



HMS PICC Data Definitions

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ENROLLMENT INFORMATION

1. HMS PARTICIPANT NUMBER

Instructions: System generates the HMS participant number.

2. HOSPITAL

Instructions: Hospital site is tied to abstractor login ID.

3. HOSPITAL DETERMINED PATIENT ID

Instructions: This ID is determined by each hospital in order to track patient data.

Note: Entries into this field are not visible to the HMS Coordinating Center. Abstractors are able to search this field in addition to the HMS ID # in order to locate patient records.

DEMOGRAPHICS

1. DOB (mm/yyyy)

Instructions: Record the patient's month and year of birth in the mm/yyyy format.

2. INSERTION LINE TYPE

Instructions: Select the type of case to abstract

- *"PICC"* if abstracting a PICC case
- *"Midline"* if abstracting a MIDLINE case
 - Note 1: In order to qualify as a Midline for the purposes of this project the Midline must be inserted into one of the veins of the arm and the tip dwelling within or distal to the subclavian vein. Midlines are typically 6cm-25cm in length.
 - Note 2: Extended-dwell peripheral IVs inserted in the arm, above the wrist, can be included as Midlines for the purposes of this project.

3. PATIENT'S GENDER IDENTITY

Instructions: Review the medical record to determine the patient's gender identity

- *"Female"* if the patient identifies as a female.
- *"Male"* if the patient identifies as a male.
- *"Transgender Women/Transgender Female"* if the patient identifies as a transgender women or transgender female.
- *"Transgender Man/Transgender Male"* if the patient identifies as a transgender man or transgender male.

- *“Other (e.g. non-binary, genderqueer, gender-diverse, or gender fluid)”* if the patient identifies as non-binary, genderqueer, gender-diverse or gender fluid.
- *“Choose not to disclose”* if the patient chooses not to disclose the gender they identify as.
- *“Unknown”* if the medical record is silent as to which gender the patient identifies as.

4. SEX ASSIGNED AT BIRTH

Instructions: Review the medical record to determine the patient’s sex assigned at birth. You have three (3) options for this question.

Select one of the following:

- *“Male”* if the patient is assigned male at birth.
- *“Female”* if the patient is assigned female at birth.
- *“Unknown”* if the patient’s sex assigned at birth is unknown.

5. ETHNICITY

Instructions: Review the medical record to determine the patient’s ethnicity. You have three (3) options for this question.

Select one of the following:

- *“Hispanic or Latino”* if patient demographic information indicates patient is of Hispanic descent. The US Census Bureau states that “People who identify their origin as Spanish, Hispanic, or Latino may be of any race.”
- *“Non-Hispanic or Latino”* if patient demographic information indicates patient is not of Hispanic descent.
- *“Unknown”* if ethnicity is not reported in the medical record.

INCLUDE: if the patient chooses not to disclose their ethnicity

6. RACE

Instructions: Review the medical record to determine the patient’s race. You have seven (7) options for this question.

Select one of the following:

- *“American Indian or Alaskan Native”* if patient demographic information indicates patient is Native American, American Indian, or Alaska Native.
- *“Arab and Chaldean Ancestries”* if patient demographic information indicates patient is Arab or Chaldean.
- *“Asian”* if patient demographic information indicates Asian.
- *“Black or African American”* if patient demographic information indicates patient is black or African American.
- *“Native Hawaiian or Pacific Islander”* if patient demographic information indicates patient is Native Hawaiian or Pacific Islander.

- *“White or Caucasian”* if patient demographic information indicates patient is white or Caucasian.
- *“Other”* if patient demographic information indicates the patient is a race other than what is listed above.
- *“Unknown”* if patient’s race is not indicated in the medical record.

7. INSURANCE PAYER

Instructions: Review the medical record to determine the patient’s primary insurance. The patient may have multiple insurers, so be sure to select only the primary insurance.

Note: The coordinating center has provided a reference on Zendesk to guide your selection for insurance documentation.

You have twelve (12) options for this question.

Select one of the following:

- *“BCBSM Michigan”*
INCLUDE: Examples include (but not limited to): Healthy Blue Outcomes, Simply Blue HRA; Simply Blue HSA; Blue Cross Complete (Livingston, Washtenaw, Wayne counties); MICHild; Community Blue.
- *“BCN Michigan”*
INCLUDE: Example include (but not limited to): Healthy Blue Living; Healthy Blue Living Rewards; Healthy Blue HMO HRA; Blue Care Network HMO HRA; BCN Advantage HMO-POS; Blue Elect Plus; BCN HMO; Blue Essentials.
- *“Commercial- HMO”*
INCLUDE: Example include (but not limited to): HAP
- *“Medicaid- HMO”* if Medicaid is the primary insurance for this hospitalization.
INCLUDE: ProCare Health Plan
- *“Medicaid- Straight”*
INCLUDE: HAP Empowered Medicaid
- *“Medicare- All”*
INCLUDE: Example include (but not limited to): Aetna Medicare Advantage Health Plus MedicarePlus Advantage PPO
- *“Medicare Advantage- BCBSM”*
INCLUDE: Example include (but not limited to): Medicare Plus Blue PPO: Essential, Vitality, Signature, Assure Prescription Blue PDP; Legacy Medigap
- *“Medicare Advantage- BCN”*
INCLUDE: Example include (but not limited to): HMO-POS options: Elements, Basic, Classic, Prestige HMO option: Focus (Wayne county only)
Group options: The UAW Retiree Medical Benefits Trust- URMBS Hourly Retirees: Chrysler, Ford, GM; Michigan Public School Employees Retirement System

My Blue Medigap plan

- *"No Insurance/ Self Pay"*

INCLUDE: If the patient has no insurance/ self-pay.

- *"Other Payer- Government"*

INCLUDE: Examples include (but not limited to): HAP Senior Plus, VA (Veteran's Affairs) Health Care Benefits, Tricare, Indian Health Services (IHS)

- *"Other Payer- Michigan and Outstate"*

INCLUDE: Examples include (but not limited to): Priority Health, Aetna, Humana

8. ZIP CODE

Instructions: Review the medical record to determine the zip code of the patient's primary residence.

Note 1: This zip code must be 9 digits in length. Please enter the 9-digit zip code whenever possible. If you are unable to locate a 9-digit zip code, please add four zeroes after the first 5 digits of the zip code. Example: 48109 should be entered as 481090000 if you are unable to locate the 9-digit zip code for this patient.

Note 2: This is a required field and the form cannot be submitted without an entry in this field.

Note 3: If the zip code is unknown or the patient is homeless, please enter "999990000".

9. STATUS

Instructions: Indicate the status of the case being abstracted. This question refers to the status of the HMS record and not the status of the patient. There are two (2) options for this question.

Select one of the following:

- *"Active"* if you are actively entering information in to the patient's HMS record, or are waiting to enter follow-up information.
- *"Completed"* if the patient's HMS record is complete and you do not anticipate entering additional information.

10. PATIENT STATUS

Instructions: The patient status indicates whether the case being abstracted is eligible or ineligible at the time of enrollment (i.e. the time at which the baseline medical record review begins). The patient status should be set as eligible (as your sampling strategy and case list should lead you to eligible cases); however there may be an instance when you find information during abstraction that indicates the case should really be ineligible (i.e. the patient is found to be pregnant, under the age of 18, admitted for palliative care, or patient

admitted to a surgical service). If a case is found to be ineligible once you have already started to abstract data, simply return to this section and mark the case as ineligible. This is a very important step, as the patient status determines whether or not the case is included for data analysis. There are five (5) options for this question.

Select one of the following:

- *“Eligible”* if the patient is admitted to a medicine service, including Medical ICUs, (Day #1/day# 2 of inpatient hospitalization), has a PICC placed inserted into one of the veins of the arm and is not considered a midline and the patient does not meet any of the exclusion criteria.

NOTE 1: Insertions in the ER or an observation unit in advance of a planned inpatient admission (either on the day of or the day before the inpatient admission) are eligible for abstraction.

EXCLUDE: PICC lines placed at an outside hospital. PICC Lines are not eligible for abstraction if they were placed at an outside institution. PICC lines that were never utilized or functional are not eligible for abstraction.

- *“Ineligible – Index line is an exchange”* if the index line is an exchange line.
INCLUDE: a Midline that was exchanged for a PICC.
- *“Ineligible - Patient was pregnant”* if the patient is pregnant at the time of enrollment.
- *“Ineligible - Patient under the age of 18”* if the patient is under the age of eighteen (18) at the time of enrollment.
- *“Ineligible - Patient admitted for palliative care”* if the patient is admitted for palliative care.
- *“Ineligible - Patient admitted to a surgical service”* if the patient was admitted to a surgical service on Day #1 or Day #2 of the hospital encounter.

NOTE 1: Patients that are admitted to a medical service then have surgery during the hospitalization when the PICC of interest was placed may be included if they do not meet any of the other exclusion criteria.

NOTE 2: Patients admitted to an inpatient medical service after ambulatory surgery may be included if they do not meet any of the other exclusion criteria.

- *“Ineligible - Presence of Left Ventricular Assist Device (LVAD)”* if the patient has an existing LVAD present at the time of PICC placement, an LVAD is implanted during Day 1-14 post PICC placement, or documentation in the medical record that states an LVAD implant is planned during the current hospitalization. (Examples include: Impella Device)
- *“Unable to finish abstraction”* if the case is eligible yet, abstraction was unable to be completed.

11. LEGACY PICC HMS ID



Instructions: Enter the number of the PICC HMS ID for a PICC case that was previously abstracted when the abstraction was out to 70 Days post PICC placement. These PICCs would have been abstracted prior to 7/1/2017 and the insertion date would have been prior to 06/01/2017. If this is the first time the patient has had a PICC entered into the PICC database, you would leave this field blank.

Note: PICC and Midline cases should be entered under separate HMS IDs

12. CHANGE LOG MESSAGE

Instructions: Whenever a change is made to an HMS patient record after it has been created and saved, provide a written explanation of the change in the available text box.

Note: A written explanation is required to save any changes made to the record.

Baseline (PICC)

Peripherally Inserted Catheter Placement



Instructions: For all questions in the database "No Answer" is the default selection. This field will be considered a blank field and is interpreted as missing data. Be sure to select the appropriate answer for each question.

1. DATE OF INDEX PLACEMENT

Instructions: Review the medical record to determine the date that the peripherally inserted central catheter (PICC) of interest was placed. Indicate the date of placement in the MM/DD/YYYY format.

Note1: If the index PICC is an exchange, enter the date of the exchange (NOT the original PICC placement date).

Note2: Be sure to indicate the date of initial PICC placement, and not the date the PICC was ordered or the date that adjustments were made.

2. THIS IS SUCCESSFUL PICC # _____ ABSTRACTED ON THIS DATE.

Instructions: Review the medical record to determine which PICC is entered that corresponds to the date of index placement.

Note 1: The default will always be one; however, if this is the second PICC line inserted on the same date indicated above then you must manually change the entry using the drop-down box.

Note 2: Only enter PICC lines that were entered into the HMS database. Example, if an individual at your institution had two PICC lines inserted on the same date and only one of these resulted in entry into the PICC database you would indicate this as PICC line #1. If both PICC lines were entered into the HMS database, then the first would be PICC line #1 and the second would be PICC line #2.

Select one of the following:

- "1" if the PICC indicated above is the first PICC inserted on the date indicated above. Note: This is the default answer.

- “2” if the PICC indicated above is the second PICC inserted on the date indicated above.
- “3” if the PICC indicated above is the third PICC inserted on the date indicated above.
- “4” if the PICC indicated above is the fourth PICC inserted on the date indicated above.
- “5” if the PICC indicated above is the fifth PICC inserted on the date indicated above.

3. PRIOR TO THE DATE OF THIS INDEX PICC INSERTION, DID THE PATIENT HAVE A PICC OR CVC PLACED IN THE PAST 6 MONTHS?

Instructions: Review the medical record to determine if the patient had a PICC or CVC placed within the past 6 months, not including the index PICC or any prior PICC exchanges. A central line is one that terminates in a central vein or enters a central vein (femoral, axillary, or subclavian). There are three (3) options for this question.

Note 1: If a Mediport is both placed and accessed in the past 6 months, these should be entered as separate CVC insertions. Each documented Mediport access in the past 6 months should be captured separately.

Note 2: If you are unable to determine the date of placement of a previous PICC or CVC in the past 6 months and it was not placed during the index encounter, please exclude.

INCLUDE: Non-tunneled, tunneled, peripherally inserted, or implanted central venous catheters (CVCs). Some examples include: Arrow, Broviac, Cannon Arrow, CL-20, Cook catheter, Groshong, Hickman, Hohn, Infusaport, Kendal Palindrome, Neostar, PermaCath, Pro-line, R-Port, Quinton, S-Port, Vas Cath, Mediport insertion, Mediport that has been accessed (including accessed for flushes), Single Lumen Infusion Catheter (SLIC), and ICY Intravascular Heat Exchange Catheter (ICY Catheter).

EXCLUDE: AV Fistulas, peripheral External Jugular (EJ)IV or peripheral Internal Jugular (IJ) IV, midline catheters (some examples include: Power Glide), interosseous (IO) lines, arterial catheters, Swan Ganz catheters, Temporary Transvenous Pacemaker, Permacath exchange, femoral sheaths and central lines placed and removed within one day, this includes femoral catheters placed for procedures (for example – cardiac procedures such as angiography, angiography, angioplasty, EPS, pacemaker placement), PICC lines already abstracted, and Mediport catheters that are not accessed.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a PICC or CVC placed within the past 6 months (not previously abstracted). **Answer questions 3.1 through 3.3**
- “No” if the medical record does not indicate that the patient had a PICC or CVC placed within the past 6 months (not previously abstracted).
- “Unknown” if the medical record is silent as to whether the patient had a prior PICC or CVC placed within the past 6 months (not previously abstracted).

3.1. DATE OF INSERTION

Instructions: Review the medical record to determine the date that the prior PICC or CVC was placed (within the past 6 months). Indicate the date of placement in the MM/DD/YYYY format. If only the month and year of placement is known, enter the midpoint between the first day and last day of that month, as the day of insertion. If you are unable to determine the date of insertion of previous PICC or CVC, please contact the Coordinating Center for assistance.

Note 1: If index PICC is an exchange, enter the original PICC placement date.

3.2. INDICATE THE TYPE OF CENTRAL VENOUS CATHETER

Instructions: Review the medical record to determine the type of central venous catheter inserted. There are three (3) options for this question. Select one of the following:

- “PICC” if the medical indicates that the patient had a PICC placed within the past 6 months (not previously abstracted).
- “CVC” if the medical indicates that the patient had a CVC placed within the past 6 months.
- “Unknown” if the medical record is silent as to whether the type of central venous catheter is a PICC or CVC placed within the past 6 months.

3.3. DID THE PATIENT HAVE AN ADDITIONAL PRIOR PICC OR CVC INSERTION IN THE PAST 6 MONTHS?

Instructions: Review the medical record to determine if the patient had an additional prior PICC or CVC insertion within the past 6 months, not including the index PICC or any prior PICC exchanges. There are three (3) options for this question.

Note: This question repeats for up to 10 prior PICC or CVC insertions within the past 6 months.

Select one of the following:

- “Yes” if the medical indicates that the patient had an additional PICC or CVC placed within the past 6 months (not previously abstracted).
- “No” if the medical record does not indicate that the patient had an additional PICC or CVC placed within the past 6 months (not previously abstracted).
- “Unknown” if the medical record is silent as to whether the patient had an additional prior PICC or CVC placed within the past 6 months (not previously abstracted).

4. DOCUMENTED INDICATION FOR INDEX PLACEMENT

Instructions: Review the medical record to determine the indication for PICC placement (i.e., the documented reason for why the PICC is being placed). There are nine (9) options for this question.

Note: The indication for the Index PICC Placement must be documented in the PICC order, the interventional radiology note or vascular access note and must specifically state “PICC indication, PICC placed for, etc.” If nothing is documented, select “Unknown”

EXCLUDE: “Venous Access”, “Physician Request” or “Patient Request” are not acceptable as a documented indication.

Select all that apply:

- “Antibiotics” if the medical record indicates that the PICC of interest was placed for intravenous antibiotic therapy either home antibiotics or inpatient antibiotics.

INCLUDE: Any documentation that the PICC was placed for intravenous antibiotic therapy. Commonly infused antibiotics (but not limited to) are:

Ampicillin, Azithromycin, Bactrim, Cefazolin, Cefoxitin, Cefepime, Cefuroxime, Ceftriaxone, Ciprofloxacin, Clindamycin, Daptomycin, Doxycycline, Gentamicin, Imipenem, Levofloxacin, Linezolid, Meropenem, Metronidazole, Nafcillin, Penicillin, Piperacillin/Tazobactam, Polymyxin, Rifampin, Tigecycline, Tobramycin, Vancomycin, Zosyn, etc. Commonly infused antivirals (but not limited to) are: acyclovir, ganciclovir. Antifungals.

- “Blood transfusion or blood products” if the medical record indicates the PICC of interest was placed for administration of blood or blood products

INCLUDE: Any documentation that the PICC was placed for transfusion of blood or blood products. Examples include (but not limited to): whole blood, PRBC, plasma, platelets, Hemopure (HBOC-201).

- “Chemotherapy” if the medical record indicates that the PICC of interest was placed for administering chemotherapy.

INCLUDE: Any documentation that the PICC was placed for chemotherapy administration. Commonly infused chemotherapy agents (but not limited to):

Nitrogen mustards: mechlorethamine (nitrogen mustard), chlorambucil, cyclophosphamide (Cytoxan[®]), ifosfamide, and melphalan. Nitrosoureas: streptozocin, carmustine (BCNU), and lomustine. Alkyl sulfonates: busulfan. Triazines: dacarbazine (DTIC) and temozolomide (Temodar[®]). Ethylenimines: thiotepa and altretamine (hexamethyl-melamine). Platinum drugs: cisplatin, carboplatin, and oxaloplatin. Antimetabolites include: 5-fluorouracil (5-FU), 6-mercaptopurine (6-MP), Capecitabine (Xeloda[®]), Cladribine, Clofarabine, Cytarabine (Ara-C[®]), Floxuridine, Fludarabine, Gemcitabine (Gemzar[®]), Hydroxyurea, Methotrexate, Pemetrexed (Alimta[®]), Pentostatin, Thioguanine. Taxanes: paclitaxel (Taxol[®]) and docetaxel (Taxotere[®]) Ixabepilone (Ixempra[®]) Vinca alkaloids: vinblastine (Velban[®]), vincristine (Oncovin[®]), and vinorelbine (Navelbine[®]), Estramustine (Emcyt[®]). Taxanes: paclitaxel (Taxol[®]) and docetaxel (Taxotere[®]). Epothilones: ixabepilone (Ixempra[®]), Chimeric antigen receptor (CAR) T cell (CART) Therapy

- *“Difficult Access/ Blood Draws”* if the medical record indicates that the PICC of interest was placed due to difficult intravenous (IV) access or blood draws (i.e. to deliver therapies in the bloodstream and/or withdraw blood for testing).
INCLUDE: Any documentation that the PICC was placed due to difficult IV access (poor peripheral venous access) and/or inability to draw blood (i.e. blood draws, phlebotomy).
- *“Medications Requiring Central Access”* if the medical record indicates that the PICC of interest was placed for medication requiring central venous access and the medication meets the criteria below:
INCLUDE: Any documentation that the PICC was placed due to the administration of medications that require central venous access. These medications only include the following:
Administration of vasopressors (epinephrine, norepinephrine, phenylephrine, phenylephrine hydrochloride, dopamine and/or dobutamine), certain IV fluids (dextrose solutions 10% or greater, sodium chloride $\geq 3\%$), propofol, fentanyl, versed, lidocaine, promethazine, pentobarbital sodium, phenobarbital sodium, pentamidine, mannitol $\geq 20\%$, acyclovir, arginine, chemotherapy agents (listed under the chemotherapy option above), and/or
Four (4) or more doses of one of the following during the hospitalization:
antibiotics that are known irritants (e.g., erythromycin, tetracycline, nafcillin, vancomycin, amphotericin B), electrolyte solutions (potassium, magnesium, or calcium), phenytoin, sodium bicarbonate, vasopressin, or amiodarone
- *“Multiple Incompatible Fluids”* if the medical record indicates that the PICC of interest was placed for multiple incompatible fluids. This should only be selected

if this reason is specifically documented by the healthcare professional (MD, Nurse, IR, etc.) in the medical record.

INCLUDE: Any documentation that the PICC was placed due to multiple infusions that are incompatible (i.e., fluids that cannot be administered at the same time).

- *“Parenteral Nutrition”* if the medical record indicates that the PICC of interest was placed for administration of parenteral nutrition (PN) and the patient received Parenteral Nutrition (PN) during the period of review.

INCLUDE: Total parenteral nutrition (TPN), parenteral nutrition (PN), total nutrient admixture (TNA), lipid emulsion.

- *“Medications Requiring Central Access - Per Hospital Policy”* if the medical record indicates that the PICC of interest was placed for administration of medications requiring central access per hospital policy. **Answer question 4.1**

INCLUDE: Medications requiring central access per your local hospital policy that are not a medication included in the “Medications Requiring Central Access” selection.

- *“Unknown”* if the medical record is silent as to the indication/reason the PICC of interest was placed.

INCLUDE: Venous Access, Physician Request, Patient Request; Long Term IV therapy, CVP Monitoring

4.1. “FOR MEDICATIONS REQUIRING CENTRAL ACCESS – PER HOSPITAL POLICY, PLEASE ENTER THE NAME(S) OF THE MEDICATION(S).”

Instructions: Free text the name(s) of the medication(s) requiring central access per your local hospital policy.

Reminder: The HMS Coordinating Center will query sites that utilize this field to provide their hospital policy for Medications Requiring Central Access.

5. ARE ANY OF THE FOLLOWING CONDITIONS PRESENT AT THE TIME OF PICC PLACEMENT?

Instructions: Review the medical record to determine if any of the following conditions are present on the day of PICC placement, the day before PICC placement, or the day after PICC placement.

Note: These conditions do not have to be specifically stated in the order or documented by the physician to be the reason for PICC placement. Please also include those that are documented in the PICC order, the interventional radiology note or vascular access note that was noted in the question *“Indication for Placement”* (i.e., parenteral nutrition).

Check all that apply:

- *“Special Population: Cancer”* if the medical record reflects a cancer diagnosis and the PICC was placed for a cancer-related admission. Also, select if the medical record indicates the PICC was placed for infusion of chemotherapy.
- *“Parenteral Nutrition”* if the medical record indicates that the patient is receiving total parenteral nutrition (TPN).
INCLUDE: Total parenteral nutrition (TPN), parenteral nutrition (PN), total nutrient admixture (TNA), lipid emulsion.
- *“Patient Request”* if the medical record indicates that the patient has requested the PICC line.
INCLUDE: “Patient refused PIV start”, “refused IV” or “blown IV’s”, “patient requests PICC”.
EXCLUDE: Patient’s family requested PICC line placement
- *“None of the above”* if the medical record does not indicate that any of the conditions listed above are present at the time of PICC placement.

6. WHAT WAS THE PATIENT’S LEVEL OF CARE (PATIENT STATUS) AT THE TIME OF PICC INSERTION?

Instructions: Review the medical record to determine the patient’s level of care (patient status) at the time of PICC placement. There are five (5) options for this question.

Note: Determine patient status by the level of care the patient is ordered to receive at the time of PICC placement.

Choose one of the following answers:

- *“Outpatient”* if the medical record indicates that the patient was receiving medical care/services as an outpatient (not hospitalized) at the time of PICC placement.
INCLUDE: Any documentation that the PICC was inserted either the day of or day before hospital admission while the patient was receiving medical care/services as an outpatient (such as a clinic).
- *“Emergency Room”* if the medical record indicates that the patient was receiving medical care/services in an emergency room at the time of PICC placement.
INCLUDE: Any documentation that the PICC was inserted while the patient was receiving medical care/services in an emergency room (ER), emergency department (ED) or urgent care center directly associated with your hospital.
EXCLUDE: Patient is physically present in the Emergency Room, but has an order for admission to an Inpatient Medical Floor or Intensive Care Unit at the time of PICC placement.

- *“Observation Unit”* if the medical record indicates that the patient was receiving medical care/services in an observation unit at the time of PICC placement.
INCLUDE: Any documentation that the PICC was inserted while the patient was receiving medical care/services in an observation unit as determined by patient status order.
- *“Intensive Care Unit”* if the medical record indicates that the patient was receiving medical care/services in an intensive care unit (ICU) at the time of PICC placement.
INCLUDE: Any documentation that the PICC was inserted while the patient was receiving medical care/services in an ICU as determined by patient status order. The ICU classifications may include Medical, Surgical, Cardiac, Neurologic, Trauma/Burn, etc.
- *“Inpatient Medical Floor”* if the medical record indicates that the patient was receiving medical care/services in an inpatient setting that is not an Intensive Care Unit (ICU) at the time of PICC placement as determined by patient status order.
INCLUDE: Any documentation that the PICC was inserted while the patient was receiving care/services in an inpatient setting that is not in an intensive care unit (ICU).
- *“Unknown”* if the medical record is silent as to the type of medical care/services provided to the patient at the time of PICC placement.
INCLUDE: If patient was in the Observation unit at the time of PICC placement, select “Unknown” and add a comment in the abstractor’s note section stated that the PICC was placed while in the Observation unit.

7. NUMBER OF ATTEMPTS TO PLACE THE PICC

Instructions: Review the medical record to determine the number of insertion attempts (i.e., the number of tries) it took to place the PICC of interest successfully. There are seven (7) options for this question.

INCLUDE: Documented # of attempts, failed attempts (by same operator or different operator), passes, insertions, and/or an attempt that was deemed successful, however, diagnostic confirmation showed incorrect positioning resulting in removal and a new PICC line needed to be inserted.

EXCLUDE: Number of adjustments.

Note 1: This may include attempts made in other extremities and/or different veins before successful placement of the PICC of interest. For example, if there was one attempt made in the right arm and a second successful attempt in the left arm, you would select “2”.

Note 2: For failed attempts, this may or may not be indicated in the PICC insertion note of the PICC of interest. For example, the vascular access team may have tried and failed which led to successful placement by interventional radiology. In this scenario, this would count as 2 attempts for the PICC of interest

Select one of the following:

- "1" if the medical record indicates that the PICC was placed successfully on the first attempt.
- "2" if the medical record indicates that the PICC was placed successfully on the second attempt.
- "3" if the medical record indicates that the PICC was placed successfully on the third attempt.
- "4" if the medical record indicates that the PICC was placed successfully on the fourth attempt.
- "5+" if the medical record indicates that the PICC was placed successfully on the fifth or greater attempt.
- "Multiple" if the medical record documentation states the PICC was placed successfully after "multiple" attempts.
- "Unknown" if the medical record is silent as to the number of attempts were taken to successfully place the PICC line.

8. IS THERE DOCUMENTATION IN THE MEDICAL RECORD THAT INDICATED THE PATIENT EXPERIENCED PICC LINE KINKING OR COILING?

Instructions: Review the medical record to determine if the patient experienced kinking or coiling of the PICC line during insertion of the index PICC line being abstracted. There are three (3) options for this question.

INCLUDE: Documentation of PICC kinking or twisting, or that the PICC catheter is bent. PICC occlusion due to kinking. Kinking may occur near the insertion site or may be found per x-ray. X-ray report of PICC kinking. Documentation of a coiled or looped PICC. X-ray report of PICC coiling or looping. For example, an x-ray report may indicate that the PICC coiled in the subclavian vein.

Choose one of the following answers:

- "Yes" if the medical record indicates that the patient experienced kinking or coiling of the PICC. **Answer question 8.1**
- "No" if the medical record does not indicate that the patient experienced kinking or coiling of the PICC.
- "Unknown" if the medical record was silent as to whether the patient experienced kinking or coiling of the PICC.

8.1. DATE

Instructions: Review the medical record to determine the date kinking or coiling of the PICC was first identified. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

9. EXTREMITY IN WHICH PICC WAS PLACED

Instructions: Review the medical record to determine the extremity (i.e., limb) in which the PICC of interest was placed. There are three (3) options for this question. Select one of the following:

- *“Right arm”* if the medical record indicates that the PICC was placed in the patient’s right arm or right upper extremity (RUE).
INCLUDE: Documentation that the PICC was placed in the right arm. Some veins of the right upper extremity include (but not limited to): right basilic, right cephalic, right axillary, right median, right brachial, etc.
- *“Left arm”* if the medical record indicates that the PICC was placed in the patient’s left arm or left upper extremity (LUE).
INCLUDE: Documentation that the PICC was placed in the left arm. Some veins of the left upper extremity include (but not limited to): left basilic, left cephalic, left axillary, left median, left brachial, etc.
- *“Unknown”* if the medical record is silent as to the extremity in which the PICC was placed.

10. VEIN IN WHICH PICC WAS PLACED

Instructions: Review the medical record to determine the vein in which the PICC was placed. There are seven (7) options for this question.

EXCLUDE: Transjugular, Jugular, Subclavian, Brachiocephalic and Non-Arm Vein PICC lines

Select one of the following:

- *“Basilic”* if the medical record indicates that the PICC of interest was placed in the basilic vein.
- *“Cephalic”* if the medical record indicates that the PICC of interest was placed in the cephalic vein.
- *“Axillary”* if the medical record indicates that the PICC of interest was placed in the axillary vein.
- *“Median”* if the medical record indicates that the PICC of interest was placed in the median vein.
- *“Brachial”* if the medical record indicates that the PICC of interest was placed in the brachial vein.

- “*Other*” if the medical record indicates that the PICC of interest was placed in a vein not specified above.

FOR OTHER, PLEASE SPECIFY VEIN

Instructions: Free text the vein in which the PICC was placed.

- “*Unknown*” if the medical record is silent as to the vein in which the PICC was placed.

11. SUCCESSFULLY INSERTED BY

Instructions: Review the medical record to determine the classification (i.e. type of professional) of the individual that placed the PICC of interest. Select the individual that physically inserted the PICC, and not the ordering physician. This piece of information is likely to be found on a PICC procedure note. There are seven (7) options for this question.

Select one of the following:

- “*Vascular Access Nurse*” if the medical record indicates that the PICC of interest was inserted by a vascular access nurse.
INCLUDE: PICC Registered Nurse (RN), Vascular Access Nurse, PICC certified nurse, Vascular Nurse, Vascular Access-Board Certified Nurse (VA-BC), Certified Registered Nurse Infusion (CRNI), etc.
- “*Interventional Radiologist*” if the medical record indicates that the PICC of interest was inserted by an interventional radiologist.
INCLUDE: Interventional Radiologist (IR), Vascular Radiologist, etc.
- “*Physician*” if the medical record indicates that the PICC of interest was inserted by a physician.
INCLUDE: Medical Doctor (MD), Doctor of Osteopathic Medicine (DO), etc.
- “*Advanced Practice Professional (Non-IR)*” if the medical record indicates that the PICC of interest was inserted by an advanced practice professional that is not part of interventional radiology.
INCLUDE: Nurse Practitioner (NP), Clinical Nurse Specialist (CNS), Certified Nurse Midwife (CNM), Certified Registered Nurse Anesthetist (CRNA), or Physician Assistant (PA or PA-C), etc.
- “*Advanced Practice Professional (IR)*” if the medical record indicates that the PICC of interest was inserted by an advanced practice professional that is part of interventional radiology.
INCLUDE: Nurse Practitioner (NP), Clinical Nurse Specialist (CNS), Certified Nurse Midwife (CNM), Certified Registered Nurse Anesthetist (CRNA), or Physician Assistant (PA or PA-C), etc.

- *"Other"* if the medical record indicates that the PICC of interest was inserted by someone with a classification not listed above.
- *"Unknown"* if the medical record is silent as to the classification of the individual who inserted the PICC of interest.

12. WERE MULTIPLE OPERATORS INVOLVED IN PLACING THE PICC?

Instructions: Review the medical record to determine if there were multiple operators (people) involved in the placement of the PICC. We are looking for multiple operators who intended on placing the line instead of an assistant. There are three (3) options for this question.

INCLUDE: Examples include (but not limited to), PICC placement that required attempts by two PICC Nurses, a Nurse and an Advanced Practice Professional, a PICC Nurse followed by an Interventional Radiologist, etc.

EXCLUDE: Do not include cases where a medical professional assisted with the procedure, for example the scenario where an interventional radiologist placed the PICC in IR and there was an RN who assisted with the procedure.

Select one of the following:

- *"Yes"* if the medical record indicates that there were multiple operators (i.e., more than one person) involved in placing the PICC of interest.
- *"No"* if the medical record indicates that there were not multiple operators (i.e., only one person) involved in placing the PICC of interest.
- *"Unknown"* if the medical record is silent as to the number of operators involved in placing the PICC of interest.

13. WAS SEDATION USED FOR THE PLACEMENT OF THE PICC?

Instructions: Review the medical record to determine if sedation was utilized during the placement of the PICC.

INCLUDE: Any explicit statement stating that sedation was used for the placement of the PICC. Documentation of anesthesia involvement related to systemic sedation rather than local anesthesia used for the placement of the PICC.

Select one of the following:

- *"Yes"* if the medical record indicates that sedation was utilized during the placement of the PICC.
- *"No"* if the medical record indicates that sedation was not utilized during the placement of the PICC.
- *"Unknown"* if the medical record is silent as to whether sedation was utilized during the placement of the PICC.

14. CATHETER STYLE

Instructions: Review the medical record to determine the style of PICC catheter placed. The style of catheter indicates whether or not the PICC is conventional/standard, or if it can be used for power injection (i.e., contrast dye injection, etc.). This piece of information is likely to be found on a PICC procedure note. There are three (3) options for this question.

Select one of the following:

- *"Non-Power PICC"* if the medical record indicates that the PICC of interest is a non-power PICC.
INCLUDE: Examples include (but not limited to): Groshong PICC, Poly Per-Q-Cath, Per-Q, Cath, PolyRad PICC, Silicone PICC, Turbo Flo PICC
- *"Power PICC"* if the medical record indicates that the PICC of interest is a Power PICC or a Power Injectable catheter.
INCLUDE: Examples include (but not limited to): PowerGroshong PICC, PowerPICC, PowerPICC SV, PowerPICC SOLO2, Turbo-Ject Power-injectable PICC, if the PICC can be used for CT injections
- *"Unknown"* if the medical record is silent as to the style of catheter placed.

15. IS THE PICC ANTIMICROBIAL COATED?

Instructions: Review the medical record to determine if the PICC of interest was coated with an antimicrobial (i.e., helps to kill organisms and/or inhibit their growth). There are three (3) options for this question.

INCLUDE: Any documentation that the PICC was antimicrobial coated/impregnated. Examples include (but not limited to): Arrowg+ard Blue Advance PICC; Minocycline + Rifampin Impregnated PICC, Minocycline/Rifampin Impregnated Power-injection PICC; Arrow PICC with Chlorag+ard™ Technology, chlorhexidine coated PICC, etc.

Select one of the following:

- *"Yes"* if the medical record indicates that the PICC of interest is antimicrobial coated.
- *"No"* if the medical record does not indicate that the PICC of interest is antimicrobial coated.
- *"Unknown"* if the medical record is silent as to whether the PICC of interest is antimicrobial coated.

16. IS THE PICC ANTI-THROMBOTIC COATED?

Instructions: Review the medical record to determine if the PICC of interest was anti-thrombotic (i.e., helps to prevent clotting) coated. There are three (3) options for this

question.

INCLUDE: Any documentation that the PICC was anti-thrombotic coated. Examples include (but not limited to): Arrow PICC with Chlorag+ard™ Technology Antithrombogenic PICC; Arrowg+ard Blue Advance PICC; BioFlo PICCs; Heparin coated PICCs; PICCs with Endexo Technology

Select one of the following:

- "Yes" if the medical record indicates that the PICC of interest is anti-thrombotic coated.
- "No" if the medical record does not indicate that the PICC of interest is anti-thrombotic coated.
- "Unknown" if the medical record is silent as to whether the PICC of interest is anti-thrombotic coated.

17. LINE THICKNESS/ GAUGE (FR)

Instructions: Review the medical record to determine the thickness/ French (F, FR, Fr.) size of the PICC catheter placed. The French catheter scale is commonly used to measure the size and external diameter of catheter. This piece of information is likely to be found on a PICC procedure note. There are nine (9) options for this question.

