle, CLABSI, short term, triple lumen, double lumen, introducer, blood withdrawal

Table 1 – Flushing and Locking Recommendation

Catheter Type	Normal Saline		Heparin Locking (when not in use)	
	Flushing Frequency	Minimum Volume (mL)	Frequency	Volume (mL/lumen)
Non-tunneled Central Venous Catheters	**Inpatient:** Before/after each use and at least every 12 hours **Outpatient:** Before/after each use. Recommended daily when not in use	10 mL	NA	NA
Non-valved Peripherally Inserted Central Catheters (PICC)			NA	NA
Tunneled open-ended Central Venous Catheters (i.e. Hickman, Broviac)			NA	NA
Tunneled closed-ended Central Venous Catheters (i.e. Groshong)	**Inpatient:** Before/after each use and at least every 12 hours **Outpatient:** Before/after each use. At least weekly when not in use	10 mL	N/A	
Valved Peripherally Inserted Central Catheters (PICC)				
Implanted Vascular Access Device: Portacath	**Inpatient:** Before/after each use and at least every 12 hours **Outpatient:** Before/after each use. At least every 4 – 8 weeks when not in use.	10 mL	NA	NA

Catheter Type	Normal Saline		Heparin Locking (when not in use)	
	Flushing Frequency	Minimum Volume (mL)	Frequency	Volume (mL/lumen)
Pheresis/Dialysis Catheters	Before & after each use	10 mL or 20 mL after use for blood specimen collection	**Catheter used daily**	**Volume:** Equal to the catheter lumen* **Concentration:** 1000 unit/mL*
			Catheter used less than once per day	**Volume:** Equal to the catheter lumen* **Concentration:** 5000 units/mL*
			Draw up 1 mL of concentrated heparin plus volume of Normal Saline to equal the volume of the catheter (for example for a 1.5 mL catheter lumen draw up 1 mL of heparin and 0.5 mL of Normal Saline) Instill volume equal to the volume of the catheter lumen. Repeat for each lumen **Apply "High Dose Heparin, Do Not Infuse" Label **Always withdraw and discard 5 mL prior to use if high dose heparin was used for locking**	

Table 2 – Central Venous Catheter Lumens (Triple Lumen Catheter)

Proximal Lumen (18 gauge)	Middle Lumen (18 gauge)	Distal Lumen (16 gauge)
• Administration of Medication • Blood Withdrawal • Blood Administration	• Administration of Medication • Hyperalimentation – it is recommended that this lumen be dedicated as such at time of insertion.	• Administration of Medication • Blood Withdrawal • Blood Administration • CVP Monitoring • Colloids • High volume or viscous fluids • Intralipids

Table 3 – Troubleshooting Implantable Ports

Signs and Symptoms	Cause	Nursing Response
Erythema, tenderness, swelling or drainage	Infection or poor wound healing	Notify the physician
An inability to aspirate the blood	Change in patient position Incorrect needle position	Reposition patient Raise the arm that's on the same side as the catheter Roll patient to opposite side Have patient sit up, cough, or take a deep breath Re-access port with a new needle If attempts to correct the problem are unsuccessful, notify the physician
An inability to infuse fluid or flush	Occlusion by the vessel wall Formation of fibrin around the catheter tip	Check IV tubing for kinks or closed clamps Reposition the patient Confirm needle placement Consider fibrinolytic agent If attempts to correct the problem are unsuccessful, notify the physician
A burning sensation or swelling of the subcutaneous tissue	Extravasation of fluid into the tissue rather than into the port or into the vessel Catheter rupture or a misplaced needle	Stop the infusion immediately. Notify the physician.

Appendix A

Push-Pause technique[19,20,21,22]

- Push Normal Saline at rate of 1mL/second then pause. Continue sequence until completion of NS 10ml flush syringe.
- For viscous fluids (e.g., blood products, TPN), push normal saline at rate of 1mL/second then pause. Continue sequence till completion of 20 mL of NS.

Appendix B

When do you change dressings?

- When not intact
- When not dry
- When not clean, except when gauze and surgical are in place. Dressings with gauze and surgical need to be changed 48hrs from last change.

Dressing **Intact** = dressing adherent to the skin/device and insertion site is not exposed or accessible
Dressing **Not Intact** = missing or insertion site is exposed or accessible

- What about lifted edges? Is that intact?
  - If there was dressing lift on the edge of the dressing and 50% of white border was attached to the skin and there were no tunnels or open areas where external environmental contamination could enter the insertion site, the dressing was considered intact
- What about if reinforced with other tape/tegaderm ***after*** the initial dressing change? Is that intact?
  - No
- What about if reinforced with other tape/tegaderm ***at the time of*** the dressing change? Is that intact?
  - Yes
  - Cloth tape is recommended over plastic tape or another tegaderm as moisture build up under the dressing is less likely.
  - Tape used to reinforce needs to have date/time/initial

Dressing **Clean** = no blood/fluid present on gel pad OR blood/fluid present on gel pad and not oversaturated AND insertion site not obscured
Dressing **Not Clean** = blood/fluid present outside of gel pad or in the gel pad and obscures the insertion site OR gel pad oversaturated

- What is oversaturation?
  - When the gel pad is depressed with a gloved finger and the gel pad feels like pitting edema and remains displaced when depressed



Gel pad feels like pitting edema and remains displaced when depressed.

- What if there is a gauze, surigicel?
  - Because the insertion site is obscured, the dressing is not clean. These dressings need to be changed 48hrs from last change.

Dressing **Dry** = no blood or fluid in the gel pad or dressing OR dried blood or fluid in the gel pad or dressing
Dressing **Not Dry** = wet blood or fluid on the gel pad or dressing



Q: How Do I Keep My Patients' A: Securement Products

1 Clean



Chlorhexidine (CHG) will be used as the skin antiseptic for dressing changes.
Allow for product to completely dry.

2 Skin Prep



Cavilon should be used as a barrier protectant between the patient's skin and any adhesive or dressing used.
Allow for product to completely dry.

3

Adhesive

AND/ OR

Adhesive



SecurePort IV is a topical adhesive that can be used on/at the **insertion site** of access device to prevent infection, aid with oozing and provide extra adhesion between skin and dressing.



Mastisol is an adhesive that can be used only in the **white border** of the dressing. Make sure to use Cavilon skin barrier before application.

4

Secondary Securement

AND/ OR

Anchoring



Medipore provides secondary securement for dressing and heavy lines; applied **at the time** of dressing application.

Medipore can be utilized to support/stabilize lines **at any time using the Omega technique.**

Pro Tip!



Always use adhesive remover when Mastisol or SecurePort IV are used to secure a central line dressing during application.



Blood Administration

- Policy # CP 3-115 - Administration of Blood Products
- Policy CP 3-119 – Massive Transfusion Protocol

Manual:	Clinical Practice	Policy #:	CP 3-115
Subject:	**Administration of Blood Products**	Effective Date:	05/02/1991
		Revised Date:	12/17/2025
		Level of Evidence:	Level: D
Personnel Covered:	Nursing, Perioperative Staff, Blood Bank & Pharmacy	Page: 1	of 19

Purpose

To standardize the procedure for the administration of blood products and to provide safe care to patients receiving transfusions.

Policy

1. Transfusion Order
   a. An order is required for the administration of all blood products.
   b. Only physicians or licensed independent providers [nurse practitioner (NP), physician assistant (PA) and CRNA under supervision of a physician] can order transfusions.
2. Transfusion Consent
   a. Except in a medical emergency, informed consent for blood or blood product transfusion must be obtained prior to transfusion.
   b. Blood consent time frames are as follows:
      i. Inpatient – Consent must be obtained for each hospital inpatient admission if transfusion might be required. The consent is valid for that inpatient admission only.
      ii. Outpatient – Consent must be obtained for each outpatient whose treatment plan requires transfusion. This outpatient consent must be renewed at least annually or whenever the patient's physician believes there is a material change in risk of transfusion for the patient.
   c. Documentation of Informed Consent or refusal of blood transfusion must be present in the medical record. A signed copy can be obtained from the medical record as applicable.
   d. Transfusion-Free patients:
      i. A copy of the Refusal to Permit Transfusion form must be faxed to blood bank at the time it is signed (see Clinical Practice policy, Transfusion Free Medicine (TFMP) Enrollment Process.
      ii. A copy of the Product Acceptance form will be faxed to blood bank upon completion.
      iii. If a situation happens any transfusion-free patient desires transfusion, refer to instructions outlined in the Clinical Practice policy, Transfusion-Free Medicine Program (TFMP): Enrollment Process.

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3. Samples drawn for blood type and antibody screen (type and screen) and crossmatch can be drawn by an RN, LVN, phlebotomist, care-partner certified in phlebotomy, Clinical Laboratory Scientist (CLS, aka medical technologist), PA or physician.
   a. Laboratory specimens will be labeled in the presence of the patient in accordance with the Specimen Labeling Policy.
4. "ABO/Rh verification sample" is a second sample collected by a separate phlebotomy that is required for patients for whom there is no history of ABO/Rh type on file in the patient's medical record.
   a. Whenever possible, the second sample will be drawn by a different staff member
   b. Each sample will be drawn using the complete patient identification process.
   c. Blood Bank laboratory will initiate the request for the verification sample if needed.
   d. Patients who have ***not*** had their ABO type confirmed will receive group O red cells until their blood type is confirmed by a second sample.
5. Pre-op blood orders should be submitted to the Blood Bank with blood bank samples at least 12 hours prior to surgery. Anticipated use of platelets, plasma or cryoprecipitate in the OR should be made known well in advance of surgery so the Blood Bank can assure an adequate supply.
6. Qualified transfusionists who may administer blood/blood products are:
   a. Registered Nurse (RN) – may administer all blood products as ordered.
   b. IV Certified LVN – may administer all blood products as ordered with the exception of factors concentrates (e.g. FVIIa, FVIII, F IX, FXIII, K-Centra, or fibrinogen concentrate).
   c. Anesthesiology team (to include attending and resident/fellow anesthesiologist, and CRNA) – may administer all blood products in the perioperative areas.
   d. Perfusionist – may administer all blood products in the perioperative areas, and also in the ICU for ECMO.
7. Blood products must be checked in the presence of the recipient by the qualified transfusionist who will administer the transfusion and a second licensed qualified individual (or an electronic identification system such as Bridge) using the patient name and medical record number.
8. The following staff members may obtain blood products from the blood bank lab:
   a. Any medical or nursing staff member, including unit secretary, certified nursing assistant (CNA), care partner, RN, LVN, licensed registry, OR orderly or nursing student.
   b. Valid hospital approved ID badge is required.

c. The person transporting the blood, must undergo training on blood transport.

9. Blood products and/or cooler ice for more than one patient will not be released at the same time to the same courier.

10. Blood product infusions will be started promptly when issued to non-OR locations. If the transfusion is cancelled, the blood product should be returned to the Blood Bank within 20 minutes of pickup to avoid wastage (Exception: red cells and plasma products issued in validated blood bank coolers).

11. Blood transfusions of all blood products (including whole blood, red cells, plasma, platelets and cryoprecipitate) MUST be completed within four (4) hours after the unit is spiked to prevent potential sepsis, and for patients in non-OR locations (and/or whose red cell or plasma blood products are not in a cooler) within six (6) hours of pickup from the Blood Bank.

12. Red cell and plasma components will be issued to the operating room (OR) and other locations as applicable in validated blood bank coolers. The coolers are transport devices and require periodic ice changes; the Blood Bank will telephone when an ice change is needed.

    NOTE: Once a blood product is removed from a cooler, the infusion must be started promptly or the blood unit returned to the cooler within twenty minutes.

13. Blood products can NEVER be placed into or stored in refrigerators outside of the Blood Bank.

14. At the end of surgery, coolers must be returned to the Blood Bank immediately with the following exceptions:

    a. When immediate post op transfusion is anticipated, the blood cooler may follow the patient to the unit. The cooler will be returned to the Blood Bank when the transfusion is complete or the blood is no longer needed.

    b. Patients may be transferred from the OR with blood infusing.

15. Issued and transfused in the following order:

    a. Autologous

    b. Directed donor

    c. Non-Directed Community donor

16. Transfusion of Cell Saver and Acute Normovolemic Hemodilution (ANH) units must be started in the OR before the patient leaves the OR. If the patient shows no signs of transfusion reaction, the transfusion can be completed in non-OR areas under the supervision of nursing staff.

    a. Transfusion of Cell Saver and ANH units cannot be started in non-OR areas.

    b. Cell Saver and ANH units not started in the OR must be discarded at the end of the case.

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c. Documentation of transfusion of Cell Saver and ANH units is recorded on the Anesthesia Record.

17. Patients admitted from outside facilities with a blood product infusing and no sign of reaction, the clinician can complete the infusion. All unused products from the outside will be returned to the blood bank.

18. To obtain emergency uncross-matched blood when, due to the severity of the patient's condition, there is no time to complete a blood type and/or antibody screen and/or crossmatch:

    a. The Blood Bank is to be notified by a direct phone call (not by computer) that emergency uncrossmatched blood is required.

    b. If a blood product is needed in an emergency and time cannot be allowed for type and screen and/or crossmatch tests, the Blood Bank/Transfusion Service "Emergency Blood Request and Release" form will be completed and sent with the blood product(s). The form should be signed immediately by a physician that is part of the patient care team. If the physician is unable to sign the form at the time the blood is needed, notify Blood Bank as to which physician has ordered the blood. If the form is not signed the blood bank staff and/or Transfusion Medicine physician will contact the physician who placed the order (and/or the attending physician or other physician who is part of the patient care team) for signature of the form as required by California State law.

    c. Type and screen and/or crossmatches will be subsequently completed and if the screen is positive or crossmatches incompatible, for inpatient, day hospital, and infusion center, the results are phoned to a member of the patient care team.

19. All red blood cell and platelet products must be leukocyte-reduced if indicated.

20. Irradiated (or pathogen reduced which is equal to irradiated), CMV sero-negative and/or hemoglobin S negative blood products are to be used as described in Attachment D.

21. The Blood Bank must be notified at the time of a suspected transfusion reaction. Complete the Transfusion Reaction documentation in Bridge or if on downtime, use downtime form.

22. Normal Saline and Plasmalyte are the only acceptable IV solutions for transfusing and flushing the IV line before and after the administration of blood products.

    a. Medications NEVER may be added to blood or blood products, or infused through the same administration set as the blood product.

23. Blood and blood components always must be administered using the appropriate filter and/or tubing (see Attachments A & B).

24. Blood and blood components must be administered using Bridge unless Bridge is not available, the product cannot be scanned or the qualified transfusionist does not have access to Bridge.

EQUIPMENT

- Transfusions

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- IV Pole
- 0.9% Normal Saline solution
- Infusion pump (if applicable)
- Component – specific filter and tubing (See Attachments A & B)
- Gloves
- Alcohol swabs

- Blood warmer (if applicable)
  - Level 1 Fluid Warmer
  - Level 1 D70 IV fluid Administration set – obtain from Materials Management (KHUSC)

Procedure (all areas)

1. Prior to administration, the nurse will ask the patient to determine if they have given informed consent to the transfusion
   a. Verify documentation of Informed Consent for blood in the medical record.
   b. If patient has not given consent, notify ordering provider prior to proceeding.
2. For red cell transfusion, a Type and Screen (T&S) sample is required if T&S has not been done within the prior 3 days
   a. Exception: Samples from Pre Op Clinic patients are usable up to thirty (30) days if the patient has NOT been transfused and/or transplanted and/or pregnant within the 90 days prior to the sample draw, and the patient has completed and signed the Pre Op 30 Day Type and Screen Questionnaire.
3. For transfusion of non-red cell products (plasma, platelets, and/or cryoprecipitate) the patient must have a Type and Screen (T&S) within the last year and at least one previous ABO type.
4. The Blood Bank will communicate with Surgery, Same Day Surgery, Day Hospital, Pre Op Clinic, or the patient's nursing unit as appropriate, when STAT orders for blood products needed on the current day are available. When requested, Blood Bank will notify the same area(s) when Routine orders for blood products are available.
5. The Blood Bank will notify Surgery, Same Day Surgery, Day Hospital, Pre Op Clinic, the nursing unit or transplant coordinator, as appropriate, when the patient has a positive antibody screen or other situations that may cause a delay in blood availability.
6. When blood is issued from Blood Bank to any area a two person read-back is done:
   a. Check and verify information on patient ID label, Transfusion Record form, and tag attached to blood bag. Elements that are checked include:

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   i. Patient's name
   ii. Date of birth
   iii. Patient's medical record number
   iv. Donor unit number
   b. Do not accept blood component if any of the information is missing, or the information on the blood bag label, blood bag tag and/or the Transfusion Record form does not match.
   c. The Blood Bank technologist will complete the verification documentation process by entering into the computer the names of the courier and blood bank staff dispensing the blood.

Administration of Blood in the Operating Room (OR)

1. A physician or CRNA order is required for any blood product and must specify component requested and number of units.
   a. Verbal orders are recorded by the OR RN on the OR Transfusion Order Sheet.
2. Blood will be picked up on an as-needed basis, with red cell products and thawed plasma transported via the blood cooler system. Laboratory Personnel can refer to Clinical Laboratory/Keck Blood Bank SOP Insulated Blood Coolers.
   a. The patient must be in the actual OR room prior to pick up and delivery of blood products.
   b. Blood product courier (or designated OR staff person) can pick up and deliver coolers and/or blue ice blocks to just one OR/one patient at a time.
   c. Couriers will use plastic bags for the transport of blue ice blocks.
   d. A Blood Pickup/Delivery slip must be completed and verified by two (2) OR staff members prior to submitting to the Blood Bank. NOTE: Verification will include patient name, MRN and OR room number.
3. If additional units are needed during surgery, the RN or designee will call the Blood Bank and indicate products needed.
4. Upon receipt of the blood products, the courier and OR RN together will:
   a. Verify information on the Blood Pickup/Delivery Slip to ensure the blood products and cooler are being delivered to the correct OR room and patient. This is done by the RN and courier doing a verbal readback of the patient name, medical record number and OR room number.
   b. If the OR RN is not readily available, the CRNA or Attending Anesthesiologist may receive the cooler and perform the verification. Anesthesia residents may NOT do the cooler receipt and verification.