Select one of the following:

- "2" if the medical record indicates the thickness of the PICC of interest is 2 FR. INCLUDE: 2 F, 2 Fr., 2 FR, 2 French
- "3" if the medical record indicates the thickness of the PICC of interest is 3 FR. INCLUDE: 3 F, 3 Fr., 3 FR, 3 French
- "4" if the medical record indicates the thickness of the PICC of interest is 4 FR. INCLUDE: 4 F, 4 Fr., 4 FR, 4 French
- "4.5" if the medical record indicates the thickness of the PICC of interest is 4.5 FR. INCLUDE: 4.5 F, 4.5 Fr., 4.5 FR, 4.5 French
- "5" if the medical record indicates the thickness of the PICC of interest is 5 FR. INCLUDE: 5 F, 5 Fr., 5 FR, 5 French
- "5.5" if the medical record indicates the thickness of the PICC of interest is 5.5 FR. INCLUDE: 5.5 F, 5.5 Fr., 5.5 FR, 5.5 French
- "6" if the medical record indicates the thickness of the PICC of interest is 6 FR. INCLUDE: 6 F, 6 Fr., 6 FR, 6 French
- "7" if the medical record indicates the thickness of the PICC of interest is 7 FR. INCLUDE: 7 F, 7 Fr., 7 FR, 7 French

- *“Unknown”* if the medical record is silent as to the thickness of the PICC of interest.

18. LUMENS

Instructions: Review the medical record to determine the number of lumens the PICC of interest has. The term lumen refers to the number of openings the line has, or IV access lines. PICCs can have one, two, three, or four lumens. There are five (5) options for this question.

Select one of the following:

- *“Single”* if the medical record indicates that the PICC of interest has one (1) lumen or a single lumen.
- *“Double”* if the medical record indicates that the PICC of interest has two (2) lumens or is a double lumen.
- *“Triple”* if the medical record indicates that the PICC of interest has three (3) lumens or is a triple lumen.
- *“Quadruple”* if the medical record indicates that the PICC of interest has four (4) lumens or is a Quad lumen.
- *“Unknown”* if the medical record is silent as the number of lumens the PICC of interest has.

19. TOTAL PICC LENGTH (CM)

Instructions: Review the medical record to determine the total length of the PICC in centimeters (CM). The total PICC length refers to the total length of the line inserted, including the length of catheter on the skin. Indicate the total PICC length as a numeric between 25 - 70 cm. For example, if the total PICC line inserted was 58 CM, 58 would be indicated. This piece of information is likely to be found on a PICC procedure note. If the total PICC length is not documented in the medical record, indicate the number 0.

Note: Capture the total PICC length, which includes the length of catheter on skin.

20. MANUFACTURER

Instructions: Review the medical record to determine the manufacturer of the PICC of interest. This piece of information is likely to be found on the PICC procedure note or in the image section of the EMR where there may be a scanned document of the PICC packaging which indicates the manufacturer, etc. There are eight (8) options for this question.

Select one of the following:

- *"BARD"* if the medical record indicates that the PICC of interest is manufactured by BARD.
 INCLUDE: BARD, BARD Access Systems, PowerPICC SOLO*2 Catheter, PowerPICC* Catheter, PowerPICC* SV Catheter, PowerGroshong* PICC, Groshong* PICC, Poly Per-Q-Cath* PICC, Per-Q-Cath* PICC, Poly RadPICC* Catheter, PowerPICC* Provena Catheter. Select if documentation states placement confirmed with a "Sherlock 3CG," or "3CG." Select if documentation states a model number that can be directly associated with a BARD product.
- *"COOK"* if the medical record indicates that the PICC of interest is manufactured by COOK.
 INCLUDE: Silicone Catheter Spectrum® Technology PICC, Silicone Catheter with Micropuncture® Peel-Away® Sheath Introducer, Spectrum Turbo-Ject®, Minocycline/Rifampin Power-Injectable PICC, Turbo-Flo® and Twin Turbo-Flo, Polyurethane Catheter with Micropuncture® Peel-Away® Sheath Introducer, Turbo-Ject® Power-Injectable PICC. Select if documentation states a model number that can be directly associated with a COOK product.
- *"Arrow"* if the medical record indicates that the PICC of interest is manufactured by ARROW.
 INCLUDE: Arrow PICC single lumen, Arrow PICC double lumen, Arrow PICC triple lumen, etc. Select if documentation states a model number that can be directly associated with an Arrow product. Select if documentation states, "Placed with VPS G4 system".
- *"Angiodynamics"* if the medical record indicates that the PICC of interest is manufactured by Angiodynamics
 INCLUDE: BioFlo PICC, Morpheus Smart PICC, Celerity. Select if documentation states a model number that can be directly associated with an Angiodynamics product.
- *"Navilyst"* if the medical record indicates that the PICC of interest is manufactured by Navilyst.
 INCLUDE: Xcela Power Injectable PICC, Xcela PICC's with PASV Valve Technology, Xcela Hybrid PICC with PASV Valve Technology, Vaxcel PICCs with PASV Valve Technology, Vaxcel PICCs. Select if documentation states a model number that can be directly associated with a Navilyst product.
- *"Teleflex"* if the medical record indicates that the PICC of interest is manufactured by Teleflex.
 INCLUDE: Select if documentation states a model number that can be directly associated with a Teleflex product.

- *"Other"* if the medical record indicates that the PICC of interest is manufactured by a company not specified above.

FOR OTHER, SPECIFY MANUFACTURER

Instructions: Free text the manufacturer.

INCLUDE: AngioDynamics Morpheus

- *"Unknown"* if the medical record is silent as to the manufacturer of the PICC line.

21. WHAT IS THE DOCUMENTED DEVICE TYPE/NAME FOR THE INDEX PICC?

Instructions: Review the medical record to determine the device type or name of the index PICC.

Select one of the following:

- *"Angiodynamics BioFlo PICC"* if the medical record indicates that the index PICC is a BioFlo PICC.
- *"Arrow Peripherally Inserted Central Catheter (PICC)"* if the medical record indicates that the index PICC is an Arrow Peripherally Inserted Central Catheter or Arrow PICC.
- *"Arrow PICC with Chlorag+ard Technology"* if the medical record indicates that the index PICC is an Arrow PICC with Chlorag+ard Technology.
- *"Arrow PICC with Chlorag+ard Technology with Pressure Injectable Catheter with Blue FlexTip"* if the medical record indicates that the index PICC is an Arrow PICC with Chlorag+ard Technology with Pressure Injectable Catheter with Blue FlexTip.
- *"BARD Groshong PICC Catheter"* if the medical record indicates that the index PICC is a Groshong PICC.
- *"BARD Per-Q-Cath PICC Catheter"* if the medical record indicates that the index PICC is a Per-Q-Cath PICC Catheter.
- *"BARD Poly Per-Q-Cath PICC Catheter"* if the medical record indicates that the index PICC is a Poly Per-Q-Cath PICC Catheter.
- *"BARD Poly RadPICC"* if the medical record indicates that the index PICC is a Poly RadPICC.
- *"BARD PowerGroshong PICC Catheter"* if the medical record indicates that the index PICC is a PowerGroshong PICC Catheter.
- *"BARD PowerPICC Catheter"* if the medical record indicates that the index PICC is a PowerPICC Catheter.
- *"BARD PowerPICC Provena Catheter"* if the medical record indicates that the index PICC is a PowerPICC Provena Catheter.
- *"BARD PowerPICC SOLO2 Catheter"* if the medical record indicates that the index PICC is a PowerPICC SOLO2 Catheter.

- *"BARD PowerPICC SV Catheter"* if the medical record indicates that the index PICC is a PowerPICC SV Catheter.
- *"Cook Silicone Peripherally Inserted Central Venous Catheter"* if the medical record indicates that the index PICC is a Cook Silicone Peripherally Inserted Central Venous Catheter or a Cook Silicone PICC.
- *"Cook Spectrum Silicone Minocycline + Rifampin Impregnated PICC"* if the medical record indicates that the index PICC is a Spectrum Silicone Minocycline + Rifampin Impregnated PICC.
- *"Cook Spectrum Turbo-Ject PICC Set – Minocycline/Rifampin Impregnated"* if the medical record indicates that the index PICC is a Minocycline/Rifampin Impregnated Spectrum Turbo-Ject PICC.
- *"Cook Turbo-Flo Peripherally Inserted Central Venous Catheter"* if the medical record indicates that the index PICC is a Turbo-Flo or Turbo-Flo Peripherally Inserted Central Venous Catheter.
- *"Cook Turbo-Ject Power Injectable PICC"* if the medical record indicates that the index PICC is a Turbo-Ject Power Injectable PICC.
- *"Navilyst Vaxcel PICC"* if the medical record indicates that the index PICC is a Vaxcel PICC.
- *"Navilyst Vaxcel PICC with PASV Valve Technology"* if the medical record indicates that the index PICC is a Vaxcel PICC with PASV Valve Technology.
- *"Navilyst Xcela Hybrid PICC with PASV Valve Technology"* if the medical record indicates that the index PICC is an Xcela Hybrid PICC with PASV Valve Technology.
- *"Navilyst Xcela PICC with PASV Valve Technology"* if the medical record indicates that the index PICC is an Xcela PICC with PASV Valve Technology.
- *"Navilyst Xcela Power Injectable PICC"* if the medical record indicates that the index PICC is an Xcela Power Injectable PICC.
- *"Unknown"* if the medical record is silent or the device type/name for the index PICC is unknown.
- *"Other"* if the medical record indicates a device type/name for the index PICC is not listed above. (Note: Contact the Coordinating Center for approval before using this option).

FOR OTHER, PLEASE SPECIFY

Instructions: Free text the full device name of the index PICC. Contact the Coordinating Center for approval before entering a device name.

EXCLUDE: Product lot numbers.

22. WAS A CATHETER TO VEIN RATIO DOCUMENTED?

Instructions: Review the medical record to determine if a catheter to vein ratio was documented. Some examples include: Minimum vein diameter 2 x's the catheter size or 3x's the catheter size. Documentation of percentage (i.e., 33%, 40%).

Note: If the only notation of catheter to vein ratio that you see is "line occupies less than X % of the vessel" (rather than a range [40-44%] or a whole percentage [33%]): Select "No" to the question "Was a catheter to vein ratio documented?"- IF you can see a vein size documented, AND there is either a line thickness (fr) or catheter size (mm) documented.

Select "Yes" to the question "Was a catheter to vein ratio documented?"- IF you cannot see a vein size documented (regardless of line thickness or catheter size documentation); select "Other" to the question "What was the catheter to vein ratio?" and capture the documentation you have in the free text box.

Select one of the following:

- "Yes" if the medical record indicates a catheter to vein ratio was documented.

Answer question 22.1

INCLUDE: If the only notation of catheter to vein ratio is "line occupies less than X % of the vessel" (rather than a range [40-44%] or a whole percentage [33%]) and you **cannot** see a vein size documented. Statement of "Percentage of venous occlusion by catheter"

- "No" if the medical record does not indicate a catheter to vein ratio was measured.

INCLUDE: If the only notation of catheter to vein ratio is "line occupies less than X % of the vessel" (rather than a range [40-44%] or a whole percentage [33%]) and you **can** see a vein size documented, **AND** there is either a line thickness (fr/gauge) or catheter size (mm) documented.

- "Unknown" if the medical record is silent as to whether a catheter to vein ratio was measured.

22.1. IF YES, WHAT WAS THE CATHETER TO VEIN RATIO/PERCENTAGE?

Instructions: Review the medical record to determine the catheter to vein ratio. Select one of the following:

Note: If the catheter to vein ratio is reported as a ratio, please convert it to a percentage and make the appropriate corresponding selection. (Example: 1:2 ratio corresponds to >= 50%, 1:3 ratio corresponds to 30-34%)

- "< 20%" if the medical record indicates < 20% as the catheter to vein ratio/percentage.
- "20-24%" if the medical record indicates 20-24% as the catheter to vein ratio/percentage.

- "25-29%" if the medical record indicates 25-29% as the catheter to vein ratio/percentage.
- "30-34%" if the medical record indicates 30-34% as the catheter to vein ratio/percentage.
- "35-39%" if the medical record indicates 35-39% as the catheter to vein ratio/percentage.
- "40-44%" if the medical record indicates 40-44% as the catheter to vein ratio/percentage.
- "45-49%" if the medical record indicates 45-49% as the catheter to vein ratio/percentage.
- ">= 50%" if the medical record indicates > = 50% as the catheter to vein ratio/percentage.
- "Unknown" if the catheter to vein ratio is unknown.
- "Other" if the medical record indicates as the catheter to vein ratio that is not one listed above. (Please contact the coordinating center before selecting "Other" for catheter to vein ratio documentation)

FOR OTHER, PLEASE SPECIFY CATHETER TO VEIN RATIO

Instructions: Free text the catheter to vein ratio.

Note: If the only notation of catheter to vein ratio that you see is "line occupies less than X % of the vessel", and you cannot see a vein size documented (regardless of line thickness or catheter size documentation): select "Other" to the question "What was the catheter to vein ratio?" and capture the documentation you have in the free text box.

23. IS THERE DOCUMENTATION OF CATHETER SIZE IN MM?

Instructions: Review the medical record to determine if there is documentation of catheter size in mm.

Select one of the following:

- "Yes" if the medical record indicates a catheter size in mm was documented.

FOR YES, PLEASE SPECIFY CATHETER SIZE IN MM

Instructions: Free text the catheter size in mm.

- "No" if the medical record indicates a catheter size in mm was not documented.
- "Unknown" if the medical record is silent as to whether a catheter size in mm was documented.

24. IS THERE DOCUMENTATION OF VEIN SIZE IN MM?

Instructions: Review the medical record to determine if there is documentation of vein size in mm.

Select one of the following:

- “Yes” if the medical record indicates a vein size in mm was documented. (Note: This is a free text, numerical entry only)

FOR YES, PLEASE SPECIFY VEIN SIZE IN MM

Instructions: Free text the vein size in mm.

- “No” if the medical record indicates a vein size in mm was not documented.
- “Unknown” if the medical record is silent as to whether a vein size in mm was documented.

25. WAS A PICC TIP DETECTOR SYSTEM USED TO CONFIRM PLACEMENT OF THE PICC?

Instructions: Review the medical record to determine if a PICC Tip Detector System was used to confirm placement during PICC insertion. There are three (3) options for this question.

INCLUDE: Any documentation that a tip detector device/system or electromagnetic position sensing device was used to confirm PICC placement during insertion;

Example names (but not limited to): BARD Sherlock^{*} II Tip Location System, Sherlock 3CG^{*} Tip Confirmation System, ARROW/Teleflex Vasonova Tip System, Nautilus Tip Verification System.

Select one of the following:

- “Yes” if the medical record indicates that a PICC tip detector system was used to confirm placement of the PICC.
- “No” if the medical record does not indicate that a PICC tip detector system was used to confirm placement of the PICC.
- “Unknown” if the medical record is silent as to whether a PICC tip detector system was used to confirm placement of the PICC.

26. ON INITIAL PLACEMENT, WAS THE LOCATION OF THE PICC TIP CHECKED VIA A METHOD OTHER THAN THE PICC TIP DETECTOR SYSTEM?

Instructions: Review the medical record to determine if the location of the PICC tip was checked via a method other than the PICC tip detector system on initial placement.

Select one of the following:

- “Yes” if the medical record indicates that the location of the PICC tip was checked on initial placement by a method other than a PICC tip detector system or in addition to a PICC tip detector system. **Answer questions 26.1 and 26.2**
- “No” if the medical record indicates that the location of the PICC tip was not checked on initial placement by a method other than the PICC tip detector

system.

- “Unknown” if the medical record is silent regarding location of PICC tip being checked.

26.1. IF YES, CONFIRMATION TYPE

Instructions: Indicate the method used to check the PICC tip location (i.e., what was used to verify the location of the PICC tip). There are four (4) options for this question.

Check all that apply:

- “X-ray” if the medical record indicates that the PICC tip was checked on initial placement via x-ray.
INCLUDE: X-ray, Chest x-ray (CXR), XRAY, Radiograph
- “Fluoroscopy” if the medical record indicates that the PICC tip was checked on initial placement via fluoroscopy.
INCLUDE: Fluoroscopy, Fluoroscope
- “Other” if the medical record indicates that the PICC tip was checked on initial placement via a method other than x-ray or fluoroscopy.
- “Unknown” if the medical record is silent as to the type of method that was used to check the PICC line location.

26.2. WAS THE PICC CONFIRMED VIA THIS METHOD TO BE IN THE CORRECT LOCATION?

Instructions: Review the medical record to determine if the location of the PICC tip was confirmed to be in the correct location on initial placement. PICC tip confirmation is usually performed prior to use of the PICC to ensure that the tip of the catheter is properly placed. PICC tip confirmation is usually performed with an x-ray or under fluoroscopy. There are three (3) options for this question.

Select one of the following:

- “Yes” if the medical record indicates that the location of the PICC tip was confirmed to be in one of the correct/appropriate locations upon initial placement. **Answer question 26.2.1**
INCLUDE: The correct/appropriate termination points include cavoatrial junction, cava atrial junction, superior vena cava (SVC) atrial junction, right atrial junction, lower 1/3rd of SVC, right atrium
- “No” if the medical record indicates that the location of the PICC tip was documented upon initial placement but it is not in one of the correct/appropriate termination points (listed in the YES response above).
Answer question 26.2.2

- INCLUDE: Some examples of incorrect/inappropriate locations are “the catheter tip terminates over the right superior mediastinum”, SVC (without any further documentation), tip projecting over the proximal SVC, tip projecting over the expected region of the mid-superior vena cava, lower SVC (without any further documentation), PICC inserted in the interval with its tip at the junction of the right brachiocephalic vein and SVC, mid-distal SVC
- “*Unknown*” if the medical record is silent as to whether the location of the PICC tip was confirmed to be in the correct/appropriate location upon initial placement (i.e. “*PICC tip confirmed in an acceptable location*”).

26.2.1. WHAT IS THE DOCUMENTED LOCATION OF THE PICC TIP?

Instructions: Review the medical record to determine the PICC tip location that was documented upon initial placement that is one of the correct/appropriate termination points. Enter the location of the PICC tip that is documented. There are three (3) options for this question.

Choose one of the following answers:

- “*Cavoatrial Junction*”
INCLUDE: Cava atrial junction, Superior vena cava (SVC) atrial junction, Right Atrial/SVC junction, Right Atrial Junction, lower 1/3 of the SVC
- “*Right Atrium*”
- “*Other*”

26.2.2. WHAT IS THE DOCUMENTED LOCATION OF THE PICC TIP?

Instructions: Review the medical record to determine the PICC tip location that was documented upon initial placement but is *not* in one of the correct/appropriate termination points. Enter the location of the PICC tip that is documented. There are fourteen (14) options for this question.

Choose one of the following answers:

- “*Arm veins (Basilic, Basilica, Cephalic)*”
- “*Azygous Vein*”
- “*Axillary Vein*”
- “*Brachial Vein*”
- “*Brachiocephalic Vein*”
- “*Contralateral Subclavian Vein*”
- “*Innominate Vein*”
- “*Ipsilateral Subclavian Vein*”
- “*Jugular Vein*”
- “*Radial Vein*”

- *“Right Atrium Vein”*
- *“Right Ventricle”*
- *“Subclavian Vein”*
- *“SVC”*
- *“Distal SVC”*
- *“Lower SVC (not specified)”*
- *“Mid SVC or Middle 1/3rd SVC”*
- *“Proximal SVC”*
- *“Upper 1/3rd SVC”*
- *“Other”*

FOR OTHER, PLEASE SPECIFY.

Instructions: Contact the coordinating center for guidance before using the “Other” selection. Free text the location of the PICC tip.

27. DID THE MEDICAL RECORD STATE THAT THE PICC TIP NEEDS TO BE ADJUSTED WITHIN 24 HOURS OF INSERTION?

Instructions: Review the medical record to determine if there is documentation that states that the PICC tip needs to be adjusted within 24 hours of placement. There are three (3) options for this question.

INCLUDE: Any documentation that indicates the PICC needed to be advanced and/or inserted more or needed to be pulled back/retracted.

Select one of the following:

- *“Yes”* if the medical record indicates there is documentation that states the PICC tip needs to be adjusted within 24 hours of insertion. **Answer question 27.1**
- *“No”* if the medical record does not indicate that the PICC tip needs to be adjusted within 24 hours of insertion.
- *“Unknown”* if the medical record is silent regarding documentation that the PICC tip needs to be adjusted within 24 hours of insertion.

27.1. IF YES, WHERE DID IT STATE THE PICC TIP NEEDS TO BE ADJUSTED?

Instructions: Indicate where in the medical documentation did it state the PICC tip needed to be adjusted? There are four (4) options for this question.

Check any that apply:

- *“X-ray”* if the medical record indicates that the PICC tip needs to be adjusted on initial placement via x-ray.
INCLUDE: X-ray, Chest x-ray (CXR), XRAY, Radiograph
- *“Fluoroscopy”* if the medical record indicates that the PICC tip needs to be adjusted on initial placement via fluoroscopy.

INCLUDE: Fluoroscopy, Fluoroscope

- "Other" if the medical record indicates that the PICC tip needs to be adjusted on initial placement via a method other than x-ray or fluoroscopy.
- "Unknown" if the medical record is silent as to if the PICC tip needs to be adjusted on initial placement.

28. WAS THE PICC TIP ADJUSTED WITHIN 24 HOURS OF INSERTION?

Instructions: Review the medical record to determine if the PICC tip was adjusted (i.e. pulled back or advanced) within 24 hours of insertion. There are three (3) options for this question.

INCLUDE: Any documentation that the PICC was advanced and/or inserted more or needed to be pulled back/ retracted. This includes adjustments made to the PICC upon initial insertion, or when the PICC tip is determined to be in a central vein but is adjusted prior to documentation of approval for use. Use of Power Flushes for PICC adjustment.

EXCLUDE: Do not include unsuccessful attempts to place the PICC (e.g., unable to advance the line).

Select one of the following:

- "Yes" if the medical record indicates that the PICC was adjusted within 24 hours of insertion. **Answer question 28.1**
- "No" if the medical record indicates that the PICC did not require an adjustment within 24 hours of insertion.
- "Unknown" if the medical record is silent regarding adjustment to the PICC within 24 hours of insertion.

28.1. NUMBER OF ADJUSTMENTS

Instructions: Indicate the number of adjustments made to the PICC within 24 hours of insertion. There are six (6) options for this question.

Choose one of the following:

- "1" if the medical record indicates that the PICC of interest required one (1) adjustment.
- "2" if the medical record indicates that the PICC of interest required two (2) adjustments.
- "3" if the medical record indicates that the PICC of interest required three (3) adjustments.
- "4" if the medical record indicates that the PICC of interest required four (4) adjustments.

- "5+" if the medical record indicates that the PICC of interest required five or more adjustments.
- "Unknown" if the medical record is silent as to the number of adjustments that was made to successfully place the PICC line.

29. WAS THE DEVICE ORDERED THE ONE THAT WAS INSERTED?

Instructions: Review the medical record to determine if the original device ordered was the one that was inserted.

Select one of the following:

- "Yes" if the medical record indicates that that the device ordered was the one that was inserted (i.e., PICC ordered and PICC inserted).
INCLUDE: Vascular access consult where the ordering physician leaves the choice to the inserting provider who is using MAGIC criteria or similar decision tool to make appropriate line choice.
- "No" if the medical record indicates that the device ordered was not the one that was inserted (i.e., Midline ordered and PICC inserted)
- "Unknown" if the medical record is silent as to whether the device ordered was the one that was inserted.

30. WAS THE NUMBER OF LUMENS ORDERED THE SAME AS THE NUMBER OF LUMENS INSERTED?

Instructions: Review the medical record to determine if the number of lumens ordered was the number of lumens that was inserted.

Select one of the following:

- "Yes" if the medical record indicates that that the number of lumens ordered was the number of lumens that was inserted (i.e., Single lumen ordered and Single lumen inserted).
- "No" if the medical record indicates that the number of lumens ordered was not the number of lumens that was inserted (i.e., Single lumen ordered and Double lumen was inserted) **Answer question 30.1**
- "Unknown" if the medical record is silent as to whether the number of lumens ordered was the number of lumens that was inserted.

INCLUDE: When the PICC order does not specify the number of lumens, select "Unknown".

30.1. DID THE NUMBER OF LUMENS INSERTED:

Instructions: Review the medical record to determine if the number of lumens inserted increased or decreased relative the number of lumens ordered.

Select one of the following:

- *“Increase in relation to the number of lumens ordered”* if the medical record indicates that the number of lumens inserted increased in relation to the number of lumens that was inserted (i.e., Single lumen ordered and Double lumen inserted).
 - *“Decrease in relation to the number of lumens ordered”* if the medical record indicates that the number of lumens inserted decreased in relation to the number of lumens that was inserted (i.e., Double lumen ordered and Single lumen inserted).
-
-

Admission Detail

1. DATE OF ADMISSION

Instructions: Review the medical record to determine the date the patient was admitted to the hospital as an inpatient. The only exception to this is if the patient was admitted to the medicine service, but was still physically located in the emergency room, short stay unit, observation unit, etc. due to limited bed space. Do not record the date the patient arrived in the emergency room or was admitted to an observation unit as the date of inpatient admission. Record the date in (MM/DD/YYYY) format.

2. INDICATE THE PLACE OF RESIDENCE PRIOR TO HOSPITALIZATION

Instructions: Review the medical record to determine the patient’s primary residence immediately prior to the hospitalization of interest.

Select one of the following:

- *“Assisted Living”* if the medical record indicates that the patient was living in an assisted living facility immediately prior to the hospitalization of interest.
INCLUDE: Assisted living, assisted living facilities (ALF), assisted living residence
Note: Assisted living is not the same as nursing home care. Assisted living is for adults that need help with everyday tasks, but don’t need full-time nursing care.
- *“Community Living”* if the medical record indicates that the patient was living in a community setting immediately prior to the hospitalization of interest.
INCLUDE: Dormitories, Sorority/Fraternity Houses, Hotels, Transitional Housing

- *“Correctional Facility”* if the medical record indicates that the patient is serving time in a correctional facility, jail, prison or penitentiary immediately prior to the hospitalization of interest.
- *“Group Home”* if the medical record indicates that the patient’s primary residence is a group home and they were living there immediately prior to the hospitalization of interest.
INCLUDE: Adult Foster Care, Substance Abuse Residential Programs
- *“Home”* if the medical record indicates that the patient’s primary residence is a private home and they were living there immediately prior to the hospitalization of interest.
INCLUDE: The patient’s own home or family member’s home.
- *“Homeless Shelter”* if the medical record indicates that the patient’s primary residence is a shelter or that the patient is homeless and they were living there immediately prior to the hospitalization of interest.
INCLUDE: Patients that are homeless but not in a shelter
- *“Inpatient Hospitalization”* if the medical record indicates that the patient resided from an inpatient hospitalization immediately prior to the hospitalization of interest
- *“Inpatient Psychiatric Facility”* if the medical record indicates that the patient resided in an inpatient psychiatric facility immediately prior to the hospitalization of interest.
- *“Inpatient Rehab”* if the medical record indicates that the patient was admitted for inpatient rehab immediately prior to the hospitalization of interest.
- *“Long Term Acute Care Hospital (LTACH)”* if the medical record indicates that the patient was admitted to a long term acute care hospital immediately prior to the hospitalization of interest.
- *“Skilled Nursing Facility”* if the medical record indicates that the patient was admitted to a skilled nursing facility immediately prior to the hospitalization of interest.
INCLUDE: Skilled nursing home, nursing home, skilled nursing facility (SNF), Extended Care Facility (ECF).
- *“Sub-acute Rehabilitation Facility”* if the medical record indicates that the patient was admitted to a sub-acute rehabilitation facility immediately prior to the hospitalization of interest.
- *“Unknown”* if the medical record is silent regarding the patient’s primary residence immediately prior to the hospitalization of interest.

3. WHAT IS THE ICD-10 CODE THAT CORRESPONDS WITH THE PRIMARY ADMITTING DIAGNOSIS?

Instructions: Review the medical record to determine the ICD-10 code corresponding with the principal reason for admission or admitting diagnosis as defined in the admitting history and physical. Use the free text box to enter the ICD-10 code that corresponds with the primary admitting diagnosis.

Note: Enter in one ICD-10 code and make sure that it is capitalized. Do not hit enter while inputting ICD-10 codes into the box.

4. INDICATE THE ADMISSION SOURCE

Instructions: Review the medical record to determine the source from which the patient was admitted. Check any admission sources that apply. Once the admission source(s) is selected, a new category will appear to input further data. There are five (5) options for this question.

Select all that apply:

- *“Emergency Room”* if the medical record indicates that the patient was admitted either from an emergency room or from an urgent care center directly associated with your hospital.

INCLUDE: Admissions from the emergency room (ER), emergency department (ED), urgent care center directly associated with your hospital, emergency department (ED) to emergency department (ED) transfer.

DATE OF ER ADMIT

Instructions: Indicate the date of the ER admit in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- *“Observation Unit”* if the medical record indicates that the patient was admitted from an observation unit, within your institution or elsewhere.

INCLUDE: Observation unit, observation status (i.e. do not meet inpatient status). Include patients that are located in an inpatient area but are considered “observation” status.

DATE OF OBS ADMIT

Instructions: Indicate the date of the observation admit in the in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- *“Direct Admit”* if the medical record indicates that the patient was admitted as a direct admit.

INCLUDE: Direct admits from home or doctor’s office, or if patient told by their doctor to go to the hospital to be admitted through the hospital’s admission office (not emergency room).

- *“Transfer from Another Facility”* if the medical record indicates that the patient was transferred from another facility. **Answer question 4.1**

INCLUDE: Any transfer from another facility (i.e. another hospital, sub-acute rehabilitation center, skilled nursing home, acute rehabilitation center, or assisted living), admission from an inpatient psychiatric unit at the same facility.

EXCLUDE: If the patient is transferred from an Adult Foster Care Center and it is the patient’s usual place of residence, it would NOT be considered a transfer from another facility.

DATE OF TRANSFER (MM/DD/YYYY)

Instructions: Indicate the date of the transfer in the MM/DD/YYYY format.

Use 01/01/1900 if the date is unknown.

4.1. FOR TRANSFER FROM ANOTHER FACILITY, PLEASE SPECIFY.

Instructions: Review the medical record to determine the type of facility (i.e. another hospital, sub-acute rehabilitation center, skilled nursing home, acute rehabilitation center, or assisted living) the patient was transferred from. There are five (5) options for this question.

Select one of the following:

- *“Sub-acute rehabilitation center”* if the medical record indicates that the patient was transferred from a sub-acute rehabilitation facility. Sub-acute rehabilitation centers are for patients that no longer require hospitalization, but still need skilled medical care in a rehabilitation facility/center.
INCLUDE: Sub-acute rehabilitation (rehab), sub-acute rehabilitation care, post-acute rehabilitation center
- *“Skilled nursing home”* if the medical record indicates that the patient was transferred from a skilled nursing home. Skilled nursing homes are generally for patients who require constant nursing care and have significant difficulties with their activities of daily living (i.e. bathing, dressing, eating, etc.).
INCLUDE: Skilled nursing home, nursing home, skilled nursing facility (SNF)
- *“Acute rehabilitation center”* if the medical record indicates that the patient was transferred from an acute rehabilitation center.
INCLUDE: Acute rehabilitation center, acute rehabilitation services, acute rehab, inpatient rehabilitation facility (IRF), inpatient rehab
- *“Assisted living”* if the medical record indicates that the patient was transferred from assisted living.
INCLUDE: Assisted living, assisted living facilities (ALF), assisted living residence

Note: Assisted living is not the same as nursing home care. Assisted living is for adults that need help with everyday tasks, but don't need full-time nursing care.

- *"Another hospital"* if the medical record indicates that the patient was transferred from another hospital.

INCLUDE: Any transfer from another hospital/ health care facility. Also, include long term acute care hospitals (LTACH). If a patient is discharged from an inpatient psychiatric unit or rehabilitation unit within your institution and readmitted to medicine, it is considered a hospital-to-hospital transfer and is included in this selection.

5. CLASSIFICATION OF THE ATTENDING PHYSICIAN AT THE TIME OF PICC INSERTION

Instructions: Review the medical record to determine the classification of the attending physician at the time of PICC placement. Choose the option that best describes the attending physician's practice specialty. This information may be found on the progress note for the day the PICC was inserted. There are eight (8) options for this question.

Note: Patients admitted by a surgeon to a medical service for a medical condition may be included.

Select one of the following:

- *"Hospitalist"* if the medical record indicates that the attending physician at the time of PICC placement was a Hospitalist.
INCLUDE: Each participating hospital in the HMS Consortium has one or more group(s) of hospitalists. It may be helpful to obtain a list of the physicians that participate in your hospital's hospitalist program.
- *"General Internist"* if the medical record indicates that the attending physician at the time of PICC placement was a General Internist.
INCLUDE: Physicians that specialize in Adult Medicine or Internal Medicine.
- *"Infectious Disease"* if the medical record indicates that the attending physician at the time of PICC placement was an Infectious Disease specialist.
INCLUDE: Physicians that specialize in Infection Disease (ID) or Infectious Disease Specialist.
- *"Hematologist/Oncologist"* if the medical record indicates that the attending physician at the time of PICC placement was a Hematologist and/or Oncologist.
INCLUDE: Physicians that specialize in hematology and/or oncology.
- *"Medicine Sub Specialist"* if the medical record indicates that the attending physician at the time of PICC placement was a Medicine Sub Specialist.

INCLUDE: Physicians that specialize in General/ Internal Medicine and have sub-specialized in another area such as Endocrinology, Cardiology, Pulmonary or Gastroenterology, as a few examples.

- “*Critical Care*” if the medical record indicates that the attending physician at the time of PICC placement was a Critical Care Physician.

INCLUDE: Physicians that specializes in critical care medicine or Intensivist.

Select this category as the attending whenever a patient is located in the ICU at the time of PICC placement.

- “*Family Medicine*” if the medical record indicates that the attending physician at the time of PICC placement was a Family Medicine Physician.

INCLUDE: Physicians that specializes in family medicine, family practice. Family physician, family doctor, etc.

- “*Other*” if the medical record indicates that the attending physician at the time of PICC placement was of a specialty not listed above.

Co-Morbid Conditions

1. PLEASE SPECIFY THE CO-MORBID CONDITIONS

Instructions: Review the medical record to determine if the patient has any of the following co-morbid conditions. A co-morbid condition refers to the presence of one or more disorders/diseases, in addition to the primary disease of interest. Co-morbid conditions may worsen or have an effect on acute illness. Please select all conditions that are present on admission. There are fourteen (14) options for this question.

Note: If a patient is receiving treatment with a medication alone without documentation of a condition it should not be entered as a co-morbid condition. For example, if patient is taking an ACE inhibitor and there is no mention of “Hypertension” then this should not be included as a co-morbid condition as some patients take these medications for other reasons.

Select all that apply:

- “*Acquired immune deficiency syndrome (AIDS)/ Human Immunodeficiency Virus (HIV)*” if the medical record indicates that the patient has acquired immune deficiency syndrome (AIDS) or Human Immunodeficiency Virus (HIV).

INCLUDE: Examples include (but not limited to): acquired immune deficiency syndrome (AIDS), AIDS-related complex (ARC), symptomatic or asymptomatic

Human Immunodeficiency Virus (HIV), Symptomatic HIV infections and reference to AIDS

EXCLUDE: Exposure to HIV virus; Nonspecific serologic evidence of HIV

- “*Cerebrovascular disease*” if the medical record indicates that the patient has a cerebrovascular disease.

INCLUDE: Examples include (but not limited to): cerebral vascular accident (CVA); Transient ischemic attack (TIA); Intracranial hemorrhage (e.g., subarachnoid hemorrhage); Carotid stenosis; Dural venous sinus thrombosis; septic emboli to the brain, cerebral small vessel disease, anterior communicating artery aneurysm; carotid artery disease; non-ruptured cerebral aneurysm; pseudotumor cerebri (idiopathic intracranial hypertension); spinal cord infarct

- “*Coagulopathy*” if the medical record indicates that the patient has a coagulopathy.

INCLUDE: Examples include (but not limited to): antiphospholipid syndrome; Antithrombin III deficiency; Disseminated intravascular coagulation (DIC); Elevated platelet counts (>1,000,000/mm³); Factor V Leiden (FVL); Hereditary bleeding disorders marked by deficiencies of blood-clotting proteins; Hypo/Hypercoagulable states; Idiopathic thrombocytopenia purpura (ITP); Increased homocysteine/ hyperhomocysteinemia; Liver failure with an INR > 2.0; Lupus anti-coagulant (such as anti-phospholipid anti-body or anti-cardiolipin antibody syndrome); Myeloproliferative disorders; Protein C or Protein S deficiency; Prothrombin gene mutation (G20210A); Qualitative platelet disorders (e.g. Glanzmann’s thrombasthenia); Sticky platelet syndrome; Thrombocytosis; Thrombotic thrombocytopenic purpura (TTP); Type A hemophilia (Factor VIII deficiency); Vitamin K deficiency; Von Willebrand disease, Jak2 mutation that resulted in thrombocytosis, Thrombocytopenia, most likely related to sepsis, chronic thrombocytopenia.

EXCLUDE: Temporary coagulopathy as a result of medication use (e.g. Coumadin, Pradaxa, etc.); Pancytopenia; Sickle cell disease

- “*Dementia*” if the medical record indicates that patient has dementia.