5. After completion of the Blood Pickup/Delivery Slip the blood components will be checked by the OR RN.
    a. The RN will check the blood products to confirm the patient name and medical record on the blood bag tag and Transfusion Record form matches the patient name and medical record of the patient. (This is the minimum check required. The nurse may elect to check other elements, such as matching the unit number on the blood label to the blood bag tag and Transfusion Record form.)
    b. The blood units must be checked against the Transfusion Record form one by one, not as a batch to avoid switching of paperwork.
    c. After checking each product, the RN will place their initials on the blood bag tag or the Transfusion Record form.
6. Transfusion of red cell and plasma products will be started promptly after removal from the cooler, or else the blood products must be returned to the cooler within 20 minutes of removal. Close the blood cooler lid after retrieval of each blood product.
7. The OR should use Bridge Multi-Unit Transfusion (MUT).
    a. Log into Bridge
    b. Verify right patient by using hospital approved identifiers.
    c. Scan the patient's armband QR code
    d. Select transfusion method MUT
        i. Loading Units
            (1) Ensure ***Add*** button is selected
            (2) *Is Recipient Tag Present?*
                (a) YES – Scan Crossmatch Tag
                (b) NO – If no, return unit to blood bank and chose a different blood unit
            (3) Scan the blood product unit number barcode
            (4) Scan the blood product barcode (E Code)
            (5) Scan the blood product expiration date barcode
            (6) Scan the blood products donor blood type (ABORh) barcode
            (7) Repeat steps (1) - (5) to load additional units

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            (8) Units are now loaded in Bridge MUT
        ii. Starting a Transfusion
            (1) While in MUT, ensure units have been loaded and ***Verify*** button is selected.
            (2) Scan the Unit Number and Blood Product barcodes for the unit being transfused.
            (3) Click Yes
            (4) Spike the unit
            (5) Click Start
            (6) Transfusion has now been started.
        iii. Ending a Transfusion
            (1) Ending a single unit
                (a) Click End button next to unit you want to end
                (b) Transfusion is now ended
            (2) End All Transfusions
                (a) Select NO from Reaction column header
                (b) Click End All Transfusions button
                (c) Click Yes
                (d) All transfusions in progress are now ended.
                (e) End All button can be clicked multiple times during the surgery doing so does not affect the list of units not started
        iv. Releasing Unused Units
            (1) Click Trash Can icon next to the unused product.
            (2) Product is now released from MUT and can be returned to blood bank.
8. Downtime Method (Paper) to be used only when Bridge is not available or product cannot be scanned
    a. Immediately prior to transfusion, the transfusionist and one (1) other qualified healthcare provider

trained in the process will concurrently verify the information on the donor unit, blood bag tag and the Transfusion Record form.

b. An anesthesia provider must participate in the verification of the blood products; the only exception is in dire emergency with the patient is already having active massive bleeding

i. Check item by item, the following elements:

(1) Patient's name and medical record number (MRN) located on the patient ID band matches name and MRN on the blood product tag and the Transfusion Record.

(2) Donor unit number matches on blood bag label, blood product tag and Transfusion Record.

(3) ABO and Rh type of both donor and recipient.

(4) Expiration date and time of the blood product.

(5) Result of crossmatch, if performed.

(6) Special attributes (e.g. CMV negative, irradiated, pathogen reduced, hgb S negative).

ii. If the patient identifiers and/or unit number do not match or information is missing, do not transfuse until the discrepancy is resolved.

c. Completion of Transfusion Record form.

i. Once verification has been made, the transfusionist and verifier will sign and complete date/time when transfusion is started, on the Transfusion Record form.

ii. Place the completed the Transfusion Record form in chart.

9. In those cases where **massive bleeding** is anticipated, the two (2) person verification of all the elements outlined in step 7 above can be done by an anesthesia provider and one (1) other qualified provider trained in the process, before active bleeding has started.

a. An anesthesia provider must participate in the verification of the blood products; the only exception is in dire emergency with the patient is already having active massive bleeding

i. In those dire emergency cases with current active massive bleeding, the two-person verification as outlined in step 7 can be done by two (2) qualified healthcare providers trained in the process.

b. After completion of the verification, the two verifiers will place their initials on the Transfusion Record form on the 'verifier' line.

c. At time of transfusion the transfusionist/anesthesia provider will positively match the patient name and medical record number of the patient to the blood tag, and check the ABO type of red cell blood products.

d. The accurate identification of the blood product to the patient is the ultimate responsibility of the transfusionist.

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e. The transfusionist must sign the Transfusion Record form to complete the medical record at the end of surgery.

f. Place the competed Transfusion Record form in the medical record under the lab section

10. The Anesthesia provider documents vital signs, and transfusion time on the Anesthesia Record.

11. Anesthesia personnel must document any reaction either in Bridge or on the Transfusion Record form and notify Blood Bank.

12. It is the responsibility of the OR circulating nurse to return the blood coolers to the blood bank after the end of the case. The only exception is if the blood cooler follows the patient from the OR.

13. When reporting to PACU RN, state number volume and type of blood product(s) patient received the patient received during surgery. Be sure that the PACU RN is aware of the potential for a transfusion reaction.

14. Transfusion reactions in the OR may be difficult to recognize because the patient's signs and symptoms may be masked by the effects of general anesthesia. Elevated temperature and unexplained dark or rusty urine are very useful signs in determining the possibility of a transfusion reaction. (See Transfusion Reactions section of the SOP.)

15. Large Volume

a. In those cases where **massive bleeding** is anticipated, the two (2) person verification of all the elements outlined in step 7 above can be done by an anesthesia provider and one (1) other qualified provider trained in the process, before active bleeding has started.

b. An anesthesia provider must participate in the verification of the blood products; the only exception is in dire emergency with the patient is already having active massive bleeding

i. In those dire emergency cases with current active massive bleeding, the two-person verification as outlined in step 7 can be done by two (2) qualified healthcare providers trained in the process.

c. After completion of the verification, the two verifiers will place their initials on the Transfusion Record form on the 'verifier' line.

d. At time of transfusion the transfusionist/anesthesia provider will positively match the patient name and medical record number of the patient to the blood tag, and check the ABO type of red cell blood products.

e. The accurate identification of the blood product to the patient is the ultimate responsibility of the transfusionist.

f. The transfusionist must sign the Transfusion Record form to complete the medical record at the end of surgery.

g. Place the competed Transfusion Record form in the medical record under the lab section

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h. Log into Bridge

i. Scan the patient's armband QR code

ii. Scan all the blood product's unit number

iii. End transfusion in Bridge (each unit, one by one).

ADMINISTRATION OF BLOOD IN PATIENT CARE AREAS

1. Ordering of blood products:

a. Obtain a provider order to include component requested, number of units and infusion information.

b. For CPOE (computerized provider order entry) areas, the provider must enter the crossmatch (red cells) or prepare (plasma, platelets, cryoprecipitate) order(s) and specify the number of units. The provider also must enter the transfuse order(s), specifying how many units to transfuse.

c. For non-CPOE areas such as Day Hospital, the unit secretary or qualified staff enters the appropriate orders in the computer, including blood component and number of units.

2. Obtaining blood products

a. IV access **must** be established prior to obtaining blood product from Blood Bank.

i. Blood should be administered through a minimum of a 20 gauge needle/catheter. If larger access cannot be obtained, a 22 gauge needle/catheter may be used.

ii. When peripheral access is limited, a central venous catheter is an acceptable option for blood transfusion.

b. **Prior to picking up blood from Blood Bank**

i. Assess patient condition including vital signs within 30 minutes, prior to the start of transfusion.

ii. Verify there is a provider order for transfusion

iii. Confirm that a current consent for transfusion is available in the medical record.

c. When ready to administer the blood, the printed blood product order is taken to the Blood Bank. One product will be issued at a time unless otherwise specified. Multiple units for the same patient may be issued as long as there are sufficient vascular access sites. Blood products for more than one patient will not be released at the same time.

i. The nurse will verify the printed blood product order is for the correct patient using two hospital approved identifiers.

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d. See PROCEDURE (ALL AREAS) section for more details on obtaining and verification of blood products upon release from blood bank

3. When the courier delivers the blood product:

a. Without a cooler handoff communication to the transfusionist will include:

i. Patient's name

ii. Patient's date of birth

iii. Patient's medical record number

iv. Product type

b. With a cooler:

i. The courier and RN together will:

(1) Verify information on the Blood Pickup/Delivery Slip to ensure the blood products and cooler are being delivered to the correct room and patient. This is done by the RN and courier doing a verbal readback of the patient's name, date of birth, medical record number and room number on the Blood Pickup/Delivery Slip. After verification the RN will print their name, sign and document the time on the Blood Pickup/Delivery Slip.

(2) If the RN is not readily available, another RN may receive the cooler and perform the verification.

ii. Transfusion of red cell and plasma products will be started promptly after removal from the cooler, or else the blood products must be returned to the cooler within 20 minutes of removal. Close the blood cooler lid after retrieval of each blood product.

4. The bedside verification will include:

a. Log into Bridge

b. Verify right patient by using hospital approved identifiers.

c. Scan the patient's armband QR code.

d. For red cell products: Upon verification of the crossmatch test interpretation, the nurse will select 'Start' in Bridge for crossmatched red cell products or the nurse will select 'Rapid Start' in Bridge for uncrossmatched red cell products. The selection of the appropriate transfusion method in Bridge serves as the documentation of crossmatch verification.

e. Select transfusion Method (Start ***or*** Rapid Start)

i. Select **Start** Transfusion (**Start** Transfusion – Usual workflow to transfuse blood products.)

(1) Verify the provider order is active immediately prior to administration

(2) Consent signed per policy

(3) Transfusion education provided

(4) Blood unit attributes checked against the order [e.g. CMV negative, irradiated (or pathogen reduced which is equal to irradiated)]

(5) Scan the recipient tag

(6) Scan the blood product unit number (E code)

(7) Scan the blood product barcode

(8) Scan the blood product expiration date barcode

(9) Scan the blood product ABORh barcode

(10) Enter vital signs. **Note:** Only temperature is required to be entered in bridge. A full set of vitals (temperature heart rate, respiratory rate, and blood pressure) must be recorded in the medical record within 30 minutes prior to the start of transfusion

ii. Select **Rapid Start** (**Rapid Start** – Workflow to utilize for non-OR areas when patient blood type is not known.) **Rapid Start** provides no verification of correct blood product to correct patient. It simply creates a list of products given to the patient. A two person check is required.

(1) The bedside check will include two licensed personnel qualified to participate in the transfusion process. The responsibilities include confirmation that the correct ID armband is on the patient, and that the content of the armband is identical to the information on the blood bag tag attached to blood bag and the Transfusion Record form, and that the information on the donor unit tag matches the blood bag label.

(2) Verify the provider order is active immediately prior to administration

(3) Scan the blood products unit number

(4) Scan the blood products barcode (E code)

(5) Scan the blood products expiration date barcode

(6) Scan the blood products blood ABORh barcode

(7) Select Continue

(8) Complete co-signature to continue

5. **DO NOT** transfuse the blood if any of the above information, patient identifiers and/or unit number is missing or does not match. The blood product may **NOT** be administered until the discrepancy is resolved. (Blood types may not always be identical between donor and patient. Refer to Attachment C Blood Compatibility Tables).

6. **Initiate Transfusion:**

   a. Wash hands and apply gloves.

   b. It is strongly preferred to transfuse one blood product at a time. In case with extreme blood loss it is acceptable to transfuse multiple units via multiple vascular access sites.

   c. Prime tubing with Normal Saline and start slow infusion.

   d. Hang on an IV pole; spike the blood product.

   e. An infusion pump may be used to assist the flow rate of the infusion. For red cell transfusions, a manual pressure cuff may be used to increase flow rate. **NOTE: Pressure cannot exceed 300 mmHg.**

   f. Use roller clamps to stop Normal Saline and start infusion of blood.

   g. Click **Start** button in Bridge.

   h. Begin transfusion at a rate of 100 mL/hr for the first 15 minutes. If no reaction has occurred, the infusion rate may be adjusted.

7. Stay with the patient for approximately the first 5 minutes. Closely monitor the patient for the next 10 minutes and re-check vital signs.

8. **Throughout Transfusion:**

   a. The patient should be monitored for signs of reaction, i.e., fever, chills, rash, SOB, chest pain, hematuria, flushing, itching, hives and condition of infusion site. The patient should have access to a call light, and response to a call should be prompt.

   b. Vital signs will include:

      i. Temperature

      ii. Heart rate

      iii. Respiratory rate

iv. Blood pressure

c. Vital signs should be recorded as follows:

i. Within 30 minutes **PRIOR** to transfusion

ii. Within10 to 20 minutes of initiation

iii. Hourly and prn

iv. Post-transfusion

v. Before sending patient home

9. **Complete Transfusion:**

a. Flush with saline

b. Remove empty blood product bag and tubing

c. Any physician-ordered laboratory values to determine transfusion efficacy may be drawn 30-120 minutes after the transfusion is completed.

d. **End Transfusion** in Bridge and enter post transfusion vital signs.

e. If there was no transfusion reaction, place the Transfusion Record form in the confidential waste bin

f. Ensure all education regarding blood transfusion was provided and documented.

10. **Disposal of Blood Component and Tubing:**

a. The empty blood component bag is to be disposed of as infectious waste (red bag), unless a transfusion reaction is suspected.

b. If an adverse reaction occurs, refer to section on Transfusion Reactions below.

11. **Downtime** Method (Paper) to be used when Bridge is not available or product cannot be scanned

a. The bedside check will include two licensed personnel qualified to participate in the transfusion process. The responsibilities include confirmation that the correct ID armband is on the patient, and that the content of the armband is identical to the information on the blood bag tag attached to blood bag and the Transfusion Record form, and that the information on the donor unit tag matches the blood bag label. Item by item, check the following information:

i. Verify the provider order is active immediately prior to administration

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ii. Consent signed per policy

iii. Transfusion education provided

iv. Patient name and date of birth (Ask the patient to state their name and date of birth when possible). Confirm the name and date of birth match on the patient armband, the blood product tag and the Transfusion Record match.

v. Patient's armband medical record number (MRN) matches MRN on the blood product tag and the Transfusion Record.

vi. Donor unit number on the blood product label matches that on blood product tag and Transfusion Record form.

vii. Check ABO and Rh type of both donor and recipient.

viii. Expiration date and time of the blood product.

ix. Results of crossmatch test, if performed.

x. Special attributes [e.g. CMV negative, irradiated (or pathogen reduced which is equal to irradiated)].

b. Both personnel must sign their names and titles on the Transfusion Record form to verify that the blood check is complete.

c. Documentation

i. The Blood Administration section on the Transfusion Record form must be fully completed.

ii. Complete all information on Transfusion Record form. ***Make sure all signatures are present.***

iii. Document blood component infused.

iv. Place the Transfusion Record form in patient's chart under lab section.

v. All education provided regarding blood transfusion will be documented in the medical record.

TRANSFUSION REACTIONS

1. Signs and symptoms may include:

- Fever (Rise in temperature of 1°C (1.4°F) or greater from baseline and at least 38°C (100.4°F)
- Rash/Hives/Itching*

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- Chills/Rigors (even in absence of fever)
- Chest or Back Pain
- Tachycardia
- Hypotension
- Chest or Back Pain
- Dyspnea
- Wheezing
- Nausea/Vomiting
- Confusion (new onset)
- Pounding Headache
- Convulsions
- Apprehension (new onset)
- Hematuria
- Hypertension
- Diaphoresis

NOTE: Fever is often the most sensitive indicator of hemolytic or septic transfusion reactions. Fever may develop over the course of multiple transfusions.

*Rash/hives/itching with no other symptoms does not need to be directly reported to Blood Bank. Bedside clerical check will be requested.

2. Any RN may initiate the transfusion reaction form for suspected transfusion reactions without a physician's order.
3. If a hemolytic reaction or anaphylactic reaction is going to occur, it usually will happen after a small volume of blood enters the patient's circulation. A febrile reaction may occur up to four (4) hours after transfusion or pulmonary reaction, such as Transfusion Related Acute Lung Injury (TRALI) or fluid overload, may occur at any point during the transfusion or up to six (6) hours after the transfusion. Sepsis due to bacterial contamination also may have delayed onset.
4. If the patient develops signs or symptoms of a reaction:
   a. Clamp off blood, maintain IV with normal saline
   b. Place transfusion on hold in Bridge by clicking **Hold Transfusion**
   c. Immediately notify the patient's physician, the Nurse Lead or NP, as applicable, and Blood Bank.
   d. Inform the physician of all objective and subjective symptoms.
   e. If the physician elects to STOP TRANSFUSION
      i. Notify Blood Bank
      ii. Obtain and send a pink top blood specimen to the Blood Bank, if ordered.

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Manual:	Clinical Practice	Policy #:	CP 3-115		
Subject:	**Administration of Blood Products**	Effective Date:	05/02/1991		
		Revised Date:	12/17/2025		
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      iii. Send the blood bag and blood tubing to Blood Bank in a sealed large clear specimen bag with a bio-hazard symbol, if requested with the printed Transfusion Report. NOTE: Do NOT use a **RED** biohazard waste bag.
      iv. Give medications (if ordered)
      v. Observe and record vital signs at least once an hour for three hours.
   f. If the physician elects to CONTINUE TRANSFUSION
      i. Notify Blood Bank of the physician decision. A transfusion reaction investigation may be initiated by the Blood Bank as determined by Blood Bank SOP and/or consult with Transfusion Service pathologist on call.
      ii. **End Hold** in Bridge and resume transfusion
      iii. Obtain and send a pink top blood sample to the Blood Bank if ordered.
      iv. Give medications (if ordered).
      v. Observe closely and record vital signs every 15 minutes until transfusion completed.
      vi. At the completion of transfusion, send the blood bag and blood tubing to Blood Bank in a sealed large clear specimen bag with a bio-hazard symbol, if requested with the printed Transfusion Report. NOTE: Do NOT use a **RED** bio-hazard waste bag.
      vii. **End Transfusion** in Bridge
5. Suspected Delayed Reaction – Notify physician, Nurse Lead or LIP (as applicable) and Blood Bank.
6. Complete a hospital occurrence report for all suspected transfusion reactions.