INCLUDE: Examples include (but not limited to): loss of cognitive function due to illness, Alzheimer’s, cerebral anoxia, chronic alcoholism, CO₂ poisoning, hypothyroidism, multiple brain infarcts, vascular dementia, Parkinson’s, subdural hematoma, Vitamin B₁₂ deficiency; Vascular dementia

EXCLUDE: Temporary loss of cognitive function Acute delirium, drug related delirium or withdrawal, semantic aphasia

Note: Only select if patient has long term cognitive dysfunction. For example, some patients with Alzheimer’s or Parkinson’s have long term cognitive

dysfunction related to the disease which in this case it would be appropriate to select this field. However, some patients have Alzheimer's and Parkinson's without dementia, which would not be appropriate to select this field.

- *"Diabetes-complicated"* if the medical record indicates the patient has diabetes that is complicated.

INCLUDE: Examples include (but not limited to): diabetes Type I and II (whether controlled with insulin, oral anti-hyperglycemic medications, or diet) with renal (nephropathy), ophthalmic (retinopathy), and/or neurologic (neuropathy) manifestations; Diabetic gastroparesis; Diabetes with circulatory disorders (cardiac, cerebral, peripheral vascular); Brittle diabetics (defined as any patient whose life is constantly disrupted by episodes of hypo/hyperglycemia, whatever the cause); Persons with diabetic ketoacidosis (with or without coma); Hyperosmolar (non-ketotic) coma; Diabetic hypoglycemic coma; Insulin coma.

EXCLUDE: Uncomplicated diabetes, diabetes insipidus

- *"Diabetes-uncomplicated"* if the medical record indicates the patient has diabetes that is uncomplicated.

INCLUDE: Examples include (but not limited to): diabetes Type I and II (whether controlled with insulin, oral anti-hyperglycemic medications, or diet) without mention of complications

EXCLUDE: Diabetes-complicated, diabetes insipidus

- *"Hypertension"* if the medical record indicates the patient has hypertension.

INCLUDE: Examples include (but not limited to): Essential hypertension; Hypertensive heart or kidney disease; Primary, secondary, and rebound hypertension.

EXCLUDE: Patients taking hypertensive medications without mention of hypertension or high blood pressure in the medical chart; idiopathic intracranial hypertension

- *"Mild Liver Disease"* if the medical record indicates that the patient has mild liver disease.

INCLUDE: Examples include (but not limited to): mild liver disease, alcoholic cirrhosis of liver, Laennec's cirrhosis, chronic hepatitis unspecified, chronic persistent hepatitis, autoimmune hepatitis, cirrhosis of the liver without mention of alcohol (i.e. NOS, cryptogenic, macronodular, micronodular, posthepatic, postnecrotic), healed yellow atrophy (liver), portal cirrhosis, biliary cirrhosis, cholangitis, chronic nonsuppurative destructive cholangitis, sarcoidosis with Granulomatous Hepatitis, Lesions on the liver from sarcoidosis, cirrhosis, cholestatic cirrhosis; Hepatitis A, B, C, D, or G without mention of end-stage liver disease-Lesions on Liver from Sarcoidosis, shock liver (ischemic hepatitis), fatty

liver, liver cyst, liver hemangioma, "history of liver transplant" status, hepatic steatosis.

Note1: If medical record documentation states only "Liver disease" without any further explanation, select "Mild Liver Disease."

Note2: If Hepatitis A, B, C, D, or G without mention of end-stage liver disease, select mild liver disease. If Hepatitis A, B, C, D, or G is mentioned with end-stage liver disease, select moderate or severe liver disease.

- "*Moderate or Severe Liver Disease*" if the medical record indicates that the patient has moderate or severe liver disease.

INCLUDE: Examples include (but not limited to): Moderate liver disease, severe liver disease, esophageal varices with or without mention of bleeding, hepatic coma, hepatic encephalopathy, hepatocerebral intoxication or hepatic encephalopathy, porto-systemic encephalopathy, portal hypertension, hepatorenal syndrome, other sequelae of chronic liver disease, end-stage liver disease; Hepatitis A, B, C, D, or G with mention of end-stage liver disease, acute liver failure.

EXCLUDE: Elevated liver enzymes without mention of liver disease; Gilbert's Disease, Congestive hepatopathy.

- "*Moderate to Severe Chronic Kidney Disease*" if the medical record indicates the patient has moderate to severe chronic kidney disease.

INCLUDE: Examples include (but not limited to): acute renal failure (ARF); acute kidney injury (AKI); chronic renal failure (CRF); chronic kidney disease (CKD); End-stage renal disease (ESRD); Renal insufficiency stage 3 or greater (GFR \leq 59 ml/min/1.73m²); renal osteodystrophy. Chronic irreversible failure of both kidneys to function, as a result of which either regular renal dialysis or renal transplant is initiated, or documentation that the serum creatinine is 3x the upper limit of normal (ULN).

EXCLUDE: Cardiorenal Syndrome with no classification of the severity of the patient's renal disease

- "*Peptic ulcer disease*" if the medical record indicates the patient has peptic ulcer disease.

INCLUDE: Examples include (but not limited to): Active gastric ulcers; active esophageal ulcers; gastritis; esophagitis; Barret's esophagus; duodenitis; marginal ulcer

EXCLUDE: Gastroesophageal reflux disease (GERD)

- "*Peripheral vascular disorders*" if the medical record indicates the patient has a peripheral vascular disorder.

INCLUDE: Examples include (but not limited to): Amputation related to PVD; Aortoiliac, femoral, and axillary artery occlusive disease; Atherosclerosis of the carotid if no history of TIA or stroke; Claudication; dermatitis stasis; Peripheral vascular disease (PVD); Peripheral vascular occlusive disease (PVOD); Prior vascular surgeries related to PVD (e.g. femoral-popliteal bypass); Severe peripheral arterial disease (PAD) with ulcerations; moderate peripheral arterial disease (PAD); Venous stasis; Venous insufficiency; AAA without repair; thoracic aortic aneurysm without repair; arterial disease

EXCLUDE: Aortic abdominal aneurysm (AAA) repair with no further issues; Esophageal varices; Ischemic colitis; Lymphedema; Raynaud's disease; Venous reflux; Varicose Veins (and treatment of varicose veins)

- "None of the above" if the medical record does not indicate that the patient has any of the co-morbid conditions listed above.

Physical Findings

1. IS THERE DOCUMENTATION OF THE PATIENT'S HEIGHT?

Instructions: Review the medical record to determine if the patient's height is documented. Use the height that is documented closest to the time of PICC placement. There are two (2) options for this question.

INCLUDE: Any documentation of the patient's height.

Select one of the following:

- "Yes" if the medical record indicates the patient's height. **Answer questions 1.1 through 1.2**
- "No" if the medical record does not indicate the patient's height.

1.1. UNIT

Instructions: Indicate the unit of measurement for the patient's height. There are two (2) options for this question.

Select one of the following:

- "Inches (in)" if the patient's height is in inches (in).
- "Centimeters (cm)" if the patient's height is in centimeters (cm).

1.2. HEIGHT

Instructions: Indicate the patient's height (numeric values only).

2. IS THERE DOCUMENTATION OF THE PATIENT'S WEIGHT?

Instructions: Review the medical record to determine if the patient's weight is documented. Use the weight that is documented closest to the time of PICC placement. There are two (2) options for this question.

INCLUDE: The most recent weight documented to the time of PICC placement.

Weights in which the EMR does not specify the method or if the weight is actual or estimated.

EXCLUDE: Patient reported weights.

Select one of the following:

- "Yes" if the medical record indicates the patient's weight. **Answer questions 2.1 through 2.2**
- "No" if in the medical record does not indicate the patient's weight.

2.1. UNIT

Instructions: Indicate the unit of measurement for the patient's weight. There are two (2) options for this question.

Select one of the following:

- "Pounds (lbs)" if the patient's weight is in pounds (lbs.).
- "Kilograms (kg)" if the patient's weight is in kilograms (kg).

2.2. WEIGHT

Instructions: Indicate the patient's weight (numeric only).

3. BMI

Instructions: The patient's body mass index (BMI) will be generated by the computer system from height and weight information. Review the system generated value to see if it corresponds to the patient scenario.

4. IS THERE DOCUMENTATION THAT THE PATIENT IS OBESE?

Instructions: Review the medical record to determine if the patient is obese (i.e., overweight). There are three (3) options for this question.

INCLUDE: Any documentation that the patient is obese (obesity) and/or BMI is documented greater than or equal to 30.

EXCLUDE: BMI less than 30 (unless obesity is specifically stated in the medical record), documentation that the patient is underweight

Note: A BMI calculator is available at

<http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm>

Select one of the following:

- “Yes” if the medical record reports a BMI greater than 30 or height and weight are documented, and BMI calculation is greater than 30. If the medical record does not have a documented BMI, or a height and weight, but physician states patient is obese.
- “No” if the medical record reports a BMI less than 30 or height and weight are used to calculate BMI which is less than 30. If the medical record does not have a documented BMI or a height and weight, but physician states patient is underweight.
- “Unknown” if the medical record is silent regarding obesity, BMI is not available, or patient height and weight are not available.

5. IS THERE DOCUMENTATION, AT THE TIME OF PICC INSERTION, THE PATIENT HAS VENOUS STASIS OR VARICOSE VEINS OF THE LEGS?

Instructions: Review the medical record to determine if the patient has venous stasis and/or varicose veins of one or both legs (lower extremities [LE]) at the time of PICC placement, the day after PICC placement, and/or the day before PICC placement.

There are three (3) options for this question.

INCLUDE: Examples include (but not limited to): venous stasis, venostasis, stasis, chronic venous stasis, varicose veins, venous insufficiency, lower extremity varicosities, venous dermatitis. Patient reports that they have varicose veins at the time of PICC placement.

EXCLUDE: History of vein ligation for the treatment of varicose veins without evidence of current presence of varicosities.

Select one of the following:

- “Yes” if the medical record indicates the patient has venous stasis and/or varicose veins at the time of PICC placement.
- “No” if the medical record does not indicate the patient has venous stasis and/or varicose veins at the time of PICC placement.
- “Unknown” if the medical record is silent regarding the presence of venous stasis or varicose veins at the time of PICC placement.

6. IS THERE DOCUMENTATION, AT THE TIME OF PICC INSERTION, THE PATIENT HAS SWOLLEN LEGS?

Instructions: Review the medical record to determine if the patient has swollen or edematous legs at the time of PICC placement, the day after PICC placement,

and/or the day before PICC placement. There are three (3) options for this question. INCLUDE: Edema or swelling in one or both lower extremities (i.e., legs), pitting edema whether it is characterized as 1+, 2+, 3+, 4+, or Anasarca (i.e., extreme generalized edema), trace edema, chronic swelling of the legs.

Select one of the following:

- “Yes” if the medical record indicates that the patient has swollen legs at the time of PICC placement.
- “No” if the medical record does not indicate that the patient has swollen legs at the time of PICC placement.
- “Unknown” if the medical record is silent regarding the presence of swollen legs at the time of PICC placement.

7. IS THERE DOCUMENTATION WITHIN 48 HOURS PRIOR TO THE PICC INSERTION THAT THE PATIENT HAD A FEVER > 38 DEGREES C OR > 100.4 DEGREES F?

Instructions: Review the medical record to determine if there is documentation that the patient had a fever greater than (>) 38°C within 48 hours prior to the PICC placement. If there is documentation that the patient was febrile (i.e., had a fever) within 48 hours prior to the PICC insertion, review the progress note to determine if the temperature was > 38°C. There are three (3) options for this question.

INCLUDE: Any documented temperature that was greater than (>) 38°C (or > 100.4°F) within 48 hours prior to the PICC placement/insertion.

EXCLUDE: temperature equal to or below 38°C a (or 100.4°F)

Select one of the following:

- “Yes” if the medical record indicates that the patient had a fever greater than (>) 38°C within 48 hours of PICC placement.
- “No” if the medical record does not indicate that the patient had a fever greater than (>) 38°C within 48 hours of PICC placement.
- “Unknown” if the medical record does not indicate a patient temperature within 48 hours of PICC insertion.

8. AT THE TIME OF PICC INSERTION, DOES THE PATIENT HAVE ORDERS FOR THE FOLLOWING RENAL REPLACEMENT THERAPIES?

Instructions: Review the medical record to determine if the patient has active orders for renal replacement therapy (i.e., hemodialysis, peritoneal dialysis, or hemofiltration) at the time of PICC placement, the day after PICC placement, and/or the day before PICC placement. Renal replacement therapy is used to remove waste

products from the blood when the kidneys are not working effectively (i.e., renal failure). There are four (4) options for this question.

Select all that apply:

- *“Hemodialysis”* if the medical record indicates that the patient has orders for hemodialysis at the time of PICC placement.
INCLUDE: Hemodialysis, HD, Sustained low efficiency dialysis (SLEDD).
EXCLUDE: Electrophoresis, plasmapheresis, aquapheresis
- *“Peritoneal Dialysis”* if the medical record indicates that the patient has orders for peritoneal dialysis at the time of PICC placement.
INCLUDE: Peritoneal dialysis, PD
EXCLUDE: Electrophoresis, plasmapheresis, aquapheresis
- *“Hemofiltration”* if the medical record indicates that the patient has orders for hemofiltration at the time of PICC placement.
Note: Hemofiltration is usually performed in an intensive care setting. It is usually used in acute renal failure.
INCLUDE: Continuous hemofiltration (CHF), Continuous hemodiafiltration (CHDF), Continuous veno-venous hemofiltration (CVVH), Continuous renal replacement therapy (CRRT), Hemofiltration (HF), Intermittent hemofiltration (IHF), Intermittent hemodiafiltration (IHDF), Slow extended hemofiltration (SLEF).
EXCLUDE: Electrophoresis, plasmapheresis, aquapheresis
- *“N/A”* if the medical record is silent regarding orders for renal replacement therapies at the time of PICC placement.

9. AT THE TIME OF PICC INSERTION, DOES THE PATIENT HAVE A PERIPHERAL IV?

Instructions: Review the medical record to determine if the patient had a peripheral intravenous (IV) access/catheter/line in place, at the time of PICC placement.

Peripheral IVs are placed in order to gain access to the peripheral blood circulation and are usually placed in upper and lower extremities. There are three (3) options for this question.

INCLUDE: Peripherally inserted IVs in the: Antecubital (AC), Hand, External jugular (EJ), Forearm, Internal jugular (IJ), Left lower extremity (LLE), Left upper extremity (LUE), Right lower extremity (RLE), Right upper extremity (RUE)

EXCLUDE: Centrally inserted venous catheters, CVC, PICC, midline, ports.

Select one of the following:

- *“Yes”* if the medical record indicates that the patient has a peripheral IV in place at the time of PICC placement.

- “No” if the medical record does not indicate that the patient has a peripheral IV in place at the time of PICC placement.
- “Unknown” if the medical record is silent regarding peripheral IV placement or venous access at the time of PICC placement.

10. DOES THE PATIENT HAVE AN EXISTING INDWELLING CENTRAL VENOUS CATHETER (CVC)-EXCLUDING THE PICC BEING ABSTRACTED?

Instructions: Review the medical record to determine if the patient has an existing indwelling CVC at the time of PICC placement, excluding the PICC that is being abstracted (i.e., the PICC of interest, which includes the PICC of interest if it is an exchange). This question is specifically asking if there was a CVC in place, in addition to the PICC of interest. There are many types of central venous catheters.

Note: If index PICC is an exchange, please enter the original PICC placement as a prior PICC placement.

INCLUDE: Non-tunneled, tunneled, peripherally inserted, or implanted central venous catheters (CVCs) present on admission, placed in the emergency department prior to admission, or if placed prior to the PICC being abstracted. Some examples include: Arrow, Broviac, Cannon Arrow, CL-20, Cook catheter, Groshong, Hickman, Hohn, Infusaport, Kendal Palindrome, Neostar, PermaCath, Pro-line, R-Port, Quinton, S-Port, Vas Cath, Mediport insertion, Mediport that has been accessed (including accessed for flushes), Single Lumen Infusion Catheter (SLIC), and ICY Intravascular Heat Exchange Catheter (ICY Catheter). Any catheter (even if a regular angiocath) that is inserted into a femoral vein, subclavian vein, or axillary vein.

EXCLUDE: AV Fistulas, External Jugular (EJ) or Internal Jugular (IJ) peripheral IV, midline catheters (some examples include: Power glide), Central lines that are placed and removed within one day, arterial catheters, Swan Ganz catheters, midline catheters.

Note: If a PICC line or CVC was inserted prior to the PICC of interest and it is still present at the time of abstraction, this should be entered in this field irrespective of whether this was entered in previous sections pertaining to existing central lines.

There are three (3) options for this question.

Select one of the following:

- “Yes” if the medical record indicates that the patient has an existing central venous catheter (CVC) in place, excluding the PICC of interest. **Answer question 10.1**
- “No” if the medical record does not indicate that the patient has an existing central venous catheter (CVC) in place, excluding the PICC of interest.

- “Unknown” if the medical record is silent regarding an existing central venous catheter (CVC), excluding the PICC of interest.

10.1. WAS THIS CENTRAL VENOUS CATHETER (CVC) INSERTED DURING THIS ADMISSION?

Instructions: Review the medical record to determine if the existing_indwelling CVC (i.e., existing at the time of PICC placement) was inserted during the current admission (i.e. the same admission as the PICC of interest). There are three (3) options for this question.

INCLUDE: Any CVCs that were inserted during the current admission, prior to the PICC that is being abstracted. Any catheter (even if a regular angiocath) that was inserted into a femoral vein, subclavian vein, or axillary vein during the current admission, prior to the PICC that is being abstracted.

EXCLUDE: CVCs that were present on admission or placed in the emergency department prior to hospital admission.

Select one of the following:

- “Yes” if the medical record indicates that the existing CVC (excluding the PICC of interest) was placed during this admission. **Answer question 10.1.1**
- “No” if the medical record does not indicate that the existing CVC (excluding the PICC of interest) was placed during this admission.
- “Unknown” if the medical record is silent regarding time of existing CVC placement (excluding the PICC of interest).

10.1.1. IS THE CVC A:

Instructions: Review the medical record to determine the type(s) of existing CVC(s) (i.e., existing at the time of PICC insertion and excluding the PICC of interest) that was inserted during this admission. There are three (3) options for this question.

Select all that apply:

- “*Peripherally inserted central catheter (PICC)*” if the medical record indicates that the patient had an existing PICC inserted during this admission- excluding the PICC being abstracted.

INCLUDE: Any type of PICC whether Power PICC, non-Power PICC, antimicrobial coated, and/or antithrombotic coated.

EXCLUDE: midline catheters (some examples include: Power glide)

DATE OF INSERTION- PERIPHERALLY INSERTED CENTRAL CATHETER (PICC)

Instructions: Indicate the date of insertion in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- “*Central venous catheter (non-dialysis)*” if the medical record indicates that the patient had an existing CVC (non-dialysis) inserted during this admission- excluding the PICC being abstracted.

INCLUDE: Med ports, Power ports, Infusa-port.

EXCLUDE: PICCs, Midlines (some examples include: Power glide)

DATE OF INSERTION- CENTRAL VENOUS CATHETER (NON DIALYSIS)

Instructions: Indicate the date of insertion in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- “*Central venous catheter for renal dialysis*” if the medical record indicates that the patient had an existing CVC for renal dialysis inserted during this admission- excluding the PICC being abstracted.

Note: To determine whether or not a CVC is in place for dialysis purposes, be sure to review the patient’s orders and medical history to see if they require hemodialysis (HD).

INCLUDE: Any CVC that is used for renal dialysis purposes (some examples include Vascath).

EXCLUDE: AV fistulas, CAPD ports for dialysis, PICCs, Midlines (some examples include: Power glide)

DATE OF INSERTION- CENTRAL VENOUS CATHETER FOR RENAL DIALYSIS

Instructions: Indicate the date of insertion in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

Laboratory Information

1. CREATININE

Instructions: Review the patient’s laboratory data and record the most current Creatinine at the time of PICC insertion. Creatinine or Serum Creatinine is usually reported as part of a basic metabolic panel. Indicate the creatinine value as a numeric value only in milligrams per deciliter (mg/dL). If no creatinine value is available or the date of lab value is out of range (see exclusion below), input the

number 9999 and enter the date 01/01/1900. Please do not leave the field blank as this will result in missing data.

Note: Enter the closest Creatinine value prior to the PICC insertion (if within 48 hours of PICC insertion). If there is not a Creatinine value available within 48 hours prior to PICC insertion, enter the closest value within 48 hours after PICC insertion.

EXCLUDE: Lab values more than 48 hours before PICC placement or 48 hours after PICC placement.

2. DATE OF CREATININE

Instructions: Indicate the date of the creatinine value in MM/DD/YYYY format. Use 01/01/1900 if the date is unknown or there is no creatinine value available during the reference timeframe.

3. HEMOGLOBIN

Instructions: Review the patient's laboratory data and record the most current hemoglobin at the time of PICC insertion. Hemoglobin (Hgb or Hb) is usually reported as part of a complete blood count (CBC). Indicate the hemoglobin value as a numeric value only in grams per deciliter (g/dL). If no hemoglobin value is available or the date of lab value is out of range (see exclusion below), input the number 9999 and enter the date 01/01/1900. Please do not leave the field blank as this will result in missing data.

Note: If laboratory values are available the same amount of time prior to or after PICC placement, use the value that is prior to PICC insertion

EXCLUDE: Lab values more than 48 hours before PICC placement or 48 hours after PICC placement.

4. DATE OF HEMOGLOBIN

Instructions: Indicate the date of the hemoglobin value in MM/DD/YYYY format. Use 01/01/1900 if the date is unknown or there is no hemoglobin value available during the reference timeframe.

5. PLATELET COUNT

Instructions: Review the patient's laboratory data and record the most current platelet count at the time of PICC insertion. Platelet (Plt) counts are usually reported as part of a complete blood count (CBC). Indicate the platelet count as a numeric value only in thousands per microliter (,000/mcL). For example, a platelet count of 150,000 would be entered as 150. If no hemoglobin value is available or the date of lab value is out of range (see exclusion below), input the number 9999 and enter the

date 01/01/1900. Please do not leave the field blank as this will result in missing data.

Note: If laboratory values are available the same amount of time prior to or after PICC placement, use the value that is prior to PICC insertion

EXCLUDE: Lab values more than 48 hours before PICC placement or 48 hours after PICC placement.

6. DATE OF PLATELET COUNT

Instructions: Indicate the date of the platelet count in MM/DD/YYYY format. Use 01/01/1900 if the date is unknown or there is no platelet count available during the reference timeframe.

7. WHITE BLOOD CELL COUNT

Instructions: Review the patient's laboratory data and record the most current white blood cell count at the time of PICC insertion. White blood cell (WBC) counts are usually reported as part of a complete blood count (CBC). Indicate the white blood cell (WBC) count as a numeric value only in (K/uL). If no white blood cell count is available or the date of lab value is out of range (see exclusion below), input the number 9999 and enter the date 01/01/1900. Please do not leave the field blank as this will result in missing data.

Note: If laboratory values are available the same amount of time prior to or after PICC placement, use the value that is prior to PICC insertion

EXCLUDE: Lab values more than 48 hours before PICC placement or 48 hours after PICC placement.

8. DATE OF WHITE BLOOD CELL COUNT

Instructions: Indicate the date of the white blood cell count in MM/DD/YYYY format. Use 01/01/1900 if the date is unknown or there is no white blood cell count available during the reference timeframe.

9. INR

Instructions: Review the patient's laboratory data and record the most current International Normalized Ratio (INR) at the time of PICC insertion. Indicate the INR as a numeric value only. If no INR is available or the date of lab value is out of range (see exclusion below), input the number 9999 and enter the date 01/01/1900. Please do not leave the field blank as this will result in missing data.

REMINDER: If the INR is reported as a range, please enter just the highest numeric value reported. Example: Enter a reported value of ">10" as just "10".

Note: If laboratory values are available the same amount of time prior to or after PICC placement, use the value that is prior to PICC insertion

EXCLUDE: Lab values more than 30 days before PICC placement or 48 hours after PICC placement.

10. DATE OF INR

Instructions: Indicate the date of the INR in MM/DD/YYYY format. Use 01/01/1900 if the date is unknown or there is no INR available during the reference timeframe.

11. eGFR

Instructions: Review the patient's laboratory data and record the most current eGFR at the time of PICC insertion. Indicate the eGFR as numeric value only. If no eGFR is available or the date of lab value is out of range (see exclusion below), input the number 9999 and enter the date 01/01/1900. Please do not leave the field blank as this will result in missing data.

Note1: Enter the closest eGFR value prior to the PICC insertion (if within 48 hours of PICC insertion). If there is not an eGFR value available within 48 hours prior to PICC insertion, enter the closest value within 48 hours after PICC insertion.

Note2: If your hospital reports two eGFR values (one African American and one non-African American) and if the patient's race is noted in the medical record, select the value that corresponds to their race. If there is no documentation of race in the medical record, use the non-African American eGFR value.

EXCLUDE: Lab values more than 48 hours before PICC placement or 48 hours after PICC placement.

REMINDER: If eGFR is reported as a range, please enter the highest numeric value in the range. Example: Enter a reported value of ">60" as just "60", and a reported value of "<15" as just "15".

12. DATE OF eGFR

Instructions: Indicate the date of the eGFR in MM/DD/YYYY format. Use 01/01/1900 if the date is unknown or there is no eGFR available during the reference timeframe.

13. DID THE MEDICAL RECORD REFLECT AN INFECTION AT ANOTHER SITE (OTHER THAN BLOOD) THAT WAS CONFIRMED BY A POSITIVE CULTURE IN THE 14 DAYS PRIOR TO PICC INSERTION?

Instructions: Review the medical record to determine if the patient had an infection at another site (other than blood) that was confirmed by a positive culture in the 14

days prior to PICC insertion. This question looks to answer whether or not the patient had any infection at a site other than the blood at the time of PICC placement.

There are three (3) options for this question.

Note: Exclude the day of PICC placement.

INCLUDE: Any documented infection that is at another site other than blood during the period of review. An infection is considered “Active” for 14 days from the point of culture. In order to be considered an infection at another site it must be confirmed via a positive culture (example: sputum culture, urine culture, etc), positive smear (ex: sputum, etc), positive tip culture from a non PICC device (example: Medport Tip, Permacath, etc), positive PICC tip culture that is not the PICC of interest, or results obtained through molecular testing or pathology report. A physician diagnosis or other diagnostics (ex: chest x-ray) is not enough documentation to support an infection at another site.

List of Infections (examples):

(Must have a positive culture (i.e. sputum, urine, wound, etc.) that confirms the infection)

Arterial or venous infection	Meningitis or ventriculitis
Breast abscess or mastitis	Myocarditis or pericarditis
Burn Infection	Necrotizing enterocolitis
Clostridium difficile infection	Oomphalitis
Conjunctivitis	Oral Cavity Infection (e.g. thrush)
Decubitus ulcer infection	Osteomyelitis
Disc Space Infection	Other infection of the male or female reproductive tract
Ear, mastoid infection	Other infection of the lower respiratory tract
Endocarditis	Pneumonia
Endometritis	Prosthetic Joint Infection
Episiotomy Infection	Sinusitis
Eye infection, other than conjunctivitis	Skin infection
Gastroenteritis	Soft Tissue Infection

Gastrointestinal tract infection	Spinal abscess without meningitis
Hepatitis	Surgical Site Infection
Intraabdominal infection	Upper respiratory tract infection, pharyngitis, laryngitis, epiglottitis
Intracranial Infection	Urinary Tract Infection
Joint or Bursa Infection	Vaginal Cuff Infection
Mediastinitis	

EXCLUDE: Sepsis, septicemia, bacteremia, blood stream infection (BSI), Positive WBC found in stool sample, lactoferrin positive in stool, candida in stool as it is almost always a commensal (not pathogen), stool culture positive for campylobacter antigen, positive antibodies (ex: EBV VCA Ab IgG and Hep A Total Ab, are a few examples), viral infections, a positive sputum gram stain with no associated positive sputum culture, positive MRSA or VRE swab, positive strep screen, positive genital direct smear and/or trichomonas antigen.

Choose one of the following answers:

- “Yes” if the medical record indicates that the patient had an infection at another site (other than blood) that was confirmed by a positive culture in the 14 days prior to PICC insertion. **Answer questions 13.1 and 13.2**
- Note: There does not need to be documentation the positive culture was treated in order to answer “yes” to this question.
- “No if the medical record does not indicate that the patient had an infection at another site (other than blood) that was confirmed by a positive culture in the 14 days prior to PICC insertion.
- “Unknown” if the medical record is silent as to whether the patient had an infection at another site (other than blood) that was confirmed by a positive culture in the 14 days prior to PICC insertion.

7.1. DATE OF INFECTION AT ANOTHER SITE

Instructions: Review the medical record to determine the date of collection of the positive culture indicating an infection at another site during the 14 days prior to PICC insertion. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

REMINDER: If there is notation of **more than one secondary infection** during the period of review, select the date of the infection closest to the date of PICC insertion.

7.2. FOR INFECTION AT ANOTHER SITE, PLEASE INDICATE THE TYPE OF INFECTION(S) THAT WAS PRESENT IN THE 14 DAYS PRIOR TO PICC INSERTION? (CHECK ALL THAT APPLY)

Instructions: Review the medical record to determine the type of infection(s) present in the 14 days prior to PICC insertion. Select the type(s) of infection(s) that is/are most appropriate for the type of positive culture(s) in the medical record. A specific diagnosis is not required to make a selection for this question. There are ten (10) options for this question.

Note: If there is more than one type of infection confirmed by a positive culture other than blood in the 14 days prior to insertion, please include ALL types of infections noted.

- *"Cellulitis"* if the medical record indicates that the individual has an infection from cellulitis present in the 14 days prior to PICC insertion.
INCLUDE: Necrotizing fasciitis that is confirmed by a positive culture in the 14 days prior to PICC insertion
- *"Endocarditis"* if the medical record indicates that the individual has an infection from endocarditis present in the 14 days prior to PICC insertion.
- *"Osteomyelitis"* if the medical record indicates that the individual has an infection from osteomyelitis present in the 14 days prior to PICC insertion.
- *"Pancreatitis"* if the medical record indicates that the individual has an infection from pancreatitis present in the 14 days prior to PICC insertion.
- *"Peritonitis"* if the medical record indicates that the individual has an infection from peritonitis present in the 14 days prior to PICC insertion.
- *"Pneumonia"* if the medical record indicates that the individual has an infection from pneumonia present in the 14 days prior to PICC insertion.
- *"Surgical Site Infection"* if the medical record indicates that the individual has an infection from a surgical site infection present in the 14 days prior to PICC insertion.
- *"Urinary Tract Infection"* if the medical record indicates that the individual has an infection from a urinary tract infection present in the 14 days prior to PICC insertion.
- *"Other"* if the medical record indicates that the individual has an infection at other than that is listed above present in the 14 days prior to PICC insertion.

FOR OTHER SITE, PLEASE SPECIFY

Instructions: Use free text to indicate the site.

- “Unknown” if the medical record is silent as to the type of infection present in the 14 days prior to PICC insertion.
-
-

Medical History

1. DOES THE PATIENT HAVE A HISTORY (PAST/PRESENT) OF CANCER?

Instructions: Review the medical record to determine if the patient has a past or present history of cancer. Malignant tumors (cancers) are usually named using –oma (which means tumor) as a suffix (i.e. -carcinoma, -sarcoma, -lymphoma, or –blastoma). There are three (3) options for this question.

INCLUDE: Examples include (but not limited to): malignant brain tumors, hematologic malignancies, lymphoma, leukemia, lung cancer (small cell or non-small cell), ovarian cancer, colon cancer, prostate cancer, stomach/gastric cancer, pancreas/pancreatic cancer, kidney/renal cancer, breast cancer, rectal/rectum cancer, bladder cancer, melanoma, liver cancer, uterine cancer, metastatic cancer, etc. Include suspected cancer that is confirmed during the hospital encounter.

EXCLUDE: basal cell carcinoma, non-melanoma skin cancer, squamous cell skin cancer, inflammatory myofibroblastic pseudotumor without mention of malignancy

Select one of the following:

- “Yes” if the medical record indicates that the patient has a history of cancer either past or present. **Answer questions 1.1 through 1.4**
- “No” if the medical record does not indicate that the patient has a history of cancer either past or present.
- “Unknown” if the medical record is silent as to whether the patient has a history of cancer either past or present.

1.1. INDICATE THE TYPE OF CANCER(S)

Instructions: Review the medical record to determine the type(s) of cancer, indicate only primary site of the cancer and not sites of metastasis. There are twenty (20) options for this question.

Select all that apply:

- “Malignant brain tumor” if the medical record indicates that the patient has a past/present history of malignant brain tumor.

INCLUDE: Examples include (but not limited to): Chordomas, Gliomas, Glioblastoma, schwannoma, meningioma, etc.

- *"Hematologic malignancies"* if the medical record indicates that the patient has a past/present history of hematologic malignancies.

INCLUDE: Examples include (but not limited to): Leukemias, Myeloma, Myelodysplastic syndrome, Multiple myeloma, sarcoma, myelofibrosis, etc.

- *"Lymphoma"* if the medical record indicates that the patient has a past/present history of lymphoma.

INCLUDE: Examples include (but not limited to): lymphomas, Hodgkin's lymphoma, non-Hodgkin's lymphomas, Waldenstrom's macroglobulinemia

- *"Lung- Small cell"* if the medical record indicates that the patient has a past/present history of lung cancer- small cell.

INCLUDE: Small cell lung cancer (SCLC) (not to be mistaken for squamous cell lung cancer), Oat-cell carcinoma.

Note: If the type of lung cancer is unknown, please select Lung-Non small cell.

- *"Lung-Non-small cell"* if the medical record indicates that the patient has a past/present history of lung cancer- non-small cell.

INCLUDE: Examples include (but not limited to): non-small cell lung cancer (NSCLC), Non-small cancers of the lung: adenocarcinomas, epidermoid carcinoma, large cell carcinomas, squamous cell carcinoma

Note: If the type of lung cancer is unknown, please select Lung-Non small cell.

- *"Ovarian"* if the medical record indicates that the patient has a past/ present history of ovarian cancer.

INCLUDE: Epithelial ovarian tumor, Germ cell tumor, sex cord stromal ovarian tumor.

- *"Colon"* if the medical record indicates that the patient has a past/present history of colon cancer.

INCLUDE: colon cancer, colorectal cancer, bowel cancer, gastrointestinal cancer, rectal cancer, rectosigmoid cancer

- *"Prostate"* if the medical record indicates that the patient has a past/ present history of prostate cancer.

INCLUDE: prostate cancer, prostate adenocarcinoma, Gleason Score X of X.

EXCLUDE: Benign prostatic hyperplasia

- *"Stomach/Gastric"* if the medical record indicates that the patient has a past/present history of stomach/gastric cancer.

INCLUDE: stomach cancer, gastric cancer, spindle cell cancer, GIST tumor

- *"Pancreas/Pancreatic"* if the medical record indicates that the patient has a past/present history of pancreas/pancreatic cancer.

INCLUDE: pancreatic cancer, cancer of the pancreas, pancreatic adenocarcinoma

- *"Kidney"* if the medical record indicates that the patient has a past/ present history of kidney/renal cancer.

INCLUDE: renal cell carcinoma (RCC), renal cell cancer, kidney cancer, renal Cancer, renal sarcoma.

- *"Breast"* if the medical record indicates that the patient has a past/ present history of breast cancer.

INCLUDE: breast cancer, mammary cancer

- *"Rectal/Rectum"* if the medical record indicates that the patient has a past/present history of rectal/rectum cancer.

INCLUDE: rectal cancer, cancer of the rectum

- *"Bladder"* if the medical record indicates that the patient has a past/ present history of bladder cancer.

INCLUDE: bladder cancer, cancer of the bladder

- *"Melanoma"* if the medical record indicates that the patient has a past/ present history of melanoma.

INCLUDE: melanoma, malignant melanoma

- *"Liver"* if the medical record indicates that the patient has a past/present history of liver/hepatic cancer.

INCLUDE: liver cancer, hepatic carcinoma, hepatic cancer, hepatocellular carcinoma, hepatic adenocarcinoma, cholangiocarcinoma, ampullary carcinoma

- *"Uterine"* if the medical record indicates that the patient has a past/ present history of uterine cancer.

INCLUDE: uterine cancer, Endometrial cancer, cervical cancer

- *"Metastatic with unknown primary"* if the medical record indicates that the patient has a past/present history of metastatic cancer with an unknown primary.

INCLUDE: cancer with an unknown primary location, Metastatic Cancer with unknown origin, original cancer location cannot be identified

- *"Other, not including basal cell"* if the medical record indicates that the patient has a past/present history of cancer not listed above, not including basal cell carcinoma.

INCLUDE: Cancer type not listed above, Fibrosarcoma, Squamous cell carcinoma (non-lung derived), Histiocytoma, Malignant pleural effusion without the type of cancer specified, appendiceal cancer, testicular cancer, esophageal cancer, esthesioneuroblastoma, tonsillar cancer, Kaposi Sarcoma

EXCLUDE: Basal cell carcinoma

- “*Unknown*” if the medical record is silent as to the type of cancer.