REFERENCE(S)

- Lippincott Manual of Nursing Practice – Current Edition. Chapter 27- Transfusion Therapy and Blood and Bone Marrow Stem Cell Transplantation. Williams and Wilkins.
- Transfusion Therapy Clinical Principles and Practice, current edition
- Technical Manual, current edition
- Blood Transfusion Therapy. A Physician's Handbook. Current Edition. AABB. Bethesda, Maryland.
- National Patient Safety Goal 1C: Eliminating Transfusion Errors

ATTACHMENTS

- **Attachment A** Blood Filters
- **Attachment B** Blood Transfusion Chart
- **Attachment C** Blood Compatibility Tables
- **Attachment D** Table of Indications for the use of Irradiated, Pathogen Reduced, CMV sero-negative or hemoglobin S negative blood components
- **Attachment E** Blood Use and Blood Review Guidelines

RELATED POLICIES AND PROCEDURE(S)

- Administration Manual
  - Consents: Obtaining and Verifying (4-104)
- Clinical Practice Manual
  - Transfusion-Free Medicine Program (TFMP): Enrollment Process (CP3-116)
  - Specimen Labeling (CP3-157)

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # CP 3-115		
Effective:	05/02/1991	Medical Executive Committee
Revised:	03/28/1996	Professional Practice Committee
	10/13/1998	Medical Executive Committee
	04/05/2002	Professional Practice Committee
	06/18/2002	Governing Board
	05/24/2005	Governing Board
	02/25/2010	Governing Board (Transferred from Nursing Manual NA 10-109)
Revised:	09/30/2010	Governing Board
Revised:	03/31/2011	Governing Board
Revised:	08/30/2012	Governing Board
Revised:	08/13/2013	Medical Executive Committee
Revised:	11/26/2013	Policy Committee
Revised:	09/25/2014	Governing Board
Revised:	07/28/2016	Governing Board
Revised:	11/27/2018	Governing Board
Revised:	05/20/2019	Quality Committee of the Governing Board (E-VOTE)
Revised:	01/16/2020	Quality Committee of the Governing Board
Revised:	06/17/2021	Quality Committee of the Governing Board
Revised:	10/21/2021	Quality Committee of the Governing Board

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OPERATING POLICIES

		Board
Revised:	01/20/2022	Quality Committee of the Governing Board
Revised:	02/17/2022	Quality Committee of the Governing Board
Revised:	06/23/2022	Quality Committee of the Governing Board
Revised:	09/27/2022	Quality Committee of the Governing Board
Revised:	01/10/2023	Policy Committee
Revised:	12/22/2023	Policy Committee
Revised:	12/17/2025	Quality Committee of the Governing Board
Keywords:	Blood, product, component, Platelets, Blood warming, Transfusion, Factors, PRBCs	

Attachment A
Blood Filters

Filter	Pore Size	Comments / Considerations
Braun V 2500 (gravity)	170 micron	Standard Y type blood tubing can be used for administration of Whole blood (WB), RBC's, plasma, platelets, cryoprecipitate, washed RBC's and granulocytes. Removes gross clots and large microaggregates only.
BD Alaris 10015415 (pump or gravity)	180 micron	Standard Y type blood tubing used for gravity or Alaris pump administration of WB, RBC's, plasma, platelets, cryoprecipitate, and washed RBC's. Removes gross clots and large microaggregates only. Administration of blood through an infusion pump will not destroy most blood components except granulocytes. Gravity only (no pump) if used for granulocytes.
Level 1 D-70	170 micron	For use with Level 1 Blood warmer/Rapid infuser. Not for use with platelets, cryoprecipitate or granulocytes.
Pall Microaggregate SQ40S	40 micron	Removal of large and smaller microaggregates from whole blood, red cells and platelets. Indicated for patients needing leuko-reduced units when pre-storage leuko-reduced units are not available. Can be used for salvaged auto blood. Filter may be added in-line to standard 170 micron Y type tubing. NOT for use with granulocytes.
Belmont 3.0 Liter Reservoir	160 micron	For use with Belmont Rapid Infuser by anesthesia providers only

TIME LIMIT GUIDELINES FOR BLOOD TRANSFUSION FILTERS

Filters should be changed at least every 12 hours in procedural areas.

Change the transfusion administration set every four hours or after four units administered within a four hour time period in non-procedural areas (Reference: AABB. *AABB Primer of Blood Administration. (2018).* AABB; 2019.)

For Blood Component Chart, see **Attachment B**.

Attachment B

Blood Component Chart

1. **All infusions must be initiated within one hour of receipt from the Blood Bank, unless stored in an approved cooler.**
2. **All blood components must be infused with a filter.**
3. **All infusions must be completed within 4 hours of spiking the blood unit.**
4. **Document all suspected transfusion reactions. Notify physician and Blood Bank of all suspected reactions.**

Blood and Blood Components	Composition Approximate Volume	Indications	Tubing	Comments
Red Blood Cells, Leuko-reduced (RBC-LR)	RBC, reduced plasma and WBC, 1 unit = 250-450 mL. Most are 300-350 ml	Increase RBC mass and O_2 carrying capacity in hypovolemic or normovolemic patients with symptomatic anemia.	V 2500 Alaris 10015415 or Level 1 D-70	One unit of packed red cells will increase hematocrit by approximately 3% and hemoglobin by 1 g/dL in an adult. Transfusion must be completed within 4 hours after unit is spiked. Leuko-reduction decreases CMV risk.
Washed Red Blood Cells	RBC's, no plasma, markedly reduced WBC. 1 unit equals 180-260 ml.	Same as RBC. Reduced risk of allergic reaction to plasma proteins	V 2500 or Alaris 10015415 or Level 1 D-70	Must be ordered from blood supplier; allow 12 hrs for availability. Unit expires 24 hours after washing completed. Transfusion must be completed within 4 hours after unit is spiked.
Platelet Pheresis (single donor)	Platelets collected from one donor by apheresis procedure. 1 unit = 1 dose. Volume will vary from 200-500 mL	To increase platelet count in bleeding patients to > 50k or prophylactically in patient with plt count < 10k or prophylactically in septic patient with plt count < 20k.	V 2500 or Alaris 10015415	Infusion must be completed within 4 hours after the unit is spiked. One platelet Pheresis product is equal to 4-6 units of platelet concentrates. HLA matching or crossmatch plts can be requested for refractory patients, but may be up to several days to obtain product.
Thawed Plasma	Plasma, all coagulation factors (no platelets). Frozen for storage. 1 unit = 200-320 mL	Replacement of coagulation factors in treatment of coagulation disorders	V2500 or Alaris 10015415 or Level 1 D-70	Infusion must be completed within 4 hours after the unit is spiked.
Cryoprecipitate	Concentrated source fibrinogen; also contains FVIII, FXIII, von Willebrand factor (vWF) and fibronectin. Provided as pools of 5 donors. Average volume is 90 -140 mL	Treatment of hypo- and dysfibrinogenemia, and for production of fibrin glue. (Deficiency of factor s VIII, XIII and vWF should be treated with factor concentrates, whenever feasible, not with cryo).	V2500 or Alaris 10015415	Infuse as soon as possible after receipt from the Blood Bank. Infusion must be complete within 4 hrs after the unit is spiked.
Granulocytes	Concentrated source of granulocytes Volume varies from	For patients who have profound absolute neutropenia and infection. Must be approved by Transfusion Service Medical Director	V2500 or Alaris 10015415 (gravity only-no pump)	Infuse by gravity only. Infuse as soon as possible over 1-2 hours as granulocytes lose potency rapidly after being collected. Infusion must be completed within 4 hours after spiking the unit. Febrile reactions are common and patient likely will require premedication. Obtaining granulocytes takes at least 36 hours from request.

ATTACHMENT C: Blood Compatibility Tables

The decision of the blood type of the blood component made available to the patient will be dependent on inventory management issues and patient factors in accordance with these guidelines.

For **Red Blood Cell Transfusions:**

If the patient is group	First Choice	Acceptable Alternative Choices	In Emergent/Shortage Situations, With Pathologist Approval
O Pos	O Pos	O Neg	
A Pos	A Pos	A Neg, O Pos, O Neg	
B Pos	B Pos	B Neg, O Pos, O Neg	
AB Pos	AB Pos	All blood groups are acceptable	
O Neg	O Neg	NONE	O Pos
A Neg	A Neg	O Neg	A Pos, O Pos
B Neg	B Neg	O Neg	B Pos, O Pos
AB Neg	AB Neg	A Neg, B Neg, O Neg	AB Pos, A Pos, B Pos, O Pos

For **Thawed Plasma* (Rh type is not a consideration when transfusing Plasma)**

If the patient is group	First Choice	Acceptable Alternative Choices	In Emergent/Shortage Situations, With Pathologist Approval
O	O	All blood groups are acceptable	
A	A	A, AB	
B	B	B, AB	
AB	AB	None	A or B

* This is provided as general information ONLY. For solid organ or allogeneic BMT (Blood/Marrow Transplant) patients, plasma components should be compatible with the donor ABO type.

Platelet Compatibility:

ABO type identical platelets (i.e. the blood type of the patient matches the blood type of the platelet product) are provided based on availability, inventory and the clinical setting. Rh negative male patients and female patients over age 55 and/or S/P hysterectomy will be provided either Rh negative or Rh positive platelets, depending on inventory. Rh negative platelets are provided to Rh negative females less than age 55 who have not had a hysterectomy, unless Rh negative platelets are not readily available and the need is urgent. The urgency of need is determined by the patient's physician.

Group O platelets have additional testing to identify those group O platelet components with potential increased hemolytic activity. Group O platelet components with higher titers of anti-A and anti-B antibodies are not provided to non-group O patients.

Cryoprecipitate

ABO group identical cryoprecipitate usually is provided, but based on availability and inventory non ABO group identical cryoprecipitate may be provided.

INDICATIONS FOR CMV SERO-NEGATIVE LEUKOCYTE-REDUCED CELLULAR COMPONENTS (OR PATHOGEN REDUCED PLATELETS*)**

*****Pathogen Reduction negates need for CMV negative as the virus is sterilized by the pathogen reduction process**

CMV negative red cells, and CMV negative or Pathogen Reduced platelets are to be given as follows:

1. Allo blood/marrow transplants:
   a. If both BMT recipient and donor are CMV neg give CMV neg red cells, and CMV negative or Pathogen Reduced platelets when feasible. If CMV negative products and/or Pathogen Reduced platelets are not available, leukoreduced units are considered CMV safe.
   b. If either the recipient or the donor is CMV positive, there is no requirement to give CMV negative red cells or platelets.
2. Organ transplants:
   a. Lung transplant recipients: give CMV neg red cell products, and CMV negative or Pathogen Reduced platelets. If CMV negative/Pathogen Reduced products are not available, leukoreduced units are considered CMV safe.
   b. Heart transplant recipients:
      i. If the recipient is CMV neg or CMV unknown, give CMV neg red cells and CMV negative or Pathogen Reduced platelets. If CMV negative/Pathogen Reduced products are not available, leukoreduced units are considered CMV safe.
      ii. If the patient is positive for antibodies to CMV, CMV neg products are not indicated.
   c. Kidney transplant recipients: Give according to the physician's order(s). If CMV negative products are not available, leukoreduced units are considered CMV safe.
   d. Liver transplant recipients: No requirement for CMV negative blood products.

Indications for the use of hemoglobin S negative blood components:

When whole blood or packed red blood cell units are used to support a patient known to have Sickle Cell Disease or Sickle/Thal Disease or other abnormal hemoglobin in conjunction with Hemoglobin S (e.g., Sickle/ C disease), the units should be screened and known to be negative for Hemoglobin S. When time and supply allow, the red cell units shall be partially or fully matched to the patient's red cell phenotype.

RED CELLS:

In a hemodynamically stable patient, the hgb/hct should be checked after infusion of each red cell unit to determine if the therapeutic goal has been met.

1. Hemoglobin trigger should be less than 7 g/dL in hemodynamically stable, non-bleeding, asymptomatic patients
   a. Less than 8 g/dL in such patients with stable coronary artery disease not undergoing cardiac surgery
   b. Less than 7.5-8.0 g/dL in patients undergoing cardiac surgery
   c. Less than 8 g/dL in patients undergoing active chemotherapy regimen
   d. Recommendation for single unit transfusion then recheck before further units
2. Higher hemoglobin transfusion triggers may be considered in patients with:
   a. Symptoms attributable to anemia (i.e. tissue hypoxia in normovolemic oxygen supplemented patient)
   b. Acute coronary syndromes, coronary artery disease
   c. Acute blood loss of equal to or greater than 30% of estimated blood volume (EBV)
   d. Significant expected blood loss (e.g. intraoperative anticipated losses)
   e. Subarachnoid hemorrhage
   f. Medically untreatable anemia with expected acute or chronic loss
3. RBC transfusion hemoglobin trigger of greater than or equal to 9 g/dL usually is not indicated

PLASMA:

Patients with an INR of 1.7 or less will show no significant shortening of the INR with plasma transfusion; plasma transfusion is not recommended if the INR is less than 1.8.

Plasma should not be transfused to a patient who has a normal PT/PTT and an INR within normal range unless one or more of the following conditions exists:

- TTP
- Ongoing massive bleeding

Plasma may be transfused to patients who have abnormal coagulation studies (INR greater than 1.7 and PTT greater than 45secs) if one or more of the following conditions/situations exist:

- Prophylactic use prior to invasive procedure (for thoracentesis done by radiology, the plasma transfusion trigger is 2 and for paracentesis done by radiology the transfusion trigger is 3)
- evidence of DIC
- Active bleeding
- Patients who will need surgery

'Cryo poor plasma' (aka cryosupernatant) should not be transfused unless the patient is being treated for the following condition:

- TTP

CRYOPRECIPITATE:

Patients with factor deficiencies such as factor VII, factor VIII, factor XIII or von Willebrand factor deficiency should be treated with factor concentrates if available, as they have markedly lower infectious risk and dose can be exact

Cryoprecipitate should not be transfused unless one or more of the following conditions/situations exists:

- Dysfibrinogenemia
- Fibrinogen less than 100 mg/dL
- DIC
- Massive transfusion (replacement greater than or equal to the patient's blood volume within a 12- hour period)
- Topical use

PLATELETS:

In a hemodynamically stable patient, the platelet count should be checked after infusion of each platelet pheresis to determine if the therapeutic goal has been met.

Platelet count less than 100K:

- Active bleeding PLUS coagulopathy, DIC, ECMO, or qualitative platelet dysfunction
- CNS/Ocular bleeding or peri-operative/peri-procedural (except lumbar puncture)

Platelet count less than 50K:

- Active bleeding
- Prior to invasive procedures or surgery (excludes line placement and removal)
- Paracentesis to be done by radiology/ultrasound transfuse only if platelet count is *less than 40K*
- ECMO
- Acute promyelocytic leukemia with DIC/coagulopathy
- Anti-coagulation therapy

Platelet count less than 20K:

- Central and arterial line placement and removal
- Prophylactic transfusions in patients with increased risk of bleeding (i.e. fever, sepsis, coagulation abnormalities)
- Outpatients

Platelet count less than 10K:

- Prophylaxis

For patients with ITP, HIT, and TTP, platelet transfusions are generally not indicated, unless there is a significant or life-threatening bleed.

MANUAL:	Clinical Practice	POLICY #:	CP3-119		
SUBJECT:	**Massive Transfusion Protocol**	EFFECTIVE DATE:	03/18/2021		
		REVISED DATE:	01/14/2025		
		LEVEL OF EVIDENCE:	Level: E		
PERSONNEL COVERED:	Providers, Registered Nurses, Blood Bank	PAGE:	1	OF	5

PURPOSE

The purpose of this policy is to outline the organization's standard for the massive transfusion protocol (MTP).

DEFINITIONS

- MTP provides a balanced replacement of blood elements lost by a bleeding patient and streamlines the process of obtaining blood products by eliminating the need for multiple phone calls or entry of orders for blood products.
- The three key components of an MTP are: 1) rapid blood product availability; 2) balanced resuscitation using set blood product ratios; and 3) role each practitioner has in the blood transfusion process.
- The MTP is appropriate for patients with acute blood loss with the following indications (list is not inclusive):
  - At least one blood volume replacement in 24 hours is anticipated.
  - Need for greater than four red blood cell (RBC) units in one hour.
  - Continuing hemorrhage of at least 250 mL/hour.
  - Clinical judgement that rapid blood loss is imminent.
- MTP has two tiers depending on anticipated blood need:
  - **Low Volume Massive Transfusion Protocol (MTP-LV**) will consist of:
    - 3 RBC and
    - 3 Plasma
    - The MTP-LV is a one-time order
    - Subsequent packs will not be automatically prepared.
  - **High Volume Massive Transfusion Protocol (MTP-HV)** will consist of:
    - 6 RBC,
    - 4 Plasma and
    - 1 Platelet (6:4:1)
    - Blood bank will keep ahead 6:4:1 until the MTP-HV is discontinued.

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OPERATING POLICIES

MANUAL:	Clinical Practice	POLICY #:	CP3-119		
SUBJECT:	**Massive Transfusion Protocol**	EFFECTIVE DATE:	03/18/2021		
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		PAGE	2	OF	5

POLICY

1. Physicians, Physician Assistants (PA), Nurse Practitioners (NP), and Certified Registered Nurse Anesthetists (CRNA) can initiate an MTP.
2. If MTP is implemented in non-intensive care units or non-operative areas, the initiating provider or designee will call "77" to have the operator overhead page a "Massive Transfusion Response".
   a. The dedicated Code Blue team will respond to Massive Transfusion events (refer to the Code Blue Response policy for detailed information regarding Code Blue Team make-up). The rapid infuser will be brought to the floor by the Code Blue ICU RN from the unit assigned to the "Assistant" ICU RN role responding to the MTP.
   b. NOTE: Please See Code Blue Policy CP3-123 for Code Blue Critical Care RN responder assignments.
3. The initiating provider or designee must call the Blood Bank at x28931 (Keck) to activate MTP specifying whether **low-volume or high volume MTP** is to be activated.
   a. See above definitions for detailed description of MTP-LV and MTP-HV responses as well as Appendix A and B of this policy.
      i. Once initiated, all telephonic communication with the blood bank lab will be through a ***designated communicator assigned by the unit Nurse Lead/OR Circulator;*** no other personnel should call requesting products for the MTP.
      ii. When calling, provide the patient's full name, MRN, activating provider's name, and the communicator name and phone contact information.
4. The standard MTP-LV and MTP-HV ratios cannot be altered.
5. Cryoprecipitate will be issued only on a specific order and does require a phone call to Blood Bank.
6. Informed consent is not required prior to emergency blood product transfusion. Refer to the Consents: Obtaining and Verifying policy (4-104).
7. A properly labeled, full pink top tube must be sent to Blood Bank ASAP if a current sample (within three days) is not in the lab already.
8. 'Emergency Blood Request and Release' form will need to be signed by a physician or advanced practice provider (APP) who is part of the patient's care team under these circumstances:
   a. If uncrossmatched RBC products must be issued,
   b. If antiglobulin crossmatch is required but cannot be completed prior to dispense of RBC products (antiglobulin crossmatch takes 45 to 70 minutes), and/or
   c. If antigen negative RBC products is required but not available.

9. A designated runner will bring a printed label, Cerner requisition, etc. to the Blood Bank with patient identifiers to include at a minimum patient's full name and medical record number, to pick up blood. Handwritten information only will be accepted during downtime.
10. Blood products must be checked in the presence of the recipient by a qualified transfusionist who will administer the transfusion and another qualified individual (or an electronic identification system, e.g., Bridge). The check is as follows:
    a. Patient name and medical record number on patient armband verified against transfusion tag on unit.
    b. Product donor identification number on blood bag checked against the transfusion tag on the unit.
    c. Patient ABO/Rh and Donor unit ABO (and donor Rh, if applicable)
    d. Product type
    e. Interpretation of crossmatch test, if applicable
11. If transfusion reaction occurs, refer to CP3-115 Administration of Blood Products policy.
12. When the MTP is discontinued, blood bank lab will be notified by the designated communicator as soon as possible. Unused coolers and blood products will be returned to the Blood Bank promptly.

EQUIPMENT

- Rapid Infuser (refer to the Rapid Infusion Device policy)
  - Rapid infusers are located in the following areas:
    - 4 South ICU
    - 5 West ICU
    - 5 South ICU
    - 7 South ICU
    - 7 East/West ICU
    - KH Cath Lab
    - KH Radiology
    - Main Operating Room
- Cooler

PROCEDURE

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OPERATING POLICIES

MANUAL:	Clinical Practice	POLICY #:	CP3-119		
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		PAGE	4	OF	5

1. Massive Transfusion: Low Volume: See appendix A for detailed script and procedure.
2. Massive Transfusion: High Volume: See appendix B for detailed script and procedure.

REFERENCE(S)

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RELATED POLICIES AND PROCEDURE(S)

- Clinical Practice Manual
  - Administration of Blood Products (CP 3-115)
  - Code Blue Response (CP 3-123)
- Special Care Units Manual
  - Rapid Infusion Device (SCU 10-111)
- Administration Manual
  - Consents: Obtaining and Verifying (4-104)

APPENDICES

- Appendix A: Script, Low Volume Massive Transfusion Protocol (MTP-LV)
- Appendix B: Script, High Volume Massive Transfusion Protocol (MTP-HV)
- Appendix C: Emergency and Non-Standard Blood Release

MANUAL:	Clinical Practice	POLICY #:	CP3-119		
SUBJECT:	**Massive Transfusion Protocol**	EFFECTIVE DATE:	03/18/2021		
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AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
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Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

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Revised:	01/14/2025	Policy Committee
	00/00/0000	
Keywords:		

EMERGENCY AND NON-STANDARD BLOOD RELEASE

Patient MRN _____ Date of Birth _____

Patient Name _____ Location _____

I authorize the transfusion knowing that standard operating procedures have been abridged or are not complete. I acknowledge that there are risks and potential complications associated with modifying usual procedures. I accept responsibility for the decision to transfuse and accept blood under the circumstances checked below. I understand that the Transfusion Service will select the most appropriate blood product(s) possible in this situation.

☐ **Uncrossmatched RBCs** ☐ Group ONEG ☐ Group O POS ☐ Group Specific Blood (ABO identical)

☐ **Rh-Pos given to Rh-Neg or Rh type unknown recipient due to limited Rh-Neg supply**

☐ **Positive AntibodyScreen**
☐ **Positive Crossmatch**
Positive test results could be due to RBC antibodies and workup is not complete yet. Such antibodies might cause hemolysis of transfused red blood cells.

☐ **Best Matched** Patient has complex antibody(ies). Best matched products selected.

☐ **Patient has alloantibody (ies) and units provided are not antigen screened**

☐ **Possible incompatible plasma / incompatible plasma**

☐ **Other** _____

Order called in by _____ for (Dr/APP)_____

Received by (Lab Staff) _____ Date _____ Time _____

Signature attests that orders were READ BACK to the provider/Advanced Practice Providers (APPs).

Physician/APP attestation: I attest that the blood products listed below were needed for the reasons listed above.

Physician/APP Printed Name _____

Physician/APP Signature _____ Date _____ Time _____

Transfusion Service Use Only
Units Issued Under This Directive

R/P	R/P
R/P	R/P
R/P	R/P
R/P	R/P
R/P	R/P
R/P	R/P

Dispense Record	
Visual Inspection (OK/Not)	
Issued to	
Issued by	
Date and Time	

INTERNAL

Low Volume Massive Transfusion Protocol (MTP-LV)

Included in MTP-LV:

- 3 RBC
- 3 Plasma

The MTP-LV is a one-time order. Subsequent packs will not be automatically prepared.

Script for Contacting Blood Bank

"We need to pick up a low volume MTP"
"The patient's name is" _____
"The MRN is" _____
"The ordering provider is" _____
"My name is" _____
"The contact person is" _____
"The phone number of the contact person is" _____

Step	Floor Actions	Blood Bank Actions
1.	Call Blood Bank to request a low volume MPT	
2.	Provide the patient's name, MRN, and ordering provider's name. Provide the caller's name and a callback number (refer to the script above)	
3.		Open the patient's information in PPI, print the screen.
4.		Read back the patient's name and MRN.
5.		Document the physician's name, the caller's name, and a call back number.
6.	Assign a runner to retrieve the MTP-LV. Ensure the runner has a patient label.	
7.		Prepare the products (3:3)
8.	Send the runner to pick up the blood products.	
9.	No need to order components in the computer at this moment.	
10.	The runner goes to the blood bank window on the 2nd floor of the main hospital (Rm 2101).	
11.	The runner notifies blood bank that they are picking up the MTP-LV.	
12.	The runner reads the patient's name and MRN from the patient label.	
13.		Verify the patient's name and MRN on the delivery slips on the coolers.
14.		Document the actual dispense time on the dispense packing list.
15.		Resume normal operations

High Volume Massive Transfusion Protocol (MTP-HV)

Included in MTP-HV:

- 6 RBC
- 4 Plasma
- 1 Platelet

Blood bank will keep ahead 6:4:1 until the MTP-HV is called off.

Script for Contacting Blood Bank

"We need to activate the high volume MTP"
"The patient's name is" _____
"The MRN is" _____
"The ordering provider is" _____
"My name is" _____
"The contact person is" _____
"The phone number of the contact person is" _____
_____

Step	Floor Actions	Blood Bank Actions
1.	Call Blood Bank to Activate a high volume MTP	
2.	Provide the patient's name, MRN, and ordering provider's name.	
3.	Provide the caller's name and a callback number	
4.		Open the patient's information in PPI, print the screen.
5.		Read back the patient's name and MRN.
6.		Document time of the initiation, the physician's name, the caller's name, call back number.
7.	Assign a runner to retrieve the MTP-HV blood products.	
8.	Ensure the runner has a patient label.	
9.		Prepare the products for the 1st batch (6:4:1)
10.		Document the time the 1st batch is ready for pick up.
11.	Send the runner to pick up the blood products.	
12.	No need to order components in the computer at this moment.	
13.	The runner goes to the blood bank window on the 2nd floor of the main hospital (Rm 2101)	
14.	The runner notifies blood bank that they are picking up the MTP-HV products.	
15.	The runner reads the patient's name and MRN from the patient label.	

High Volume Massive Transfusion Protocol (MTP-HV)

Step	Floor Actions	Blood Bank Actions
16.		Verify the patient's name and MRN on the delivery slips on the coolers while the runner reads the information from the patient label.
17.		Document the actual dispense time on the dispense packing list.
18.		Prepare the 2nd batch.
19.		Document the time the 2nd batch is ready for pick up.
20.	Dispatch staff to pick up additional products without calls to the Blood Bank.	
21.	Repeat steps 11-14 as needed.	
22.		Repeat steps 15-16 as needed.
23.		Keep ahead 6:4:1 until the MTP-HV is called off
24.	Call off the MTP-HV	
25.	Return unused product to Blood Bank ASAP	
26.		Resume normal operations

INTERNAL

Tracheostomy

- Policy # CP 3-121 - Tracheostomy Care and Airway Management

MANUAL:	Clinical Practice	POLICY #:	CP 3-121		
SUBJECT:	**Tracheostomy Care and Airway Management**	EFFECTIVE DATE:	06/24/2010		
		REVISED DATE:	08/13/2024		
		LEVEL OF EVIDENCE:	Level: D		
PERSONNEL COVERED:	RNs, LVNs, RCPs	PAGE:	1	OF	8

PURPOSE

The purpose of this policy is to outline the organization's standard of care for tracheostomy care and airway management.

DEFINITIONS

- Coordinated Suctioning: removing secretions at the end of the inspiratory cycle

POLICY

1. Tracheostomy care will be performed by a Registered Nurse (RN), Licensed Vocational Nurse (LVN), or Respiratory Care Practitioner (RCP) at least every eight (8) hours or as needed.[1]
   - Tracheostomy care involves assessing and cleaning the inner and outer cannula[1], under the neck ties[1], and the skin around the stoma.
2. Tracheostomy ties will be changed when they become soiled and as needed.
3. A dry, clean dressing around the tracheostomy will be maintained in order to decrease the risk of skin breakdown. Only precut gauze, foam, or sponges will be used.[1]
   - Precut gauze dressings will be changed every eight (8) hours or as needed.
   - Precut foam dressings will be changed within seven (7) days or as needed.
4. For a newly inserted tracheostomy tube, consult with the provider regarding when initial tracheostomy care should be performed.
   - Tracheostomy sutures are to be removed by providers at 5 days after insertion of the tracheostomy.
5. An extra tracheostomy set, same size and type as the patient's, will be in the patient's room in a clearly visible location at all times.
6. An obturator will be taped at the bedside and clearly visible at all times.
7. A sterile catheter suction kit will be used for open suctioning.[2] A red rubber catheter may be used for open suctioning with a provider order.
   a. Aseptic technique will be maintained with suctioning
   b. Catheter may only be used for one episode of suctioning (up to three passes), prior to being discarded.[2]

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8. An RN or RCP may perform tracheostomy tube suctioning as deemed necessary by the patient's condition.
9. An RN or RCP will coordinate suctioning with the patient's respiratory cycle to ensure tolerate suctioning. When the patient is unable to tolerate coordinated suctioning, hyperoxygenate with 100% FiO_2 before and after each pass of the suction catheter.[2]
10. Suction will not be applied for longer than ten (10) seconds at any one time.[2]
11. If the patient is on ventilator support, a closed suction system will be used and always maintained.
    a. The RCP will change the closed suction system every 24 hours or sooner if needed.
    b. The suction system will be left in "locked" position when not in use.
    c. The suction catheter must be completely withdrawn after each suction procedure to avoid the catheter partially occluding the tube.
12. Saline lavage is **not** routinely done with every suctioning procedure. Saline lavage has **not** been proven to increase secretion removal and may result in a decrease in oxygenation, and/or increase colonization in the lungs.[2]
13. A tracheostomy tube will have the cuff deflated, unless ordered otherwise by provider. The cuff should be inflated if the patient experiences the following:
    a. Aspiration
    b. Bleeding
    c. Ventilator support
14. Tracheostomy tube cuff pressures will be monitored by the RCP at least every 12 hours or as needed. (See policy on Endotracheal and Nasotracheal Tube Care and Airway Management for procedure for cuff pressure measurement.)

TRACHEOSTOMY CARE

EQUIPMENT

- Tracheostomy care kit
- Sterile disposable inner cannula (if disposable cannula is used)
- Second reusable inner cannula (if reusable cannula is being used)
- Sterile normal saline
- Sterile cotton-tipped applications
- Sterile 4 x 4s

- Sterile split gauze or foam tracheostomy pad
- Suction supplies
- Sterile gloves (2 pairs)
- Non-sterile gloves
- Mask and goggles recommended

PROCEDURE

1. Explain and educate patient and family regarding procedure
2. Assessment:
   a. Check proper placement by auscultation[2]
   b. Inspect and palpate for air under skin
   c. Assess for frank bleeding or constant oozing of blood
   d. Assess for the presence of pain
   e. Assess skin around stoma and under neck ties for signs of infection, breakdown, and/or inflammation[2]
   f. Ensure any circuit attachment has adequate support to minimize pressure at tracheostomy site
3. Inner cannula care:
   a. Disposable inner cannula:
      i. Make sure disposable inner cannula is the same size as the tracheostomy tube
      ii. Perform hand hygiene and apply gloves
      iii. Suction patient as needed and hyperoxygenate for at least 30 seconds or as needed when coordinated suctioning is not effective
      iv. Remove gloves and perform hand hygiene
      v. Set up sterile field
      vi. Apply sterile gloves
      vii. Disconnect patient from ventilator or aerosol delivery device with non-sterile hand
      viii. Hold outer cannula in place with non-sterile hand, unlock and remove inner cannula with sterile hand

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      ix. Discard disposable inner cannula
      x. Insert new sterile disposable inner cannula. To insert inner cannula, point the tip to the side, begin to insert while turning the cannula to the upright position. Pull the wings together to lock the cannula into place.
      xi. Reapply ventilator or oxygen source
   b. Reusable inner cannula
      i. Perform hand hygiene and apply gloves
      ii. Suction patient as needed and hyperoxygenate patient for at least 30 seconds or as needed when coordinated suctioning is not effective
      iii. Remove soiled gloves and perform hand hygiene
      iv. Set up sterile field, fill sterile solution container with sterile NS, while maintaining sterility of the inside of the container.
      v. Apply sterile gloves
      vi. Remove oxygen source and inner cannula[2]
      vii. Apply oxygen source
      viii. Discard gloves, apply new sterile gloves
      ix. Clean inner cannula with a small brush
      x. Rinse inner cannula off with sterile NS. Remove excess solution by tapping on the inside edge of sterile container.[2]
      xi. Remove oxygen source, insert inner cannula and lock into place
      xii. Reapply oxygen source
4. Outer Cannula Care:
   a. Perform hand hygiene and apply gloves
   b. Set up container filled with sterile NS
   c. Remove old or soiled dressing and discard
   d. Remove soiled gloves and perform hand hygiene
   e. Apply gloves

f. Moisten swabs and 4 x 4 gauze pads with saline solution

g. Clean the stoma site, outer cannula, and neck plate surface

h. Pat dry the skin around the stoma site

i. Note appearance of stoma site

j. Apply dry sterile split gauze or foam tracheostomy pad under flange

k. Change tracheostomy ties if needed

5. Changing tracheostomy ties:

   a. Perform hand hygiene and apply gloves

   b. To avoid decannulation, have someone assist and hold neckplate securely during change

   c. Remove old tracheostomy tie and apply new, clean tie

   d. If using twill tie, cut a length long enough to encircle the patient's neck two times, cut ends diagonally, and tie in double square knot on the side of the neck

   e. Check for tie tightness. Allow one finger space between tie and neck. Ties are too loose if outer cannula extrudes out of tracheostomy site.

Tracheostomy Suctioning

Equipment

Open technique

- Sterile catheter suction kit (includes sterile solution container)
- Sterile saline solution
- Sterile gloves
- Source of suction
- Suction connecting tubing and cannister
- Resuscitation bag
- Mask and goggles recommended

Closed suction system

- Closed suction setup
- Source of suction

- Suction connecting tubing and cannister
- Non-sterile gloves
- Mask and goggles recommended

Procedure

1. Explain and educate patient and family regarding procedure
2. Assist the patient into a comfortable position, usually semi-fowlers or fowlers[2]
3. Open technique
   a. Perform hand hygiene and apply gloves[2]
   b. Assemble suction device and tubing, set wall suction to 80-120 mmHg[2]
   c. Open sterile catheter kit[2]
   d. Set up sterile container with approximately 100 mL of sterile saline solution[2]
   e. Hyperoxygenate patient for at least 30 seconds or as needed if coordinated suctioning is not effective
   f. Discard used gloves and perform hand hygiene
   g. Apply sterile gloves
   h. Pick up the sterile suction catheter. With the non-dominant, non-sterile hand, pick up the suction tubing and secure the suction catheter to it.[2]
   i. Check equipment for proper functioning by suctioning a small amount of sterile saline solution from the container[2]
   j. With the suction off, gently but quickly insert the catheter with the dominant hand into the inner cannula until resistance is met, then pull back 1-2 cm.
   k. Place the non-dominant thumb over the control vent of the suction catheter and apply continuous suction during end-inspiration. **Suction should not be applied for longer than ten (10) seconds**.[2]
   l. Prior to suctioning again, hyperoxygenate for at least 30 seconds or as needed if coordinated suctioning is not effective
   m. One or two more passes of the suction catheter may be performed if needed. Provide hyperoxygenation before and after each pass if coordinated suctioning is not effective. Rinse the catheter with sterile saline solution in between suctioning until clear.
   n. On completion, wrap the catheter around the dominant hand, pull glove off inside out, and discard.

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o. Turn off suction

Note: A red rubber catheter may be used for open suctioning with a provider order, and if the patient has no history of a latex allergy. Many of the red rubber catheters available are made of latex. The catheter may only be used for one episode of suctioning, which includes up to three passes, prior to being discarded. Sterile technique will be used.

4. Closed suction system
   a. Perform hand hygiene and apply gloves[2]
   b. Connect wall suction to 80-120 mmHg[2]
   c. Unlock thumb control valve
   d. Hyperoxygenate patient for at least 30 seconds or as needed if coordinated suctioning is not effective.
   e. Advance catheter 2cm beyond the length of the tracheostomy tube
   f. Apply continuous suction during end-inspiration by depressing thumb control valve and withdrawing catheter straight out. Stabilize tracheostomy with one hand while withdrawing catheter with the other. **Suction should not be applied for longer than ten (10) seconds.[2]**
   g. Clear catheter of secretions:
      i. Withdraw catheter completely from tracheostomy
      ii. Apply suction with thumb control valve
      iii. Instill NS into catheter via irrigation port
      iv. Release thumb control valve and lock
      v. Ensure that the irrigation port of the suction system is closed when not in use to avoid an air leak
   h. One or two more passes of the suction catheter may be performed if needed. Provide hyperoxygenation before and after each pass if coordinated suctioning is not effective.

DOCUMENTATION

1. Patient medical record:
   a. Date and time of tracheostomy care and/or suctioning
   b. Appearance of skin and stoma site
   c. Suctioning

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   d. Characteristics/amount of sputum
   e. Patient tolerance
   f. Interventions performed
   g. Patient/family education

REFERENCE(S)

1. Przybyl, H.L. (2023). Tracheostomy cuff and tube care. In Wiegand, D.J. (8th Ed.). *AACN Procedure Manual for High Acuity, Progressive, and Critical Care* (89-102314-355). St. Louis, MO:Elsevier.
2. Hare, E & Seckel, M.A.- (2023). Suctioning: endotracheal or tracheostomy tube. In Wiegand, D.J. (8th Ed.). *AACN Procedure Manual for High Acuity, Progressive, and Critical Care* (261-283). St. Louis, MO:Elsevier.

RELATED POLICIES AND PROCEDURES

- Clinical Practice Manual
  - Endotracheal and Nasotracheal Tube Care and Airway Management 3-127

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # CP 3-121		
Effective:	06/24/2010	Governing Board
Revised:	11/28/2011	Policy Committee
Revised:	12/09/2014	Medical Executive Committee
Revised:	11/14/2017	Policy Committee
Revised:	10/17/2019	Quality Committee of the Governing Board
Revised:	11/19/2020	Quality Committee of the Governing Board
Revised:	12/12/2023	Policy Committee
Revised:	08/13/2024	Policy Committee
Keywords:	00/00/0000	trach, obturator, red rubber catheter, pressure, cuff, suctioning, stoma, vent, ventilator

Foley Catheter

- https://keckmedicine.sharepoint.com/:u:/r/sites/KMC-intranet/PoliciesandProcedures/KMCPNP/NA11-304.url?csf=1&web=1

Catheter-Associated Urinary Tract Infection (CAUTI) Prevention Bundle

- Indwelling urinary catheters must only be used for specific indications
- Promote use of alternative devices: purewick, quik-change wrap, condom cath in lieu of urinary catheter
- Strict adherence to maintenance practices is crucial
- Advocate for removal as soon as possible
- Utilize Nurse-Driven Removal Protocol for Foley removal when appropriate



CAUTI Maintenance Bundle:
Daily Documented Assessment of Need
Seal Intact
Catheter-Securement Device in Place
Hand Hygiene Performed
Daily Meatal Hygiene
Drainage Bag Emptied Using Clean Container
Unobstructed Flow, no dependent loop

INTERNAL

Ostomy Care

- Policy # NA 10-151 - Ostomy Care

MANUAL:	Nursing	POLICY #:	NA 10-151		
SUBJECT:	Ostomy Care	EFFECTIVE DATE:	05/02/1991		
		REVISED DATE:	07/18/2024		
		AUTHORIZED APPROVAL:			
PERSONNEL COVERED:	Nursing	PAGE:	1	OF	7

PURPOSE

The purpose of the policy is to outline the organization's standard for the care of Ostomies.

POLICY

1. Patients who have a colostomy, ileostomy, urinary diversion, cutaneous fistula, esophagostomy or involuntary drainage will be assessed as to their learning, self-care and counseling needs.