1.2. INDICATE CANCER TYPE

Instructions: Review the medical record to determine the type of cancer the patient has.

- “*Metastatic*” select if there is medical documentation that the patient’s cancer is metastatic.

DEFINITION: Metastatic means the spread of a disease (typically cancer) from one organ or part to another non-adjacent organ or part. Stage 4 cancer.

- “*Not Metastatic*” select if there is medical documentation that the patient’s cancer is non-metastatic.

DEFINITION: Non-Metastatic means the disease (typically cancer) has not spread to another organ or part, but rather it is confined to its original location.

- “*Unknown*” select if the medical record is silent regarding the documentation of whether the cancer is metastatic or not.

1.3. HAS THE PATIENT RECEIVED ANY TREATMENT RELATED TO THEIR DIAGNOSIS OF CANCER IN THE LAST SIX MONTHS?

Instructions: Review the medical record to determine if the patient has received any treatment related to their diagnosis of cancer within the six months prior to placement of the PICC of interest. This information may be found within past history & physical (H&P) notes, outpatient infusion notes, procedure notes, radiology notes, etc. There are three (3) options for this question.

INCLUDE: Any treatment such as chemotherapy, hormonal therapy, surgery, radiation therapy, bone marrow transplant, etc. Any surgical treatment for a complication of cancer-related treatment (i.e., colostomy for radiation proctitis).

Select one of the following:

- “*Yes*” if the medical record indicates that the patient has received treatment related to their diagnosis of cancer in the six months prior to placement of the PICC of interest. **Answer question 1.3.1**
- “*No*” if the medical record does not indicate that the patient received treatment related to their diagnosis of cancer in the six months prior to placement of the PICC of interest.
- “*Unknown*” if the medical record is silent as to whether the patient received treatment related to their diagnosis of cancer in the six months prior to placement of the PICC of interest.

1.3.1. TYPE OF CANCER TREATMENT

Instructions: Review the medical record to determine the type of treatment the patient received related to their diagnosis of cancer in the last six months (i.e., six months from the date of PICC placement). There are six (6) options for this question.

Select all that apply:

- *“Chemotherapy”* if the medical record indicates that the patient received chemotherapy within the six months prior to placement of the PICC of interest.

INCLUDE: Therapy with any chemo agent. Examples include (but not limited to): Nitrogen mustards: mechlorethamine (nitrogen mustard), chlorambucil, cyclophosphamide (Cytoxan®), ifosfamide, and melphalan.

Nitrosoureas: streptozocin, carmustine (BCNU), and lomustine. Alkyl sulfonates: busulfan. Triazines: dacarbazine (DTIC) and temozolomide (Temodar®). Ethylenimines: thiotepa and altretamine (hexamethylmelamine). Platinum drugs: cisplatin, carboplatin, and oxaloplatin.

Antimetabolites include: 5-fluorouracil (5-FU), 6-mercapto-purine (6-MP), Capecitabine (Xeloda®), Cladribine, Clofarabine, Cytarabine (Ara-C®), Floxuridine, Fludarabine, Gemcitabine (Gemzar®), Hydroxyurea, Methotrexate, Pemetrexed (Alimta®), Pentostatin, Thioguanine. Taxanes: paclitaxel (Taxol®) and docetaxel (Taxotere®) Ixabepilone (Ixempra®). Vinca alkaloids: vinblastine (Velban®), vincristine (Oncovin®), and vinorelbine (Navelbine®), Estramustine (Emcyt®). Taxanes: paclitaxel (Taxol®) and docetaxel (Taxotere®). Epothilones: ixabepilone (Ixempra®),

- *“Hormonal therapy”* if the medical record indicates that the patient received hormonal therapy within the six months prior to placement of the PICC of interest.

INCLUDE: Any hormonal therapy. Examples include (but not limited to):

Anti-estrogens: fulvestrant (Faslodex®), tamoxifen, and toremifene (Fareston®). Aromatase inhibitors: anastrozole (Arimidex®), exemestane (Aromasin®), and letrozole (Femara®). Progestins: megestrol acetate (Megace®). Anti-androgens: bicalutamide (Casodex®), flutamide (Eulexin®), nilutamide (Nilandron®) and Xtandi. Gonadotropin-releasing hormone (GnRH), also known as luteinizing hormone-releasing hormone (LHRH) agonists or analogs: leuprolide (Lupron®) and goserelin (Zoladex®). Sandostatin (octreotide).

- *“Surgical therapy”* if the medical record indicates that the patient received surgical therapy (billed OR time) within the six months prior to placement of the PICC of interest.
 INCLUDE: Any surgery that the patient had related to their diagnosis of cancer. This may include tumor resection, biopsies, lymph node biopsies, exploratory surgery, etc.
- *“Radiation therapy”* if the medical record indicates that the patient received radiation therapy within the six months prior to placement of the PICC of interest.
 INCLUDE: Any type of radiation therapy. Examples include (but not limited to): external-beam radiation, or internal radiation therapy (i.e. brachytherapy). Electromagnetic radiation, intensity-modulated radiation therapy (IMRT), image-guided radiation therapy (IGRT), tomotherapy, stereotactic radiation therapy, proton therapy, radioactive iodine.
- *“Bone marrow transplant”* if the medical record indicates that the patient received bone marrow transplant within the six months prior to placement of the PICC of interest.
 INCLUDE: Bone marrow transplant regardless of if it is autologous or allogeneic.
- *“Other”* if the medical record indicates that the patient received a therapy not listed above within the six months prior to placement of the PICC of interest.
 INCLUDE: Opdivo (Immunotherapy)
 EXCLUDE: Tacrolimus

1.4. HAS THE PATIENT HAD A HOSPITALIZATION (>24HRS) WHERE THE PRIMARY ADMISSION DIAGNOSIS WAS CANCER RELATED IN THE LAST SIX MONTHS?

Instructions: Review the medical record to determine if the patient had a hospitalization (greater than 24 hours) where the primary admission diagnosis was cancer related in the six months prior to placement of the PICC of interest.

There are three (3) options for this question.

INCLUDE: Any hospital inpatient admission that was greater than 24 hours that had a primary admission diagnosis related to cancer or cancer treatment within the six months prior to placement of the PICC of interest.

EXCLUDE: Hospitalizations lasting less than 24 hours, Emergency Room or observation stays, or inpatient hospital admission that occurred more than six months prior to placement of the PICC of interest. Current encounter.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a hospitalization that was greater than 24 hours where the primary admission diagnosis was cancer related in the six months prior to placement of the PICC of interest.
- “No” if the medical record does not indicate that the patient had a hospitalization that was greater than 24 hours where the primary admission diagnosis was cancer related in the six months prior to placement of the PICC of interest.
- “Unknown” if the medical record is silent as to whether the patient had a hospitalization that was greater than 24 hours where the primary admission diagnosis was cancer related in the six months prior to placement of the PICC of interest.

2. DOES THE PATIENT HAVE A HISTORY OF CENTRAL LINE ASSOCIATED BLOOD STREAM INFECTION (CLABSI) IN THE LAST THREE MONTHS?

Instructions: Review the medical record to determine if the patient has a history of a central line associated blood stream infection (CLABSI) within the three months prior to placement of the PICC of interest. There are three (3) options for this question.

INCLUDE: Documentation that the patient had a primary or secondary diagnosis of a central line associated blood stream infection (CLABSI) within a history and physical (H&P) or discharge summary within the three months prior to placement of the PICC of interest.

EXCLUDE: History of Bacteremia

Select one of the following:

- “Yes” if the medical record indicates that the patient has a history of CLABSI within the three months prior to placement of the PICC of interest. **Answer question 2.1**
- “No” if the medical record indicates that the patient does not have a history of CLABSI in the three months prior to placement of the PICC of interest.
- “Unknown” if the medical record is silent as to whether the patient has a history of CLABSI in the three months prior to placement of the PICC of interest.

2.1. IS THERE DOCUMENTATION IN THE MEDICAL RECORD THAT THE CLABSI WAS ASSOCIATED WITH A PICC?

Instructions: Review the medical record to determine if there is documentation in the medical record that the CLABSI was associated with a PICC. This information may be found in a progress note, Infectious Disease (ID) note, or in laboratory

information (if a PICC tip was cultured). There are three (3) options for this question.

INCLUDE: Any documentation that the CLABSI was due to a peripherally inserted central venous catheter (PICC). Look for documentation of PICC removal because of CLABSI.

EXCLUDE: Any infection related to another site (i.e., urinary catheter related, surgical site related, wound related, etc.). Any infection related to a venous access device that is *not a PICC* (i.e., midline [example: Power glide]), central line used for dialysis, ports, etc.). Any infection related to an arterial line.

Select one of the following:

- “Yes” if the medical record indicates that the CLABSI was associated with a peripherally inserted central catheter (PICC).
- “No” if the medical record indicates that the CLABSI was not associated with a peripherally inserted central catheter (PICC).
- “Unknown” if the medical record is silent regarding whether the CLABSI was associated with a peripherally inserted central catheter (PICC).

3. DOES THE PATIENT HAVE A HISTORY OF A DEEP VEIN THROMBOSIS (DVT) IN THE ARM OR LEG?

Instructions: Review the medical record to determine if the patient has a past or present history of deep vein thrombosis (DVT) in the arm or leg. DVT refers to the presence a blood clot in one or more of the deep veins. There are five (5) options for this question.

INCLUDE: Any documentation of a thrombosis or clot in a deep vein (DVT) of the arm or leg. DVT left lower extremity (LLE), DVT right lower extremity (RLE), DVT right upper extremity (RUE), DVT left upper extremity (LUE); Thrombus/Clot in the following deep veins: subclavian, axillary, brachial, radial, ulnar, common iliac, internal iliac, external iliac, common femoral, deep femoral, femoral, popliteal, gastrocnemius, anterior tibial, soleus, peroneal, tibioperoneal, posterior tibial

EXCLUDE: Superficial vein clots (i.e., clots in the cephalic vein, median cephalic vein, basilic vein, median cubital vein, median forearm vein, greater saphenous vein, lesser saphenous vein); Clots that are not within a deep vein of the arm or leg (i.e., internal/external jugular clots, clots in central venous catheters (e.g., pericatheter thrombus, hepatic/renal/splenic/mesenteric thrombosis, etc.), fat emboli.

Select one of the following:

- “Active at the time of PICC placement” if the medical record indicates that the patient has a DVT in the arm or leg at the time of PICC placement. **Answer question 3.1**

INCLUDE: Documentation of acute DVT diagnosed on the day before PICC placement, the day of PICC placement, or the day after PICC placement.

Documentation of chronic DVT newly diagnosed the day before PICC placement, the day of PICC placement, or the day after PICC placement.

EXCLUDE: Documentation of suspicion of DVT without test to confirm diagnosis.

- “≤ 30 days” if the medical record indicates that the patient had a DVT in the arm or leg in the 30 days prior to placement of the PICC of interest. **Answer question 3.1**

INCLUDE: Patient diagnosis and/or treatment of acute DVT within the 30 days prior to PICC placement.

EXCLUDE: DVTs diagnosed the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- “Positive History” if the medical record indicates that the patient has a history of DVT in the arm or leg. **Answer question 3.1**

INCLUDE: Documentation that the patient is receiving active ongoing treatment (i.e., anticoagulant) without evidence of new thrombosis formation within the 30 days prior to placement of the PICC of interest. History of chronic and/or acute DVT that occurred greater than 30 days prior to placement of the PICC of interest.

- “No” if the medical record indicates the patient has no history of deep vein thrombosis in the arm or leg.
- “Unknown” if the medical record is silent regarding history of deep vein thrombosis in the arm or leg.

3.1. IS THERE EVIDENCE THAT THE DVT WAS ASSOCIATED WITH A PICC OR MIDLINE?

Instructions: Review the medical record to determine if there is evidence that the DVT was associated with a PICC or midline. There are three (3) options for this question.

INCLUDE: Any documentation that the DVT was associated with a PICC or was called “PICC-related”, “catheter-associated”, or “catheter-related.”

EXCLUDE: Documentation that there was occlusion of the PICC catheter (i.e., intraluminal occlusion of the catheter without evidence of extraluminal occlusion), without evidence of DVT.

Select one of the following:

- “Yes” if the medical record indicates that the DVT was associated with a PICC or midline.

- “No” if the medical record does not indicate that the DVT was associated with a PICC or midline.
- “Unknown” if the medical record is silent as to whether the DVT was associated with a PICC or midline.

4. DOES THE PATIENT HAVE A HISTORY OF A PULMONARY EMBOLISM (PE)?

Instructions: Review the medical record to determine if the patient has a history of pulmonary embolism (PE), which is a blood clot that has travelled to the lung. There are five (5) options for this question.

INCLUDE: Any documentation that the patient has a past or present history of pulmonary embolism or PE.

EXCLUDE: Non-blood clot emboli such as septic pulmonary emboli or fat emboli.

Select one of the following:

- “Active at the time of PICC placement” if the medical record indicates that the patient had a pulmonary embolism (PE) on the day before PICC placement, the day of PICC placement, or the day after PICC placement. **Answer question 4.1**
INCLUDE: Documentation of acute PE diagnosed on the day before PICC placement, the day of PICC placement, or the day after PICC placement or documentation of suspicion of PE without test to confirm diagnosis on the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- “≤ 30 days” if the medical record indicates that the patient had a pulmonary embolism (PE) in the 30 days prior to placement of the PICC of interest and was not diagnosed the day before PICC placement, the day of PICC placement, or the day after PICC placement. **Answer question 4.1**
INCLUDE: Patient diagnosis and/or treatment of PE within the 30 days prior to PICC placement, and the PE was not diagnosed the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- “Positive History” if the medical record indicates that the patient has a history of pulmonary embolism (PE). **Answer question 4.1**
INCLUDE: Documentation that the patient is receiving active ongoing treatment (i.e. anticoagulant) without evidence of new thrombosis formation within the 30 days prior to placement of the PICC of interest. History of chronic and/or acute PE that occurred greater than 30 days prior to placement of the PICC of interest.
- “No” if the medical record indicates the patient has no history of pulmonary embolism (PE).
- “Unknown” if the medical record is silent regarding history of pulmonary embolism (PE).

4.1. IS THERE EVIDENCE THAT THE PE WAS ASSOCIATED WITH A PICC OR MIDLINE?

Instructions: Review the medical record to determine if there is evidence that the PE was associated with a PICC or midline. There are three (3) options for this question.

INCLUDE: Any documentation that the PE was associated with a PICC or was called "PICC-related", "catheter-associated", or "catheter-related."

EXCLUDE: Documentation that there was occlusion of the PICC catheter (i.e. intraluminal occlusion of the catheter without evidence of extraluminal occlusion), without evidence of PE.

Select one of the following:

"Yes" if the medical record indicates that the PE was associated with a PICC or midline.

"No" if the medical record does not indicate that the PE was associated with a PICC or midline.

"Unknown" if the medical record is silent as to whether the PE was associated with a PICC or midline.

5. DOES THE PATIENT HAVE A HISTORY OF CONGESTIVE HEART FAILURE (CHF)?

Instructions: Review the medical record to determine if the patient has a past or present history of congestive heart failure (CHF). There are five (5) options for this question.

INCLUDE: Examples include (but not limited to): Congestive heart failure (CHF), Heart Failure (HF), Cardiomyopathy (common cardiomyopathies include [but are not limited to]: ischemic cardiomyopathy, dilated cardiomyopathy, hypertrophic cardiomyopathy, or takotsubo cardiomyopathy [broken heart syndrome]).

Select one of the following:

- "*Active at the time of PICC placement*" if the medical record indicates that the patient has congestive heart failure (CHF) that is active the day before PICC placement, the day of PICC placement, or the day after PICC placement.
INCLUDE: Documentation of new or recent onset of HF (i.e., diagnosis of HF or an exacerbation of the patient's known HF) that is active at the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- "*≤ 30 days*" if the medical record indicates that the patient had congestive heart failure (CHF) in the 30 days prior to PICC placement.

INCLUDE: Documentation of diagnosis or exacerbation of HF within the 30 days prior PICC placement, but HF is not active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“Positive History”* if the medical record indicates that the patient had a history of congestive heart failure (CHF).

INCLUDE: Any documentation that the patient has a history of heart failure and/or the patient is receiving active ongoing treatment (i.e., medication, pacemaker) for heart failure, without evidence of an acute exacerbation within the 30 days prior to placement of the PICC of interest.

- *“No”* if the medical record indicates no history of congestive heart failure (CHF).
- *“Unknown”* if the medical record is silent regarding cardiac function and/or assessment for congestive heart failure (CHF).

6. DOES THE PATIENT HAVE A HISTORY OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)?

Instructions: Review the medical record to determine if the patient has a past or present history of chronic obstructive pulmonary disease (COPD), which is a persistent obstruction of the airways occurring with emphysema, chronic bronchitis, or both. There are five (5) options for this question.

INCLUDE: Examples include (but not limited to): chronic obstructive pulmonary disease (COPD), chronic obstructive airway disease (COAD), chronic obstructive lung disease (COLD), chronic bronchitis, chronic obstructive bronchitis, chronic tracheobronchitis, chronic airflow limitation (CAL), chronic obstructive respiratory disease (CORD), or emphysema.

EXCLUDE: Chronic pulmonary disorders such as cystic fibrosis, bronchiectasis, or asthma if not listed with COPD.

Select one of the following:

- *“Active at the time of PICC placement”* if the medical record indicates that the patient has chronic obstructive pulmonary disease (COPD) that is active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation that the patient had an increase in the severity of airflow obstruction, decreased pulmonary function, or acute respiratory distress that was associated with the patient’s COPD the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“≤ 30 days”* if the medical record indicates that the patient had chronic obstructive pulmonary disease (COPD) in the 30 days prior to PICC placement.

INCLUDE: Documentation that there was an admission for and/or treatment directed specifically toward management of chronic obstructive pulmonary disease (COPD) within the 30 days prior to PICC placement, but is not active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“Positive History”* if the medical record indicates that the patient had a history of chronic obstructive pulmonary disease (COPD).

INCLUDE: Documentation of chronic obstructive pulmonary disease (COPD) without evidence of an acute exacerbation within the 30 days prior to PICC placement.

- *“No”* if the medical record indicates that the patient has no history of chronic obstructive pulmonary disease (COPD).
- *“Unknown”* if the medical record is silent regarding a respiratory function and/or assessment for chronic obstructive pulmonary disease (COPD).

7. DOES THE PATIENT HAVE A HISTORY OF INFLAMMATORY BOWEL DISEASE (I.E. CROHN’S OR ULCERATIVE COLITIS)?

Instructions: Review the medical record to determine if the patient has a history of inflammatory bowel disease (IBD), which includes ulcerative colitis (UC) and Crohn’s disease. There are five (5) options for this question.

INCLUDE: Examples include (but not limited to): Crohn’s disease, microscopic colitis, Regional enteritis, Ulcerative colitis, Ulcerative proctocolitis.

EXCLUDE: Celiac disease, Colitis, Spastic colitis, Ischemic colitis, and/or Infectious colitis, Irritable bowel disease/syndrome (IBS), lymphocytic colitis.

Note: irritable bowel syndrome (IBS) should not be confused with Inflammatory Bowel Disease (IBD).

Select one of the following:

- *“Active at the time of PICC placement”* if the medical record indicates that the patient has inflammatory bowel disease (IBD) that is active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation of an aggravation of symptoms or an increase in the severity of inflammatory bowel disease (IBD) that was active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“≤ 30 days”* if the medical record indicates that patient had inflammatory bowel disease (IBD) in the 30 days prior to PICC placement.

INCLUDE: Documentation that there was an admission for and/or treatment of an acute exacerbation of inflammatory bowel disease (IBD) within the 30 days

prior to PICC insertion, but is not active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“Positive History”* if the medical record indicates that the patient had a history of inflammatory bowel disease (IBD).

INCLUDE: Documentation of inflammatory bowel disease (IBD) without evidence of an acute exacerbation within the 30 days prior to PICC placement.

- *“No”* if the medical record indicates that there is no history of inflammatory bowel disease (IBD).
- *“Unknown”* if the medical record is silent regarding inflammatory bowel disease (IBD).

8. DOES THE PATIENT HAVE A HISTORY OF SERIOUS LUNG DISEASE (NOT COPD, PNEUMONIA)?

Instructions: Review the medical record to determine if the patient has a history of serious lung disease, which includes lung diseases that are often classified as environmental or interstitial lung disease. There are five (5) options for this question.

INCLUDE: Pneumoconiosis: black lung disease, asbestosis, pneumoconiosis due to the inhalation of silica or silicates (i.e. talc or dust); Diffuse parenchymal or infiltrative lung disease: pulmonary fibrosis, allergic pneumonia, eosinophilic pneumonia; Pleurisy, Pleural effusion, Pneumothorax, Atelectasis, Sleep apnea, tuberculosis, Basilar parenchymal disease, Pulmonary hypertension, Acute respiratory failure, Adult respiratory distress disorder (ARDS), Interstitial lung disease, Severe acute respiratory distress syndrome (SARS), cystic fibrosis, Bronchiectasis, Pulmonary tuberculosis, Chronic hypoxemic respiratory failure, Cor Pulmonale (pulmonary heart disease), chronic graft vs. host disease with sclerodermatous, sarcoidosis (if involving the lung), lupus pneumonitis (if there is documentation that it is active), Lady Windermere Syndrome (Mycobacterium avium complex), septic emboli to the lung

EXCLUDE: Pneumonia, influenza, asthma, acute bronchitis, chronic obstructive pulmonary disease (COPD), histoplasmosis, emphysema, tracheobronchomalacia, persistent linear fibrosis of the lung, pulmonary vascular congestion, obesity hypoventilation syndrome (OHS), Pneumomediastinum, Chronic bronchitis, Tracheobronchitis, Valley Fever/coccidioidomycosis, Bronchiolitis obliterans organizing pneumonia (BOOP), pulmonary mucormycosis, tracheostomy

Select one of the following:

- *“Active at the time of PICC placement”* if the medical record indicates the patient has serious lung disease (not COPD or pneumonia) active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation of a serious lung disease (not COPD or acute pneumonia) that was an active problem the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- “≤ 30 days” if the medical record indicates that the patient had serious lung disease (not COPD or acute pneumonia) in the 30 days prior to PICC placement. INCLUDE: Documentation that there was an admission for and/or management of a serious lung disease (not COPD or acute pneumonia) within the 30 days prior to PICC placement but was not an active problem the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- “Positive history” if the medical record indicates that the patient had a history of a serious lung disease (not COPD or acute pneumonia). INCLUDE: Documentation that there was an admission for and/or management of a serious lung disease (not COPD or acute pneumonia) without evidence of an acute exacerbation within the 30 days prior to PICC placement.
- “No” if the medical record indicates there is no history of serious lung disease.
- “Unknown” if the medical record is silent regarding history of serious lung disease.

9. DOES THE PATIENT HAVE A HISTORY OF RHEUMATOID ARTHRITIS OR RELATED ARTHROPATHIES?

Instructions: Review the medical record to determine if the patient has a history of rheumatoid arthritis or related arthropathies, which are a part of a group of disorders known as diffuse connective tissue diseases. There are five (5) options for this question.

INCLUDE: Rheumatologic disorders, Connective tissues disorders, Rheumatoid arthritis (RA), Systemic lupus erythematosus (SLE), Mixed connective tissue disorder/disease, Scleroderma, CREST syndrome, Dermatomyositis, Poly-myositis, Vasculitis, Polymyalgia rheumatic (PMR), Sjogren’s syndrome, Polyarthritus nodosa (PAN), Antineutrophil cytoplasmic antibody (ANCA), associated vasculitis (microscopic polyangiitis [polyarteritis]), Wegener’s granulomatosis (midline granulomatosis, granulomatosis with polyangiitis, GPA), Behcet’s disease, Buerger’s disease (thromboangitis obliterans), Central Nervous System (CNS) vasculitis, Churg-Strauss Syndrome (Eosinophilic granulomatosis with polyangiitis, EGPA), Cryoglobulinemic vasculitis (hypersensitivity vasculitis), Giant Cell Arteritis (also called Temporal or Cranial Arteritis), Henoch-Schonlein Purpura (HSP, IgA vasculitis), Rheumatoid vasculitis, Takayasu’s arteritis, Polychondritis, Antisythetase syndrome, Ankylosing spondylitis, Seronegative arthritis, Psoriatic arthritis, Kawasaki

disease, Inflammatory arthritis, Ehler's Danlos Syndrome, Diffuse Systemic Sclerosis, Morphea

EXCLUDE: Osteoarthritis, Gout, Fibromyalgia, Reflex sympathetic dystrophy, Sarcoidosis, Marfan's syndrome, Neuropathic arthropathy, Psoriasis (unless there is documentation of psoriatic arthritis), Raynaud's, Urticarial vasculitis, Charcot Marie Tooth Syndrome, pyogenic arthritis

Select one of the following:

- *"Active at the time of PICC placement"* if the medical record indicates that the patient has rheumatoid arthritis or a related arthropathy active the day before PICC placement, the day of PICC placement, or the day after PICC placement.
INCLUDE: Documentation of an aggravation of symptoms or an increase in the severity of a rheumatoid arthritis or related arthropathy that was active the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- *"≤ 30 days"* if the medical record indicates that the patient had rheumatoid arthritis or a related arthropathy in the 30 days prior to PICC placement.
INCLUDE: Documentation that there was an admission for and/or treatment of an aggravation of symptoms or an increase in the severity of a rheumatoid arthritis or related arthropathy within the 30 days prior to PICC placement but was not an active problem the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- *"Positive History"* if the medical record indicates that the patient had a history of rheumatologic disorder or related arthropathy.
INCLUDE: Documentation of a rheumatoid arthritis or related arthropathy without evidence of an acute exacerbation within the 30 days prior to PICC placement.
- *"No"* if the medical record indicates that there was no history of rheumatoid arthritis or related arthropathy.
- *"Unknown"* if the medical record is silent regarding a history of a rheumatologic disorder.

10. DOES THE PATIENT HAVE A HISTORY OF PNEUMONIA?

Instructions: Review the medical record to determine if the patient has a past or present history of pneumonia, which is an inflammatory condition of the lung usually due to bacteria, viruses, fungus, parasites, or other pathogenic organisms. There are five (5) options for this question.

INCLUDE: Lobar pneumonia, bronchopneumonia, aspiration pneumonia, atypical pneumonia, post-obstructive pneumonia, community acquired pneumonia (CAP),

fungal pneumonia, acute interstitial pneumonia, bronchial pneumonia, nosocomial pneumonia, healthcare associated pneumonia (HCAP), hospital-acquired pneumonia (HAP), ventilator associated pneumonia (VAP), Bronchiolitis obliterans organizing pneumonia (BOOP).

EXCLUDE: Allergic pneumonia, Eosinophilic pneumonia, pneumonitis caused by the inflammation of vapors and fumes, positive blood culture for Klebsiella pneumonia with no mention of pneumonia or suspicion of pneumonia in the medical documentation.

Select one of the following:

- *“Active at the time of PICC placement”* if the medical record indicates that the patient has pneumonia at the time of PICC insertion.
INCLUDE: Documentation that the patient had pneumonia the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- *“≤ 30 days”* if the medical record indicates that the patient had pneumonia in the 30 days prior to PICC placement.
INCLUDE: Documentation that the patient was diagnosed and/or received treatment for pneumonia within the 30 days prior to PICC placement, but was not active the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- *“Positive History”* if the medical record indicates that the patient had a history of pneumonia.
INCLUDE: Documentation of pneumonia but acute infection has not occurred within the 30 days prior to PICC placement.
- *“No”* if the medical record indicates no history of pneumonia, no acute/active pulmonary infection, or similar statement.
- *“Unknown”* if the medical record is silent regarding history of pneumonia.

11. DOES THE PATIENT HAVE A HISTORY OF A MYOCARDIAL INFARCTION (MI)?

Instructions: Review the medical record to determine if the patient has a past or present history of myocardial infarction (MI), which is otherwise known as a heart attack. There are five (5) options for this question.

INCLUDE: Myocardial infarction (MI), Myocardial infarction with ST elevation (STEMI), non-ST elevation myocardial infarction (NSTEMI), Acute myocardial infarction, AMI, Cardiac infarction, Coronary artery embolism, Coronary artery occlusion, Coronary artery thrombus, Infarction of the heart, Infarction of the myocardium, Infarction of the ventricle, Old myocardial infarction

EXCLUDE: Angina pectoris, Unstable angina, Cardiac ischemia without meeting criteria for MI, Non-specific chest pain, Rule out (R/O) MI.

Select one of the following:

- *“Active at the time of PICC placement”* if the medical record indicates that the patient has a myocardial infarction (MI) the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation that the patient had an active or acute MI the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“≤ 30 days”* if the medical record indicates that the patient had a myocardial infarction (MI) in the 30 days prior to PICC placement.

INCLUDE: Documentation of an MI that occurred within the 30 days prior PICC placement but is not an active problem the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *“Positive History”* if the medical record indicates that the patient has a history of myocardial infarction (MI).

INCLUDE: Documentation of an MI that occurred more than 30 days prior to placement of the PICC of interest.

- *“No”* if the medical record indicates there was no history of myocardial infarction (MI).

- *“Unknown”* if the medical record is silent regarding myocardial infarction (MI).

12. DOES THE PATIENT HAVE A HISTORY OF SEPSIS?

Instructions: Review the medical record to determine if the patient has a past or present history of sepsis, which is a potentially life-threatening condition involving a systemic response to an infection. There are five (5) options for this question.

INCLUDE: Diagnosis of possible sepsis, Sepsis, Severe sepsis, Septic shock, Documentation of two or more SIRS criteria by a clinician, Sepsis with a single site/source of infection (i.e., septic knee, septic arthritis), urosepsis, septicemia

EXCLUDE: Bacteremia, septic syndrome

Note 1: A positive culture is not needed to meet the criteria for sepsis.

Note 2: Positive vital signs for SIRS alone, without supporting documentation by a clinician, is not enough to meet the criteria for documentation of a sepsis history.

Select one of the following:

- *“Active at the time of PICC placement”* if the medical record indicates that the patient has sepsis the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation that the patient had sepsis (or was septic) the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- “≤ 30 days” if the medical record indicates that the patient had sepsis in the 30 days prior to PICC placement.

INCLUDE: Documentation of a sepsis diagnosis within the 30 days prior to PICC placement, but is not active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- “Positive History” if the medical record indicates that the patient had a history of sepsis.

INCLUDE: Documentation that the patient had sepsis that occurred more than 30 days prior to PICC placement.

- “No” if the medical record indicates there was no history of sepsis.
- “Unknown” if the medical record is silent regarding sepsis.

13. DOES THE PATIENT HAVE A HISTORY OF A STROKE (CVA) OR TRANSIENT ISCHEMIC ATTACK (TIA)?

Instructions: Review the medical record to determine if the patient has a past or present history of a stroke (CVA) or transient ischemic attack (TIA). There are five (5) options for this question.

INCLUDE: Patients with a cerebrovascular accident (CVA), stroke, transient ischemic attack (TIA). Include stroke or CVA that is ischemic, embolic (including septic emboli to the brain), hemorrhagic (e.g., subarachnoid hemorrhage [SAH]) or thrombotic stroke, or spinal cord infarct.

Also include cerebral infarction without residual effects and pontine infarction.

EXCLUDE: Patients with cerebral hemorrhage caused by trauma, tumor or lesion (not hemorrhagic stroke) causing paralysis or disturbances in vision, speech or balance.

Select one of the following:

- “Active at the time of PICC placement” if the medical record indicates that the patient had a stroke (CVA) or transient ischemic attack (TIA) the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation that the patient had a stroke (CVA) or transient ischemic attack (TIA) the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- “≤ 30 days” if the medical record indicates that the patient had a stroke (CVA) or transient ischemic attack (TIA) in the 30 days prior to PICC placement.

INCLUDE: Documentation of a stroke (CVA) or transient ischemic attack (TIA) within the 30 days prior to PICC placement, but is not active the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- *"Positive History"* if the medical record indicates that the patient had a history of a stroke (CVA) or transient ischemic attack (TIA).

INCLUDE: Documentation that the patient had a stroke (CVA) or transient ischemic attack (TIA) that occurred more than 30 days prior to PICC placement.

- *"No"* if the medical record indicates there was no history of a stroke (CVA) or transient ischemic attack (TIA).
- *"Unknown"* if the medical record is silent regarding a stroke (CVA) or transient ischemic attack (TIA).

14. DOES THE PATIENT HAVE OSTEOMYELITIS?

Instructions: Review the medical record to determine if the patient has osteomyelitis (OM) which is infection and inflammation of the bone and/or bone marrow that is active at time of PICC placement. There are three (3) options for this question.

INCLUDE: Osteomyelitis (OM), Chronic osteomyelitis, Acute suppurative osteomyelitis, Chronic suppurative osteomyelitis, non-suppurative osteomyelitis, Vertebral osteomyelitis, Spinal osteomyelitis, Medullary osteomyelitis, Superficial osteomyelitis, Localized osteomyelitis, Diffuse osteomyelitis.

EXCLUDE: Septic arthritis

Select one of the following:

- *"Active at the time of PICC placement"* if the medical record indicates that the patient had osteomyelitis the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- *"No"* if the medical record indicates the patient did not have active osteomyelitis the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- *"Unknown"* if the medical record is silent regarding osteomyelitis.

15. DOES THE PATIENT HAVE CELLULITIS?

Instructions: Review the medical record to determine if the patient has cellulitis (a skin infection that usually causes warmth, redness, swelling, and tenderness) that is active at time of PICC placement. There are three (3) options for this question.

Select one of the following:

- *"Active at the time of PICC placement"* if the medical record indicates that the patient has cellulitis the day before PICC placement, the day of PICC placement, or the day after PICC placement.

INCLUDE: Documentation that the patient had cellulitis or necrotizing fasciitis (gangrene/myonecrosis) the day before PICC placement, the day of PICC placement, or the day after PICC placement.

- “No” if the medical record indicates the patient did not have active cellulitis the day before PICC placement, the day of PICC placement, or the day after PICC placement.
- “Unknown” if the medical record is silent regarding cellulitis.

16. DOES THE PATIENT HAVE A HISTORY OF A KIDNEY TRANSPLANT?

Instructions: Review the medical record to determine if the patient has a history of a kidney transplant. There are five (5) options for this question.

Select one of the following:

- “Active at the time of PICC placement” if the medical record indicates that the patient has had a kidney transplant the day before PICC placement, the day of PICC placement, or the day after PICC placement.
 - “≤ 30 days” if the medical record indicates that the patient had a kidney transplant within the last 30 days prior to placement of the PICC of interest.
INCLUDE: Documentation of a kidney transplant within the 30 days prior to PICC placement, but is not the day before PICC placement, the day of PICC placement, or the day after PICC placement.
 - “Positive History” if the medical record indicates that the patient had a history of a kidney transplant.
 - “No” if the medical record indicates there was no history of a kidney transplant.
 - “Unknown” if the medical record is silent regarding a kidney transplant.
-
-

Social History

1. DOES THE PATIENT HAVE A HISTORY OF ALCOHOL ABUSE?

Instructions: Review the medical record to determine if the patient has a history of alcohol abuse. There are four (4) options for this question.

INCLUDE: Any documentation of the following: alcoholism, alcohol withdrawal, admission for acute intoxication, alcohol abuse, alcohol dependence, hazardous drinking, alcohol use disorder, binge drinking, and alcohol overuse

EXCLUDE: Social drinking, occasional alcohol use

Select one of the following:

- *“Current”* if the medical record indicates that the patient was admitted for acute intoxication and/or alcohol withdrawal or alcoholism. Also, if the medical record indicates the patient has a current problem with alcoholism.
- *“Former”* if the medical record indicates that the patient has a history of alcohol abuse or is a recovering alcoholic, but alcoholism is not a current problem.
- *“Never”* if the medical record indicates there is no evidence of alcohol abuse or patient denies history of alcohol abuse.
- *“Unknown”* if the medical record is silent as to whether the patient has a history of alcohol abuse or there is no social assessment present.

2. DOES THE PATIENT HAVE A HISTORY OF INTRAVENOUS (IV) DRUG ABUSE?

Instructions: Review the medical record to determine if the patient has a history of intravenous (IV) drug abuse (i.e. heroin, cocaine, etc.). There are four (4) options for this question.

INCLUDE: Intravenous injection of any drug not medically prescribed (i.e. heroin, cocaine, etc.), any documentation of IV drug abuse

EXCLUDE: IV therapy prescribed for medical reasons

Select one of the following:

- *“Current”* if the medical record indicates that the patient has received treatment for acute IV drug overdose or IV drug withdrawal is a problem during the current admission. Also include documentation that states there is a current problem with IV drug abuse.
- *“Former”* if the medical record indicates that the patient has a history of IV drug abuse but it is not a current problem.
- *“Never”* if the medical record indicates that there is no evidence of IV drug use, or patient denies history of IV drug use.
- *“Unknown”* if the medical record is silent as to whether the patient has a history of IV drug abuse.