2. RN will provide patient education and observe teach back as evaluation of learning per Patient Education policy.

   Note: A patient with an ostomy requires a great deal of encouragement and reassurance, much of which can be given during the appliance change. The nurses' professional attitude, as expressed in verbal and nonverbal behavior, will influence the patient's adaptation to the stoma. If a nurse expresses distaste or revulsion upon viewing or touching the stoma, the patient will often detect this and feel unacceptable or untouchable. It is important that the nurse be aware of their behavior so that they can demonstrate acceptance and assist the patient as he adjusts to his altered body image and new method of elimination. Organization of supplies and providing simple step by step instructions helps to simplify the procedure and eases patient anxiety.

3. Patients admitted with an ostomy are encouraged to continue self-care. Patient's home supplies should only be used when there is no available equivalent and until provider order is received.

4. RN will routinely assess the stoma mucosa for any changes, (i.e. color, size, shape, mucocutaneous junction (the junction of a stoma between the bowel mucosa and the skin) and peristomal skin, and document in the Electronic Medical Record (EMR). The RN will notify Provider Team for abnormal findings.

   Note: abnormal findings include stoma that is not pink or red (indicates poor perfusion), any abnormalities to the peristomal skin (e.g.- rash, skin tears, blisters or wounds) should be communicated immediately to the provider.

5. A provider's order for Enterostomal /Ostomy Nurse consult may be obtained for newly created stomas, atypical stomas or ostomies, or persistent skin issues.

6. An ostomy pouching system should be placed immediately following the surgery while in the OR.

7. The ostomy appliance will be changed within the first (48) hours following the surgery and every (3-4) days or when leakage beneath the wafer occurs. If needed, additional pouch changes may occur independently of wafer changes.

   Note: If abdominal distention is observed, change ostomy appliance immediately. **Abdominal distention can increase incidence of peristomal abnormalities and stomal laceration.**

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8. Ostomy appliance should be changed immediately If there is an occurrence of leakage.
   Note: Leakage increases the risk of Peristomal Moisture Associated Skin Dermatitis (PMASD)

9. Colostomy irrigation due to constipation or blockage can only be performed by the provider or Ostomy Certified RN.

10. An ileostomy is irrigated as an emergent measure only. This is performed by the provider or Ostomy Certified RN.

11. Empty appliance **EACH SHIFT** or when pouch is 1/3 – 1/2 FULL of flatus or drainage to prevent leakage.

12. RN, Provider Team, and Case Management to coordinate discharge including pre-ordering home supplies, and may include Home Health and/or enrollment into patient support group.

PROCEDURE

OSTOMY CARE

A. **GI Ostomy**

PRECAUTIONS

1. Use see-through pouches or pouches with viewing option to allow for stoma assessment.

2. A properly fitted ostomy appliance will prevent skin denuding from intestinal contents. Intestinal contents have digestive enzymes that irritate and denude the skin.

3. It is imperative that the opening of the appliance be the proper size to ensure skin protection and the longest possible wearing time.

   Note: To prevent stoma laceration and peristomal moisture associated skin damage, cut the skin barrier opening approximately 1/8" from the stoma size.

EQUIPMENT

- Plastic waste bag
- Appropriate appliance (skin barrier and pouch)
- Scissors
- Ostomy Barrier Ring
- No Sting Barrier Skin Prep (only when indicated)
- Ostomy Paste (only when indicated)
- Disposable dry wipes, Paper towels, or gauze
- Normal saline or sterile water
- Stoma measuring guide

- Adhesive remover spray or wipe
- Measuring container

PROCEDURE

1. Prepare ostomy supplies and assess the size of skin barrier flange (ex: 57mm or 2 ¼ inch) or the product numbers on the ostomy appliance. See Addendum A: Keck/Norris USC Ostomy Supplies Request Form
2. Explain procedure step by step with patient while performing each step. Place disposable bed pads beneath stoma location.
3. Perform hand hygiene and apply gloves.
4. Empty pouch, assess output type, color, amount.
5. Remove appliance gently and slowly by using adhesive remover spray or wipe on the skin barrier border, or pushing down on skin with a warm, wet paper towel while pulling up on the barrier and tape which surrounds wafer. **Prevent epidermal stripping by avoiding rushed removal.** Place used appliance in waste bag. Discard in covered biohazard trashcan. Do not leave in patient's room. **NOTE: Do not dispose of clamp if used.**
6. Moisten disposable dry wipes, paper towels, or gauze with normal saline, sterile water, or warm water (for established stomas) and Cleanse peristomal skin. Pat dry thoroughly with disposable dry wipes, paper towels, or gauze. Place disposable dry wipes or clean measuring container underneath stoma to capture output while preparing the ostomy appliance.
7. Apply Skin Prep and allow to air dry.
8. Skin Barrier application
   a. Measure stoma with stoma measuring guide leave 1/8 inch or 3mm larger than stoma to prevent stoma laceration.
   b. Draw pattern on back of wafer.
   c. Cut out hole on the outer edge of the drawing to prevent stoma strangulation.
   d. Peel plastic and/or paper backing off skin barrier.
   e. Stretch barrier ring to fit around stoma or Stretch ostomy barrier ring to match the cut opening on wafer (inner edge only) and apply to adhesive side.
   f. Apply skin barrier to clean, DRY skin
   g. Remove paper backing on tape - smoothing tape down on peristomal skin.

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9. For Two-Piece system, apply ostomy pouch to prepared precut skin barrier and ensure the flange has made complete contact around the entire circumference Or attach the pouch to the skin barrier by engaging the lower edges of the pouch flange and the skin barrier flange. Press the two flanges together. A series of "clicks" will confirm you are doing it correctly. No more "clicks" means the pouch is secured.
10. The Lock 'n Roll microseal closure is an integrated closure on a drainable pouch. Before applying a new pouch, close the pouch tail. Roll the pouch tail up tightly three times. Fold flap down aligning the fasteners together. To close, start at the center and press. Continue pressing to the outer edges. Feeling the fasteners seal together. For no available interlocking system, apply clamp to bottom of pouch.
11. Document procedure, amount of effluent, size and color of stoma and condition of peristomal skin.

B. **Emptying & Cleaning Appliance while in place**

1. Perform hand hygiene and apply gloves
2. Holding end above ostomy Opening –
   a. Lift from the center of the transparent flap, unroll the pouch tail up tightly three times.
   b. Draining – Position fingers on both sides of the pouch tail, between the ribbed strips, and squeeze from the sides. Empty pouch in plastic graduate container. Continue to hold the pouch open for cleaning.
   c. Cleaning – Clean and dry the inside of the pouch tail. Clean with disposable wet wipes and disposable dry wipes. Wipe the outside edge of pouch tail.
   d. Closing – Fold flap down aligning the fasteners together. To close, start at the center and press. Continue pressing to the outer edges. Feeling the fasteners seal together. For no available interlocking system, remove clamp and roll edge of bag back ½ to 1 inch, follow steps to empty and clean pouch, then apply clamp to bottom of pouch.

EDUCATION

1. Assess patient's ability to receive and recall information. Assess patients' ability to see the ostomy appliance and stoma. Assess the patients tactile and strength ability for application of one-piece or two-piece ostomy appliance.
2. Initial education includes looking at the stoma. Identify patient's ability and willingness to participate. If unable or unwilling, identify family member or patient designated person who will be available to assist patient. If patient is cognitively able to perform ostomy change but unable due functional reasons, have patient provide verbal instructions to family member or Nurse when providing care to ensure understanding of procedure and acceptance.
3. Provide patient education kit with ostomy model and additional sample supplies for patient to practice in between educational opportunities.
4. Upon initial education, provide patient with step-by-step procedure guide to follow along. Prior to ending initial education. Have patient practice opening and closing pouch for emptying.

5. With each additional ostomy encounter, provide education and allow/encourage/enable the patient/family to provide the hands-on care while providing reinforcement education. Encourage patient to participate when emptying pouch (as this needs to be mastered if discharging home.)

6. For new patients with newly created ostomies assign and play GetWell network videos for patients, when available in their language.

7. Patient should have the opportunity to provide complete appliance change on self or on model prior to discharge.

B. **URINARY DIVERSIONS**

PRECAUTIONS

1. Keep urine from bathing stoma by connecting to straight bedside drainage while patient is in bed, using appropriate connector.

   Note: Primary caregiver should use urostomy drain tube adaptor to connect to bedside drainage bag.

2. Keep drainage tubing free from kinks and pouch from twisting by positioning in such a fashion to permit the free flow of urine to collection bag.

EQUIPMENT

- Appropriate appliance (skin barrier and urostomy pouch)
- Barrier ring
- Scissors
- Connector (urostomy drain tube adaptor)
- Bedside drainage system
- Plastic bag
- Disposable dry wipes, Paper towels, or gauze
- Normal saline or sterile water
- Adhesive remover spray or wipe
- Stoma measuring guide

PROCEDURE

1. Explain procedure to patient.
2. Perform hand hygiene and apply gloves.
3. Empty pouch, review procedure with patient.

4. Remove used appliance gently by pushing down on skin with an adhesive remover or a moistened disposable wipe while pulling up on the appliance and tape. Never rip appliance off. Place used appliance in bag and discard in covered trashcan in utility room. Do not leave in patient's room.

5. Cleanse stoma mucosa and peristomal area with normal saline or sterile water.

6. Keep stoma covered with dry disposable wipes to wick urine from skin.

7. Prepare wafer by cutting to size of stoma +1/8" or using prepared pattern.

8. Apply a barrier ring by stretching to match inner opening to the cut edge of wafer (inner edge only).

9. When peristomal area is dry, apply prepared pouch immediately. DO NOT let any urine get on peristomal area. If urine leaks on skin, appliance will not seal. If urine gets on skin, rewash and dry skin again.

10. Remove paper backing from tape and smooth tape down as you go.

11. Connect urinary pouch to straight bedside drainage. Material Management will provide appropriate connector per manufacturer of pouch. Watch that pouch does not twist and prevent urine from flowing into bedside drainage unit.

DOCUMENTATION

1. In the patient's medical record document:
   a. Stoma mucosa color, size and shape
   b. Condition of peristomal skin area
   c. Urine drainage, color, amount, etc.

OSTOMY SUPPORT GROUP

The United Ostomy Associations of America (U.O.A.A.) https://www.ostomy.org/support-group-finder.

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2. Ostomy Wound Management 2010, March, Vol. 48, Issue No. 10 pp. 40-43
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4. Intestinal Stomas: Principal, Technique, and Management 2nd Edition Revised and Expanded, Marcel Denker, Inc, New York Basal. Edited by P. Castalgo and J. Mackeigan 2004

5. Colostomy and Ileostomy Appliance Care. Lippincott Procedures December 2023. https://procedures.lww.com/lnp/view.do?pid=528604&hits=ostomy&a=false&ad=false&q=Ostomy

6. Hollister Ostomy Care Quick Educational Tools. Hollister Incorporated 2024. https://www.hollister.com/en/ostomycare/educationaltools

7. Wound Ostomy and Continence Nurses Society (2017). Clinical Guideline: Management of the adult patient with a fecal or urinary ostomy. Mt. Laurel, NJ.

ATTACHMENT(S)

- Addendum A: Keck/Norris USC Ostomy Supplies Request Form

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

Effective/Revision Dates for Policy # NA 10-151		
Effective:	05/02/1991	MEC
Revised:	07/11/1995	MEC
Revised:	01/12/1999	MEC
Revised:	06/28/2002	Professional Practice Committee
Revised:	07/16/2002	Governing Board
Revised:	03/29/2005	Governing Board
Revised:	07/29/2010	Governing Board
Revised:	05/29/2014	Governing Board
Revised:	01/25/2018	Governing Board
Reviewed:	06/08/2021	Policy Committee
Revised:	07/18/2024	Quality Committee of the Governing Board
	00/00/0000	
Keywords:	Ostomy Care, Colostomy, Ileostomy, Urinary Diversions	

Sequential compression therapy

- https://keckmedicine.sharepoint.com/sites/KMC-intranet/PoliciesandProcedures/KMCPNP/NA11-501.url

Sequential compression therapy

Revised: May 19, 2025

Introduction

Sequential compression therapy helps prevent venous thromboembolism-a disorder that includes deep vein thrombosis (DVT) and pulmonary embolism-in patients at risk for the disorder. This safe, effective, noninvasive therapy massages the legs in a wavelike, milking motion that promotes blood flow in the lower extremities to decrease the risk of thrombosis.

◆ ***Hospital-acquired condition alert:*** Keep in mind that the Centers for Medicare and Medicaid Services considers venous thromboembolism (VTE) in patients who underwent total knee replacement or hip replacement to be a hospital-acquired condition *because it can be reasonably prevented using a variety of best practices.* Be sure to follow evidence-based VTE prevention practices, such as using mechanical compression devices (including antiembolism stockings or an intermittent pneumatic compression device), early ambulation, and pharmacologic prophylaxis, *to reduce the risk of VTE.* [1][2][3] ◆

Sequential compression therapy in combination with anticoagulant medications prevents DVT in patients at low to moderate risk for the condition. However, patients at high risk for bleeding should undergo sequential compression therapy without anticoagulants.[4][5] Preventive measures should continue for as long as the patient remains at risk.

Surgery, certain medications, prolonged immobilization, obesity, heart failure, and cancer can increase the risk of developing VTE.[6][7] Sequential compression therapy counteracts blood stasis and coagulation changes-two of the three major factors that promote DVT. It reduces stasis by increasing peak blood flow velocity, helping to empty the femoral vein's valve cusps of pooled or static blood. The compressions also cause an anticlotting effect by increasing fibrinolytic activity, which stimulates the release of a plasminogen activator.

Studies show that many patients at risk for developing DVT don't comply with sequential compression therapy.[4][7] Providing education about the procedure, including the importance of adhering to therapy, can help promote adherence.

Sequential compression therapy isn't appropriate for patients with acute DVT (or DVT diagnosed within the last 6 months), serious arterial insufficiency, ischemic vascular disease, massive edema of the legs resulting from pulmonary edema or heart failure, or any local condition that the compression sleeves may aggravate, such as dermatitis, recent skin graft, cellulitis, gangrene, or vein ligation (immediately postoperative).[8][9] It's also unlikely to benefit patients with pronounced leg deformities.

Equipment

- Appropriately sized compression sleeves
- Compression controller
- Connecting tubing
- Facility-approved disinfectant
- Gloves
- Measuring tape and brand-specific sizing chart
- Optional: other personal protective equipment

Preparation of Equipment

Inspect all equipment and supplies. If a product is expired, is defective, or has compromised integrity, remove it from patient use, label it as expired or defective, and report the expiration or defect as directed by your facility.

Implementation

- Verify the practitioner's order.
- Gather and prepare the necessary equipment and supplies.
- Perform hand hygiene.[10][11][12][13][14][15]
- Confirm the patient's identity using at least two patient identifiers.[16]
- Provide privacy.[17][18][19][20]
- Explain the procedure to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation.*[21]

Applying the compression sleeves

- Perform hand hygiene.[10][11][12][13][14][15]
- Assess skin integrity for any existing leg conditions before applying the compression sleeves.[8]
- Determine the proper sleeve size according to the manufacturer's instructions.
- Remove the compression sleeves from the package and unfold the sleeves.
- Lay the unfolded sleeves on a flat surface with the cotton lining facing up (as shown below).



- Note the markings on the lining denoting the ankle and, if applying thigh-length sleeves, the area behind the knee at the popliteal pulse point. Use these markings to position each sleeve at the appropriate landmarks.
- Place the patient's leg on the sleeve lining. Position the back of the knee *over* the popliteal opening if applicable.
- Make sure that the back of the patient's ankle is *over* the ankle marking.
- Starting at the side opposite the clear plastic tubing, wrap the sleeve snugly around the patient's leg.
- Fasten the sleeve securely with the Velcro fasteners. For the best fit, first secure the ankle and calf sections and then the thigh if you're applying thigh-length sleeves. The sleeve should fit snugly but not tightly. Check the fit by inserting two fingers between the sleeve and the patient's leg. Loosen or tighten the sleeve, as necessary, by readjusting the Velcro fasteners.
- Apply the second sleeve using the same procedure (as shown below).

INTERNAL



Operating the system

- Connect the sleeves to the tubing that leads to the controller. (Some devices require that both sleeves be attached to the controller for the controller to function; others can operate with one or both attached.) Follow the manufacturer's instructions for use. Line up the blue arrows on the sleeve connector with the arrows on the tubing connectors and push the ends together firmly. Listen for a click, signaling a firm connection. Make sure that the tubing has no kinks.
- Plug the compression controller into the proper wall outlet. Turn on the power. If your controller can function with one or both sleeves attached, be sure to turn on the appropriate sleeves. The controller automatically sets the compression sleeve pressure at 45 mm Hg, which is the midpoint of the normal range (35 to 55 mm Hg).
- Observe the patient's tolerance of the therapy, and monitor the controller as the system completes its first cycle.
- Check the AUDIBLE ALARM key. The green light should be lit, indicating that the alarm is working.
- Evaluate the patient's skin under the sleeves at least every 8 hours for signs of pressure-related injury.[22]
- Assess the extremities for peripheral pulses, edema, changes in sensation, and movement at least once each shift.
- Perform hand hygiene.[10] [11] [12] [13] [14] [15]
- Document the procedure.[23] [24] [25] [26]

Discontinuing compression therapy

- Verify the practitioner's order.
- Perform hand hygiene.[10] [11] [12] [13] [14] [15]
- Confirm the patient's identity using at least two patient identifiers. [16]
- Provide privacy.[17] [18] [19] [20]
- Explain the procedure to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation.*[21]
- Turn *off* the power.
- Open the Velcro fasteners on the sleeves and remove them from the extremities.
- Discard the sleeves in an appropriate receptacle.[27]
- Disconnect the tubing from the compressor by depressing the latches on each side of the connector and pulling them apart.
- Perform hand hygiene.[10] [11] [12] [13] [14] [15]
- Put on gloves and, as needed, other personal protective equipment *to comply with standard precautions.*[22]
- Clean and disinfect the tubing and compressor according to the manufacturer's instructions *to prevent the spread of infection.*[28] [29]
- Removed and discard your gloves and, if worn, other personal protective equipment. [27]
- Perform hand hygiene.[10] [11] [12] [13] [14] [15]
- Store the tubing and compressor as directed by your facility, *because this equipment isn't disposable.*
- Perform hand hygiene.[10] [11] [12] [13] [14] [15]
- Document the procedure.[23] [24] [25] [26]

Special Considerations

- The compression sleeves should function continuously (24 hours a day) until the patient is fully ambulatory. Check the sleeves at least once each shift *to ensure proper fit and inflation.* [8]
- Remove the sleeves when the patient is walking, bathing, or leaving the room for tests or other procedures by undoing the Velcro fasteners. Reapply them immediately after any of these activities.
- Be aware that the compression controller also has a mechanism to help cool the patient.
- If a malfunction triggers the instrument's alarm, you'll hear beeping. The system shuts off whenever the alarm is activated. To respond to the alarm, follow the manufacturer's instructions.[8]

Patient Teaching

Teach the patient about VTEs, the patient's unique risk factors, the compression devices, and the importance of compliance with the therapy.