3. DOES THE PATIENT HAVE A HISTORY OF TOBACCO USE?

Instructions: Review the medical record to determine if the patient has a history of tobacco use (i.e. nicotine). There are four (4) options for this question.

INCLUDE: Any form of tobacco products: cigarettes, cigars, chew, etc. This includes smoking, chewing, snuffing, or dipping tobacco. To be considered a “former” smoker, there must be documentation that states the patient quit smoking prior to the admission of interest.

EXCLUDE: Marijuana, electronic cigarettes, second hand smoking

Select one of the following:

- *“Current”* if the medical record indicates that the patient is currently using tobacco products.
 - *“Former”* if the medical record indicates that the patient has a history of tobacco use, but does not currently use tobacco.
 - *“Never”* if the medical record indicates no smoking/tobacco use, or patient denies history of tobacco use.
 - *“Unknown”* if the medical record is silent as to whether the patient has a history of tobacco use.
-
-

Obstetrical History

1. DOES THE PATIENT HAVE AN OBSTETRICAL HISTORY?

Instructions: Review the medical record to determine if the patient has an obstetrical (i.e. female reproductive/pregnancy) history. Medical documentation for obstetrics and gynecology may include the TPAL and/or the GPA system used to describe the patient’s obstetrical history.

T = term births

P = preterm births (prior to 37 weeks gestation)

A = abortions

L = living children

G = gravida (number of pregnancies)

P = para (number of births of viable offspring)

A or AB = abortus (abortions)

There are three (3) options for this question.

INCLUDE: Individuals that have had a pregnancy (this includes stillborn infants/spontaneous abortions).

EXCLUDE: Individuals that have not had a pregnancy, Medical documentation states the patient has children but does not specify an obstetrical history

Select one of the following:

- “Yes” if the medical record indicates that the patient had an obstetrical history.
Answer questions 1.1 through 1.4
- “No” if the medical record indicates that the patient is male or does not have an obstetrical history (as described above).
- “Unknown” if the medical record is silent regarding whether or not the patient has an obstetrical history.

1.1. IS THE PATIENT POST-DELIVERY \leq 4 WEEKS?

Instructions: Review the medical record to determine if the patient delivered within four weeks prior to PICC placement. There are three (3) options for this question.

INCLUDE: Delivery within the past 4 weeks. Vaginal delivery and Cesarean deliveries regardless if carried to full term, Elective or Spontaneous abortions, pre-mature delivery, delivery of a still born, full term delivery

EXCLUDE: Patients with tubal pregnancy, patients diagnosed with hydatidiform mole or molar pregnancy

Select one of the following:

- “Yes” if the medical record indicates that there was a delivery that occurred within 4 weeks prior to PICC placement.
- “No” if the medical record indicates that the patient was not post-delivery or delivery occurred greater than 4 weeks prior to PICC placement.
- “Unknown” if the medical record is silent regarding whether or not the patient is post-delivery less than or equal to 4 weeks.

1.2. DOES THE PATIENT HAVE A HISTORY OF UNEXPLAINED STILLBORN INFANT(S)?

Instructions: Review the medical record to determine if the patient had a history of unexplained stillborn infant (i.e. birth of a dead fetus for unknown reasons). There are three (3) options for this question.

INCLUDE: Still birth reported in the medical record.

EXCLUDE: Reports of voluntary abortions or spontaneous abortion before 20 weeks of gestation.

Select one of the following:

- “Yes” if the medical record indicates a history of unexplained stillborn.
- “No” if the medical record does not indicate that there was a history of unexplained stillborn.
- “Unknown” if the medical record is silent regarding the patient’s history of unexplained stillborn.

1.3. DOES THE PATIENT HAVE A HISTORY OF SPONTANEOUS ABORTIONS?

Instructions: Review the medical record to determine if the patient has a history of three (3) or more spontaneous abortions (i.e. termination of pregnancy before the fetus reaches viable age that occurs without apparent cause). There are three (3) options for this question.

INCLUDE: History of three (3) or more spontaneous abortions or miscarriages.

Include missed abortions (when the fetus has died before the completion of the 20th week of gestation, but the products of conception are retained in the uterus for 8 weeks or longer).

EXCLUDE: Medical record reports less than 3 spontaneous abortions, or only induced or elective abortions.

Select one of the following:

- “Yes” if the medical record indicates that the patient had three (3) or more spontaneous abortions that were unaided or without apparent cause.
- “No” if the medical record does not indicate that there was a history of spontaneous abortion.
- “Unknown” if the medical record is silent regarding the patient’s history of spontaneous abortions.

1.4. DOES THE PATIENT HAVE A HISTORY OF PREMATURE BIRTH WITH TOXEMIA OR GROWTH RESTRICTED INFANT?

Instructions: Review the medical record to determine if the patient has a history of premature birth (i.e. before 37 week’s gestation) with toxemia (i.e.

preeclampsia or pregnancy-induced hypertension with the presence of excess protein in the urine) or growth restricted infant (i.e. infant less than 5 pounds, 8 ounces or 2500 grams) whether by vaginal or cesarean delivery and whether or not the pregnancy was carried to full term. There are three (3) options for this question.

INCLUDE: Pre-mature delivery and documented preeclampsia and/or seizures proceeding, during, or within 2 weeks of delivery; or if the patient has an obstetrical history that includes delivery of a low birth weight infant, whether or not the pregnancy was carried to full term. Patients diagnosed with hemolysis, elevated liver enzymes, and low platelet count (HELLP syndrome) during pregnancy or after delivery.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a history of premature birth with toxemia or growth-restricted infant (as described above).

- “No” if the medical record indicates there was no history of premature birth with toxemia or growth-restricted infant.
 - “Unknown” if the medical record is silent regarding the patient’s history of premature birth with toxemia or growth-restricted infant.
-
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Surgical History

1. HAS THE PATIENT HAD AN INPATIENT SURGERY FOR ANY REASON?

Instructions: Review the medical record to determine if the patient had an inpatient surgery for any reason. Inpatient surgery is an operative procedure that requires hospitalization postoperatively. There are four (4) options for this question.

INCLUDE: Any procedure that is billed Operating Room (OR) time during an inpatient hospitalization.

EXCLUDE: Procedures that are not billed OR time.

Note: If the patient has laparoscopic and/or arthroscopic surgery while an inpatient, please count this as inpatient surgery only.

Select one of the following:

- “*Within the last 30 days*” if the medical record indicates surgery that required a hospital stay within 30 days prior to PICC placement, whether or not the surgery was initially performed in an inpatient setting. Select this option if the surgery was completed on the same date as PICC placement, but it was prior to PICC placement.
- “*> 30 days to 1 year*” if the medical record indicates a history of surgery that required a hospital stay more than 30 days and up to 1 year prior to PICC placement, whether or not the surgery was performed in an inpatient setting.
- “No” if the medical record indicates the patient has no history of surgery with hospital stay in the past year.
- “Unknown” if the medical record is silent regarding surgery with hospital stay in the last year.

2. HAS THE PATIENT HAD AN OUTPATIENT LAPAROSCOPIC SURGERY?

Instructions: Review the medical record to determine if the patient had an outpatient laparoscopic surgery (i.e. use of laparoscope to view the operative field). A few

examples of laparoscopic surgery may include cholecystectomy, appendectomy, female sterilization procedures, etc. There are four (4) options for this question.

INCLUDE: All outpatient laparoscopic surgeries.

Note: If laparoscopic surgery is done while inpatient, include this as inpatient surgery only.

Select one of the following:

- *"Within the last 30 days"* if the medical record indicates an outpatient surgery involving laparoscopy within the 30 days prior to PICC placement.
- *"> 30 days to 1 year"* if the medical record indicates an outpatient surgery involving laparoscopy more than 30 days and up to 1 year prior to PICC placement.
- *"No"* if the medical record indicates the patient has no history of outpatient surgery involving laparoscopy within the last year.
- *"Unknown"* if the medical record is silent regarding history of laparoscopic surgery within the last year.

3. HAS THE PATIENT HAD AN OUTPATIENT ARTHROSCOPIC SURGERY?

Instructions: Review the medical record to determine if the patient had an outpatient arthroscopic surgery (i.e. use of fiber optic scope to visualize the interior of a joint).

There are four (4) options for this question.

INCLUDE: All outpatient arthroscopic surgeries.

Note: If arthroscopic surgery is done while inpatient, include this as inpatient surgery only.

Select one of the following:

- *"Within the last 30 days"* if the medical record indicates the patient had an outpatient arthroscopic surgery, within 30 days prior to PICC placement.
- *"> 30 days to 1 year"* if the medical record indicates the patient had outpatient arthroscopic surgery more than 30 days and up to 1 year prior to PICC placement.
- *"No"* if the medical record indicates the patient has no history of outpatient arthroscopic surgery within the last year.
- *"Unknown"* if the medical record is silent regarding history of outpatient arthroscopic surgery within the last year.

4. HAS THE PATIENT HAD AN OUTPATIENT SURGERY (NOT LAPAROSCOPIC OR ARTHROSCOPIC)?

Instructions: Review the medical record to determine if the patient had outpatient surgery (i.e. no overnight stay) that is not arthroscopic or laparoscopic. There are

four (4) options for this question.

INCLUDE: All same-day surgeries and procedures that involve anesthesia or conscious sedation and meets the project definition of surgery (billed OR time). May include cataract surgery.

EXCLUDE: Laparoscopy, arthroscopy, oral surgery performed in a dental office, cardiac catheterization (if not considered billed OR time), colonoscopy (if not considered billed OR time), or any procedures performed under local anesthetic.

Select one of the following:

- *"Within the last 30 days"* if the medical record indicates the patient had an outpatient surgery within 30 days prior to PICC placement.
 - *"> 30 days to 1 year"* if the medical record indicates the patient had an outpatient surgery more than 30 days and up to 1 year prior to PICC placement.
 - *"No"* if the medical record indicates the patient has no history of outpatient surgery within the last year.
 - *"Unknown"* if the medical record is silent regarding history of outpatient surgery within the last year.
-
-

Mobility

1. HAS THE PATIENT HAD AN IMMOBILIZING PLASTER CAST?

Instructions: Review the medical record to determine if the patient had an immobilizing plaster cast on one or more lower extremity (i.e. right lower extremity [RLE] or left lower extremity [LLE]). There are four (4) options for this question.

INCLUDE: Any cast or brace used to immobilize a lower extremity/extremities or pelvic region. Include any immobilizing (i.e. inhibits ambulation) cast or brace, regardless if it comes above the knee or below the knee.

EXCLUDE: Upper extremity casts, Braces that allow for full range of motion (i.e. not immobilizing), Metatarsal boot, Waffle boot.

Select one of the following:

- *"Active at time of PICC placement"* if the medical record indicates that the patient had an immobilizing plaster cast at the time of PICC placement.
- *"≤ 30 days"* if the medical record indicates that the patient had an immobilizing plaster cast within 30 days of PICC placement, but the patient did not have the cast at the time of PICC placement.

- “No” if the medical record indicates the patient was ambulatory or without a lower extremity plaster cast, or the cast was in place more than 30 days prior to PICC placement.
- “Unknown” if the medical record is silent regarding whether or not the patient had a cast.

2. HAS THE PATIENT HAD PARALYSIS?

Instructions: Review the medical record to determine if the patient had paralysis (i.e. permanent or temporary loss of muscle function) of one or more extremities (limbs).

There are four (4) options for this question.

INCLUDE: Any documentation that the patient had paralysis that affected the patient’s mobility. Terms may include: Monoplegia, Diplegia, Paraplegia, Triplegia, Quadriplegia, Hemiplegia, Quadriparesis, Functional quadriplegia, Paraparesis

EXCLUDE: Hemiparesis, temporary paralysis due to a paralytic (e.g. Nimbex)

Select one of the following:

- “Active at time of PICC placement” if the medical record indicates that the patient had paralysis at the time of PICC placement.
- “≤ 30 days” if the medical record indicates that the patient had paralysis within 30 days of PICC placement, but the patient did not have paralysis at the time of PICC placement.
- “No” if the medical record indicates that the patient had no paralysis.
- “Unknown” if the medical record is silent regarding whether or not the patient had paralysis.

3. HAS THE PATIENT HAD SPINAL CORD INJURY WITH PARALYSIS?

Instructions: Review the medical record to determine if the patient had a new spinal cord injury with paralysis (i.e. permanent or temporary loss of muscle function).

Patients with paralysis due to spinal cord injury are usually classified as paraplegic (i.e. paralysis of the lower body involving both legs) or quadriplegic (paralysis of all four extremities). There are four (4) options for this question.

INCLUDE: Patient with paraplegia or quadriplegia due to a new traumatic spinal cord injury and/or spinal lesions/ tumors (e.g. transverse myelitis).

Select one of the following:

- “Active at time of PICC placement” if the medical record indicates that the patient had a new spinal cord injury with paralysis at the time of PICC placement (day before, the day of or the day after PICC placement).
- “≤ 30 days” if the medical record indicates that the patient had a new spinal cord injury with paralysis within 30 days of PICC placement.

- “No” if the medical record indicates that the patient had no new spinal cord injury with paralysis or the spinal cord injury (with paralysis) occurred more than 30 days prior to the PICC placement.
- “Unknown” if the medical record is silent regarding whether or not the patient had a new spinal cord injury with paralysis.

4. HAS THE PATIENT HAD A FRACTURE OF THE HIP/PELVIS/LEG?

Instructions: Review the medical record to determine if the patient had a fracture (i.e. break in the bone) of the hip, pelvis, and/or leg. Types of fractures include greenstick, displaced, incomplete, complete, comminuted, segmental, butterfly, spiral, and hairline. There are four (4) options for this question.

INCLUDE: Fractures of the hip usually involve the head of the femur (greater trochanter) and the acetabulum. Fractures of the pelvis includes the right and left hip bones (each made up of an ilium, ischium, and pubis), the sacrum, and the coccyx. Fractures of the leg may include the femur, patella, lateral and medial condyle, tibia, and fibula. Malleolus fracture.

EXCLUDE: fractures of the foot (i.e. metatarsal fracture, calcaneus fracture)

Select one of the following:

- “Active at time of PICC placement” if the medical record indicates that the patient had a fracture of the hip, pelvis, and/or leg at the time of PICC placement.
- “≤ 30 days” if the medical record indicates that the patient had a hip, pelvis, and/or leg fracture within 30 days of PICC placement, but is not active at the time of PICC placement.
- “No” if the medical record indicates no history of fracture of the hip, pelvis, and/or leg (or similar statement) or the patient had a fracture of the hip, pelvis, and/or leg more than 30 days prior to PICC placement.
- “Unknown” if the medical record is silent regarding patient history of fracture of the hip, pelvis, and/or leg.

5. HAS THE PATIENT HAD ELECTIVE HIP OR KNEE REPLACEMENT?

Instructions: Review the medical record to determine if the patient had an elective (i.e. planned) hip or knee replacement surgery. There are four (4) options for this question.

INCLUDE: Elective total hip replacement (THR), Elective total knee replacement (TKR), Partial hip replacement, Hip resurfacing

Note: The term “elective” is used to define a surgery that was scheduled in advance because it does not involve a medical emergency.

EXCLUDE: Above the knee amputation (AKA)

Select one of the following:

- *"Within 30 days"* if the medical record indicates that the patient had elective hip or knee replacement surgery within 30 days of PICC placement.
- *"> 30 days to 1 year"* if the medical record indicates that the patient had hip or knee replacement surgery more than 30 days and up to 1 year prior to PICC placement.
- *"No"* if the medical record indicates no hip or knee replacement surgery, or if the surgery occurred greater than 1 year prior to PICC placement.
- *"Unknown"* if the medical record is silent regarding elective surgery of the hip or knee.

6. HAS THE PATIENT HAD A TRAUMA REQUIRING HOSPITALIZATION?

Instructions: Review the medical record to determine to determine if the patient had trauma requiring hospitalization. There are five (5) options for this question.

INCLUDE: Hospital admission due to high intensity impact events including, but not limited to, motor vehicle accident (MVA), trauma related to military service, burns, gunshot wounds, or near drowning. Traumatic events that are similar in intensity to a recent stroke or acute spinal cord injury should be captured by this question.

Examples include blunt trauma to an organ requiring surgery (i.e. splenectomy, aortic rupture, etc.) or multiple bone fractures that may or may not require surgery that occurred as a result of a high velocity impact.

EXCLUDE: Mechanical falls, falls out of bed even with one or more broken bones.

Note: Hip, pelvis, and/or leg fractures should be captured above in the hip, pelvis or leg fracture question.

Select one of the following:

- *"Within 30 days"* if the medical record indicates that the patient had a trauma-related admission that occurred within 30 days prior to PICC placement.
- *"> 30 days to 1 year"* if the medical record indicates that the patient had a trauma-related admission more than 30 days and up to 1 year prior to PICC placement.
- *"Positive History"* if the medical record indicates that the patient had a trauma-related admission more than 1 year prior to PICC placement.
- *"No"* if the medical record indicates no history of a trauma-related admission or similar statement.
- *"Unknown"* if the medical record is silent regarding patient history of trauma-related admissions.

7. HAS THE PATIENT BEEN IMMOBILIZED > 72 HOURS DUE TO BED REST OR PARALYSIS?

Instructions: Review the medical record to determine if the patient had been immobilized greater than (>) 72 hours due to bed rest (i.e. bed bound) or paralysis.

There are four (4) options for this question.

INCLUDE: Patients who have been on best rest for more than 72 hours prior to PICC placement. Include quadriplegics.

EXCLUDE: Anyone who is able to ambulate to the bathroom. Bilateral amputees should not be considered "immobile."

Note: If the patient was able to ambulate to the restroom and back, even with assistance, they would not be considered to be immobilized.

Select one of the following:

- *"Active at time of PICC placement"* if the medical record indicates that the patient was immobilized greater than (>) 72 hours prior to PICC placement.
- *"No"* if the medical record indicates no immobilization for greater than (>) 72 hours or similar statement.
- *"Unknown"* if the medical record is silent about whether or not the patient was immobilized for > 72 hours prior to admission.

8. AT THE TIME OF PICC PLACEMENT, DOES THE PATIENT HAVE AN ACTIVE ORDER FOR BED REST?

Instructions: Review the medical record to determine if the patient had an active order for bed rest (i.e. extended period of recumbence) at the time of PICC placement. There are three (3) options for this question.

INCLUDE: Bed rest, strict bed rest, "Do Not Ambulate" orders.

EXCLUDE: Ambulating patients, up ad lib, suspended orders for bed rest, bed rest orders for limited amount of time (including 2, 4, or 6 hrs.) post procedure, temporary bed rest orders (ex: bed rest x2 hours).

Select one of the following:

- *"Yes"* if the medical record indicates that the patient had an active order for bed rest at the time of PICC placement.
- *"No"* if the medical record indicates no active order for bed rest at the time of PICC placement.
- *"Unknown"* if the medical record is silent about bed rest or activity orders.

9. HOW MANY BRADEN ACTIVITY SCORES WERE DOCUMENTED ON THE DAY OF PICC INSERTION?

Instructions: Review the medical record to determine the number of Braden activity scores documented on the day of PICC insertion.

Select one of the following:

- “N/A (Do not collect Braden Scores)” select if your site does not collect Braden activity scores.
- “0 (Collect Braden but no score available)” select if your site collects Braden activity scores, but you are unable to view the actual score or if a Braden activity score is unavailable for the day of PICC placement as the patient is not in the hospital.
- “1” if the medical record reflects one Braden activity score on the day (calendar day) of PICC Placement. **Answer 9.1**
- “2” if the medical record reflects two Braden activity scores on the day (calendar day) of PICC Placement. **Answer 9.1**
- “3” if the medical record reflects three Braden activity scores on the day (calendar day) of PICC Placement. **Answer 9.1**
- “4” if the medical record reflects four Braden activity scores on the day (calendar day) of PICC Placement. **Answer 9.1**
- “5” if the medical record reflects five Braden activity scores on the day (calendar day) of PICC Placement. **Answer 9.1**
- “6” if the medical record reflects six Braden activity scores on the day (calendar day) of PICC Placement. **Answer 9.1**

9.1. BRADEN ACTIVITY LEVEL/SCORE

Instructions: Review the medical record to determine the Braden score documented on the day of PICC insertion.

Select one of the following:

- “*Bedfast (1)*” select if the Braden activity score is indicated as 1 - Bedfast.
- “*Chairfast (2)*” select if the Braden activity score is indicated as 2 - Chairfast.
- “*Walks Occasionally (3)*” select if the Braden activity score is indicated as 3 - Walks Occasionally.
- “*Walks Frequently (4)*” select if the Braden activity score is indicated as 4 - Walks Frequently.
- “*Unknown*” select if the medical record is silent regarding the Braden activity score.

10. HOW MANY BRADEN ACTIVITY SCORES WERE DOCUMENTED ON THE DAY AFTER PICC PLACEMENT?

Instructions: Review the medical record to determine the number of Braden Activity Scores documented on the day after PICC placement.

Select one of the following:

- *"N/A (Do not collect Braden Scores)"* select if your site does not collect Braden activity scores.
- *"0 (Collect Braden but no score available)"* select if your site collects Braden activity scores, but you are unable to view the actual score or if a Braden activity score is unavailable for the day after PICC placement as the patient is not in the hospital.
- *"1"* if the medical record reflects one Braden activity score on the day after (calendar day) PICC Placement. **Answer 10.1**
- *"2"* if the medical record reflects two Braden activity scores on the day after (calendar day) PICC Placement. **Answer 10.1**
- *"3"* if the medical record reflects three Braden activity scores on the day after (calendar day) PICC Placement. **Answer 10.1**
- *"4"* if the medical record reflects four Braden activity scores on the day after (calendar day) PICC Placement. **Answer 10.1**
- *"5"* if the medical record reflects five Braden activity scores on the day after (calendar day) PICC Placement. **Answer 10.1**
- *"6"* if the medical record reflects six Braden activity scores on the day after (calendar day) PICC Placement. **Answer 10.1**

10.1. BRADEN ACTIVITY LEVEL/SCORE

Instructions: Review the medical record to determine the Braden score documented on the day of PICC insertion.

Select one of the following:

- *"Bedfast (1)"* select if the Braden activity score is indicated as 1 - Bedfast.
- *"Chairfast (2)"* select if the Braden activity score is indicated as 2 - Chairfast.
- *"Walks Occasionally (3)"* select if the Braden activity score is indicated as 3 - Walks Occasionally.
- *"Walks Frequently (4)"* select if the Braden activity score is indicated as 4 - Walks Frequently.

Abstractor Notes

1. DO YOU HAVE ANY NOTES OR DO YOU WANT TO EXCLUDE A FORM?

Instructions: Indicate whether you have any notes that you would like to include regarding any of the baseline data forms or if you would like to remove this form.

There are two (2) options for this question.

Select one of the following:

- “Yes” if you have notes that you would like to include or you would like to remove this form. **Answer questions 1.1 and 1.2**
- “No” if you do not have any notes that you would like to include or you do not want to remove this form

1.1. ABTRACTOR NOTES

Instructions: Use free text to input your notes.

Important: Do not enter any PHI (Protected Health Information)

1.2. DO YOU WANT TO EXCLUDE THIS FORM?

Instructions: This question will default to “No”. If you would like to exclude/remove this form you must manually change your answer to “Yes”. There are two (2) options for this question.

Select one of the following:

- “Yes” if you would like to exclude/remove this form from data analysis. **Answer question 1.2.1**
- “No” if you would like to include this form in the data analysis. Note: This is the default

1.2.1. ARE YOU SURE YOU WANT TO EXCLUDE THIS FORM? IF YES, PLEASE ENTER THE REASON FOR FORM REMOVAL IN THE ABSTRACTOR NOTES SECTION ABOVE.

- “Yes” if you are sure you would like to exclude/remove this form from data analysis. Enter the reason for form removal in the abstractor notes section above.
- “No” if you are sure you would like to include this form in the data analysis. Note: This is the default.

30-Day Follow Up (PICC)

Follow-Up Form: Period of Review

Instructions: The period of review will be automatically calculated by the dates you input in the database. The information below is for reference.



For the 30-day follow-up form, you will review the medical record for information from the day of PICC placement until:

- PICC removal (if PICC was removed prior to day 30)
Note: There are some instances where you will review the medical record through Day #1 or Day #2 after PICC removal. These are all noted within the definitions and the database.

OR

- Day 30 post PICC placement (if PICC still in place at day 30)

The 30-day medical record review must occur 30 days after the date of PICC placement, or within the 7-day leeway window. Please note that if the 7-day leeway window is used (will allow an extra 7 days beyond the end of the cycle for the completion of data collection), only include information from the date of PICC placement until day 30.

Patient Status

Instructions: For all questions in the database, "No Answer" is the default selection. This field will be considered a blank field and is interpreted as missing data. Be sure to select the appropriate answer for each question.

1. DATE OF PICC PLACEMENT

Instructions: Indicate the date that the PICC of interest was placed. Indicate the date in the MM/DD/YYYY format.

Note: This field is required, as it is used to generate the date ranges in the following pages.

1.1. THIS IS SUCCESSFUL PICC # _____ ON THIS DATE.

Instructions: Review the medical record to determine which PICC is entered that corresponds to the date of index placement.

Note 1: The default will always be one; however, if this is the second PICC line inserted on the same date indicated above, then you must manually change the entry using the drop-down box.

Note 2: Only enter PICC lines that were entered into the HMS database. For example, if an individual at your institution had two PICC lines inserted on the same date and only one of these resulted in entry into the PICC database, you would indicate this as PICC line #1 on this date. If both PICC lines were entered into the HMS database, then the first PICC line inserted on that day would be PICC line #1 and the second PICC line inserted on that day would be PICC line #2.

Select one of the following:

- "1" if the PICC of interest is the first PICC inserted on the date indicated above.
Note: This is the default answer.
- "2" if the PICC of interest is the second PICC inserted on the date indicated above.
- "3" if the PICC of interest is the third PICC inserted on the date indicated above.
- "4" if the PICC of interest is the fourth PICC inserted on the date indicated above.
- "5" if the PICC of interest is the fifth PICC inserted on the date indicated above.

2. IS THERE DOCUMENTATION IN THE MEDICAL RECORD THAT THE PICC HAS BEEN REMOVED WITHIN 30 DAYS POST-PICC PLACEMENT?

Instructions: Review the medical record to determine if the PICC of interest has been removed within the 30-day follow-up period (i.e., from the day of PICC placement till day 30 post-PICC placement). There are two (2) options for this question.

INCLUDE: Any documentation of PICC removal regardless of reason in the 30 days after PICC placement.

Note 1: If the PICC of interest was removed and a subsequent PICC had been placed, you would still answer "Yes" that the PICC had been removed.

Note 2: If the patient expired while the PICC was in place, this would count as a PICC removal.

Note 3: If there is a discharge order from the inpatient hospitalization when the PICC of interest was placed that specifically says “remove PICC” without further documentation of the actual PICC removal, you would answer “Yes” that the PICC had been removed.

Select one of the following:

- “Yes” if the medical record indicates that the PICC has been removed within the 30-day follow up period. **Answer questions 2.1 through 2.2**
- “No” if the medical record does not indicate that the PICC has been removed within the 30-day follow up period.

INCLUDE: If the documentation shows the PICC Tip migrated to a non- central vein location (some examples include tip dwelling in the basilic, cephalic or brachial vein, at or below the level of the axilla and/or distal to the shoulder). Continue to follow the PICC of interest as a PICC line in this case – even if documentation states, “use as Midline.” Be sure to capture this as Tip Migration in the Minor Complications section.

2.1 DATE OF PICC REMOVAL

Instructions: Review the medical record to determine the date of PICC removal. Indicate the date removed in the MM/DD/YYYY format.

Note: If the medical documentation is not specific about the date/time of actual removal, but it is stated that the PICC is no longer in place, please do the following: Ascertain the date (via medical documentation) on which it is known that the PICC line is present. Compare this to the date on which you have documentation that the PICC line is no longer present, but you are unable to determine the actual date of removal. Enter the PICC removal date as the date that is in the middle of these two known dates. Then, please indicate that you completed this process to determine the PICC removal date in the abstractors notes section.

Note: If patient expired while the PICC was in place, use the date of death as the date of PICC removal.

2.2 REASON(S) FOR REMOVAL

Instructions: Review the medical record to determine the documented reason(s) for removal of the PICC. PICCs may be removed for various reasons such as discharge from the hospital, a complication with/caused by the PICC, or the PICC

may no longer be indicated (i.e., do not need it for infusion of medications any longer). There are eight (8) options for this question.

Select all that apply:

- *“Discharge”* if the medical record indicates that the PICC was removed due to patient being discharged from the hospital with no further requirements for IV access.
INCLUDE: PICC removal due to patient discharge, regardless of if the patient was discharged home, to another hospital, assisted living, skilled nursing facility, sub-acute rehab, inpatient hospice, prison, inpatient rehab, or psychiatric facility. Documentation of “PICC removal prior to patient leaving AMA”.
- *“Complication”* if the medical record indicates the PICC was removed due to a complication. **Answer question 2.2.1**
INCLUDE: Suspected central line associated blood stream infection (CLABSI), confirmed CLABSI, suspected line sepsis or bacteremia, confirmed line sepsis or bacteremia, suspected DVT, confirmed DVT, suspected PE, confirmed PE, difficulty with blood collection, difficulty infusing and mechanical issues with the PICC (i.e., kinking, coiling, breakage, etc.).
- *“No Longer Indicated”* if the medical record indicates the PICC was removed because it was no longer clinically indicated.
INCLUDE: PICC removal because it was no longer indicated (i.e., no longer needed). PICC no longer needed for medication administration, and/or no longer needed for blood collection, and/or PICC removed for a “Line Holiday”. PICC removal to change number of lumens.
- *“Accidental removal”* if the medical record indicates the PICC was removed because it was accidentally pulled out by the patient or caregiver, was caught on the bed or IV pole, etc.
INCLUDE: PICC removal when patient or family accidentally or purposefully pulling out line.
- *“Dislodgement”* if the medical record indicates the PICC was removed because it became dislodged and resulted in removal.
- *“Death (Complete Death Form)”* if the medical record indicates the PICC was removed due to the patient’s death. Please complete the death form.
- *“Treatment Discontinued”* if the medical record indicates the PICC was removed because the patient’s treatment was discontinued/stopped.
INCLUDE: PICC removal because TPN discontinued.
- *“Unknown”* if the medical record was silent as to the reason for the PICC removal.

2.2.1 SPECIFY THE COMPLICATION

Instructions: Review the medical record to determine the type of complication(s) the patient had that resulted in removal of the PICC. There are fifteen (15) options for this question.

Select all that apply:

- *“Suspected Central Line Associated Blood Stream Infection (CLABSI) (include suspected line sepsis or suspected bacteremia)”* if, at the time of PICC removal, the medical record documentation indicates that the PICC was removed due to a suspected central line associated blood stream infection (CLABSI), suspected PICC line associated blood stream infection, suspected line sepsis, or suspected bacteremia.
INCLUDE: PICC removal where the decision for removal was due to suspected central line associated blood stream infection (CLABSI), suspected line sepsis, suspected bacteremia related to the line, or suspected fungemia related to the line. Removal of PICC line to culture the PICC tip. **Answer question 2.2.1.1**
- *“Confirmed Central Line Associated Blood Stream Infection (CLABSI) (include confirmed line sepsis or bacteremia)”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to a confirmed central line associated blood stream infection (CLABSI), confirmed PICC line associated blood stream infection, confirmed line sepsis, confirmed bacteremia related to the line, or confirmed fungemia related to the line.
INCLUDE: PICC removal due to a confirmed CLABSI, line sepsis, or bacteremia (i.e., confirmed through positive blood culture and/or PICC tip culture).
- *“Bacteremia (Unrelated to line)”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to bacteremia that is unrelated to the line.
- *“Suspected DVT”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to a suspected deep vein thrombosis (DVT).
INCLUDE: PICC removal due to a suspected deep vein thrombosis (DVT) or “rule out” DVT. Also, PICC removal due to suspected DVT, if a confirmation test had been ordered, but the results are pending and/or inconclusive.

EXCLUDE: Suspected clots (i.e., thrombus) within the PICC catheter (i.e., intraluminal occlusion of the catheter without evidence of extraluminal occlusion). Superficial thrombophlebitis (i.e., superficial vein clots - clots in the cephalic vein, median cephalic vein, basilic vein, median cubital vein, median forearm vein, greater saphenous vein, lesser saphenous vein)

- *"Confirmed DVT"* if at the time of PICC removal, the medical record indicates that the PICC was removed due to a confirmed deep vein thrombosis (DVT).

INCLUDE: PICC removal due to DVT, and DVT has been confirmed through diagnostic testing such as venogram, ultrasound/doppler, CT, or MRI.

EXCLUDE: Clots (i.e., thrombus) within the PICC catheter (i.e., intraluminal occlusion of the catheter without evidence of extraluminal occlusion). Superficial thrombophlebitis (i.e., superficial vein clots - clots in the cephalic vein, median cephalic vein, basilic vein, median cubital vein, median forearm vein, greater saphenous vein, lesser saphenous vein)

- *"Suspected PE"* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to suspected pulmonary embolism (PE).

INCLUDE: PICC removal due to suspected pulmonary embolism (PE) or "rule out" PE. Also, PICC removal due to suspected PE if a confirmation test has been ordered, but the results are pending and/or inconclusive.

- *"Confirmed PE"* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to a confirmed pulmonary embolism (PE).

INCLUDE: PICC removal due to confirmed pulmonary embolism (PE), with PE confirmed per CT, MRI, Ventilation Perfusion (VQ) scan, and/or pulmonary angiogram.

- *"Superficial Thrombophlebitis"* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to a superficial thrombophlebitis.

- *"Difficulty with Blood Collection"* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to difficulty with blood collection.

INCLUDE: PICC removal due to difficulty with blood collection or blood sampling, which may include difficulty drawing (i.e., obtaining) blood from one or more ports/lumens of the PICC. Documentation of no blood return.

- *“Difficulty Infusing”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to difficulty infusing.
INCLUDE: PICC removal due to difficulty infusing (i.e., administering) fluids and/or medications. This may include documentation that the lumen(s) are unable to be flushed (i.e., unable to push medicine or fluids into PICC line).
- *“Mechanical (such as kinking, coiling, breakage)”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to a mechanical issue (such as kinking, coiling, breakage).
INCLUDE: PICC removal due to leaking, cap missing or accidental cap removal, broken PICC cap, malfunction, non-functioning line, inconsistently functioning line, leaking, PICC “not working”, PICC removal due to a mechanical problem such as kinking, coiling, or breakage. Kinking includes occlusion (i.e., blocking) of the line due to a bend or twist in the line. Breakage includes any break in the PICC line. Coiling includes looping of the PICC line. Radiology report (i.e., chest x-ray, CT, etc.) that the PICC had kinking, coiling, or breakage, and PICC was subsequently removed for this reason.
- *“Occlusion or occlusive catheter thrombosis”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to occlusion of the PICC catheter.
- *“Exit site problems (such as blood or serous discharge from catheter site)”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to exit site problems.
INCLUDE: Removal due to infiltration, blood from the exit site or serous drainage from PICC catheter site, swelling or redness ONLY at the exit site without additional documentation.
- *“Catheter Migration”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to catheter migration.
INCLUDE: PICC removal due to external movement of the catheter (e.g., increase in the amount of catheter exposed on skin, external movement of the catheter as measured by catheter length on skin etc.)
- *“Malposition”* if, at the time of PICC removal, the medical record indicates that the PICC was removed due to malposition.
INCLUDE: PICC removal due to malposition in the internal jugular vein, axillary or subclavian vein, high /middle third of the superior vena cava contralateral arm, etc.
- *“Other”* if, at the time of PICC removal, the medical record indicates the PICC was removed for a reason not listed above.

FOR OTHER, INDICATE REASON

Instructions: Indicate the type of complication that was listed as the reason for PICC removal, if not listed above. Use free text.

- *“Unknown”* if the medical record was silent as to the complication that occurred which resulted in PICC removal.

2.2.1.1. DID THE PATIENT HAVE AN INFECTIOUS DISEASE CONSULT FOR THE SUSPECTED CENTRAL LINE ASSOCIATED BLOOD STREAM INFECTION (CLABSI)?

Instructions: Review the medical record to determine if the patient had an infectious disease consult in relation to the suspected CLABSI.

Select one of the following:

- *“Yes”* if the medical record indicates that an infectious disease consult was made for a suspected CLABSI.
- *“No”* if the medical record indicates that an infectious disease consult was not made for a suspected CLABSI.
- *“Unknown”* if the medical record is silent as to whether an infectious disease consult was made for the suspected CLABSI.

3. WAS THE PICC REPLACED BY ANOTHER DEVICE WHEN IT WAS REMOVED?

Instructions: Review the medical record to determine if the PICC of interest was replaced by another type of vascular access device.

INCLUDE: Any documentation of Peripheral IV, Midline, PICC, or other vascular access device insertion within the day after PICC removal.

EXCLUDE: Any documentation of a successful PICC exchange to another PICC (Note – this should be captured via the PICC Exchange form)

Select one of the following:

- *“Yes”* if the medical record indicates another vascular access device was inserted within the day after removal of the PICC of interest. **Answer question 3.1**
- *“No”* if the medical record indicates that another vascular access device was not inserted within the day after removal of the PICC of interest.
- *“Unknown”* if the medical record is silent as to whether another vascular access device was inserted within the day after removal of the PICC of interest.

3.1 IF YES, WHAT TYPE OF DEVICE WAS INSERTED?

Instructions: Review the medical record to determine the type of vascular access device that was inserted within the day after removal of the PICC of interest.

Select one of the following:

- *“Mediport/Medport”* if the medical record indicates that a Mediport/Medport was inserted within the day after removal of the PICC of interest.
- *“Midline”* if the medical record indicates that a Midline was inserted within the day after removal of the PICC of interest. **Answer question 3.1.1**
- *“Peripheral IV (PIV)”* if the medical record indicates that a Peripheral IV was inserted within the day after removal of the PICC of interest.
- *“PICC (Not an Exchange for the Index PICC)”* if the medical record indicates that a PICC was inserted within the day after removal of the PICC of interest.
- *“Other”* if the medical record indicates that another type of vascular access device was inserted within the day after removal of the PICC of interest.

Answer question 3.1.2

INCLUDE: CVC

3.1.1 IS THERE DOCUMENTATION THAT THE PICC WAS EXCHANGED TO A MIDLINE OVER A GUIDEWIRE?

Instructions: Review the medical record to determine if the PICC of interest was exchanged to a Midline over a guidewire

Select one of the following:

- *“Yes”* if the medical record indicates that the PICC of interest was exchanged to a Midline over a guidewire
- *“No”* if the medical record indicates that the PICC of interest was not exchanged to a Midline over a guidewire
INCLUDE: documentation that a Midline was inserted after the PICC of interest was removed without documentation of a successful exchange over a guidewire.
- *“Unknown”* if the medical record is silent as to whether the PICC of interest was exchanged to a Midline over a guidewire

3.1.2 IF OTHER, PLEASE SPECIFY

Instructions: Indicate the type of vascular access device that was inserted within the day after removal of the PICC of interest.

Surgical Information

1. DID THE PATIENT HAVE A SURGICAL PROCEDURE (BILLED OR TIME) DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient had a surgical procedure or surgery (i.e. billed OR time) during the period of review. The period of review will be automatically calculated and indicated.

There are three (3) options for this question.

INCLUDE: Any procedure that is billed Operating Room (OR) time, without regard to location of the procedure (i.e. operating room, procedure room, bedside, etc.).

EXCLUDE: Procedures that are not billed OR time.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a surgical procedure during the period of review. **Answer questions 1.1 through 1.4.**
- “No” if the medical record does not indicate the patient had a surgical procedure during the period of review.
- “Unknown” if the medical record was silent regarding surgical procedures during the period of review.

1.1 DATE OF SURGERY

Instructions: Indicate the date of the surgical procedure in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

Note: As a double check, please ensure that the date of surgery falls within the period of review.

1.2 TYPE OF SURGERY

Instructions: Review the medical record to determine the type of surgical procedure performed during the period of review. There are nine (9) options for this question.

Select one of the following:

- “*Intra-abdominal*” if the medical record indicates that the patient had intra-abdominal surgery during the period of review.

INCLUDE: Any abdominal surgery (i.e. opening the abdomen) such as exploratory laparotomy, open appendectomy, open cholecystectomy, colectomy, Pancreaticoduodenectomy (WHIPPLE), etc.

- “*Intra-thoracic*” if the medical record indicates that the patient had intra-thoracic surgery during the period of review.

INCLUDE: Surgery within the lungs such as removal of tumors of the lung (i.e. lobectomy, pneumonectomy), chest reconstruction after major trauma or

surgery, lung volume reduction surgery for emphysema, esophageal reconstruction, lung transplantation, thoracoscopy (VATS), repair of thoracic aneurysms

- *"Vascular"* if the medical record indicates that the patient had vascular surgery during the period of review.

INCLUDE: Surgery within the vascular system (i.e. arteries or veins) such as abdominal aortic aneurysm (AAA) repair, carotid endarterectomy, carotid stenting, vein stripping, sclerotherapy, bypass surgery, embolectomy, etc.

- *"Intra-cranial"* if the medical record indicates that the patient had intra-cranial surgery during the period of review.

INCLUDE: Surgery within the skull such as a craniotomy, skull base tumor resection, cranial aneurysm clipping, arteriovenous malformation (AVM) surgery, burr hole craniotomy, brain biopsy, etc.

- *"Cardiac"* if the medical record indicates that the patient had cardiac surgery during the period of review.

INCLUDE: Surgery within the heart or great vessels such as coronary artery bypass surgery, valve repair or replacement, minimal access cardiac surgery, ventricular remodeling, heart transplant, etc.

- *"Orthopedic"* if the medical record indicates that the patient had orthopedic surgery during the period of review.

INCLUDE: Surgery within the musculoskeletal system such as total knee replacement (TKR), total hip replacement (THR), Girdlestone procedure/operation, spinal surgery, etc.

- *"OB/GYN"* if the medical record indicates that the patient had OB/GYN surgery during the period of review.

INCLUDE: Surgery of the female reproductive system such as hysterectomies, myomectomies, etc.

- *"Other"* if the medical record indicates that the patient had a type of surgery not identified above.

FOR OTHER, INDICATE THE TYPE OF SURGERY

INCLUDE: Irrigation and Debridement

Instructions: Review the medical record to determine the type of surgery the patient had and use free text to indicate response.

- *"Unknown"* if the medical record was silent to the type of surgery the patient had during the period of review.

1.3 LENGTH OF SURGERY

Instructions: Review the medical record to determine the length of the surgery indicated above. There are three (3) options for this question.

Select one of the following:

- *“Less than two hours”* if the medical record indicates that the surgery was less than two hours.
- *“Greater than or equal to two hours”* if the medical record indicates that the surgery was greater than or equal to two hours.
- *“Unknown”* if the medical record was silent in regards to the length of surgery.

1.4 DID THE PATIENT HAVE ANY ADDITIONAL SURGICAL PROCEDURES?

Instructions: Review the medical record to determine if the patient had any additional surgical procedures during the period of review. Repeat the surgical information section for up to five surgeries. There are three (3) options for this question.

INCLUDE: Any additional surgical procedures that are billed OR time.

Select one of the following:

- *“Yes”* if the medical record indicates that the patient had an additional surgical procedure.
- *“No”* if the medical record does not indicate that the patient had an additional surgical procedure.
- *“Unknown”* if the medical record was silent in regards to additional surgical procedures.

ICU Information

1. WAS THE PATIENT IN THE ICU DURING THE REVIEW PERIOD?

Instructions: Review the medical record to determine if the patient was in the Intensive Care Unit (ICU) at any point during the period of review (i.e. date of PICC placement to 30 days post-PICC placement or date of PICC removal, whichever comes first). There are three (3) options for this question.

INCLUDE: Patients in any type of ICU or CCU classification: Medical, Surgical, Cardiac, Neurologic, Trauma/Burn, etc.

EXCLUDE: Units not classified as intensive care: step-down, general medical, telemetry, surgery, rehabilitation, intermediate care, etc.

Select one of the following:

- “Yes” if the medical record indicates that the patient was in the Intensive Care (ICU) at any point during the period of review. **Answer questions 1.1 through 1.9.**
- “No” if the medical record does not indicate that the patient was in the Intensive Care (ICU) at any point during the period of review.
- “Unknown” if the medical record was silent as to whether or not the patient was in the ICU during the period of review.

1.1 ICU CLASSIFICATION

Instructions: There are various types of ICUs that cater to a specific medical specialty or patient population. Review the medical record to determine the classification of the ICU that the patient was in during the period of review. There are seven (7) options for this question.

Select one of the following:

- “Surgical” if the medical record indicates that the patient was in a surgical ICU during the period of review.
INCLUDE: Surgical Intensive Care Unit (SICU)
- “Medical” if the medical record indicates that the patient was in a medical ICU during the period of review.
INCLUDE: Medical Intensive Care Unit (MICU)
- “Medical/Surgical” if the medical record indicates that the patient was in a medical/surgical ICU during the period of review.
INCLUDE: Medical/Surgical Intensive Care Unit (MSICU)
- “Neurological” if the medical record indicates that the patient was in a neurological ICU during the period of review.
INCLUDE: Neuroscience Critical Care Unit (NCCU), Neuroscience Intensive Care Unit (NICU)
- “Cardiac” if the medical record indicates that the patient was in a cardiac ICU during the period of review.
INCLUDE: Coronary Intensive Care Unit (CCU or CICU)
- “Other” if the medical record indicates that the patient was in an ICU not identified above during the period of review.
- “Unknown” if the medical record was silent as to the type of ICU that the patient was in during the period of review.

1.2 DATE OF ICU ADMISSION

Instructions: Indicate the date of ICU admission in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

Note: This date can be prior to the date of PICC placement, if the PICC was placed while the patient was in the ICU.

1.3 REASON(S) FOR ICU ADMISSION

Instructions: Review the medical record to determine the reason(s) that the patient was admitted to an ICU. Patients are admitted to ICUs for constant monitoring and/or care for severe and life-threatening illnesses or injuries. There are eight (8) options for this question.

Select all that apply:

- *"Myocardial Infarction/ Unstable Cardiac Disease"* if the medical record indicates that the patient was admitted to the ICU for myocardial infarction and/or unstable cardiac disease.
INCLUDE: Examples include (but not limited to): acute myocardial infarction (AMI), myocardial infarction (MI), heart attack, myocardial infarction with ST elevation (STEMI), myocardial infarction without ST elevation (NSTEMI), coronary artery embolism, coronary artery occlusion, coronary artery thrombus, infarction of the heart or myocardium or ventricle, unstable angina, acute coronary syndrome, unstable heart failure (HF), unstable congestive heart failure (CHF), hypertensive emergency, cardiac arrest, unstable irregular heart beat (i.e. cardiac dysrhythmia or cardiac arrhythmia).
EXCLUDE: Angina pectoris, non-specific chest pain, rule out (r/o) MI and no diagnosis of MI.
- *"Respiratory Failure/ Pulmonary Compromised"* if the medical record indicates that the patient was admitted to the ICU for respiratory failure/pulmonary compromise.
INCLUDE: Any documentation of respiratory failure or pulmonary compromise. Examples include (but not limited to): respiratory failure, acute respiratory distress syndrome (ARDS), respiratory distress syndrome (RDS), pulmonary dysfunction, pulmonary edema, pulmonary embolism, acute lung injury (ALI), pulmonary fibrosis, severe pneumonia, hypoxemic respiratory failure, pneumonitis, etc.
- *"Sepsis/Infection"* if the medical record indicates that the patient was admitted to the ICU for sepsis/infection.
INCLUDE: Examples include (but not limited to): sepsis, severe sepsis, septic shock, severe infection, septicemia, bacteremia, infectious disease, acute infection, pneumonia, etc.

- *"Altered Mental Status"* if the medical record indicates that the patient was admitted to the ICU for altered mental status.
INCLUDE: Examples include (but not limited to): alteration in mental status for any reason: trauma, exposures, overdose (i.e. drugs, chemicals, etc.), insufficient oxygen or blood flow, etc. Altered mental status, altered level of consciousness (LOC), comatose, altered state of consciousness.
- *"Stroke"* if the medical record indicates that the patient was admitted to the ICU for stroke.
INCLUDE: Examples include (but not limited to): stroke, cerebral vascular accident (CVA), hemorrhagic stroke, ischemic stroke, transient ischemic stroke (TIA), thrombotic stroke, embolic stroke, cerebral infarction.
- *"Unstable Bleeding"* if the medical record indicates that the patient was admitted to the ICU for unstable bleeding.
INCLUDE: Documentation of fatal, major, or clinically important bleeding as the reason for the patient receiving care in the ICU, and/or symptomatic bleeding associated with a fall in hemoglobin level of 2 g/DL or more, leading to transfusion of 2 or more units of packed red blood cells, or within a critical organ (including intracranial, intraspinal, intraocular, retroperitoneal, intraarticular, pericardial, or intramuscular with compartment syndrome).
- *"Other"* if the medical record indicates that the patient was admitted to the ICU for a reason other than listed above.

FOR OTHER, INDICATE THE REASON

Instructions: Indicate the reason using free text.

- *"Unknown"* if the medical record is silent as to a reason the patient was admitted to the ICU.

1.4 WAS THE PATIENT MECHANICALLY VENTILATED DURING THE PERIOD OF REVIEW (WHILE IN THE ICU)?

Instructions: Review the medical record to determine if the patient was mechanically ventilated during the period of review (i.e. while the patient was admitted to the ICU). Mechanical ventilation is a method used to assist breathing. Only include invasive mechanical ventilation (involving endotracheal intubation). Patients can be intubated with an endotracheal tube, which is then hooked up to a breathing machine (i.e. ventilator). There are three (3) options for this question.

INCLUDE: Mechanical ventilation, ventilator, endotracheal ventilation

EXCLUDE: BiPAP, intubation only during a procedure/surgery

Select one of the following:

- "Yes" if the medical record indicates that the patient was mechanically ventilated while admitted to the ICU during the period of review.
- "No" if the medical record does not indicate that the patient was mechanically ventilated while admitted to the ICU during the period of review.
- "Unknown" if the medical record was silent as to whether the patient was mechanically ventilated during the period of review.

1.5 WAS AN INTRAVENOUS VASOPRESSOR ADMINISTERED DURING THE PERIOD OF REVIEW (WHILE IN THE ICU)?

Instructions: Review the medical record to determine if the patient was given an intravenous vasopressor during the period of review (i.e. while the patient was admitted to the ICU). A vasopressor refers to a medication used to raise blood pressure, and are typically used when a patient is hypotensive (i.e. has low blood pressure). This information is likely to be found in medication orders and/or the medication administration record (MAR). If there are 2 or more vasopressors administered on the same day, you can select one of them. If there are 2 or more vasopressors administered to the patient, but they are administered on different days, enter the first one that was given during the period of review. There are three (3) options for this question.

INCLUDE: Vasopressin, dopamine, dobutamine, epinephrine (Adrenalin), norepinephrine (Levophed), phenylephrine (Neo-Synephrine).

EXCLUDE: Nitroprusside, oral Midodrine

Select one of the following:

- "Yes" if the medical record indicates that the patient was given an intravenous vasopressor while admitted to the ICU during the period of review. **Answer questions 1.5.1 through 1.5.2**
- "No" if the medical record does not indicate that the patient was given an intravenous vasopressor while admitted to the ICU during the period of review.
- "Unknown" if the medical record was silent as to whether the patient received an intravenous vasopressor during the period of review.

1.5.1 NAME OF DRUG

Instructions: Review the medical record to determine the name of the vasopressor administered during the ICU admission (i.e. while the patient was admitted to the ICU during the period of review). There are seven (7) options for this question.

Select one of the following:

- *"Vasopressin"* if the medical record indicates that vasopressin was the vasopressor administered during the ICU admission.
INCLUDE: Vasopressin, Pitressin Synthetic, Pitressin
- *"Dobutamine"* if the medical record indicates that dobutamine was the vasopressor administered during the ICU admission.
INCLUDE: dobutamine, dobutamine hydrochloride, Dobutrex
- *"Dopamine"* if the medical record indicates that dopamine was the vasopressor administered during the ICU admission.
INCLUDE: dopamine, dopamine hydrochloride, Intropin
- *"Epinephrine"* if the medical record indicates that epinephrine was the vasopressor administered during the ICU admission.
INCLUDE: Epinephrine, Adrenalin, Adrenaline
- *"Phenylephrine"* if the medical record indicates that phenylephrine was the vasopressor administered during the ICU admission.
INCLUDE: Phenylephrine, Neo-Synephrine,
- *"Norepinephrine"* if the medical record indicates that levophed was the vasopressor administered during the ICU admission.
INCLUDE: Norepinephrine, Levophed
- *"Other"* if the medical record indicates that the name of the vasopressor administered during the ICU admission was something other than listed above.

FOR OTHER, SPECIFY NAME OF DRUG.

Instructions: Use free text to indicate the name of the vasopressor.

1.5.2. WAS A VASOPRESSOR INFUSED THROUGH THE PICC (WHILE IN THE ICU)?

Instructions: Review the medical record to determine if the vasopressor was infused (i.e. administered) through the PICC of interest while in the ICU. Depending on your site, this information may be found within the medical administration record (MAR) or in nursing line care notes. There are three (3) options for this question.

INCLUDE: Any documentation that the vasopressor identified above was infused through any lumen (i.e. port) through the PICC of interest.

EXCLUDE: Any documentation that the vasopressor was infused through a line other than the PICC of interest (i.e. a port, peripheral IV, midline [some examples include: Power glide], etc.).

Select one of the following:

- *"Yes"* if the medical record indicates that a vasopressor was infused through the PICC of interest while in the ICU.
- *"No"* if the medical record does not indicate that a vasopressor was infused through the PICC of interest while in the ICU.
- *"Unknown"* if the medical record is silent as to whether a vasopressor was infused through the PICC of interest while in the ICU.

1.6. DOES THE PATIENT HAVE A PERIPHERAL IV IN PLACE DURING THE PERIOD OF REVIEW (WHILE IN THE ICU)?

Instructions: Review the medical record to determine if the patient has a peripheral intravenous (IV) access/catheter/line in place during the period of review (while the patient was/is admitted to the ICU). Peripheral IVs are placed in order to gain access to the peripheral blood circulation, and are usually placed in upper and lower extremities. There are three (3) options for this question.

INCLUDE: Peripherally inserted IVs in the: Antecubital (AC), Hand, External jugular (EJ), Forearm, Internal jugular (IJ), Left lower extremity (LLE), Left upper extremity (LUE), Right lower extremity (RLE), Right upper extremity (RUE)

EXCLUDE: Centrally inserted venous catheters (CVCs), PICC, midline (some examples include: Power glide), ports

Select one of the following:

- *"Yes"* if the medical record indicates that the patient has a peripheral IV in place during the ICU admission.
- *"No"* if the medical record does not indicate that the patient has a peripheral IV in place during the ICU admission.
- *"Unknown"* if the medical record is silent regarding peripheral IV placement or venous access during the ICU admission.

1.7 DID THE PATIENT HAVE A CENTRAL VENOUS CATHETER (CVC) PLACED DURING THE PERIOD OF REVIEW (WHILE IN THE ICU) (NOT THE PICC OF INTEREST)?

Instructions: Review the medical record to determine if the patient had a CVC, not including the PICC of interest, placed during the period of review (while the patient was admitted to the ICU). A central line is one that terminates in a central vein or enters a central vein (femoral, axillary or subclavian). This question is specifically asking if there was a CVC placed, in addition to the PICC of interest. There are three (3) options for this question.

INCLUDE: Non-tunneled, tunneled, peripherally inserted, or implanted central venous catheters (CVCs) placed while the patient was in the ICU during the

period of review. Some examples include (but not limited to): Arrow, Broviac, Cannon Arrow, CL-20, Cook catheter, Groshong, Hickman, Hohn, Infusaport, Kendal Palindrome, Neostar, PermaCath, Pro-line, R-Port, Quinton, S-Port, Vas Cath, Mediport insertion, Mediport that has been accessed (including accessed for flushes), Single Lumen Infusion Catheter (SLIC), and ICY Intravascular Heat Exchange Catheter (ICY Catheter).

Note: If a Mediport is both placed and accessed in the during the period of review (while in the ICU), these should be entered as separate CVC insertions. Each documented Mediport access should be captured separately as well.

EXCLUDE: AV Fistulas, External Jugular (EJ) or Internal Jugular (IJ) peripheral IV, midline catheters (some examples include: Power glide), Med Port access, interosseous lines, arterial catheters, Swan Ganz catheters, Temporary Transvenous Pacemaker, Permacath exchange, femoral sheaths, and central lines placed and removed within one day (this includes femoral catheters placed for procedures [for example – cardiac procedures such as angiography, angiography, angioplasty, EPS, pacemaker placement]).

Select one of the following:

- “Yes” if the medical record indicates that the patient had a CVC placed (not including the PICC of interest) during the ICU admission. **Answer questions 1.7.1 through 1.7.3**
- “No” if the medical record does not indicate that the patient had a CVC placed (not including the PICC of interest) during the ICU admission.
- “Unknown” if the medical record was silent as to whether the patient had a CVC placed (not including the PICC of interest) during the ICU admission.

1.7.1. DATE OF CVC INSERTION

Instructions: Indicate the date of CVC (not the PICC of interest) insertion in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.7.2. VEIN

Instructions: Review the medical record to determine the vein in which the CVC (not including the PICC of interest) was placed. There are seven (7) options for this question.

Select one of the following:

- “*Basilic*” if the medical record indicates that the CVC (not the PICC of interest) was placed in the basilic vein.
- “*Cephalic*” if the medical record indicates that the CVC (not the PICC of interest) was placed in the cephalic vein.

- *“Axillary”* if the medical record indicates that the CVC (not the PICC of interest) was placed in the axillary vein.
- *“Median”* if the medical record indicates that the CVC (not the PICC of interest) was placed in the median vein.
- *“Brachial”* if the medical record indicates that the CVC (not the PICC of interest) was placed in the brachial vein.
- *“Internal Jugular”* if the medical record indicates that the CVC was placed in the internal jugular vein.
- *“Other”* if the medical record indicates that the CVC (not the PICC of interest) was placed in a vein not specified above.

FOR OTHER, SPECIFY VEIN

Instructions: Free text the vein in which the CVC (not the PICC of interest) was placed.

- *“Unknown”* if the medical record was silent as to the vein in which the CVC (not the PICC of interest) was placed.

1.7.3. LUMENS

Instructions: Review the medical record to determine the number of lumens the CVC (not including the PICC of interest) had. The term “lumen” refers to the number of openings the line has or IV access lines. CVCs can have one, two, three, or four lumens. There are five (5) options for this question.

Select one of the following:

- *“Single”* if the medical record indicates that the CVC had one (1) lumen or is a single lumen.
- *“Double”* if the medical record indicates that the CVC had two (2) lumens or is a double lumen.
- *“Triple”* if the medical record indicates that the CVC had three (3) lumens or is a triple lumen.
- *“Quadruple”* if the medical record indicates that the CVC had four (4) lumens or is a Quad lumen.
- *“Unknown”* if the medical record is silent as the number of lumens the CVC had.

1.8. WAS THE PATIENT DISCHARGED/TRANSFERRED FROM THE ICU DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient was discharged/transferred from the ICU during the period of review. There are three (3) options for this question.

INCLUDE: Discharge/transfers from the ICU to another unit within the hospital, another hospital, home, or due to patient death.

EXCLUDE: Patients that have not been discharged/transferred from the ICU (i.e. patient was still currently admitted to ICU at the time of medical record review)

Select one of the following:

- "Yes" if the medical record indicates that the patient was discharged or transferred from the ICU review or died while in the ICU during the period of review. **Answer question 1.8.1**
- "No" if the medical record does not indicate that the patient was discharged or transferred from the ICU or died while in the ICU during the period of review.
- "Unknown" if the medical record was silent as to whether the patient was discharged or transferred from the ICU or died while in the ICU during the period of review.

1.8.1. DATE OF ICU DISCHARGE

Instructions: Indicate the date of ICU discharge/transfer/death in the MM/DD/YYYY format. Enter the date of the discharge/transfer order, if the patient does not leave the ICU on the same date as the order was written. Use 01/01/1900 if the date is unknown.

1.9. DID THE PATIENT HAVE AN ADDITIONAL ICU ADMISSION DURING THE REVIEW PERIOD?

Instructions: Review the medical record to determine if the patient had an additional admission to the intensive care unit (ICU) or critical care unit (CCU) during the period of review (i.e. dates indicated). There are two (2) options for this question.

INCLUDE: Patients transferred to or admitted to any type of ICU or CCU, within the hospital or another hospital, classification: Medical, Surgical, Cardiac, Neurologic, Trauma/Burn, etc.

EXCLUDE: Units not classified as intensive care: Step-down, general medical, telemetry, surgery, rehabilitation, intermediate care.

Note: This question will repeat up to 5 times to allow for multiple ICU admissions.

Select one of the following:

- "Yes" if the medical record indicates that the patient had an additional ICU admission during the review period.
- "No" if the medical record does not indicate that the patient had an additional ICU admission during the review period.

Medications

Note: All medications need to be confirmed as ordered and administered.

Examples of appropriate documentation for medications as ordered and administered:

- Documentation of administration via the Medication Administration Record (MAR)
- Documentation in an outpatient note from a healthcare professional that the patient received the medication (example: "Patient has taken their Lovenox for the past two weeks")

Examples of inappropriate documentation for medications as ordered and administered:

- Documentation of a medication as being ordered on discharge
- Documentation of a medication as being listed as a patient's current medication

1. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT THE PATIENT RECEIVED ANY OF THE FOLLOWING MEDICATIONS DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient received (i.e. the medication was ordered AND given) any of the following medications during the period of review (i.e. dates indicated). There are six (6) options for this question.

Select all that apply:

- "*Antiplatelet*" if the medical record indicates that the patient received an antiplatelet during the period of review.
INCLUDE: Clopidogrel (Plavix), prasugrel (Effient), ticagrelor (Brilinta), ticlopidine (Ticlid), cilostazol (Pletal), eptifibatide (Integrilin), abciximab (ReoPro), tirofiban (Aggrastat), dipyridamole (Persantine, Apo-Dipyridamole, Novo-Dipiradol), dipyridamole with aspirin (Aggrenox), Agrylin
- "*Aspirin*" if the medical record indicates that the patient received aspirin during the period of review.
INCLUDE: Any dose of an antiplatelet such as (but not limited to) aspirin, acetyl salicylic acid (ASA), Acuprin, Apo-ASA, Apo-Asen, Arthrinol, Arthritis, Artria SR ASA, Bayer Aspirin, Coryphen, Easprin, Ecotrin, Emparin, Entrophen, Excedrin,

Halfprin, Norwich Extra-Strength, Novasen, PMS-ASA, Sloprin, St. Joseph's Children Aspirin, Supasa, Fiorinal, Zorprin

- *"Statins"* if the medical record indicates that the patient received a statin during the period of review.

INCLUDE: Any dose of a statin such as (but not limited to) niacin/lovastatin (Advicor), atorvastatin (Lipitor), amlodipine besylate/atorvastatin calcium (Caduet), fluvastatin (Lescol), lovastatin (Altacor, Altoprev, Mevacor), pravastatin (Pravachol), pitavastatin (Livalo), rosuvastatin (Crestor), Simcor, Vytorin, simvastatin (Zocor)

EXCLUDE: Octreotide (Sandostatin)

- *"Erythropoietin Stimulating Agent (ESA)"* if the medical record indicates that the patient received an ESA during the period of review.

INCLUDE: Any dose of an Erythropoietin Stimulating Agent (ESA) such as (but not limited to) erythropoietin (EPO), epoetin alfa (Procrit, Epogen), epoetin beta (NeoRecormon), darbepoetin alfa (Aranesp).

- *"None Listed"* if the medical record does not indicate that the patient received any of the medications listed above.
- *"Unknown"* if the medical record was silent as to whether the patient received any of the medications.

2. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT AN ANTICOAGULANT WAS ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient was administered (i.e. ordered AND given) an anticoagulant during the period of review (i.e. dates indicated). Enter only the doses received during the period of review (i.e. after the PICC was placed until the 30th day post-placement or PICC removal, whichever comes first). There are three (3) options for this question.

INCLUDE: Any anticoagulant that was administered as venous thromboembolism (VTE) prophylaxis and/or treatment. Any anticoagulant administered for treatment reasons (i.e. atrial fibrillation, mechanical heart valve, etc). Common anticoagulants include (but are not limited to) apixaban (Eliquis), Argatroban, bivalirudin (Angiomax), dalteparin (Fragmin), enoxaparin (Lovenox), fondaparinux (Arixtra), heparin, heparin sodium, lepirudin (Refludon), tinzaparin (Innohep), warfarin (Coumadin), dabigatran (Pradaxa), rivaroxaban (Xarelto).

EXCLUDE: Anticoagulants that were ordered, but not administered; heparin administered along with dialysis in order to keep the machine from clotting.

Select one of the following:

- "Yes" if the medical record indicates that the patient received an anticoagulant during the period of review. **Answer questions 2.1 through 2.4**
- "No" if the medical record does not indicate that the patient received an anticoagulant during the period of review. **Answer question 2.5**
- "Unknown" if the medical record was silent as to whether the patient received an anticoagulant during the period of review.

2.1. REASON FOR ANTI-COAGULANT

Instructions: Review the medical record to determine the reason, either for treatment or as VTE prophylaxis, that the anticoagulant was administered to the patient during the period of review (i.e. dates indicated). There are three (3) options for this question.

Note: Anticoagulants cannot be ordered for both treatment and prophylaxis because anticoagulants for the purpose of prophylaxis are likely unnecessary or contraindicated if the patient is receiving an anticoagulant for treatment.

Treatment may be ordered either because the physician is continuing a medication that the patient was on before coming to the hospital or the patient may have a new condition that now requires treatment with an anticoagulant. VTE prophylaxis may be ordered with or without a VTE Risk Assessment. In order to tell the difference between treatment vs. prophylaxis, consider why the anticoagulant is being administered and at what dose. Anticoagulants ordered for prophylaxis are generally ordered in lower doses than treatment anticoagulants (anticoagulants are described below and include examples of treatment and prophylaxis dosing). An INR ordered on admission may indicate the patient has been on long term anticoagulation or prophylaxis prior to admission and, therefore, the anticoagulant ordered on admission is a treatment dose rather than a prophylaxis measure OR it may indicate concern regarding the patient's coagulation status not related to anticoagulant use (such as liver failure).

Select one of the following:

- "VTE Prophylaxis" if the medical record indicates that the patient was given an anticoagulant during the period of review for VTE prophylaxis.
INCLUDE: Any documentation that the anticoagulant was administered as a prophylactic agent or for VTE prophylaxis.
- "Treatment" if the medical record indicates that the patient was given an anticoagulant during the period of review for treatment purposes.
INCLUDE: Any documentation that the anticoagulant was administered as treatment for atrial fibrillation, mechanical heart valve, PE, DVT, stroke,

- orthopedic surgery, or clotting disorder.
- “*Unknown*” if the medical record was silent as to the reason for the anticoagulant.

2.2. NAME OF ANTI-COAGULANT

Instructions: Review the medical record to determine the name of the anticoagulant that was administered. There are fifteen (15) options for this question.

Note: Example anticoagulant order: Coumadin 5 mg PO daily - Coumadin is the name of the anticoagulant, PO is the route, 5 is the dose, mg is the unit, and daily is the frequency.

Select one of the following:

- “*Apixaban*” if the medical record indicates that the patient was given apixaban.
INCLUDE: Apixaban (Eliquis)
Treatment Dosing: The dose is 5mg PO BID for most patients, but may also be dosed as 2.5mg for some patients.
VTE Prophylaxis Dosing: This medication is not used in VTE prophylaxis for medical patients at this time.
- “*Argatroban*” if the medical record indicates that the patient was given argatroban.
INCLUDE: Argatroban (Argatroban Injection)
Treatment Dosing: Argatroban is administered as an IV injection and continuous IV infusion only.
VTE Prophylaxis Dosing: Argatroban is very unlikely to be used for VTE prophylaxis.
- “*Betrixaban*” if the medical record indicates that the patient was administered betrixaban.
INCLUDE: Betrixaban (Bevyxxa[®])
- “*Bivalirudin*” if the medical record indicates that the patient was administered bivalirudin.
INCLUDE: Bivalirudin (Angiomax[®])
Treatment Dosing: Bivalirudin is administered as an IV injection or continuous IV infusion.
VTE Prophylaxis Dosing: Not used in VTE prophylaxis for medical patients at this time.
- “*Dalteparin*” if the medical record indicates that the patient was given dalteparin.

INCLUDE: Dalteparin (Fragmin[®])

Treatment Dosing: Example treatment dosing of dalteparin for unstable angina/non-Q-wave MI = 120 international units/kg

VTE Prophylaxis: 5,000 international units subcutaneous daily

- “Edoxaban (Savaysa)” if the medical record indicates that the patient was given Edoxaban (Savaysa).

Treatment Dosing: Example treatment dosing of edoxaban for A-Fib: 60 mg PO daily (30 mg PO daily if CrCl 15-50 ml/min) *DVT/PE treatment: same dosing as for A-Fib (30 mg PO daily is also used for patients who weigh 60 kg or less)*

- “Enoxaparin” if the medical record indicates that the patient was given enoxaparin (Lovenox[®]).

Treatment Dosing: Example treatment dosing for unstable angina/non-Q-wave MI: 1 mg/kg subcutaneous every 12 hours

VTE Prophylaxis Dosing: 40 mg subcutaneous daily, 30 mg subcutaneous daily, 30 subcutaneous BID

- “Fondaparinux” if the medical record indicates that the patient was given fondaparinux (Arixtra[®])

Treatment Dosing: Example treatment dosing for DVT/PE 5 mg subcutaneous daily, 7.5 mg subcutaneous daily, or 10 mg subcutaneous daily, depending on weight

VTE Prophylaxis Dosing: 2.5 mg subcutaneous daily

- “Heparin” if the medical record indicates that the patient was given heparin.

INCLUDE: Heparin, Heparin Sodium, Unfractionated Heparin (UFH)

Treatment Dosing: Often Heparin is given as an IV bolus followed by an IV infusion (i.e. heparin drip)

VTE Prophylaxis Dosing: 5,000 units subcutaneous two or three times daily (i.e. BID or TID).

Note 1: Patients receiving heparin drips while hospitalized often receive a bolus prior to a continuous hourly drip. Only indicate in the anticoagulant section the continuous dose. No need to record the initial bolus or subsequent boluses (often given if the PTT is sub therapeutic). Additionally, the hourly rate can change daily depending on the PTT results. It is only necessary to record the initial dose that was administered during the period of review.

Note 2: Often heparin boluses are given during a cardiac catheterization or dialysis as a one-time order. These should not be included in the anticoagulant section.

- *“Lepirudin”* if the medical record indicates that the patient was given lepirudin (Refludon®).
Treatment Dosing: IV bolus and continuous IV infusions only.
VTE Prophylaxis Dosing: Not used for VTE prophylaxis.
- *“Tinzaparin”* if the medical record indicates that the patient was given tinzaparin (Innohep®).
Treatment Dosing: Example treatment dosing for DVT 175mg/kg/day subcutaneous
VTE Prophylaxis Dosing: Not used for VTE prophylaxis.
- *“Warfarin”* if the medical record indicates that the patient was given warfarin (Coumadin).
Treatment Dosing: 2.5-5 mg orally daily (dose is titrated to meet patient’s INR goal, so may be higher than 5 mg daily)
VTE Prophylaxis Dosing: Coumadin is not generally used specifically for VTE prophylaxis; however, if a patient continues to take this medication while hospitalized, no additional prophylaxis is needed (similar to dabigatran).
- *“Dabigatran”* if the medical record indicates that the patient was given dabigatran (Pradaxa®).
Treatment Dosing: 150 mg PO BID (or 75 PO BID if estimated glomerular filtration rate (eGFR) is 15-30 ml/min).
VTE Prophylaxis Dosing: Dabigatran is not used specifically for VTE prophylaxis; however, if a patient continues to take this medication while hospitalized, no additional prophylaxis is needed (similar to warfarin for INR levels).
- *“Rivaroxaban”* if the medical record indicates that the patient was given rivaroxaban (Xarelto®).
Treatment Dosing: Example treatment dosing: 20 mg PE daily for Afib.
VTE Prophylaxis Dosing: 10 mg PO daily.
Note: Unlike warfarin, this drug does not require routine monitoring (blood testing for INR levels).
- *“Ticagrelor”* if the medical record indicates that the patient was given ticagrelor (Brilinta).
Treatment Dosing: 180mg loading dose given with 325mg of Aspirin, then 90mg twice a day with 81mg of Aspirin in first year, then 60mg with 81mg Aspirin after 1 year post ACS event.
VTE Prophylaxis Dosing: Not used for VTE prophylaxis
- *“Other”* if the medical record indicates that the patient was given an anticoagulant not listed above.

- *“Unknown”* if the medical record was silent as to the name of the anticoagulant.

2.3. DATE OF FIRST DOSE ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW

Instructions: Review the medical record to determine the date of the first dose of anticoagulant administered to the patient during the period of review. For example, if the patient received the anticoagulant on the day of PICC insertion, you would enter the same date here. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

2.4. WAS AN ADDITIONAL ANTI-COAGULANT ADMINISTERED?

Instructions: Review the medical record to determine if an additional anticoagulant was administered (i.e. ordered AND given) during the period of review (i.e. dates indicated above). Enter only the doses received after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. There are three (3) options for this question.