Complications

Complications associated with sequential compression therapy may include:

- allergic skin reaction
- exacerbation of skin infection
- edema[10]
- pain
- skin irritation
- soft tissue and nerve injury (rare).[4] [20]

Documentation

Documentation associated with sequential compression therapy includes:

- date and time of the procedure
- response to the procedure
- status of the alarm and cooling settings
- assessment findings
  - skin
  - neurovascular
- teaching provided to the patient and family (if applicable)
  - understanding of that teaching
  - follow-up teaching needed.

This procedure has been reviewed by the Academy of Medical-Surgical Nurses.

AMSN Academy of Medical-Surgical Nurses

INTERNAL

Clinical Alarms

- Policy # CP 3-104 - Clinical Alarm Policy

Manual:	Clinical Practice	Policy #:	CP 3-104		
Subject:	**Clinical Alarm Policy**	Effective Date:	09/23/2004		
		Revised Date:	07/23/2024		
		Authorized Approval:			
Personnel Covered:	All Clinical Staff and Biomedical Engineering	Page:	1	of	4

Purpose

The purpose of this policy is to outline the organization's standard on safe management of clinical alarms by hospital staff.

Definition

- **Hospital Staff** – hospital employees and independent contractors of the hospital

Policy

1. **General Provisions**
   a. Clinical alarm management is applicable to all physiologic monitoring and patient care equipment alarms in the inpatient setting (including but not limited to, cardiac monitor alarms, apnea alarms, cell salvaging devices, elopement alarms, infusion pump alarms, ventilator alarms, pulse oximeters, and emergency alarms).
   b. Alarm system safety is a hospital priority. Hospital personnel give especially high priority to management of alarms that:[4]
      i. The medical staff and clinical departments identify as highly important
      ii. Pose a risk to patients if unattended or malfunctioning
      iii. Are clearly needed and do not unnecessarily contribute to alarm noise and alarm fatigue
      iv. May have the potential for patient harm based on internal incident history at the hospital
      v. Are highlighted in best practices and guidelines
   c. The Biomedical Department shall perform regular preventative maintenance and testing on all alarms on patient physiological monitoring and patient care equipment. The above general provisions shall apply regardless of whether the hospital owns, borrows, rents or leases the equipment for long term or short-term use (including demonstration).
2. **Medical Equipment / Device Alarms**
   a. Upon initiation of equipment with alarms, at the start of each shift, and as needed, nurses and other licensed, direct patient care providers shall ensure that all alarms are customized to the patient's individual needs with appropriate alarm parameters set. Refer to ECG alarm policy for ECG alarm settings.

USC Norris Cancer Hospital
Keck Hospital of USC
Operating Policies

Manual:	Clinical Practice	Policy #:	CP 3-104		
Subject:	**Clinical Alarm Policy**	Effective Date:	09/23/2004		
		Revised Date:	07/23/2024		
		Page	2	of	4

   b. At the start of each shift and as needed, hospital staff who are responsible for medical equipment shall check alarm settings prior to device use and ensure that audible alarms will be clearly discernible relative to ambient, distance and competing noise.
   c. Hospital staff are not permitted to bypass, shut off or adjust medical equipment alarm volumes to a level that cannot be readily heard when the alarm activates.
   d. Only trained and authorized hospital staff members and qualified providers may manage clinical alarms. A hospital staff member who detects a medical equipment alarm shall immediately respond and/or alert the authorized licensed staff member responsible for managing the alarm.
   e. Clinical alarms should not be silenced or acknowledged at the central station unless hospital staff are trained, authorized and have been assigned the duty to perform.
   f. Nurses and other licensed direct patient care providers shall carefully monitor equipment and devices that enunciate locally at the bedside (i.e., infusion pump alarms) with special attention to patient care areas that are remote from a nurse's station, isolation rooms, and other situations that require patient room doors to remain closed.
3. **Alarm Malfunction or Failure and Alarm-Related Incidents**
   a. Clinical staff shall report to their Department Managers any equipment whose clinical alarm system they suspect to be malfunctioning or failing. Department Managers shall identify/verify alarms that are in disrepair or in need of assessment. Department Managers shall take such equipment out of service to prevent inadvertent reuse. Alarm failure includes failure to alarm in the presence of abnormal measured parameters and established set points.
   b. Hospital personnel will replace equipment that is removed from service with comparable equipment.
   c. Hospital personnel shall report any patient monitoring or clinical equipment alarm malfunction or failure that caused or may have caused a death, serious injury, serious illness, or a material change in the plan of care.
      i. The person who discovers a medical device incident must immediately notify the appropriate Department Director (or their designee), take control of the device in question, and remain at the scene of the event pending the Director's arrival.
      ii. The person must also make a list of all persons present at the time of the event.
      iii. The person must personally complete a Hospital Occurrence Report describing the event prior to leaving the Hospital.
   d. Unexplained alarms are indicative of equipment failure, and the hospital staff member identifying the alarm shall report them to the Biomedical Engineering Department. Hospital staff members shall not bypass alarm functions. Hospital personnel shall report any unavoidable bypass of an alarm function on a Hospital Occurrence Report. Biomedical Engineering shall repair the medical device.
4. **Alarm Maintenance and Testing**

MANUAL:	Clinical Practice	POLICY #:	CP 3-104		
SUBJECT:	**Clinical Alarm Policy**	EFFECTIVE DATE:	09/23/2004		
		REVISED DATE:	07/23/2024		
		PAGE	3	OF	4

a. Biomedical Engineering shall, as part of the patient care equipment inventory, identify those devices and systems that include physiologic and patient care alarms.

b. Hospital personnel shall inspect and functionally test alarms and alarm settings during regularly scheduled preventive maintenance.

c. As a part of performance inspection, the proper functionality of alarms is tested and verified during the initial acceptance inspection of incoming medical equipment.

REFERENCE(S)

1. CMS Manual System Regulations and Guidance; 42 CFR § 482.41(c)(2). https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R37SOMA.pdf
2. The Joint Commission Accreditation Manual for Hospitals; Environment of Care/ Safety Committee Criteria; EC.02.06.01, EC.03.01.01 https://www.jointcommission.org/standards/standard-faqs/critical-access-hospital/environment-of-care-ec/000001280/
3. The Joint Commission Sentinel Event Alert, Issue 25, 2/26/02 https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-issue-50-medical-device-alarm-safety-in-hospitals/
4. The Joint Commission, 2023, NSPG06.01.01; National Patient Safety Goal #6 https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2023/npsg_chapter_hap_jul2023.pdf
5. Agency for Healthcare Research and Quality, *A Critical Analysis of Patient Safety Practices* https://www.ahrq.gov/research/findings/making-healthcare-safer/mhs3/index.html#chapters
6. GACHRLS Regulations with Survey Procedures; Cal Code Regs. tit. 22, §§ 70227 70837and 70853 https://www.cdph.ca.gov/Programs/CHCQ/LCP/CDPH%20Document%20Library/GACHRLS_Regulations_with_Survey_Procedures.pdf

RELATED POLICIES AND PROCEDURES

- Administration Manual
  - Control of Defective Equipment or Products – Safe Medical Device Act Reporting
  - Occurrence Reporting Requirements for Hospital Staff Members
  - Sentinel Event Response and Reporting Policy
  - Patient Safety Plan
- Biomedical Engineering Manual

MANUAL:	Clinical Practice	POLICY #:	CP 3-104		
SUBJECT:	**Clinical Alarm Policy**	EFFECTIVE DATE:	09/23/2004		
		REVISED DATE:	07/23/2024		
		PAGE	4	OF	4

  - Repair of Patient Related Medical Equipment
  - Reporting of Medical Device Incidents
- Nursing Manual
  - ECG Monitoring

Effective/Revision Dates for Policy # CP 3-104		
Effective:	09/23/2004	
Revised:	04/29/2008	Governing Board (Transferred from Administration Manual #6-137)
	05/03/2011	Policy Committee
Revised:	09/25/2014	Governing Board
Reviewed:	09/26/2017	Policy Committee
Revised:	09/22/2020	Policy Committee
Revised:	09/21/2023	Quality Committee of the Governing Board
Revised:	07/23/2024	Policy Committee
	00/00/0000	
Keywords:	Clinical alarm, alarm, failure, equipment	

Safety

- Workplace Violence
- De-Escalation
- Code Grey
- Code Silver
- Radiation Safety
- MRI Safety
- Internal Disaster
- External Disaster

DEPARTMENT OF PUBLIC SAFETY
323-442-1200 Non-Emergency
323-442-1000 Emergency

WORKWELL CENTER
Employees are encouraged to contact us for guidance with life's difficulties
213-821-0800

HUMAN RESOURCES
323-442-8223

EQUITY, EQUAL OPPORTUNITY & TITLE IX (EEO-TIX)
213-740-5886

CARE FOR THE CAREGIVER
323-865-9897

An educational component of the
Office of Safety & Emergency Management
(323) 442-9915

Prepare, Protect, Recover

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Workplace Violence

Employee Resource Guide

Keck Medicine of USC

What is Workplace Violence?

Use of physical force against a hospital employee by a patient or visitor that causes, or has a high likelihood of causing injury, psychological trauma or stress regardless of whether the employee sustains injury.

Incidents involving the use of a firearm or other dangerous weapon, regardless of whether employee sustains an injury.

What do I need to know?

Keck Medicine of USC (KMUSC) strictly prohibits violence, threats of violence, and any other behavior that jeopardizes or harms the safety of any KMUSC campus, facility, activity, or event that raises a reasonable concern for the safety or wellbeing of students, faculty, staff, patients or visitors.

See policy 6-146 Violence Free Campus.

Prohibited Behavior

Keck Medicine of USC (KMUSC) strictly prohibits behavior that includes, but is not limited to:

- Engaging in any act of violence toward a person or property.
- Making a direct, indirect, or conditional threat of harm.
- Engaging in any conduct, including aggression, intimidation, harassment, epithets, belligerence, and disruptive or erratic behavior, that has the purpose or effect of generating a reasonable concern for physical safety.
- Damaging or destroying university property or equipment, or threatening such harm.
- Engaging in stalking or aggressive pursuit.
- Participating in, or encouraging a fight.
- Using any instrument to injure, threaten, or intimidate.
- Using or possessing any firearm, explosive, or weapon of any kind, regardless of whether the person has a lawfully-issued permit to carry a concealed weapon (except for DPS or peace officers on duty).

What Should I Do?

Follow these three simple steps:

1. **For situations occurring on-campus, call the Department of Public Safety.**
   (323) 442-1200 Non-Emergency
   (323) 442-1000 Emergency
2. **For situations occurring off-campus including buildings not located directly on the HSC, call the police at 9-1-1.**
3. **Submit an incident report through the Risk Management reporting system within 24 hours**

Basics of De-escalation

- Communicate
  - Listen
    - Empathically
    - Non-judgmentally
    - For information
  - State the problem to ensure understanding
  - Address the issue
  - Be able to rationally detach—QTIP
- Be aware of non-verbal behavior



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Basics of De-escalation

- Position:
  - Where are you in relation to your patient, visitor, or colleague?
- Posture:
  - How should you hold and move your body?
- Proximity:
  - How close should you be to your patient, their visitor, or a colleague?



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Basics of De-escalation

- Set limits
  - Simple – short and to the point
  - Reasonable – do not demand too much at once
  - Enforceable – make sure that you can make it happen



Nonviolent Crisis Intervention® - Crisis Prevention Institute

Keck Medical Center of USC

Basics of De-escalation

- Limit setting tactics
  - Interrupt and redirect
  - When and then
  - If and then



Nonviolent Crisis Intervention® - Crisis Prevention Institute

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INTERNAL

Code Gray Policy: S 2.02

- Aggressive, combative or abusive behavior can be displayed by anyone; a patient, a patient's family member, staff, staff family members, or acquaintances of employees and patients. Aggressive, combative or abusive behavior can escalate into a more violent episode.
- Staff will take responsible, proactive measures to ensure the safety and security of all persons on hospital property by effectively responding to and minimizing the number of assault victims and potential injuries.
- When staff is concerned about their own safety and the safety of others due to abusive or assaultive behavior, they should initiate a Code Gray.

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Code Gray Policy: S 2.02

- Any staff member confronted with or witnessing a combative situation should initiate a Code Gray per their facilities' emergency activation system.
  - Verbal Abuse – Personnel should provide assistance to the victim(s).
    - Assist in attempts to verbally de-escalate the assailant.
    - Call in a second person to take over.
    - Add distance/barriers between victim and assailant.



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Code Gray Policy: S 2.02

- Physical Battery – Prepare to provide assistance to the victim(s) by:
  - Protecting self and others by assisting victim to stop/deflect blows by the assailant.
  - Creating a diversion by putting distance/barrier between victim and assailant.
  - Getting medical assistance if needed and submitting an event report through SRM.



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Code Silver Policy: S 2.06

- Assault with a weapon – Person with a weapon /hostage situation policy.
- Any staff members in the area specified by Code Silver should:
  - Evacuate if possible.
  - Seek cover/protection and warn others of the situation.
  - Stay calm and alert.
- Any staff members in an area distant from the area stated in Code Silver should:
  - Stay away from the area specified in Code Silver.
  - Close all patient and unit exit doors.
  - Take cover behind locked doors if possible.
  - Provide assistance as requested.

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INTERNAL

Questions?

323-865-3512

Emergency?

Contact the RSO by dialing

323-442-8500

Safety & Emergency Management

323-442-9915

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Keck Medicine of USC

Office of Safety, Emergency Management & Business Continuity

323-442-9915

Mitigation, Preparedness, Response, Recovery

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RADIATION SAFETY IN THE ENVIRONMENT

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Employee Education

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Radiation Safety Awareness for Nurses

The radiation dose to a nurse received from a patient depends on the type of medical procedure, and risks are managed using radiation protection principles. In diagnostic imaging, exposure is minimal and primarily from scatter radiation. With therapeutic applications like brachytherapy or radiopharmaceuticals, the risk is higher and requires stricter precautions.

Fluoroscopic procedures and bedside radiology

During procedures such as fluoroscopy and portable X-rays, the radiation dose to nurses comes primarily from scattered radiation from the patient.

- **Minimal doses:** Studies show that radiation doses to nurses during these procedures are very low, especially when protective measures are used.
- **Scatter radiation:** The intensity of scattered radiation is highest on the side where the X-ray tube enters the patient. Nurses can minimize exposure by standing on the opposite side, where the detector is located.
- **Protection measures:** Distance from source of radiation is critical; stay out of room/area if possible, moving six feet away can significantly reduce the dose. Standard precautions include wearing a lead apron, thyroid shield, and protective eyewear if within a few feet of the X-ray source.

Nuclear medicine

In nuclear medicine, patients are given a radioactive substance (radiopharmaceutical) for diagnostic or therapeutic purposes. The patient and their bodily fluids become a source of radiation.

- **Diagnostic patients:** Patients who have received radiopharmaceuticals for a diagnostic scan are generally a very low-level radiation risk due to low activity and short decay time, and standard precautions are sufficient. Patient care is similar any other patient.
- **Therapeutic patients:** Patients undergoing high-dose radioiodine (I-131) therapy are a more significant source of radiation than diagnostic patients. Nurses must take stringent precautions, such as limiting their time in the room, maximizing distance, and using portable lead shields (if applicable) wear disposable gloves and gowns, and practice special handling of contaminated linens and waste. Involve Radiation Safety Office for further instructions. A specific "stay time" is often posted on the patient's door.
- **Waiting areas:** Studies have shown that radiation doses to nurses and others in nuclear medicine waiting rooms are small. The risk is considered minimal, and separate waiting rooms for radioactive patients are often unnecessary.

Radiation Safety Office: 1441 Eastlake Ave. G395, Los Angeles, CA 90033
Email: radiation.safety@med.usc.edu; Tel: (323) 865-3512

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Brachytherapy

Brachytherapy involves placing a radioactive implant directly into a tumor, which makes the patient a localized source of radiation.

- **High dose, short range:** The dose rate is high near the patient but decreases sharply with distance due to the inverse square law.
- **Protection measures:** Distance from source of radiation is critical; moving six feet away can significantly reduce the dose. There is no concern with regards to contamination.
- **Emergency procedures:** In the rare event an implant becomes dislodged, special tools like long-handled forceps must be used to place it in a shielded container.

General precautions (ALARA principles)

Healthcare workers protect themselves and others by following the ALARA (As Low As Reasonably Achievable) principles, which apply to any scenario involving radiation.

- To minimize exposure, you need to take five routine precautions:
  - Recognize radiation sources
  - **Time:** Minimize the amount of time spent near a radiation source.
  - **Distance:** Increase the distance from the source of radiation.
  - **Shielding:** Use appropriate shielding, such as lead aprons or portable barriers.
  - Avoid radioactive contamination in case of radiopharmaceutical.
- **Personal dosimetry:** Nurses working in radiation-heavy areas (e.g. IR, Cath Labs that use long fluoroscopy procedures or therapies using radiopharmaceuticals) are often required to wear dosimeter badges to monitor their cumulative radiation exposure and ensure they remain within safe annual limits.

Radiation Exposure Limits

Occupational annual limit for radiation worker: 5000 mrem
Radiation monitoring required (>10% Annual Limit Intake): 500 mrem
General Public dose limit: 100 mrem (annual)

RADIATION EMERGENCIES

A degree of radiation hazard is present only with patients containing therapeutic amounts of radionuclides or implanted brachytherapy sources.

Code Blue Patient

- The degree of hazard from radiation or radioactive contamination will vary, depending on the procedure that the patient is undergoing at the time. In any case, the risk to you is less significant than the risk to the code blue patient.
- Carry out code blue procedures in the usual manner. If you think you may have been contaminated, contact the nuclear medicine department and RSO.

Radiation Safety Office: 1441 Eastlake Ave. G395, Los Angeles, CA 90033
Email: radiation.safety@med.usc.edu; Tel: (323) 865-3512

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Emergency Surgery

- Without notification and proper precautions, surgical staff, areas, and equipment could receive unexpected exposure to radiation or contamination from radioactive materials.
- If possible, do not move the patient until you have consulted the nuclear medicine or radiation therapy physician.

Death of Patient

- Without notification and proper precautions, people, equipment, and facilities involved in post-mortem procedures could receive unexpected exposure to radiation or contamination by radioactive materials.
- Restrict room access and do not allow the body to be removed until authorized by nuclear medicine or radiation therapy physician.

References:

Harding, L. K., Harding, N. J., Warren, H., Mills, A., & Thomson, W. H. (1990). The radiation dose to accompanying nurses, relatives and other patients in a nuclear medicine department waiting room. *Nuclear medicine communications*, *11*(1), 17–22. https://doi.org/10.1097/00006231-199001000-00004

10 CFR § 20.1502 Conditions requiring individual monitoring of external and internal occupational dose.



WHAT SHOULD I DO?

ASSIST

ASSIST --- LIFTING/ TRANSPORTING

For staff who have been appropriately trained to lift and/or move patients.

BLUE

BLUE --- CARDIAC ARREST

Called when an adult is found in cardiac or respiratory arrest.

GRAY

GRAY --- COMBATIVE PERSON

Initiated by any staff member confronted with or witnessing a combative situation.