INCLUDE: Any anticoagulant that was administered as venous thromboembolism (VTE) prophylaxis and/or treatment. Any anticoagulant administered for treatment reasons (i.e. atrial fibrillation, mechanical heart valve, etc). Common anticoagulants include (but are not limited to) apixaban (Eliquis), Argatroban, bivalirudin (Angiomax), dalteparin (Fragmin), enoxaparin (Lovenox), fondaparinux (Arixtra), heparin, heparin sodium, lepirudin (Refludon), tinzaparin (Innohep), warfarin (Coumadin), dabigatran (Pradaxa), rivaroxaban (Xarelto).

EXCLUDE: Anticoagulants that were ordered, but not administered.

Note: This section repeats so that up to five (5) anticoagulants may be entered.

Select one of the following:

- *“Yes”* if the medical record indicates that an additional anticoagulant was administered to the patient during the period of review.
- *“No”* if the medical record does not indicate that an additional anticoagulant was administered to the patient during the period of review.
- *“Unknown”* if the medical record is silent as to whether an additional anticoagulant was administered to the patient during the period of review.

2.5. REASON FOR NO ANTI-COAGULANT

Instructions: Review the medical record to determine the reason for no anticoagulant administration. There are six (6) options for this question.

Select one of the following:

- "Contraindication to pharmacologic prophylaxis" if the medical record indicates that an anticoagulant was not administered due to the patient having a contraindication to pharmacologic prophylaxis (i.e. VTE prophylaxis was contraindicated).

INCLUDE: Gastrointestinal (GI) or Genitourinary (GU) Hemorrhage Within the Last 3 Months

EXCLUDE: Bleeding events of uncertain clinical significance on admission. For example, microscopic blood in urine.

DEFINITION: GI or GU bleeding (hemorrhage) may be major or minor. Some examples of Gastrointestinal (GI) bleeding that may be documented include hematemesis (vomiting of blood or coffee ground like materials), hematochezia (passage of maroon or bright red blood), or passage of blood clots per rectum. Documentation of Genitourinary (GU) bleeding is often characterized by gross hematuria (blood in the urine) that is evident on macroscopic evaluation and presents for 24 hours or more.

INSTRUCTIONS: Select if GI or GU hemorrhage is documented the day before, the day of, or the day after PICC placement or within the 3 months prior to PICC placement.

Note: A positive Hemocult® is not sufficient to contraindicate pharmacologic prophylaxis.

INCLUDE: Intracranial Hemorrhage Within the Last Year

DEFINITION: Intracranial bleeding may also be referred to as a hemorrhagic stroke, subdural hematoma, or subarachnoid hemorrhage.

INSTRUCTIONS: Select if intracranial hemorrhage, hemorrhagic stroke, subdural hematoma or subarachnoid hemorrhage is documented the day before, the day of, or the day after PICC placement or within one year prior to PICC placement.

INCLUDE: Other Hemorrhage within the last 3 months

DEFINITION: Other bleeding (hemorrhage) may be major or minor. Some examples of other (not GI/GU nor intracranial) bleeding that may be documented include epistaxis that requires intervention and is recurrent and/or lasts at least 5 minutes, Pituitary Apoplexy, extensive hematoma or bruising (>5 cm in diameter), intra-articular bleeding (documented by aspiration), menorrhagia or metrorrhagia (increased quantity or duration), Thrombocytopenia with platelets < 50,000, or other bleeding important enough to be recorded on the medical record.

EXCLUDE: Blood in urine from a patient's menses.

- *"INR > 2.0"* if the medical record indicates that an anticoagulant was not administered during the period of review due to the patient's INR being greater than (>) 2.0.
INCLUDE: Any documentation that an anticoagulant was not administered due to patient's INR > 2.0 regardless of the reason for the INR being elevated.
- *"Thrombocytopenia > 50,000"* if the medical record indicates that an anticoagulant was not administered during the period of review due to thrombocytopenia with a platelet count greater than 50,000.
INCLUDE: Any documentation that an anticoagulant was not administered due thrombocytopenia and the patient's platelet count was 50,000 or above.
Note: If the patient's platelet count was less than 50,000, you should select *"Contraindication to pharmacological prophylaxis"*
- *"Considered low risk"* if the medical record indicates that an anticoagulant was not administered during the period of review due to the patient being low risk for VTE.
INCLUDE: Any physician/provider documentation that the patient was not administered an anticoagulant because the patient was "low risk" for VTE.
- *"Unknown"* if the medical record was silent as to the reason why no anticoagulant was administered during the period of review.
- *"Other"* if the medical record indicates that an anticoagulant was not administered during the period of review due to something other than the options listed above.
INCLUDE: patient refuses heparin SQ

3. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT PIPERACILLIN/TAZOBACTAM (INTRAVENOUS ONLY) WAS ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient was administered (i.e. ordered AND given) intravenous piperacillin/tazobactam (i.e. Zosyn) during the period of review (i.e. dates indicated). Enter only the doses received after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. This information is likely to be found on the medication administration record (MAR). There are three (3) options for this question.

INCLUDE: Piperacillin/tazobactam, piperacillin and tazobactam for injection, Zosyn
Select one of the following:

- "Yes" if the medical record indicates that the patient received intravenous piperacillin/tazobactam during the period of review. **Answer question 3.1.**

- “No” if the medical record does not indicate that the patient received piperacillin/tazobactam during the period of review.
- “Unknown” if the medical record was silent as to whether the patient received piperacillin/tazobactam during the period of review.

3.1. DATE OF FIRST DOSE ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW

Instructions: Review the medical record to determine the date of the first administered dose of intravenous piperacillin/tazobactam during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

4. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT VANCOMYCIN (INTRAVENOUS ONLY) WAS ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if intravenous (IV) vancomycin was administered (i.e. ordered AND given) to the patient during the period of review (i.e. dates indicated). Enter only the doses received after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. This information is likely to be found on the medication administration record (MAR).

There are three (3) options for this question.

INCLUDE: Intravenous vancomycin, Vanco, vancocin HCl, vancomycin hydrochloride, or vancoled

EXCLUDE: Oral Vancomycin

Select one of the following:

- “Yes” if the medical record indicates that the patient was given intravenous vancomycin during the period of review. **Answer question 4.1.**
- “No” if the medical record does not indicate that the patient was given intravenous vancomycin during the period of review.
- “Unknown” if the medical record was silent as to whether intravenous vancomycin was administered to the patient during the period of review.

4.1. DATE OF FIRST DOSE ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW

Instructions: Review the medical record to determine the date of the first administered dose of intravenous vancomycin during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

5. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT CEFEPIME (INTRAVENOUS ONLY) WAS ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if intravenous cefepime was administered (i.e. ordered AND given) to the patient during the period of review (i.e. dates indicated). Enter only the doses received after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. This information is likely to be found on the medication administration record (MAR). There are three (3) options for this question.

INCLUDE: Cefepime, Maxipime, cefepime hydrochloride

Note: Example order: Cefepime 1 g q8h - Cefepime is the name of the antibiotic, 1 is the dose, g is the unit, and q8h is the frequency.

Select one of the following:

- “Yes” if the medical record indicates that intravenous cefepime was administered to the patient during the period of review. **Answer question 5.1.**
- “No” if the medical record does not indicate that intravenous cefepime was administered to the patient during the period of review.
- “Unknown” if the medical record was silent as to whether intravenous cefepime was administered to the patient during the period of review.

5.1. DATE OF FIRST DOSE ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW

Instructions: Review the medical record to determine the date of the first administered dose of intravenous cefepime during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

6. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT CHEMOTHERAPY WAS ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if chemotherapy was administered (i.e. ordered AND given) to the patient during the period of review (i.e. dates indicated). Enter only the doses received after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. This information is likely to be found in the medication orders and/or on the medication administration record (MAR). There are three (3) options for this question.

INCLUDE: Therapy with any chemotherapy agent. Some examples include (but not limited to): Nitrogen mustards: mechlorethamine (nitrogen mustard), chlorambucil, cyclophosphamide (Cytoxan®), ifosfamide, and melphalan. Nitrosoureas:

streptozocin, carmustine (BCNU), and lomustine. Alkyl sulfonates: busulfan. Triazines: dacarbazine (DTIC) and temozolomide (Temodar®). Ethylenimines: thiotepa and altretamine (hexamethyl-melamine). Platinum drugs: cisplatin, carboplatin, and oxaloplatin. Antimetabolites include: 5-fluorouracil (5-FU), 6-mercapto-purine (6-MP), Capecitabine (Xeloda®), Cladribine, Clofarabine, Cytarabine (Ara-C®), Floxuridine, Fludarabine, Gemcitabine (Gemzar®), Hydroxyurea, Methotrexate, Pemetrexed (Alimta®), Pentostatin, Thioguanine. Taxanes: paclitaxel (Taxol®) and docetaxel (Taxotere®) Ixabepilone (Ixempra®) Vinca alkaloids: vinblastine (Velban®), vincristine (Oncovin®), and vinorelbine (Navelbine®), Estramustine (Emcyt®). Taxanes: paclitaxel (Taxol®) and docetaxel (Taxotere®). Epothilones: ixabepilone (Ixempra®), Etoposide (Toposar®, VePesid®, Etopophos®), Rituximab (Rituxan), Daunorubicin (Cerubidine®), Proteasome inhibitors: Bortezomib (Velcade®). Enasidenib (Idhia), Inotuzumab Ozogamicin (Besponsa)

EXCLUDE: Chimeric antigen receptor (CAR) T cell (CART) Therapy

Note1: Example order: Taxol 135 mg/m² IV weekly - Taxol is the name of the chemotherapy, 135 is the dose, mg/m² is the unit, weekly is the frequency, and IV is the route.

Note2: If the patient received a multiple drug combo (for example, 3 drug combo), all of the chemotherapy agents should be entered separately.

Select one of the following:

- “Yes” if the medical record indicates that the patient was administered chemotherapy during the period of review. **Answer questions 6.1 through 6.5**
- “No” if the medical record does not indicate that the patient was administered chemotherapy during the period of review.
- “Unknown” if the medical record was silent as to whether chemotherapy was administered during the period of review.

6.1. NAME OF DRUG

Instructions: Review the medical record to determine the name of the chemotherapy agent administered.

Select one of the following:

- “Abraxaone”
- “Adriamycin”
- “ARA-C”
- “Bendamustine”
- “Bleomycin”
- “Carboplatin”
- “Carmustine”

- *"Cisplatin"*
- *"Cyclophosphamide"*
- *"Cytarabine"*
- *"Cytoxan"*
- *"Daunorubicin"*
- *"Decitabine"*
- *"Docetaxel"*
- *"Doxorubicin"*
- *"Eloxatin"*
- *"Etoposide"*
- *"Fludarabine"*
- *"Fludara"*
- *"Gemzar"*
- *"Idamycin"*
- *"Idarubicin"*
- *"Ifosfamide"*
- *"Inotuzumab Ozogamicin"*
- *"Leucovorin"*
- *"Methotrexate"*
- *"Mutamycin"*
- *"Oncaspar"*
- *"Oncovin"*
- *"Oxaliplatin"*
- *"Paclitaxel"*
- *"Rituxan"*
- *"Rituximab"*
- *"Taxol"*
- *"Trastuzumab"*
- *"Vepesid"*
- *"Vesanoid"*
- *"Vincristine"*
- *"Other"* if the medical record indicates a chemotherapy agent not listed in the drop selections.

FOR OTHER, PLEASE SPECIFY THE DRUG NAME.

Instructions: free text the name of the drug.

6.2. INDICATION

Instructions: Review the medical record to determine the reason that the patient was administered chemotherapy. Select the reason from the drop down selections. If more than one option is the reason for the chemotherapy infusion, select one of the documented indications from the drop down selections.

- *"Breast Cancer"* if the medical record indicates that the chemotherapy was administered for breast cancer treatment.
- *"Cancer - Not otherwise specified"* if the medical record indicates the chemotherapy was administered for a cancer not listed as a choice in this list of options.
- *"Esophageal Cancer"* if the medical record indicates the chemotherapy was administered for esophageal cancer treatment.
- *"Leukemia"* if the medical record indicates the chemotherapy was administered for treatment of leukemia.
- *"Liver Cancer"* if the medical record indicates the chemotherapy was administered for liver cancer treatment.
- *"Lymphoma"* if the medical record indicates the chemotherapy was administered for treatment of lymphoma.
- *"Multiple Myeloma"* if the medical record indicates the chemotherapy was administered for the treatment of multiple myeloma.
- *"Non-Cancer Diagnosis"* if the medical record indicates the chemotherapy was administered for treatment of a non-cancer diagnosis. (for example: rheumatoid arthritis)
- *"Non-Small Cell Lung Cancer"* if the medical record indicates the chemotherapy was administered for non-small cell lung cancer treatment.
Note: If the indication is noted as lung cancer without the type indicated, please select Lung-Non small cell.
- *"Pancreatic Cancer"* if the medical record indicates the chemotherapy was administered for pancreatic cancer treatment.
- *"Small Cell Lung Cancer"* if the medical record indicates the chemotherapy was administered for small cell lung cancer treatment.
Note: If the indication is noted as lung cancer without the type indicated, please select Lung-Non small cell.
- *"Unknown"* if the indication for the chemotherapy is not documented in the medical record.

6.3. DATE OF FIRST DOSE ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW

Instructions: Review the medical record to determine the date of the first administered dose of chemotherapy during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

6.4. ROUTE

Instructions: Indicate the route in which the chemotherapy was administered. There are four (4) options for this question.

Select one of the following:

- *"Intravenous (IV) Continuous Infusion"* if the medical record indicates that the chemotherapy was administered intravenously. **Answer question 6.4.1**
INCLUDE: Intravenous (IV)
- *"By Mouth (PO)"* if the medical record indicates that the chemotherapy was administered orally.
INCLUDE: By mouth, per mouth, PO, p.o, PEG or G tube administration.
- *"Subcutaneous (SQ)"* if the medical record indicates that the chemotherapy was administered subcutaneously.
INCLUDE: sub-cutaneous injection, subcut, SQ, SC, sub-cu, sub-Q
- *"Intrathecal"* if the medical record indicates that the chemotherapy was administered intrathecally.
- *"Intramuscular"* if the medical record indicates that the chemotherapy was administered intramuscularly.
- *"Unknown"* if the medical record is silent as to the route in which the chemotherapy was administered.

6.4.1. WAS THE CHEMOTHERAPY ADMINISTERED THROUGH THE PICC?

Instructions: Review the medical record to determine if the chemotherapy was administered (i.e. ordered AND given) through the PICC of interest. This information is likely to be found on the medication administration record (MAR) or within infusion notes. There are three (3) options for this question.

INCLUDE: Documentation that the chemo was administered using the PICC of interest. Documentation that the chemo was administered through a central venous catheter (CVC), and the PICC of interest is the patient's only central venous access device.

EXCLUDE: Chemo administered orally, through a peripheral IV, through a port, through a CVC other than the PICC of interest.

Select one of the following:

- *"Yes"* if the medical record indicates that the chemotherapy was administered to the patient through the PICC of interest at any point

during the period of review. For example, if a patient was receiving chemotherapy and the first dose was on 4/15/15 and was given via a port, but on 4/17/15, it was infused through the PICC, you would still select “Yes” to infused through the PICC because, at some point during the period of review, it was.

- “No” if the medical record does not indicate that the chemotherapy was administered through the PICC of interest.
- “Unknown” if the medical record was silent as to whether or not the chemotherapy was administered through the PICC of interest.

6.5. DID THE PATIENT HAVE AN ADDITIONAL CHEMOTHERAPY AGENT ADMINISTERED DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if another chemotherapy agent was administered (i.e. ordered AND given) to the patient during the period of review (i.e. dates indicated). Enter only the doses received after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. This information is likely to be found in the medication orders and/or on the medication administration record (MAR). There are three (3) options for this question.

Note 1: This question will repeat up to five times to enable input of multiple chemo agents administered during the period of review.

Select one of the following:

- “Yes” if the medical record indicates that an additional chemotherapy agent was administered to the patient during the period of review.
- “No” if the medical record does not indicate that an additional chemotherapy agent was administered to the patient during the period of review.
- “Unknown” if the medical record is silent as to whether or not the patient received an additional chemotherapy agent during the period of review.

7. INDICATE THE CATHETER LOCK SOLUTION(S) USED FOR THE PICC

Instructions: Review the medical record to determine the type(s) of catheter lock solution(s) used for the PICC (i.e. the types of flushes used to lock the PICC lumens between medication administrations). This information may be found in the medication administration record (MAR) or within nursing documentation of PICC line care. Only include flushes and not continuous drips. There are eight (8) options for this question.

Select all that apply:

- "*Heparin*" if the medical record indicates that heparin was used as catheter lock solution for the PICC.
INCLUDE: Heparin lock flush injection, hep-flush, hep-lock
- "*Saline*" if the medical record indicates that saline was used as catheter lock solution for the PICC.
INCLUDE: Saline flush, 0.9% Sodium Chloride, NaCl, Normal Saline flush
- "*Ethanol*" if the medical record indicates that ethanol was used as catheter lock solution for the PICC.
INCLUDE: Ethanol lock, ethanol lock therapy (ELT), 70% ethanol lock, ethyl alcohol
- "*Antibiotic*" if the medical record indicates that an antibiotic was used as catheter lock solution for the PICC.
INCLUDE: Antibiotics that are administered into the PICC as a lock solution (i.e. small amount of antibiotic is infused into the PICC so that it stays within the actual PICC catheter and does not get administered into the patient's circulation). The antibiotics used may include vancomycin, cefazolin, gentamycin, or amikacin. The dose will likely be very small; for example, Vancomycin 1mg/ml.
EXCLUDE: Antibiotics that are administered to the patient via the PICC line that are not intended for lock use.
- "*Ethylenediaminetetraacetic acid (EDTA)*" if the medical record indicates that EDTA was used as catheter lock solution for the PICC.
INCLUDE: Ethylenediaminetetraacetic acid (EDTA), M-EDTA, minocycline-EDTA flush
- "*Taurolidine and Citrate (TauroLock)*" if the medical record indicates that TauroLock was used as catheter lock solution for the PICC.
INCLUDE: Taurolidine and citrate (TauroLock), (cyclo)-taurolidine and citrate (4%)
- "*Other*" if the medical record indicates that a solution other than those indicated above was used as catheter lock solution.
FOR OTHER, SPECIFY THE CATHETER LOCK SOLUTION
Instructions: Specify the type of solution used as catheter lock solution using free text.
- "*Unknown*" if the medical record is silent as to the kind of catheter lock solution that was used for the PICC.

8. IS THERE DOCUMENTATION WITHIN THE MEDICAL RECORD THAT MECHANICAL PROPHYLAXIS WAS ADMINISTERED TO THE PATIENT DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient received a mechanical form of venous thromboembolism (VTE) prophylaxis during the period of review (i.e. dates indicated). There are three (3) options for this question.

INCLUDE: All mechanical compression devices administered regardless of length (i.e. knee length or thigh length). Graduated compression stockings (GCS), intermittent pneumatic compression device (IPC), intermittent compression device (ICD), sequential compression device (SCD), venous foot pump (VFP), continuous enhanced circulation therapy (CECT), graduated TED hose.

EXCLUDE: Orders for mechanical prophylaxis without evidence of being administered.

Select one of the following:

- "Yes" if the medical record indicates that the patient received mechanical prophylaxis during the period of review.
- "No" if the medical record does not indicate that the patient received mechanical prophylaxis during the period of review.
- "Unknown" if the medical record was silent as to whether the patient received mechanical prophylaxis during the period of review.

Major Complications - Bleeding

1. DID THE PATIENT RECEIVE WHOLE BLOOD, PRBCs, PLATELETS OR A PLASMA TRANSFUSION DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient received a transfusion of whole blood, packed red blood cells (PRBCs), platelets, or plasma during the period of review. Enter only transfusions administered after the PICC was placed and until 30 days post-PICC placement or PICC removal, whichever is first. There are three (3) options for this question.

INCLUDE: Whole blood, PRBCs, platelets and plasma transfusions that were ordered and administered to the patient during the period of review.

Choose one of the following answers:

- "Yes" if the medical record indicates that the patient received whole blood, PRBCs, platelets and/or plasma transfusion(s) during the period of review.

Answer questions 1.1 through 1.3

- "No" if the medical record does not indicate that the patient received whole blood, PRBCs, platelets and/or plasma transfusion(s) during the period of review.
- "Unknown" if the medical record was silent as to whether the patient received whole blood, PRBCs, platelets and/or plasma transfusion(s) during the period of review.

1.1. DID THE PATIENT RECEIVE WHOLE BLOOD OR A PRBC TRANSFUSION DURING THE PERIOD OF REVIEW?

INCLUDE: Whole blood or PRBC transfusions that were ordered and administered to the patient during the period of review.

Select one of the following:

- "Yes" if the medical record indicates that the patient received whole blood or PRBC transfusion(s) during the period of review. **Answer questions 1.1.1 through 1.1.4**
- "No" if the medical record does not indicate that the patient received whole blood or PRBC transfusion(s) transfusion during the period of review.
- "Unknown" if the medical record was silent as to whether the patient received whole blood or PRBC transfusion(s) during the period of review.

1.1.1. HOW MANY UNITS (CUMULATIVE) OF WHOLE BLOOD AND PRBCs WAS THE PATIENT ADMINISTERED DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine how many cumulative (i.e., the total number) units of whole blood and PRBCs were administered (i.e. ordered and given) during the period of review. There are five (5) options for this question.

INCLUDE: Only include units of whole blood or PRBCs that were transfused.

EXCLUDE: Units of whole blood or PRBCs that were ordered, but not administered.

Select one of the following:

- "1" if the medical record indicates that the patient received one (1) unit of whole blood or PRBCs during the period of review.
- "2" if the medical record indicates that the patient received two (2) units of whole blood and/or PRBCs during the period of review.
- "3" if the medical record indicates that the patient received three (3) units of whole blood and/or PRBCs during the period of review.
- "4" if the medical record indicates that the patient received four (4) units of whole blood or PRBCs during the period of review.

- "5+" if the medical record indicates that the patient received five or more (5+) units of whole blood and/or PRBCs during the period of review.
- "Unknown" if the medical record is silent as the number of units of whole blood and/or PRBCs administered during the period of review.

1.1.2. DATE OF FIRST WHOLE BLOOD/PRBC TRANSFUSION

Instructions: Review the medical record to determine the date of the first whole blood or PRBCs transfusion that was administered during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.1.3. WERE ANY OF THE WHOLE BLOOD/PRBC TRANSFUSIONS ADMINISTERED THROUGH THE PICC?

Instructions: Review the medical record to determine if any of the units of whole blood or PRBCs transfused during the period of review were administered (i.e., given) through the PICC of interest. This information is likely to be found on the medication administration record (MAR) or within the nursing documentation. There are three (3) options for this question.

INCLUDE: Documentation that one or more units of whole blood or PRBCs were administered through the PICC of interest during the period of review.

EXCLUDE: Whole blood or PRBCs that were administered through a peripheral IV, port, or CVC that is not the PICC of interest.

Select one of the following answers:

- "Yes" if the medical record indicates that any of the units of whole blood or PRBCs were administered through the PICC of interest.
- "No" if the medical record does not indicate that any of the units of whole blood or PRBCs were administered through the PICC of interest.
- "Unknown" if the medical record was silent as to whether the whole blood or PRBCs were administered through the PICC of interest.

1.1.4. INDICATE THE REASON(S) FOR THE WHOLE BLOOD/PRBC TRANSFUSION(S)

Instructions: Review the medical record for the reason(s) given for the whole blood/PRBC transfusion(s).

Check any that apply:

- "Bleeding" if the medical record indicates that the patient received a whole blood or PRBC transfusion for bleeding.

INCLUDE: Bleeding related to hemorrhage or hematoma. Examples of bleeding may include epistaxis, gastrointestinal (GI) bleed, genitourinary (GU) bleed, hemoptysis, intracranial hemorrhage.

- *"Anemia (Chronic Illness)"* if the medical record indicates the patient received a whole blood or PRBC transfusion for anemia.

INCLUDE: Examples may include pancytopenia secondary to chemotherapy.

- *"Hemolysis"* if the medical record indicates the patient received a whole blood or PRBC transfusion for hemolysis.

- *"Other"* if the patient received a whole blood or PRBC transfusion for something other than what is listed above.

INCLUDE: Examples may include Disseminated Intravascular Coagulopathy (DIC).

FOR OTHER, PLEASE SPECIFY

Instructions: Free text the reason specified for the whole blood/PRBC transfusion(s).

1.2. DID THE PATIENT RECEIVE A PLATELET TRANSFUSION DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient received a platelet transfusion during the period of review.

INCLUDE: Platelet transfusions that were ordered and administered to the patient during the period of review.

Select one of the following:

- *"Yes"* if the medical record indicates that the patient received a platelet transfusion(s) during the period of review. **Answer questions 1.2.1 and 1.2.2**
- *"No"* if the medical record does not indicate that the patient received a platelet transfusion(s) during the period of review.
- *"Unknown"* if the medical record was silent as to whether the patient received a platelet transfusion(s) during the period of review.

1.2.1. DATE OF FIRST PLATELET TRANSFUSION

Instructions: Review the medical record to determine the date of the first platelet transfusion that was administered during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.2.2. WERE ANY OF THE PLATELET TRANSFUSIONS ADMINISTERED THROUGH THE PICC?

Instructions: Review the medical record to determine if any of the units of platelets transfused during the period of review were administered (i.e., given) through the PICC of interest. This information is likely to be found on the medication administration record (MAR) or within the nursing documentation. There are three (3) options for this question.

INCLUDE: Documentation that one or more units of platelets were administered through the PICC of interest during the period of review.

EXCLUDE: Platelets that were administered through a peripheral IV, port, or CVC that is not the PICC of interest.

Select one of the following answers:

- "Yes" if the medical record indicates that any of the units of platelets were administered through the PICC of interest.
- "No" if the medical record does not indicate that any of the units of platelets were administered through the PICC of interest.
- "Unknown" if the medical record was silent as to whether or not any of the units of platelets were administered through the PICC of interest.

1.3. DID THE PATIENT RECEIVE A PLASMA TRANSFUSION DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient received a plasma transfusion during the period of review.

INCLUDE: Plasma transfusions that were ordered and administered to the patient during the period of review.

EXCLUDE: Plasmapheresis, cryoprecipitate transfusion, intravenous immunoglobulin (IVIG).

Select one of the following:

- "Yes" if the medical record indicates that the patient received a plasma transfusion(s) during the period of review. **Answer questions 1.3.1 and 1.3.2**
- "No" if the medical record does not indicate that the patient received a plasma transfusion(s) during the period of review.
- "Unknown" if the medical record was silent as to whether the patient received a plasma transfusion(s) during the period of review.

1.3.1. DATE OF FIRST PLASMA TRANSFUSION

Instructions: Review the medical record to determine the date of the first plasma transfusion that was administered during the period of review. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.3.2. WERE ANY OF THE PLASMA TRANSFUSIONS ADMINISTERED THROUGH THE PICC?

Instructions: Review the medical record to determine if any of the units of plasma transfused during the period of review were administered (i.e., given) through the PICC of interest. This information is likely to be found on the medication administration record (MAR) or within the nursing documentation. There are three (3) options for this question.

INCLUDE: Documentation that one or more units of plasma were administered through the PICC of interest during the period of review.

EXCLUDE: Plasma transfusions that were administered through a peripheral IV, port, or CVC that is not the PICC of interest.

Select one of the following:

- "Yes" if the medical record indicates that any of the units of plasma were administered through the PICC of interest.
- "No" if the medical record does not indicate that any of the units of plasma were administered through the PICC of interest.
- "Unknown" if the medical record was silent as to whether any of the units of plasma were administered through the PICC of interest.

Major Complications - VTE

1. WAS THE PATIENT DIAGNOSED WITH A CONFIRMED OR SUSPECTED DEEP VEIN THROMBOSIS (DVT) DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient was diagnosed with a deep vein thrombosis (DVT) during the period of review (i.e., dates indicated). DVT may occur in the upper extremities and/or lower extremities. There are three (3) options for this question.

INCLUDE: Documentation of a new diagnosis of DVT (or DVT extension) in one or more of the deep veins of the lower extremity (common iliac vein, internal iliac vein, external iliac vein, common femoral vein, deep femoral (profunda femoris) vein, femoral vein, popliteal vein, gastrocnemius vein, anterior tibial vein, soleus (soleal sinus) vein, peroneal vein, tibioperoneal vein, posterior tibial vein and/or the upper extremity (subclavian vein, axillary vein, brachial vein, radial vein, ulnar vein, innominate vein [brachiocephalic]). Documentation of a mural thrombus in one of

these veins. DVTs that are present at the time of PICC placement but show additional vein involvement or extension during the period of review should be included.

Note: Include new or worsening DVTs documented as suspected or confirmed from 2 days after PICC placement through the day after PICC removal, or 30 days after PICC placement, whichever occurs first.

EXCLUDE: DVTs present at the time of PICC placement, which includes those diagnosed the day before PICC placement, the day of PICC insertion, or the day after PICC insertion. These should be captured in the Medical History section as “present at the time of PICC placement”. Superficial veins of the upper and lower extremities (cephalic vein, median cephalic vein, basilic vein, median cubital vein, median forearm vein, greater saphenous vein, lesser saphenous vein), internal/external jugular thrombosis, clots located within central venous catheters (CVCs) (even if the CVC is located within a deep vein, as long as the clot is only within the catheter, e.g., pericatheter thrombus), and hepatic/renal/splenic/mesenteric thromboses, arterial occlusions. Suspected DVTs should not be included if the DVT was ruled out by diagnostic testing (i.e., diagnostic testing was negative).

Select one of the following:

- “Yes” if the medical record indicates that the patient was diagnosed with a DVT during the period of review. **Answer questions 1.1 through 1.6**
- “No” if the medical record does not indicate that the patient was diagnosed with a DVT during the period of review.
- “Unknown” if the medical record is silent as to whether the patient was diagnosed with a DVT during the period of review.

1.1 WAS THE DEEP VEIN THROMBOSIS (DVT):

Instructions: Review the medical record to determine the type of DVT recorded.

Select one of the following:

- “Confirmed” if the medical record indicates that the deep vein thrombosis (DVT) was confirmed via diagnostic imaging.
- “Suspected” if the medical record indicates that the deep vein thrombosis (DVT) was not confirmed via diagnostic imaging; however, it was highly suspicious given the clinical scenario.

1.2 DATE OF THE FIRST CONFIRMED/SUSPECTED DVT

Instructions: Review the medical record to determine the date that the DVT was diagnosed. This is likely to be found on a diagnostic study report (i.e., Doppler

study, CT, etc.) or within the progress notes. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.3 WHAT TEST(S) WERE USED FOR THE DIAGNOSIS OF THE CONFIRMED/SUSPECTED DVT?

Instructions: Review the medical record to determine which test(s) were used to confirm the diagnosis of the DVT. If more than one test was used, check all tests that apply. There are seven (7) options for this question.

Select all that apply:

- *"Computerized Tomography Scan (CT)"* if the medical record indicates that the DVT was diagnosed via CT scan.
INCLUDE: Computerized Tomography Scan (CT), computed tomography, CAT scan, CT scan
- *"Magnetic Resonance Imaging (MRI)"* if the medical record indicates that the DVT was diagnosed via Magnetic Resonance Imaging (MRI).
- *"Venogram"* if the medical record indicates that the DVT was diagnosed via venogram.
INCLUDE: venogram, phlebography
- *"Ultrasound with doppler"* if the medical record indicates that the DVT was diagnosed via ultrasound with doppler.
INCLUDE: Ultrasound with doppler, doppler ultrasound, duplex ultrasound, venous doppler ultrasound
- *"Ultrasound without doppler"* if the medical record indicates that the DVT was diagnosed via ultrasounds without doppler.
INCLUDE: ultrasound, compression ultrasound.
- *"None of the above"* if the medical record indicates that none of the above methods were used to diagnose the DVT.
- *"Unknown"* if the medical record is silent as to the test used for the diagnosis of the DVT.

1.4 INDICATE THE LOCATION OF THE CONFIRMED/SUSPECTED DVT

Instructions: Review the medical record to determine the location of the DVT. If more than one location is involved, check all that apply. There are five (5) options for this question.

Select all that apply:

- *"Right Lower Extremity"* if the medical record indicates that the DVT was located in one or more of the deep veins of the right lower extremity.

INCLUDE: Only include lower extremity DVTs in the right common iliac vein, internal iliac vein, external iliac vein, common femoral vein, deep femoral (profunda femoris) vein, femoral vein, popliteal vein, gastrocnemius vein, anterior tibial vein, soleus (soleal sinus) vein, peroneal vein, and/or posterior tibial vein. **Answer question 1.4.1**

- "Left Lower Extremity" if the medical record indicates that the DVT was located in one or more of the deep veins of the left lower extremity.
INCLUDE: Only include lower extremity DVTs in the left common iliac vein, internal iliac vein, external iliac vein, common femoral vein, deep femoral (profunda femoris) vein, femoral vein, popliteal vein, gastrocnemius vein, anterior tibial vein, soleus (soleal sinus) vein, peroneal vein, and/or posterior tibial vein. **Answer question 1.4.1**
- "Right Upper Extremity" if the medical record indicates that the DVT was located in one or more of the deep veins of the right upper extremity.
INCLUDE: Only include upper extremity DVTs in the right subclavian vein, axillary vein, brachial vein, radial vein, ulnar veins, and/or innominate (brachiocephalic). **Answer question 1.4.2**
- "Left Upper Extremity" if the medical record indicates that the DVT was located in one or more of the deep veins of the left upper extremity.
INCLUDE: Only include upper extremity DVTs in the left subclavian vein, axillary vein, brachial vein, radial vein, ulnar veins, and/or innominate vein (brachiocephalic). **Answer question 1.4.2**
- "Unknown" if the medical record is silent as to the location of the DVT

1.4.1. FOR LOWER EXTREMITIES, INDICATE THE VEIN(S) INVOLVED

Instructions: Review the medical record to determine the vein in which the DVT was located. If more than one DVT was found, check all that apply. There are thirteen (13) options for this question.

Select all that apply:

- "Common iliac" if the medical record indicates that the DVT of the lower extremity was within in the common iliac vein.
- "Internal iliac" if the medical record indicates that the DVT of the lower extremity was within the internal iliac vein.
- "External iliac" if the medical record indicates that the DVT of the lower extremity was within the external iliac vein.
- "Common femoral" if the medical record indicates that the DVT of the lower extremity was within the common femoral vein.
INCLUDE: *Diagnosis of a DVT in the superficial femoral vein.*

- *"Deep femoral"* if the medical record indicates that the DVT of the lower extremity was within the deep femoral vein.
- *"Deep femoral"* if the medical record indicates that the DVT of the lower extremity was within the deep femoral vein.
- *"Femoral"* if the medical record indicates that the DVT of the lower extremity was within the femoral vein.
- *"Popliteal"* if the medical record indicates that the DVT of the lower extremity was within the popliteal vein.
- *"Gastrocnemius"* if the medical record indicates that the DVT of the lower extremity was within the gastrocnemius vein.
- *"Anterior Tibial"* if the medical record indicates that the DVT of the lower extremity was within the anterior tibial vein.
- *"Soleus"* if the medical record indicates that the DVT of the lower extremity was within the soleus vein.
- *"Peroneal"* if the medical record indicates that the DVT of the lower extremity was within the peroneal vein.
INCLUDE: Tibioperoneal vein
- *"Posterior Tibial"* if the medical record indicates that the DVT of the lower extremity was within the posterior tibial vein.
- *"Unknown"* if the medical record was silent as to the vein which the lower extremity DVT was in.

1.4.2. FOR UPPER EXTREMITIES, INDICATE THE VEIN(S) INVOLVED

Instructions: Review the medical record to determine the upper extremity vein in which the DVT was located. If more than one DVT was found, check all that apply. There are seven (7) options for this question.

Select all that apply:

- *"Subclavian"* if the medical record indicates that the DVT of the upper extremity was within the subclavian vein.
- *"Brachial"* if the medical record indicates that the DVT of the upper extremity was within the brachial vein.
- *"Axillary"* if the medical record indicates that the DVT of the upper extremity was within the axillary vein.
- *"Ulnar"* if the medical record indicates that the DVT of the upper extremity was within the ulnar vein.
- *"Innominate"* if the medical record indicates that the DVT of the upper extremity was within the innominate vein.
INCLUDE: Brachiocephalic vein

- *"Radial"* if the medical record indicates that the DVT of the upper extremity was within the radial vein.
- *"Unknown"* if the medical record was silent as to the vein which the upper extremity DVT was in.

1.5. DID THE PATIENT HAVE ANY OF THE FOLLOWING SYMPTOMS?

Instructions: Review the medical record to determine if the patient the patient had any symptoms associated with the DVT (i.e., was the patient symptomatic). There are seven (7) options for this question.

Note: Only review for symptoms through the day after PICC removal if DVT occurred the day after PICC removal.