GREEN

GREEN --- PATIENT ELOPEMENT

Called when a patient has left his/her area of care without medical authorization and there is concern for the patients welfare.

ORANGE

ORANGE --- HAZMAT SPILL

Called when a hazardous material spill/ release occurs that is likely to cause injury, illness, or may harm the environment.

YELLOW

YELLOW --- BOMB THREAT

Initiated when a suspicious looking device is discovered or a bomb threat is received.

RED

RED --- FIRE

Called when any of the following indications of a real or suspected fire are experienced:

- Smelling smoke or burning material
- Feeling unusual heat on a wall, door or other surface
- Seeing smoke or a fire

SILVER

SILVER --- PERSON WITH A WEAPON AND/OR HOSTAGE SITUATION

Initiated during extremely dangerous situations. Upon hearing Code Silver, staff members should not go to the area where code has been called. Code Silver situations should be handled by trained personnel only.

PINK

PINK --- INFANT ABDUCTION

Called when an infant is missing or known to have been kidnapped.

PURPLE

PURPLE --- CHILD ABDUCTION

Called when an child is missing or known to have been kidnapped.

TRIAGE - INTERNAL

CODE TRIAGE: INTERNAL

Initiated during a disaster within the facilities. Examples of an internal disaster include a total power outage or utility disruption, plumbing and/or water problems, or flooding.

TRIAGE - EXTERNAL

CODE TRIAGE: EXTERNAL

Initiated during a disaster within the community. Examples of an external disaster include events that cause mass casualties, a major earthquake, wildfire, floods, or a nuclear, biological, or chemical incident.

Employees should respond accordingly. Medical center administration, medical staff leadership, and all senior and department directors should report to the Hospital Command Center in either the Cardinal Room at Keck Hospital of USC or in the Matson Conference Room, First Floor at USC Norris Cancer Hospital, based on where they work.

Internal Disaster

An internal disaster is an event or condition that interrupts the delivery of routine patients care, service, or comfort, which may adversely affect that well-being of patients, employees, and visitors. Examples of an internal disaster are a fire, bomb threat, or a disruption of essential services such as an electrical power failure. In the event of an internal disaster your Charge Nurse will provide direction for you.

External Disaster Plan

The HEICS (Hospital Emergency Incident Command System) is the disaster plan for our hospital's and has been coordinated with the Los Angeles County Disaster Plan. Under this countrywide plan, the hospital may function as:

- A primary receiving facility
- An Evacuation facility for disabled or over-loaded nearby facilities
- A resource to provide triage teams to be dispatched to the disaster site

In the event of an external disaster your Charge Nurse will provide direction for you.

ICU and Stepdown Units:

Pulmonary Artery Catheter

- Policy # SCU 10-408 - Pulmonary Artery Catheter Insertion, Monitoring, Troubleshooting and Discontinuation
- Policy # CP 4-156 - Administration and Titration of Intravenous Medications

MANUAL:	Special Care Units	POLICY #:	SCU 10-408
SUBJECT:	**Pulmonary Artery Catheter Insertion, Monitoring, Troubleshooting and Discontinuation**	EFFECTIVE DATE:	05/02/1991
		REVISED DATE:	09/21/2023
		AUTHORIZED APPROVAL:	
PERSONNEL COVERED:	Special Care Unit and Stepdown RNs	PAGE: 1	OF 16

PURPOSE

The purpose of this policy is to outline the organization's standard for the care of a patient with a pulmonary artery catheter.

ABBREVIATIONS

- CI – Cardiac Index
- CO – Cardiac Output
- LVSW- Left Ventricular Stroke Work
- LVSWI – Left Ventricular Stroke Work Index
- PA – Pulmonary Artery
- PAP – Pulmonary Artery Pressure
- PAWP – Pulmonary Artery Wedge Pressure
- PVR – Pulmonary Vascular Resistance
- PVRI- Pulmonary Vascular Resistance Index
- RAP – Right Atrial Pressure (also referred to as CVP – Central Venous Pressure)
- RVSW- Right Ventricular Stroke Work
- RVSWI – Right Ventricular Stroke Work Index
- SVR – Systemic Vascular Resistance
- SVRI- Systemic Vascular Resistance Index

POLICY

1. Pulmonary artery (PA) waveform will be monitored continuously (including during transport) with appropriate high/low alarms set 20% above and below the patient's baseline, or per provider order. PA alarms are not to be turned off.
2. Blood may be drawn for lab samples (except for blood cultures) from any lumen except the PA distal. (See 'Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal' Policy)
3. Mixed venous blood gases will be drawn from the PA distal lumen.

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4. Blood products and albumin should never be infused through a PA catheter except in an emergency. Viscous solutions may occlude the catheter and cause dampening of the waveforms, adversely affecting the accuracy of the monitoring system.
5. The PA lumen patency will be maintained with a continuous infusion via a Normal Saline (NS) bag pressurized to 300 mmHg IV solutions or medications will not be infused through the PA distal port.
6. When performing manual cardiac output: Vasoactive medications will not be administered through the proximal injectate (Blue Port), these medications cannot be safely stopped to perform a manual cardiac output measurement, unless there is no other site available. In this event, no cardiac output data will be obtained while vasoactive medication is infusing.
7. All stopcock ports will be covered with sterile caps (non-vented).
8. The Introducer and non-monitoring lumens will be used for continuous IV infusion and medication administration.
    a. In cases of severe fluid restriction, the Introducer and/or non-monitoring lumens may be capped and flushed every 12 hours with 10 mL NS (See 'Standardized Procedure for Ordering of Flushes for Vascular Devices' Policy).
    b. Only the 1.5 mL syringe included in the insertion kit will be connected to the balloon port.
9. The phlebostatic axis will be marked and maintained for all hemodynamic readings.[1]
10. PAWP determination will be performed using monitoring procedures (wedge procedure) on bedside monitor.
11. Wedge procedure and digital readings (for PAP and RA) may be used unless there is significant respiratory variation, catheter whip, at which time measurements will be taken from paper tracings.
12. When the introducer is left in place, a single lumen infusion catheter (SLIC) or obturator cap must be placed immediately upon removal of PA catheter in the intensive care unit (ICU). A SLIC or obturator cap will not be placed on stepdown.
    a. The PA catheter and introducer will both be removed when the PA catheter is ordered to be discontinued on stepdown.
13. The use of introducers outside of critical care and stepdown is restricted. Exceptions may be made according to patient condition by the attending physician. Before patients are transferred to the floor, the introducer must be sutured in place, a SLIC or blue obturator cap must be secure, and all IV connections must be luer lock (no stopcocks).
14. Do not fast-flush the PA lumen for longer than 2 seconds. Prolonged flushing of high-pressure fluid can potentially cause pulmonary artery rupture.
15. Maintain sterility and integrity of the plastic sleeve covering the PA catheter. **DO NOT put tape or dressings on the plastic sleeve.**

16. The CO injectate syringe and CVP pressure tubing should remain connected to the PA catheter. If the CO injectate syringe or the CVP pressure tubing is disconnected from PA catheter, follow the 'Central Venous Access Device' policy for managing intermittent tubing.
17. PA catheters will not be inserted on stepdown.
18. PAWP measurements will not be performed by stepdown RNs. PAWP measurements on stepdown will be performed by the provider.
19. Patients with PA lines may ambulate with an RN or a Patient Care Assistant. The patient must remain connected to a monitor or within range of a wireless telemetry monitoring system.
20. If a patient is admitted from an outside hospital with a non-Edwards Lifesciences pulmonary artery catheter, the catheter must be removed and swapped out with an Edwards catheter.
21. Change transducer, flush bag, tubing, and CO set every 96 hours.
22. Change dressing every 7 days and prn (see 'Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal' Policy).
23. A provider must remove PA line if transvenous or permanent pacing wires are in place.

EQUIPMENT

- IV pole and transducer holder
- IV solution and sterile syringes for flushing catheter ports
- Double transducer/tubing set
- 500 mL NS
- Pressure bag
- Transparent occlusive dressing
- CO injectate set
- Catheter introducer tray (size according to provider preference)
- Central line support tray
- Pulmonary Artery catheter
- Two pressure modules/cables
- One cardiac output module/cable
- Carpenters level

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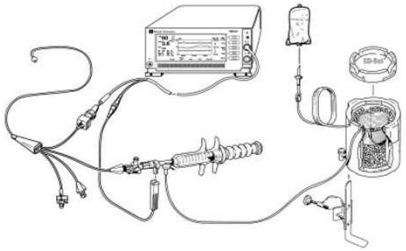
- Hemosphere Monitor (for continuous cardiac output/SVO_2 readings)
- Computation constant for manual cardiac output Swan-Ganz catheters/readings. Refer to Manual Cardiac Output Policy for information on how to utilize the computation constant.

PRE-INSERTION PROCEDURE

1. Verify signed consent or emergency consent.
2. Patient teaching, education flyer given to patient.
3. Assess vital signs.
4. Locate and mark phlebostatic axis (4th ICS, halfway between the anterior and posterior chest wall)
5. Assemble transducer/tubing flush system.
    a. Perform hand hygiene and apply gloves.
    b. Open transducer tubing package and tighten all connections before removing from package.
    c. Spike 500 mL NS bag with transducer tubing set, clamp flush tubing.
    d. Insert flush bag into pressure bag and hang from IV pole. (Do not inflate pressure bag. Priming under pressure increases turbulence in the line, increasing the amount of air in the system.)
    e. Open tubing clamp, flush system by gently pulling the snap tab- remove vented cap on transducer stopcock and turn stopcock to flush port and assure all air bubbles are removed. Replace vented caps with non-vented caps.
    f. Inflate pressure bag to 300 mmHg.
    g. Connect pressure cables to transducer and to HP pressure module.
6. Assemble the CO injectate syringe.
    a. Aseptically connect the injectate syringe to the tubing
    b. Spike a 500 mL NS bag with the tubing.
    c. Hang the IV injectate solution on an IV pole.
    d. Assemble syringe and tubing.
    e. Prime the tubing and assure all air bubbles are removed.
7. Prepare the PA catheter.

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a. Connect PA distal port to the yellow pressure transducer/flush system. Connect the CO injectate syringe to the proximal injectate (blue/CVP) port so it is in straight alignment with the PA catheter. The blue pressurized transducer/flush line will connect to a three ways stop cock with the syringe (see diagram below).



Wiegand, D.J., Carlson, K.K. AACN Procedure Manual for Critical Care (5th ed.) Elsevier Saunders 2005

b. Flush all open lumens of the PA catheter with the flush system (can be done by provider or RN)

c. Insert 1.5 mL of air into the balloon to check integrity of the balloon (can be done by provider or RN)

8. Level and air zero/calibrate transducer.

a. Using a level, level phlebostatic axis mark on patient with air zero port (stopcock) of transducer

b. Turn transducer stopcock up (off to patient); ensure that port is vented to air.

c. Press "zero" on pressure module or monitor, confirm zero by visual message on monitor and beep tones.

d. Return stopcock to 90-degree angle for monitoring (closed to air)

INSERTION

1. All personnel involved with insertion and assisting in insertion must wear a mask.
2. Assist provider as necessary.

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3. Provide psychological support to patient.
4. Monitor and treat arrhythmias.
5. Keep introducer catheter SLIC obturator (from introducer kit) at bedside for use if PA catheter is removed and introducer left in place.

POST-INSERTION

1. Secure catheter and dress insertion site with transparent occlusive dressing (See 'Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal' Policy)
2. Label dressing with date, time, and initials
3. Obtain provider order for chest x-ray for position confirmation.
4. Monitor site for hematoma or hemorrhage.
5. Monitor for signs of cardiac tamponade and air embolism.

DOCUMENTATION

1. Complete bedside procedure form in the electronic health record (EHR), including infection prevention information.
2. Note insertion site.
3. Note initial values after placement of catheter (PAPs, PAWP, RAP, CO, CI, SVR, SVRI, PVR, PVRI, RVSW, RVSWI, LVSW and LVSWI).
4. Save post insertion rhythm and hemodynamic pressure waveforms. Document the following:
   a. Note and record length of catheter inserted (thick hash mark = 50 cm, thin hash mark = 10 cm)
   b. Note and record amount of air necessary to inflate balloon.
   c. Save dual or four channel waveforms of PA/PAWP/RA with end expiratory pressure measurements. Ensure saved waveforms include the patient's initials, room number, date, time, pressure scale and identification of waveform.

CONTINUED MONITORING

1. **Zero/Calibrate Transducer**
   a. At the beginning of every shift
   b. After setup change

c. After electrical power interruption

d. Questionable accuracy of pressures obtained.

2. **Leveling the Transducer**

a. At the beginning of every shift

b. With any position changes

c. Do not "eyeball" always use a level.

3. **Square Wave Test/Dynamic Response Test**

a. At the beginning of every shift

b. Questionable accuracy of pressures obtained.

c. Document waveform as optimally damped, overdamped, or underdamped (see diagram below)

d. See PA Catheter Troubleshooting Appendix if catheter not optimally damped.

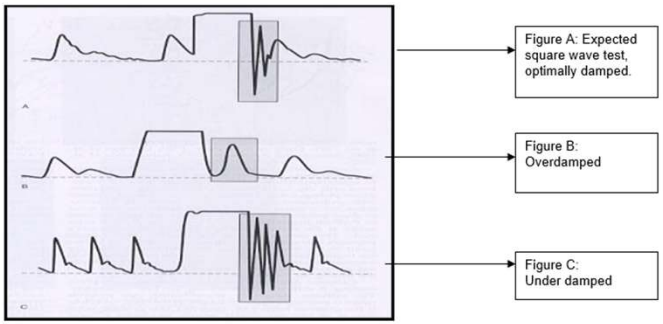


Figure A: Expected square wave test, optimally damped.

Figure B: Overdamped

Figure C: Under damped

4. **Evaluation of Waveform Quality and Data Accuracy**

When evaluating waveforms, the "a, c, v" waveforms should be identified. The "a" wave reflects atrial contraction, the "c" wave reflects closure of the tricuspid valve, and the "v" wave reflects passive filling of the atria. The "a" wave gives the best reflection of ventricular end-diastolic pressure.

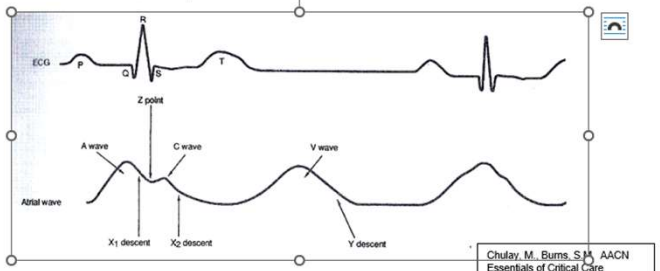
a. Right atrial waveform (RA)

i. At least two visible waves per cardiac cycle (a, c, v)

ii. Identify the "a" wave. The "a" wave correlates just after the P wave, in the PR interval.

iii. Measure the mean pressure of the "a" wave at end-expiration.

iv. In atrial fibrillation when an "a" wave is not present, the Z-point method may be used and estimates ventricular end-diastolic pressures. The Z-point is located on an RA waveform in the mid to late QRS complex area.



Chulay, M., Burns, S.M. AACN Essentials of Critical Care Nursing. The McGraw-Hill Companies, 2006

b. Pulmonary artery waveform (PA)

i. Clear end diastolic point (use 0.08 sec after the onset of the QRS when significant whip or artifact does not exist)

ii. Clear dicrotic notch

iii. Measure systolic and diastolic pressures at end-expiration.

c. Pulmonary artery wedge pressure waveform (PAWP)

i. At least two visible waves per cardiac cycle (a, c, v)

ii. Identify the "a" wave. The "a" wave correlates with the end of the QRS complex and reflects atrial contraction. The "a" wave is delayed for the PAWP due to the increased distance from the tip of the PA catheter to the left atrium.

iii. Measure mean pressure of the "a" wave at end expiration.

5. **Measuring PAWP**
   a. Confirm provider order to wedge and shoot a full line of data (FLOD) is present.
   b. Position patient supine with HOB 0 to 45 degrees
   c. Confirm PA waveform.
   d. On Philips bedside monitor, press "monitoring procedures" - then press "wedge" soft key (ensure that PAWP parameter is turned on)
      i. Check balloon capacity of catheter (printed on catheter)
         (1) If catheter is already in place, note amount of air required for previous wedge procedure.
      ii. Obtain syringe supplied with catheter (3 mL syringe)
      iii. Fill syringe with air (no more than 1.5 mL of air)
      iv. Attach syringe to balloon port on catheter.
      v. Confirm that red lines are in alignment (open)
      vi. Slowly inflate balloon when prompt message "Ready for wedge procedure" appears.
      vii. Inject air slowly until waveform changes and the message "...wedging..." appears.
      viii. After approximately 12 seconds, the PAWP waveform will freeze and the message "...ready for balloon deflation..." appears.
      ix. Deflate the balloon (allowing air to escape passively) when prompt message "Ready for balloon deflation" appears in the task window.
      x. Press "Edit wedge" soft key.
      xi. Move cursor (horizontal line) up or down using "cursor" soft keys into the position measuring the mean value of the PAWP. Ensure that measurement is taken at the end expiratory point of waveform.
      xii. Press the hard key "confirm" when the cursor is in the correct position.
      xiii. Press "Restart wedge" (or "continue trace") soft key if another measurement is desired. The new measurement must be stopped manually using "stop trace" soft key.
      xiv. Remove syringe, dispel air, and reattach to balloon port and lock
      xv. Confirm return of PA waveform

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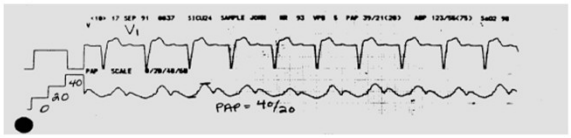
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      xvi. If no wedging waveform is detected, "...wedging..." message will not appear. Stop the measurement by pressing the "stop trace" soft key. See PA Catheter Troubleshooting Appendix.

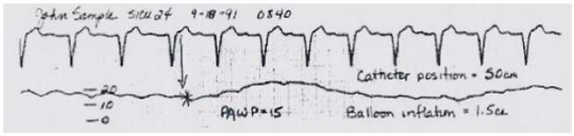
4. **Documentation**
   a. Record hemodynamic values in EMR per provider order.
   b. Dual or four channel recordings (strips) will be placed saved in the EHR **at least every 12 hours and whenever there is significant change in waveform**.
   c. Documentation will include:
      i. Patient's initials, room number, date, time
      ii. PA & RA with wave identified.
      iii. PAWP (when performed)
      iv. Clear calibration markings
      v. End-expiratory waveform used for measurement and clearly marked at systolic and diastolic point on PA waveform and mean on PAWP (when performed) & RA waveform.
      vi. Amount of air required for balloon inflation.
      vii. Position of catheter by hash markings visible on catheter
   c. Wedge procedure and digital readings for PAP and RA measurements will be used to record pressures unless there is a significant respiratory variation when compared to paper tracing measurements. Significant variation is defined as greater than 5 mmHg difference in PA values and greater than 3 mmHg difference in PAWP or RA values. When the previous criteria exist:
      i. A dual or four channel recording will be used to measure PA, PAWP and RA values each time measurements are taken.

SAMPLE DOCUMENTATION: End-expiratory pressure readings

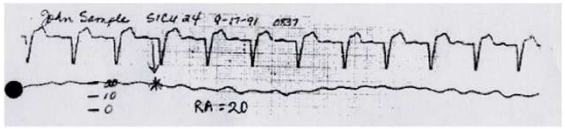
1. PA tracing – spontaneous ventilation



2. PAWP tracing - mechanical ventilation



3. RA tracing - spontaneous ventilation



BLOOD SAMPLING

1. **All Proximal Ports**
   a. See 'Central Venous Access Devices: Care, Maintenance, Blood Withdrawal, and Removal' policy.
2. **Distal (PA) port – Mixed Venous Blood Gases**
   a. The **only** blood sample to be drawn from the PA distal lumen is a mixed venous blood gas.
   b. Verify PA waveform.
   c. Perform hand hygiene and apply gloves.
   d. Swab PA Distal port with alcohol for 15 seconds.
   e. Connect 3 mL discard syringe to PA stopcock, maintain sterility of all components.
   f. Slowly aspirate 3 mL discard and remove syringe.
   g. Swab PA distal port with alcohol for 15 seconds.
   h. Connect sampling syringe (ABG heparinized syringe) and slowly aspirate (1 mL per 15 seconds) the required sampling volume (2 mL).
   i. Remove syringe.

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   j. Flush line with flush system.
   k. Confirm PA waveform on monitor.
   l. In the presence of the patient, place a patient label on each tube with date, time, and initials of nurse collecting specimen.
   m. Give sample to respiratory care practitioner (RCP) in a biohazard bag to run results within 15 minutes.

DISCONTINUATION OF PA CATHETER WITH INSERTION OF SLIC OR BLUE OBTURATOR CAP

EQUIPMENT

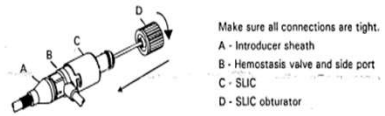
- Clean gloves
- Sterile gloves
- Mask
- Two percent chlorhexidine sponge
- Transparent occlusive CHG impregnated dressing
- 7 Fr. Single Lumen Infusion Catheter (SLIC) or blue obturator cap (in introducer tray and packaged separately)
- Needleless injection site cap (if placing SLIC)

PROCEDURE

1. Confirm provider order to remove PA line is present- provider to remove PA line if transvenous or permanent pacing wires in place.
2. Turn off or transfer infusions from all lumens and introducer lumens (maintain introducer infusion if it will remain in place).
3. Perform hand hygiene and apply gloves.
4. Place patient flat in bed for removal. If catheter is placed via jugular or subclavian routes, instruct patient to exhale and hold breath during removal.
5. Determine that the balloon is deflated by removing the syringe from the balloon inflation port with the red lines in alignment to passively allow air to escape.
6. Put on mask and set up sterile field.
7. Pull back clear plastic sheath covering PA catheter far enough to grab catheter (PA catheter is sterile underneath sheath).
8. Remove soiled gloves and perform hand hygiene.

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9. Apply sterile gloves.
10. Swab sheath hub and surrounding skin with 2% chlorhexidine sponge and let dry.
11. Unlock PA catheter from introducer. While stabilizing the introducer with non-dominant hand, withdraw PA catheter through introducer with steady constant movement. Observe for arrhythmia during removal. Immediately occlude end of hemostasis valve with thumb.
12. Have the patient exhale and hold while the PA catheter is removed.
13. Check catheter for intactness.
14. Insert SLIC or blue obturator cap into introducer using sterile technique.
    a. SLIC Placement:
        i. Insert SLIC with obturator. **NOTE**: if unable to advance SLIC, use blue obturator cap, do not force, or cut SLIC.
        ii. Unscrew obturator (D in figure below) and withdraw. Immediately attach a 3 mL syringe and pull back until blood is obtained in syringe.
        iii. Place luer lock injection cap and flush with 3 mL of NS
        iv. May infuse IV fluid continuously or may be capped and flushed for intermittent use.



Make sure all connections are tight.
A - Introducer sheath
B - Hemostasis valve and side port
C - SLIC
D - SLIC obturator

    b. Blue obturator cap placement:
        i. Place obturator cap and lock into place
        ii. Cap may not be removed for SLIC placement once it is placed.
14. After the above steps, the head of the bed may be elevated.
15. Maintain infusion via introducer lumen.
16. Replace CHG impregnated transparent occlusive dressing if introducer remains in place.

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DISCONTINUATION OF PA CATHETER AND INTRODUCER

EQUIPMENT

- Gauze dressing
- Clean gloves
- Sterile gloves
- Suture removal set
- Two percent chlorhexidine sponge
- Tape

PROCEDURE

1. Discontinue PA catheter by performing steps 1-12 from previous section.
2. Clip sutures securing introducer.
3. Ask the patient to take a deep breath in and hold.
4. Withdraw the introducer, pulling parallel to the skin using a steady motion.
5. As the introducer exits the site, apply pressure with a gauze pad.
6. Have the patient exhale once the introducer is removed.
7. Check catheter for intactness.
8. Maintain pressure over site until bleeding stops. Once catheter is removed, may elevate head of bed to promote hemostasis.
9. Dress insertion site with gauze dressing.
10. Dressing should remain in place for 24 hours.

DOCUMENTATION

1. Appearance of insertion site
2. Appearance of catheter, intactness of catheter
3. Any arrhythmias or untoward effects and the interventions performed.
4. Position of patient during procedure
5. Adequate direct pressure over site until hemostasis

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DOCUMENTATION

1. Documentation of the following should be completed in the electronic medical record:
   a. Site Assessment
   b. Patient and family education
   c. Patient tolerance of procedure
   d. Troubleshooting intervention and outcome
   e. Occurrence of unexpected outcomes and interventions
   f. Change in external centimeter marking of PA catheter at exit site.
   g. ECG strip with CVP and PA waveforms.

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ATTACHMENT(S)

- Appendix A: CO-Set+ Closed Injectate Delivery System Table
- Appendix B: Troubleshooting

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KECK HOSPITAL OF USC
OPERATING POLICIES

MANUAL:	Special Care Units	POLICY #:	SCU 10-408
SUBJECT:	**Pulmonary Artery Catheter Insertion, Monitoring, Troubleshooting and Discontinuation**	EFFECTIVE DATE:	05/02/1991
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Effective/Revision Dates for Policy # SCU 10-408		
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Manual:	Clinical Practice	Policy #:	CP 4-156		
Subject:	**Administration and Titration of Intravenous Medications**	Effective Date:	12/05/2013		
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		Authorized Approval:			
Personnel Covered:	Nursing, Pharmacy	Page:	1	of	9

PURPOSE

The purpose of this policy is to outline the organization's standard in the administration and titration of intravenous medications.

DEFINITION

- **Intravenous (IV) therapy:** Medications or solutions administered by the intravenous route.
- **Block of Charting:** A time period when rapid titration of medication was necessary in specific urgent/emergent situations.
- **I-TRACE:** A tubing and line connection safety mnemonic. These recommendations describe actions undertaken by clinicians who initiate, access, maintain, or discontinue invasive lines and tubes, Lines and tubes include, but may not be limited to, parenteral, enteral, respiratory, gastrointestinal (GI), and urinary catheters.

POLICY

1. Please see attachments at the end of this policy for detailed information regarding administration and titration of specific medications to include dosages, appropriate level of care, monitoring and other special requirements.
2. Only competency validated nurses shall administer IV medications and will be administered as outlined in the 'Administration of Medication' policy.
3. The registered nurse should consult with the provider or clinical pharmacist if there is a question about the safe administration of a medication.
4. **For Physician-Administered Intravenous Medications**: If monitoring of vital signs is more frequent than is routine for the Nursing Unit, the Nurse Lead shall be consulted to ensure appropriate and adequate staffing is available.
5. Only designated intravenous medications that have been approved by the Pharmacy and Therapeutics (P&T) Committee may be administered by continuous infusion on non-critical care units.
6. The provider's medication order shall include the following:[3]
   a. Medication name
   b. Strength (concentration if non-standard)

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   c. Route of administration
   d. Frequency of administration, as applicable
   e. Duration of order, as applicable
7. Registered nurses shall adjust titratable IV drip medication per provider orders. These orders shall include:
   a. Starting infusion rate or dose
   b. Maximum infusion rate or dose
   c. Incremental units to which the rate or dose can be increased or decreased
   d. Frequency of rate or dose changes
   e. Titration parameters
      i. The conditions for which the rate of the drip may be decreased or increased. These should be quantifiable, such as blood pressure, heart rate, pain scale, and sedation scale, etc.
8. Prescribers shall include measurable criteria for all intravenous medication orders that may be titrated, indicating the parameters under which these rate changes can be made.
   a. Analgesics must be titrated to a validated pain assessment instrument per the "Pain Assessment" policy.[1]
   b. The POSS (Pasero Opioid Sedation Scale) is used to assess for opioid-induced sedation[2] in patients without an artificial airway who are on a continuous opioid infusion.
   c. Sedatives must be titrated to the Richmond Agitation-Sedation Scale (RASS).[4]
      i. Sedation of agitated patients shall be started only after providing adequate analgesia and evaluating and treating causes of agitation. Sedative medications include benzodiazepines [e.g. midazolam (Versed), lorazepam (Ativan)], propofol (Diprivan), and dexmedetomidine (Precedex).
      ii. Spontaneous awakening trials will be performed as outlined in the "Spontaneous Awakening and Spontaneous Breathing Trial" policy.
   d. When a patient is transferred directly into an ICU with intravenous agent(s) infusing, the receiving RN will continue current infusion rates if actively infusing upon arrival to the unit until further titration is required.
   e. For patients receiving a ketamine infusion:

Saved to this PC

i. As an analgesic, the RASS and a pain assessment per the "Pain Assessment" policy will be performed.

ii. As a sedative, the RASS will be performed.

9. The registered nurse shall document the measurable criteria for all intravenous medication orders that may be titrated, indicating the condition under which the rate of the drip was increased or decreased as outlined in the provider order.

10. The measurable criteria shall be documented upon initiation of the titratable medication, 30 minutes after starting the infusion, prior to titration, and 30 minutes after titration.

11. When an order is received to discontinue a medication, the medication should be promptly removed from the infusion pump, disconnected from the patient, and discarded/wasted in accordance with proper pharmaceutical waste procedures.

12. It is allowed to temporarily keep the infusion connected to the patient and the pump after infusion is titrated off because the patient no longer meets the criteria for the infusion based on the assessment of physiological parameters.

    a. If the medication needs to be restarted based on the assessment of the patient and physiological parameters of the titrated medication, the medication should be restarted at the rate required immediately before pausing the infusion. The infusion can then be further titrated based on instructions located in the medication order.

    b. If a provider places a new order for the infusion or places an order specifically outlining how the infusion should be restarted, this new order should supersede the standard approach of restarting at the rate prior to the pause.

    c. Infusions that have been titrated off and remained off for 2 hours should be immediately removed from the pump, disconnected from the patient and discarded, and the primary provider/team should be notified.

    d. If the patient is stable for 2 hours after stopping the titratable infusion, contact provider to consider discontinuing the order for the infusion.

13. If there is an immediate risk to patient safety or a life-threatening condition and rapid titration of a medication is necessary, the registered nurse may titrate as needed and document all the titration elements below. If the episode of emergent/urgent titration exceeds four hours, a new block of charting documentation should be utilized.

    a. time of initiation

    b. name of medication administered

    c. starting rates/dose and ending rates/dose of medications

    d. maximum rate/dose of medications administered

    e. time of completion

    f. physiological parameters evaluated to determine the administration of titratable medications.

14. If there is an immediate risk to patient safety or a life-threatening condition and rapid titration of a medication is necessary, the provider will be notified as soon as reasonably possible, and the notification will be documented and additional orders will be instituted as ordered by the provider.

15. Code Blue or Rapid Response treatment situations are not restricted by the guidelines of this policy.

16. Intravenous chemotherapy or biotherapy shall be administered as outlined in the "Chemotherapy, Biotherapy, and Related Agents: IV Administration" policy.

17. Tubing will be labeled with date and time it was initiated. Preferred label is a colored day of the week sticker. When day of the week sticker is used, select colored sticker indicating the day of the week the tubing will be changed.

18. Nurses will utilize the I-TRACE process when administering medications and when assisting with the independent double-check of high alert medications.

    a. Illuminate the patient care area whenever invasive medical lines and tubes are manipulated.

    b. Touch the line or tube and trace it from the insertion point on the patient back to the point of origin.

    c. Perform a cognitive review- consider the purpose and expected outcome of the actions you are about to perform. When line access or connection involves medication delivery, use defined BCMA process to ensure medication is checked against the medication administration record/provider order.

    d. Act if any mismatch between the planned activity and desired outcome is discovered, either through BCMA alerts, independent double checks, or a cognitive review.

    e. Clarify and correct. Concerns expressed by primary caregivers, colleagues, patients, or family members are valid reasons to seek clarification before proceeding with a task involving lines and tubes. Correct any discrepancies before proceeding with the intervention.

    f. Expect to use the I-TRACE process each time a line or tube is accessed, manipulated, or discontinued and when care is handed off to another clinician or care team.

19. Medications ordered as an IVPB must be administered as an IVPB (secondary), not on a primary tubing set-up, to ensure delivery of full medication dose- this includes antibiotics and electrolytes.

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PROCEDURE

1. **Administration of Intravenous Infusions**

   a. For IV infusions, each bag is documented via MAR utilizing Begin Bag option.

   b. Administration of an IV bolus from a continuous infusion requires additional documentation via MAR.

   c. Initial IV rate is documented in MAR. Subsequent IV rate changes are documented on the electronic flowsheet (IVIEW).

   d. Documentation of IV Titrations is recorded in iView.

   e. Discontinuing an IV Infusion is documented in MAR.

   f. When hanging new IV infusion or IVPB medications, the nurse will ensure that the bag label correctly reflects the ordered medication, that the bag hanging matches what the pump is programmed to infuse and that the line is traced to the patient to ensure it is connected to the venous access device.

   g. Discontinued infusions should be removed from the infusion pump, disconnected from the patient, and promptly discarded, to minimize risk of inadvertently restarting the infusion.

   EQUIPMENT

   - IV pole
   - IV solution
   - IV administration set and labels
   - IV pump
   - Gloves
   - Alcohol pad

   PROCEDURE

   a. Assemble equipment.

   b. Perform hand hygiene.

   c. Check solution for contaminants, leakage and expiration date. Return to Pharmacy if necessary.

   d. Take IV solution to bedside.

   e. Perform hand hygiene, apply gloves.

   f. Explain procedure to patient, check patient ID band, have patient state name and date of birth (if able).

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   g. Assess IV site for redness, swelling, or tenderness. If these signs are present, remove IV and restart at a new site.

   h. Spike bag with administration set and prime.

   i. Insert administration set into pump and program according to provider order.

   j. Swab injection port or needless connector with alcohol pad for 15 seconds, allow to dry.

2. Attach tubing to injection port or needless connector and start infusion, assess for signs of infiltration. Label tubing per policy statement #17 above.

3. **Administration of IV Push Medication**

   EQUIPMENT

   - Medication
   - Luer-lock syringe
   - Alcohol -pad
   - 10 mL NS flush or 20 mL NS flush (incompatible drugs only)

   PROCEDURE

   a. Verify drug compatibility with IV solution.

   NOTE: If drug incompatibility exists with solution, clamp infusion and flush tubing with 10 mL NS prior to, and after injection of medication.

   b. Refer to IV Guidelines to verify administration.

   c. Perform hand hygiene.

   d. Explain procedure to patient, check patient ID band, have patient state name and date of birth (if able).

   e. Perform hand hygiene, apply gloves.

   f. Assess IV site for redness, swelling or tenderness. If these signs are present, remove IV and restart at a new site.

   g. Clamp infusion.

   h. Swab injection port closest to IV site with alcohol for 15 seconds, allow to dry.

   i. Attach syringe into IV tubing injection port and inject medication at recommended rate.

j. Disconnect syringe and discard.

k. Swab injection port closest to IV site with alcohol for 15 seconds, allow to dry.

l. Attach saline flush into IV tubing injection port and inject saline.

m. Disconnect saline and discard.

n. Resume infusion.

4. **Administration of IV Piggyback with Infusion Pump**

EQUIPMENT

- IV piggyback (IVPB) supplied by pharmacy
- IVPB secondary tubing and labels
- Alcohol pad
- 10mL NS pre-filled syringe

PROCEDURE

a. Medications ordered as an IVPB must be administered as an IVPB, not on a primary set-up, to ensure delivery of full medication dose- this includes antibiotics and electrolytes.

b. If multiple IVPB medications are ordered, if IVPB medications are on an extended infusion schedule, or there is concern that the duration and frequency of IVPB medications will interfere with patients hydration infusion the RN may set up a carrier infusion per NASP 09 "Standardized Procedure for the Ordering of Flushes for Vascular Access Devices" to allow for infusion of IVPB medication without interruption of intravenous hydration.

c. Refer to IV Guidelines administration information.

d. Verify drug compatibility with IV solution.

NOTE: When infusing IVPB medications that are incompatible with the main infusion:

i. Start another peripheral line.

ii. Flush the line with NS before and after the IVPB. When infusing multiple IVPB medications that are incompatible, back flush IVPB line with main infusion between piggybacks.

e. Assemble equipment.

f. Take IVPB medication to bedside.

g. Perform hand hygiene, apply gloves.

h. Explain procedure to patient, check patient ID band, have patient state name and date of birth (if able).

i. Assess site for redness, swelling, or tenderness. For saline lock, flush with 2 mL NS and assess for signs of infiltration. If present, restart IV.

j. Spike piggyback bag with IV secondary tubing and prime, clamp tubing.

NOTE: multiple IVPB medications may be used with one set of secondary tubing if they are compatible with each other and with the main infusion. Minimize the use of add-on devices for administration sets as each device is a potential source of contamination[3].

k. Swab injection port on primary line above pump with alcohol for 15 seconds, allow to dry.

l. Connect IV tubing to injection port.

m. Hang IVPB bag higher than main IV.

n. Set secondary infusion rate and volume.

o. Release clamp on secondary tubing.

p. Press START. Visualize drops in the chamber of the secondary tubing to ensure fluid from IV bag is flowing before walking away from the pump.

q. Primary line will resume infusing when secondary volume has been delivered. After infusion completed, leave piggyback tubing connected to main line to ensure sterility for subsequent use.**

r. Label IV tubing and IVPB bag with date, time hung.

REFERENCE(S)

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Attachments

- IV Therapy Administration
- Intravenous Infusion Titration
- I-TRACE Information
- Correctly labeled IV tubing example (photo)

Related Policies and Procedure(s)

- Clinical Practice
  - Administration of Medications
  - Chemotherapy, Biotherapy, and Related Agents: IV Administration
  - Awakening and Breathing Trial Coordination
  - Pain Assessment and Management

AACN's Evidence-leveling System	
Level A	Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment
Level B	Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
Level C	Quality studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
Level D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
Level E	Theory-based evidence from expert opinion or multiple case reports
Level M	Manufactures' recommendations only

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