Select all that apply:

- *"Pain"* if the medical record indicates that the patient had pain in the extremity or extremities with the DVT.
INCLUDE: Any rating of pain in the extremity or extremities diagnosed with DVT. Pain also may be described as stabbing, throbbing, burning, aching, etc.
- *"Swelling"* if the medical record indicates that the patient had swelling in the extremity or extremities with the DVT.
INCLUDE: Any documentation of swelling, edema, or edematous in the extremity or extremities diagnosed with DVT
- *"Redness"* if the medical record indicates that the patient had redness in the extremity or extremities with the DVT.
INCLUDE: Any documentation of redness or erythema in the extremity or extremities diagnosed with DVT
- *"Tenderness"* if the medical record indicates that the patient had tenderness in the extremity or extremities with the DVT.
INCLUDE: Any documentation of tenderness or discomfort when the affected extremity or extremities (i.e., the extremity with DVT) are touched.
- *"PICC malfunction"* if the medical record indicates that the patient had PICC malfunction in the extremity with the DVT.
INCLUDE: Any documentation that the patient had PICC malfunctioning in the extremity with the DVT. PICC malfunction may include inability to flush the PICC, kinking of the PICC, leaking at the insertion site, etc.
- *"No symptoms indicated"* if the medical record indicates that the patient did not have any of the above symptoms.
- *"Unknown"* if the medical record was silent as to any symptoms in the extremity or extremities with the DVT.

1.6. INDICATE THE CLASSIFICATION OF DVT FROM THE TEST RESULT

Instructions: Review the medical record to determine the classification of the DVT as reported per the test result (i.e., CT result, doppler result, etc.). If more than one DVT was found, the patient may have more than one classification of DVT, so you should select all options that apply. For example, a patient may have a chronic DVT in a lower extremity with the presence of an additional acute clot somewhere else. There are three (3) options for this question.

Select all that apply:

- *"Acute"* if the medical record indicates that the DVT was acute.
- *"Chronic"* if the medical record indicates that the DVT was chronic.
- *"Unknown"* if the medical record is silent as to whether the DVT was acute or chronic.

1.7. WHICH OF THE FOLLOWING WERE ORDERED FOR TREATMENT?

Instructions: Review the medical record to determine which of the following treatments were used to treat the patient's DVT, if any. If more than one treatment was used, check all that apply. There are nine (9) options for this question.

Note: Only review for treatment through the day after PICC removal if DVT occurred the day after PICC removal.

Select all that apply:

- *"Catheter Directed Thrombolysis"* if the medical record indicates that the patient received catheter directed thrombolysis.
INCLUDE: Catheter directed thrombolysis (CDT), percutaneous procedure with the administration of a lytic directly into the clot through a catheter
- *"IVC Filter Placed"* if the medical record indicates that the patient had an IVC filter placed.
INCLUDE: Inferior Vena Cava (IVC) filter, Greenfield IVC filter
- *"SVC Filter Placed"* if the medical record indicates that the patient had a SVC filter placed.
INCLUDE: Superior vena cava (SVC) filter, Greenfield SVC filter
- *"Intravenous Thrombolysis"* if the medical record indicates that the patient received intravenous thrombolysis.
INCLUDE: Intravenous thrombolysis, Intravenous fibrinolytic therapy, thrombolytic therapy with a drug such as tPA
- *"Systemic Anticoagulation"* if the medical record indicates that the patient received systemic anticoagulation.

INCLUDE: New orders for an anticoagulant (i.e. warfarin, lovenox, heparin gtt etc.) following DVT diagnosis.

- *"Already Receiving Treatment Anticoagulant"* if the medical record indicates the patient was already receiving systemic anticoagulation and no additional anticoagulant was to be ordered for treatment of the DVT.

INCLUDE: Select this option if a patient was already receiving a treatment dose of an anticoagulant and no additional anticoagulant was to be ordered for treatment of the DVT.

- *"PICC Removal"* if the medical record indicates that the patient had their PICC removed.

INCLUDE: Documentation that the PICC was removed because of the DVT diagnosis.

- *"Other"* if the medical record indicates that the patient had a treatment not indicated above.
- *"No Treatment Ordered"* if the medical record indicates that there was no treatment ordered.
- *"Unknown"* if the medical record is silent as to the treatment used for the DVT.

2. WAS THE PATIENT DIAGNOSED WITH A CONFIRMED OR SUSPECTED PULMONARY EMBOLISM (PE) DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient was diagnosed with a pulmonary embolism (PE) during the period of review (i.e., dates indicated).

There are three (3) options for this question.

INCLUDE: A new pulmonary embolism (PE) diagnosed during the period of review

Note: Include PEs documented as suspected or confirmed through the day after PICC removal.

EXCLUDE: PEs present at the time of PICC placement, which includes those diagnosed the day before PICC placement, the day of PICC insertion, or the day after PICC insertion. These should be captured in the Medical History section as "present at the time of PICC placement". Non-blood clot emboli such as septic pulmonary emboli. Suspected PEs should not be included if the PE was ruled out by diagnostic testing (i.e., diagnostic testing was negative).

Select one of the following:

- *"Yes"* if the medical record indicates that the patient was diagnosed with a PE during the period of review. **Answer questions 2.1 through 2.4**
- *"No"* if the medical record does not indicate that the patient was diagnosed with a PE during the period of review.

- *"Unknown"* if the medical record is silent as to whether the patient was diagnosed with a PE during the period of review.

2.1. WAS THE PULMONARY EMBOLISM (PE):

- *"Confirmed"* if the medical record indicates that the pulmonary embolism (PE) was confirmed via diagnostic imaging.
- *"Suspected"* if the medical record indicates that the pulmonary embolism (PE) was not confirmed via diagnostic imaging; however, a PE is highly suspicious given the clinical scenario.

2.2. DATE OF THE FIRST CONFIRMED/SUSPECTED PE

Instructions: Review the medical record to determine the date that the pulmonary embolism (PE) was diagnosed. This is likely to be found on a diagnostic study report (i.e., CT, MRI, etc.) or within the progress notes. Enter the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

2.3. WHAT TEST(S) WERE USED FOR THE DIAGNOSIS OF THE CONFIRMED/SUSPECTED PE?

Instructions: Review the medical record to determine which test(s) were used to confirm the diagnosis of the PE. If more than one test was used, check all tests that apply. There are seven (7) options for this question.

Select all that apply:

- *"Computerized Tomography Scan (CT)"* if the medical record indicates that the PE was diagnosed via CT scan.
INCLUDE: Computerized Tomography Scan (CT), computed tomography, CAT scan, CT scan
- *"Magnetic Resonance Imaging (MRI)"* if the medical record indicates that the PE was diagnosed via Magnetic Resonance Imaging (MRI).
- *"Ventilation/Perfusion scan"* if the medical record indicates that the PE was diagnosed via ventilation/perfusion scan.
INCLUDE: Ventilation/perfusion scan, V/Q scan
- *"Pulmonary venogram"* if the medical record indicates that the PE was diagnosed via pulmonary venogram.
INCLUDE: Pulmonary venogram, pulmonary angiography
- *"Other"* if the medical record indicates that the PE was diagnosed via a test not indicated above.
- *"None of the above"* if the medical record indicates that none of the methods above were used to diagnose the PE.

- *"Unknown"* if the medical record is silent as to the test used for the diagnosis of the PE.

2.4. DID THE PATIENT HAVE ANY OF THE FOLLOWING SYMPTOMS?

Instructions: Review the medical record to determine if the patient had any symptoms associated with the PE (i.e., was the patient symptomatic). There are seven (7) options for this question.

Note: Only review for symptoms through the day after PICC removal if PE occurred the day after PICC removal.

Select all that apply:

- *"Chest pain"* if the medical record indicates that the patient had chest pain associated with the diagnosis of PE.
INCLUDE: Documentation that the patient experienced chest pain or angina at the time of PE diagnosis.
- *"Shortness of Breath"* if the medical record indicates that the patient had shortness of breath associated with the diagnosis of PE.
INCLUDE: Documentation that the patient experienced shortness of breath (SOB) or difficulty breathing (DIB) at the time of PE diagnosis.
- *"Cardiogenic Shock"* if the medical record indicates that the patient had cardiogenic shock associated with the diagnosis of PE.
INCLUDE: Documentation that the patient experienced cardiogenic shock at the time of PE diagnosis.
- *"Hemoptysis"* if the medical record indicates that the patient had hemoptysis associated with the diagnosis of PE.
INCLUDE: Documentation that the patient experienced hemoptysis (i.e., spitting up blood, blood in sputum) at the time of PE diagnosis.
- *"Hypoxia"* if the medical record indicates that the patient had hypoxia associated with the diagnosis of PE.
INCLUDE: Documentation that the patient experienced hypoxia (i.e., oxygen deprivation, low oxygen saturation) at the time of PE diagnosis.
- *"No symptoms indicated"* if the medical record indicates that the patient did not have any symptoms associated with the diagnosis of PE.
- *"Unknown"* if the medical record is silent as to whether the patient experienced symptoms associated with the diagnosis of PE.

2.5. WHICH OF THE FOLLOWING WERE ORDERED FOR TREATMENT?

Instructions: Review the medical record to determine which of the following treatments were used to treat the patient's PE. If more than one treatment was

used, check all that apply. There are ten (10) options for this question.

Note: Only review for treatment through the day after PICC removal if PE occurred the day after PICC removal.

Select all that apply:

- *"Catheter Directed Thrombolysis"* if the medical record indicates that the patient received catheter directed thrombolysis.
INCLUDE: Catheter directed thrombolysis (CDT), percutaneous procedure with the administration of a lytic directly into the clot through a catheter
- *"IVC Filter Placed"* if the medical record indicates that the patient had an IVC filtered placed.
INCLUDE: Inferior Vena Cava (IVC) filter, Greenfield IVC filter
- *"SVC Filter Placed"* if the medical record indicates that the patient had an SVC filter placed.
INCLUDE: Superior vena cava (SVC) filter, Greenfield SVC filter
- *"Intravenous Thrombolysis"* if the medical record indicates that the patient received intravenous thrombolysis.
INCLUDE: Intravenous thrombolysis, Intravenous fibrinolytic therapy, thrombolytic therapy with a drug such as tPA
- *"Systemic Anticoagulation"* if the medical record indicates that the patient received systemic anticoagulation.
INCLUDE: A new order for an anticoagulant (i.e., warfarin, lovenox, etc.) following diagnosis of the PE.
- *"Already Receiving Treatment Anticoagulant"* if the medical record indicates the patient was already receiving systemic anticoagulation and no additional anticoagulant was to be ordered for treatment of the PE.
INCLUDE: Select this option if a patient was already receiving a treatment dose of an anticoagulant and no additional anticoagulant was to be ordered for treatment of the PE.
- *"PICC Removal"* if the medical record indicates that the patient had their PICC removed.
INCLUDE: Documentation that the PICC was removed because of the PE diagnosis
- *"Other"* if the medical record indicates that the patient had a treatment for their PE not indicated above.
- *"No Treatment Ordered"* if the medical record indicates that there was no treatment ordered for the PE.
- *"Unknown"* if the medical record is silent as to the treatment ordered for the PE.

Major Complications - CLABSI

1. DID THE MEDICAL RECORD REFLECT THE DIAGNOSIS OF A CENTRAL LINE- ASSOCIATED BLOOD STREAM INFECTION (CLABSI) RELATED TO THE PICC LINE DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient had a diagnosis of a central line-associated blood stream infection (CLABSI) related to the PICC line during the period of review (i.e. dates indicated). There are three (3) options for this question.

INCLUDE: Documentation that the patient had a diagnosis of central line-associated blood stream infection (CLABSI) within the period of review.

Note: Include diagnosis of CLABSI related to the PICC line documented through the day after PICC removal or 30 days after PICC placement, whichever is first.

EXCLUDE: Blood stream infections (BSI) secondary to an infection at another site.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a diagnosis of central line associated blood stream infection (CLABSI) within the period of review.

Answer question 1.1

- “No” if the medical record does not indicate that the patient had a diagnosis of CLABSI within the period of review.
- “Unknown” if the medical record was silent as to whether the patient had a diagnosis of CLABSI during the period of review.

1.1. DATE OF DIAGNOSIS OF CLABSI:

Instructions: Review the medical record to determine the date of the CLABSI diagnosis during the period of review. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

2. DID THE MEDICAL RECORD REFLECT THE DIAGNOSIS OF LINE SEPSIS OR BACTEREMIA RELATED TO THE PICC LINE DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient had a diagnosis of line sepsis or bacteremia related to the PICC line during the period of review (i.e.

dates indicated). There are three (3) options for this question.

INCLUDE: PICC line infection/Peripherally Inserted Catheter Line infection

Note: Include diagnosis of line sepsis or bacteremia related to the PICC line documented through the day after PICC removal or 30 days after PICC placement, whichever is first.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a diagnosis of line sepsis or bacteremia related to the PICC line within the period of review. ***Answer question 2.1***
- “No” if the medical record does not indicate that the patient had a diagnosis of line sepsis or bacteremia related to the PICC line within the period of review.
- “Unknown” if the medical record was silent as to whether the patient had a diagnosis of line sepsis or bacteremia related to the PICC line during the period of review.

2.1. DATE OF DIAGNOSIS OF LINE SEPSIS OR BACTEREMIA:

Instructions: Review the medical record notes to determine the date of the line sepsis or bacteremia diagnosis during the period of review. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

3. DID THE PATIENT HAVE BLOOD CULTURE(S) COLLECTED IN THE 14 DAYS PRIOR TO PICC PLACEMENT THROUGH DAY 30, DEATH, OR 2 DAYS AFTER PICC REMOVAL (WHICHEVER COMES FIRST)?

Instructions: Review the medical record to determine if the patient had any positive or negative blood culture(s) collected during the period of review (go by the date of blood culture collection, not culture completion date). The period of review is defined as 14 days prior to PICC placement through day 30, death, or two days after PICC removal (whichever occurred first)

Select one of the following:

- “Yes” if the medical record indicates that the patient had blood cultures collected during the period of review. ***Answer questions 3.1. and 3.2***
- “No” if the medical record does not indicate that the patient had blood cultures collected during the period of review.
- “Unknown” if the medical record was silent as to whether the patient had blood cultures collected during the period of review.

3.1. DID THE PATIENT HAVE A POSITIVE BLOOD CULTURE COLLECTED 14 DAYS PRIOR TO PICC PLACEMENT THROUGH DAY 30, DEATH OR 2 DAYS

AFTER PICC REMOVAL (WHICHEVER OCCURS FIRST)?

Instructions: Review the medical record to determine if the patient had a positive blood culture(s) collected during the period of review (go by the date of blood culture collection, not culture completion date). The period of review is defined as 14 days prior to PICC placement through day 30, death, or two days after PICC removal (whichever occurred first). The blood is cultured in the lab to see if there are any pathogens in the blood and, if a pathogen is identified, it is considered positive and may be sent for culture and susceptibility testing (C&S). Then, further tests are done to identify the specific type of pathogen, which helps to determine the best course of treatment. Blood cultures are usually collected in sets (each set consisting of aerobic & anaerobic vials) and are ordered in multiple sets drawn from different sites (for example, right antecubital & left antecubital). Blood cultures are also ordered from peripheral veins (e.g., arm veins) or from the central line (catheter cultures). There are three (3) options for this question.

INCLUDE: Documentation of one or more positive blood cultures with a recognized pathogen (i.e. microorganism) during the period of review.

EXCLUDE: Cultures that yield no growth or no growth to date (NGTD).

Select one of the following:

- "Yes" if the medical record indicates that the patient had blood cultures collected during the period of review. ***Complete a Blood Culture form for each positive culture drawn during the period of review.***
- "No" if the medical record does not indicate that the patient had blood cultures collected during the period of review.
- "Unknown" if the medical record was silent as to whether the patient had blood cultures collected during the period of review.

3.2. HOW MANY NEGATIVE BLOOD CULTURES WERE COLLECTED IN THE 14 DAYS PRIOR TO PICC PLACEMENT THROUGH DAY 30, DEATH OR 2 DAYS AFTER PICC REMOVAL (WHICHEVER COMES FIRST)?

Instructions: Review the medical record to determine how many negative blood culture(s) were collected during the period of review (go by the date of blood culture collection, not culture completion date). The period of review is defined as 14 days prior to PICC placement through day 30, death, or two days after PICC removal (whichever occurred first).

Instructions: Use free text to indicate the number of negative blood cultures collected during the period of review. The period of review is defined as 14 days prior to PICC placement through day 30, death, or two days after PICC removal (whichever occurred first).

4. DID THE PATIENT HAVE A PICC TIP SENT FOR CULTURE?

Instructions: This question will only appear if you indicated that the PICC has been removed. Review the medical record to determine if the patient had the PICC tip (i.e. of the PICC being abstracted) sent for microbiological culture during the period of review. This information is likely to be found in the physician progress notes, vascular nursing notes, and/or laboratory (i.e. microbiology) information. There are three (3) options for this question.

INCLUDE: Documentation and/or order for the PICC tip to be sent for culture.

Laboratory results of the PICC tip (i.e. of the PICC being abstracted) culture.

Select one of the following:

- “Yes” if the medical record indicates that the patient had their PICC tip sent for culture. **Answer question 4.1**
- “No” if the medical record does not indicate that the patient had their PICC tip sent for culture.
- “Unknown” if the medical record was silent as to whether the patient had their PICC tip cultured.

4.1. WAS THE PICC TIP CULTURE RESULT POSITIVE?

Instructions: Review the medical record to determine if the PICC tip culture was positive (i.e. the culture was positive for pathogen growth) during the period of review. There are three (3) options for this question.

INCLUDE: Physician documentation of a positive culture of the PICC tip, or laboratory result that indicates that the PICC tip was positive for a pathogen

Select one of the following:

- “Yes” if the medical record indicates that the patient had a positive PICC tip culture result. **Answer questions 4.1.1 through 4.1.3**
- “No” if the medical record does not indicate that the patient had a positive PICC tip culture result.
- “Unknown” if the medical record was silent as to whether the patient had a positive PICC tip culture result.

4.1.1. POSITIVE PICC TIP CULTURE - DATE OF CULTURE

Instructions: Review the medical record to determine the date of collection of the positive PICC tip culture (i.e. date the culture was drawn). Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown

4.1.2. POSITIVE PICC TIP CULTURE - PATHOGEN IDENTIFIED

Instructions: Review the medical record to determine the pathogen identified on the PICC tip culture. Pathogens are classified by genus and species. The genus and species of the pathogen will likely be found on the laboratory report; however, they may also be found within the progress notes. First, indicate the genus, which is the broad or the generic name. Once the genus is selected, you will be prompted to indicate the species.

Select one of the following:

- "Achromobacter"
- "Acinetobacter"
- "Actinomyces"
- "Aerobacter"
- "Aerococcus"
- "Aeromonas"
- "Alcalignes"
- "Alpha-hemolytic Streptococcus, not *S. pneumoniae*"
- "Arachnia"
- "Arcanobacterium"
- "Arthrobacter"
- "Aspergillus"
- "Bacillus"
- "Bacterionema"
- "Bacteroides"
- "Bordetella"
- "Branhamella"
- "Brevibacillus"
- "Brevibacterium"
- "Burkholderia"
- "Candida"
- INCLUDE: Yeast and *Torulopsis Glabrata*
- "Citrobacter"
- "Clostridium"
- "Corynebacterium"
- "Coryneform"
- "Cupriavidus"
- "Dermabacter"
- "Dermacoccus"
- "Diphtherioids"
- "Elizabethkingia"

- "Enterobacter"
- "Enterococcus"
- "Escherichia"
- "Francisella"
- "Friedlander's"
- "Fusobacterium"
- "Gordonia"
- "Granulicatella"
- "Haemophilus"
- "Histoplasma"
- "Klebsiella"
- "Kluyvera"
- "Kocuria"
- "Legionella"
- "Levinea"
- "Listeria"
- "Micrococcus"
- "Microbacterium"
- "Monilia"
- "Moraxella"
- "Morganella"
- "Neisseria"
- "Nocardia"
- "Oidium"
- "Paeni"
- "Pantoea"
- "Pasteurella"
- "Pediococcus"
- "Peptostreptococcus"
- "Pneumocystis"
- "Prevotella"
- "Propioniferax"
- "Propionibacterium"
- "Providencia"
- "Proteus"
- "Pseudomonas"
- "Raoultella"
- "Rhodococcus"

- *"Rothia"*
- *"Rummeliibacillus"*
- *"Salmonella"*
- *"Sarcina"*
- *"Scedosporium"*
- *"Solibacillus"*
- *"Serratia"*
- *"Staphylococcus"*
- *"Streptococcus"*
- *"Trueparella"*
- *"Tsukamurella"*
- *"Tufted Mitior"*
- *"Turicella"*
- *"Viridans Group Streptococci"*
- *"Yersina"*
- *"Stenotrophomonas"*
- *"Streptococcus species"*
- *"Xanthomonas"*
- *"Other (See the CDC's complete list in the knowledge base)"*

FOR OTHER, PLEASE SPECIFY

Instructions: Do not use the selection "Other" until you have contacted the coordinating center for guidance. Use free text to indicate the other pathogen.

INCLUDE: Streptococcus Intermedius, Gemella Morbillorum

- *"Bacteria Not Specified"*

4.1.3. FOR THE POSITIVE PICC TIP CULTURE, WAS THERE AN ADDITIONAL PATHOGEN IDENTIFIED?

Instructions: Review the medical record to determine if there was an additional pathogen identified on the PICC tip culture.

- *"Yes"* if the medical record indicates that the patient had a second pathogen identified within the PICC tip culture. **Answer question 4.1.3.1**
- *"No"* if the medical record does not indicate that the patient had a second pathogen identified within the PICC tip culture.
- *"Unknown"* if the medical record is silent as to whether the patient had a second pathogen identified within the PICC tip culture.

4.1.3.1. POSITIVE PICC TIP CULTURE-PATHOGEN (#2) IDENTIFIED

Instructions: Review the medical record to determine if the patient had a second pathogen identified within the PICC tip culture. Repeat the steps outlined above for up to five pathogens.

Minor Complications

1. DID THE PATIENT HAVE EVIDENCE OF TIP MIGRATION?

Instructions: Review the medical record to determine if the patient had evidence of PICC tip migration (i.e. movement of the PICC tip) during the period of review (i.e. 30 days post-PICC placement or the date of PICC removal, whichever comes first). The migration or movement of PICCs within the body may occur spontaneously or as the result of patient movement (i.e. cough, emesis, etc.). Movement may cause the PICC to shift to a more peripheral or central location. There are three (3) options for this question.

INCLUDE: Documentation of PICC tip migration, documentation that more catheter length was visible outside the insertion site, X-ray results that indicate PICC tip migration. Documentation of PICC tip migration with the PICC being used as a Midline.

Select one of the following:

- “Yes” if the medical record indicates that the patient had evidence of PICC tip migration during the period of review. **Answer questions 1.1 and 1.2**
- “No” if the medical record does not indicate that the patient had evidence of PICC tip migration during the period of review.
- “Unknown” if the medical record was silent as to whether the patient had evidence of PICC tip migration during the period of review.

1.1. DATE

Instructions: Review the medical record to determine the date that PICC tip migration was first identified. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.2. IS THERE DOCUMENTATION IN THE MEDICAL RECORD THAT THE TIP MIGRATION WAS CORRECTED?

Instructions: Review the medical record to determine if there is documentation that the tip migration was corrected. There are three (3) options for this question. INCLUDE: Documentation of saline flush, guidewire exchange, PICC removal, etc. in connection with the PICC tip migration.

Select one of the following:

- *"Yes (Confirmed Corrected)"* if the medical record indicates that the PICC tip migration was corrected during the period of review. **Answer question 1.2.1**
- *"No (Confirmed Not Corrected)"* if the medical record indicates that the PICC tip migration was not corrected during the period of review.
INCLUDE: Documentation of tip migration resulting in the PICC being used as a Midline.
- *"Unknown (No Mention of Correction)"* if the medical record was silent as to whether the PICC tip migration was corrected during the period of review.

1.2.1. IF YES, WHAT INTERVENTION WAS DOCUMENTED TO ADDRESS THE PICC TIP MIGRATION?

Instructions: Review the medical record to determine what intervention(s) were utilized to address the tip migration. There are three (3) options for this question. Select all that apply.

INCLUDE: Documentation of saline flush, guidewire exchange, PICC removal, etc. in connection with the PICC tip migration.

Select one of the following:

- *"Saline Flush"* if the medical record indicates that the PICC tip migration was corrected via saline flush during the period of review.
INCLUDE: Documentation of saline flush in connection with PICC tip migration that resolves the PICC tip migration or the PICC is documented as "ok to use" after the saline flush was administered.
- *"Guidewire Exchange (Complete Exchange Form)"* if the medical record indicates that the PICC tip migration was corrected via guidewire exchange to another PICC during the period of review.
- *"PICC Removal"* if the medical record indicates that the PICC tip migration was corrected via PICC removal during the period of review.
EXCLUDE: Documentation of successful PICC guidewire exchange.
- *"Other"* if the medical record indicates that the PICC tip migration was corrected via another method during the period of review.

IF OTHER, PLEASE SPECIFY

Instructions: Free text the documented intervention used to address/correct the PICC tip migration.

- *“Unknown”* if the medical record was silent as to the type of intervention used to correct the PICC tip migration during the period of review.

2. DID THE PATIENT HAVE SUPERFICIAL THROMBOPHLEBITIS AROUND THE PICC?

Instructions: Review the medical record to determine if the patient had documentation detailing tender, swollen veins; swelling/inflammation along a vein where the catheter resides; and/or if there is documentation of "phlebitis", "superficial phlebitis", "superficial thrombophlebitis" or "superficial thrombosis" through the day after PICC removal or 30 days after PICC placement, whichever is first. There are three (3) options for this question.

INCLUDE: Healthcare professional (physician, vascular access nurse, infectious disease, home care, etc.) documentation of thrombophlebitis, superficial thrombophlebitis, or superficial thrombosis in the same extremity as the PICC, Ultrasound or venography report of superficial thrombophlebitis at PICC site, documentation of PICC removal due to superficial thrombophlebitis. Include clots in the cephalic vein, median cephalic vein, basilic vein, median cubital vein, median forearm vein, greater saphenous vein, lesser saphenous vein as superficial thrombophlebitis.

EXCLUDE: Deep vein thrombosis (i.e. thrombus/Clot in the following deep veins: subclavian, axillary, brachial, radial, ulnar, common iliac, internal iliac, external iliac, common femoral, deep femoral, femoral, popliteal, gastrocnemius, anterior tibial, soleus, peroneal, tibioperoneal, posterior tibial), cellulitis, edema without further documentation. Swelling or redness ONLY at the exit site, as this should be recorded as exit site infection.

Select one of the following:

- *“Yes”* if the medical record indicates that the patient had superficial thrombophlebitis around the PICC during the period of review. **Answer question 2.1**
- *“No”* if the medical record does not indicate that the patient had superficial thrombophlebitis around the PICC during the period of review.
- *“Unknown”* if the medical record was silent as to whether or not the patient had superficial thrombophlebitis around the PICC during the period of review.

2.1. DATE

Instructions: Review the medical record to determine the date that the superficial thrombophlebitis around the PICC was first identified. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

3. DID THE PATIENT DEVELOP AN EXIT SITE INFECTION?

Instructions: Review the medical record to determine if the patient developed a PICC exit site infection through the day after PICC removal or 30 days after PICC placement, whichever is first. Include if the medical record indicates redness, purulent discharge or granulation tissue documented at the site of the catheter exit which may also be associated with tenderness or pain; OR if there is documentation of "exit site infection," "site infection". Also include if there are cultures of discharge at the exit site of the PICC or swelling and redness at the insertion site. There are three (3) options for this question.

Select one of the following:

- "Yes" if the medical record indicates that the patient developed a PICC exit site infection during the period of review. **Answer question 3.1**
- "No" if the medical record does not indicate that the patient developed a PICC exit site infection during the period of review.
- "Unknown" if the medical record was silent as to whether the patient developed a PICC exit site infection during the period of review.

3.1. DATE

Instructions: Review the medical record to determine the date that the exit site infection was first identified. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

4. DID THE PATIENT EXPERIENCE CATHETER OCCLUSION WITHIN THE LUMEN OF THE PICC?

Instructions: Review the medical record to determine if the patient experienced catheter occlusion within one or more lumens of the PICC during the period of review (i.e. 30 days post-PICC placement or the date of PICC removal, whichever comes first). Thrombotic occlusion within the lumen(s) of the PICC is one example of a lumen occlusion and accounts for the majority of catheter occlusions. Another example is non-thrombotic occlusion that can occur when medications and other infusates precipitate within the lumen of the catheter. Lipids also have the potential to occlude catheters. There are three (3) options for this question.

INCLUDE: Fibrin clot formation inside the lumen of the PICC (intraluminal), any documentation of a thrombosis within the lumen of the PICC, or catheter occlusion from any source. Documentation may include the words "occlusion", "occluded", or "blocked", as a few examples, or inability to flush the catheter.

Note: If there is documentation of inability to flush the catheter and subsequent documentation that an individual either changed the cap or performed a more vigorous flushing technique which solved the “inability to flush”, you should not mark this as an occlusion. The caveat here is that there must be documentation in the medical record that the CAP change or more vigorous flushing technique solved the “inability to flush”.

EXCLUDE: Deep vein thrombosis (DVT), superficial thrombophlebitis, draws and flushes hard, flushes with resistance, infusion not flowing, if the only documentation is “inability to get a blood return”.

Select one of the following:

- “Yes” if the medical record indicates that the patient experienced catheter occlusion within the lumen of the PICC during the period of review. **Answer question 4.1**
- “No” if the medical record does not indicate that the patient experienced catheter occlusion within the lumen of the PICC during the period of review.
- “Unknown” if the medical record was silent as to whether the patient experienced catheter occlusion within the lumen of the PICC during the period of review.

4.1. DATE

Instructions: Review the medical record to determine the date the catheter occlusion within the lumen of the PICC was first identified. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

5. WAS A DECLOTTING PROCEDURE OF THE LINE PERFORMED?

Instructions: Review the medical record to determine if a declotting procedure of the PICC line was performed during the period of review (i.e. 30 days post-PICC placement or the date of PICC removal, whichever comes first). Declotting procedures are usually performed for either partial or complete occlusion of the PICC line. There are three (3) options for this question.

Select one of the following:

INCLUDE: Direct instillation declotting method, 3-way stopcock declotting method, declotting by thrombolytic agent (such as tPA, urokinase, streptokinase, etc.) of PICC catheter, gentle push of declotting agent or clearing agent.

EXCLUDE: Saline flushes

- “Yes” if the medical record indicates that a declotting procedure of the PICC line was performed during the period of review. **Answer questions 5.1 through 5.3**
- “No” if the medical record does not indicate that a declotting procedure of the PICC line was performed during the period of review.

- “Unknown” if the medical record was silent as to whether or not a declotting procedure of the PICC line was performed during the period of review.

5.1. DATE OF FIRST DECLOTTING PROCEDURE

Instructions: Review the medical record to determine the date that the first declotting procedure was performed during the period of review. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

5.2. CUMULATIVE NUMBER OF DECLOTTING PROCEDURES

Instructions: Review the medical record to determine the cumulative number of declotting procedures that were performed during the period of review (i.e. 30 days post-PICC placement or the date of PICC removal, whichever comes first).

Note: If a declotting procedure (ex: alteplase) is performed at one time but is inserted in multiple different lumens, this should count as one procedure.

There are five (5) options for this question.

Select one of the following:

- “1” if the medical record indicates that one (1) declotting procedure was performed during the period of review.
- “2” if the medical record indicates that two (2) declotting procedures were performed during the period of review.
- “3” if the medical record indicates that three (3) declotting procedures were performed during the period of review.
- “4” if the medical record indicates that four (4) declotting procedures were performed during the period of review.
- “5+” if the medical record indicates that five or more (5+) declotting procedures were performed during the period of review.
- “Unknown” if the medical record is silent as to the number of declotting procedures performed during the period of review.

5.3. INDICATE ALL DECLOTTING AGENTS USED

Instructions: Review the medical record to determine the declotting agent(s) used during the declotting procedure (i.e. the line clearing agent used). If more than one was used during the period of review, select all that apply. There are ten (10) options for this question.

Select all that apply:

- “Alteplase (t-PA)” if the medical record indicates that alteplase (t-PA) was a declotting agent used.

INCLUDE: Alteplase (t-PA), Activase, tissue plasminogen activator (tPA or PLAT)

- “Anistreplase” if the medical record indicates that anistreplase was a clotting agent used.

INCLUDE: Anistreplase, Eminase

- “Urokinase” if the medical record indicates that urokinase was a clotting agent used.

INCLUDE: Urokinase, Abbokinase, urokinase-type plasminogen activator (uPA)

- “Streptokinase” if the medical record indicates that streptokinase was a clotting agent used.

INCLUDE: Streptokinase (SK), Streptase

- “Retepase” if the medical record indicates that reteplase was a clotting agent used.

INCLUDE: Reteplase, Retavase, Rapilysin

- “Tenecteplase” if the medical record indicates that tenecteplase was a clotting agent used.

INCLUDE: Tenecteplase (TNK), TNKase

- “Recombinant Urokinase” if the medical record indicates that recombinant urokinase was a clotting agent used.

- “Alfimeprase” if the medical record indicates that alfimeprase was a clotting agent used.

- “Other” if the medical record indicates that a clotting agent not identified above was used.

- “Unknown” if the medical record was silent as to the clotting agent(s) that were used.

6. WERE ANY CONSULTATIONS/REFERRALS MADE TO ANY OF THE FOLLOWING DURING THE PERIOD OF REVIEW?

Instructions: Review the medical record to determine if the patient had any of the following consults or referrals ordered for additional services (i.e. a discipline other than the admitting medical physician) during the period of review. Patients often have referrals while in the hospital for special services, such as infectious disease if the patient is being treated for an infection, or are referred to their primary care physician for follow-up (f/u) if the patient is being discharged.

Note 1: If an individual is discharged during the period of review with a referral order to an additional service, this can be included.

There are six (6) options for this question.

Select all that apply:

- “Home Care” if the medical record indicates that the patient had a consult/referral made for home care.

INCLUDE: Any consult/referral for the patient to receive home care, home care nursing, supportive home care, home healthcare, home health aide, etc.

DATE

Instructions: Review the medical record to determine the date the home care consult was ordered or the date of the home care note during the period of review or within 5 days prior to the PICC placement. If there is more than one consult or note, enter the date of the note that is closest and prior to the date of PICC placement. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- “Infectious Disease” if the medical record indicates that the patient had a consult/referral for infectious disease. **Answer question 6.1**

INCLUDE: Inpatient or outpatient referral/consult for Infectious Disease (ID) or an Infectious Disease Specialist.

Note: If an infectious disease consult was ordered or there is an infectious disease note in the medical record within the 5 days prior to PICC placement please select “Infectious Disease” even though it is prior to the period of review.

DATE

Instructions: Review the medical record to determine the date the infectious disease consult was ordered or the date of the infectious disease note during the period of review or within the 5 days prior the PICC placement. If there is more than one consult or note, enter the date of the note that is closest and prior to the date of PICC placement. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- “Nephrology” if the medical record indicates that the patient had a consult/referral for a nephrologist. **Answer question 6.2**

INCLUDE: Inpatient or outpatient referral/consult for Nephrologist. If a nephrology consult was ordered, there is a nephrology note, or there is a vascular access nurse, mid-level provider, non-nephrology physician note stating “Nephrology provided approval, feedback, consulted, (etc.) regarding insertion of

PICC line" in the medical record within the 5 days prior to PICC placement, please select "Nephrology" even though it is prior to the period of review.

EXCLUDE: Documentation of Nephrologist's approval of PICC placement by Care Management

DATE

Instructions: Review the medical record to determine the date the nephrology consult was ordered or the date of the nephrology note during the period of review or within 5 days prior to the PICC placement. If there is more than one consult or note, enter the date of the note that is closest and prior to the date of PICC placement. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- "Oncologist" if the medical record indicates that the patient had a consult/referral for an oncologist. **Answer question 6.3**

INCLUDE: Inpatient or outpatient referral/consult for hematology and/or oncology services If an oncologist consult was ordered or there is an oncologist note in the medical record within the 5 days prior to PICC placement, please select "Oncologist" even though it is prior to the period of review.

EXCLUDE: Radiation oncology.

DATE

Instructions: Review the medical record to determine the date the oncologist consult was ordered or the date of the oncologist note during the period of review or within 5 days prior to the PICC placement. If there is more than one consult or note, enter the date of the note that is closest and prior to the date of PICC placement. during the period of review. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

- "No F/U or referral made" if the medical record does not indicate that the patient had any F/U or referral made during the period of review.
- "Unknown" if the medical record is silent as to whether a consult/referral was made during the period of review.

6.1. WAS THE INFECTIOUS DISEASE CONSULT OBTAINED BEFORE THE PICC WENT IN?

Instructions: Review the medical record to determine if the patient had an infectious disease consult obtained before/prior to placement of the PICC of interest.

Select one of the following:

- "Yes" if the medical record indicates that the infectious disease consult was obtained before PICC placement. **Answer question 6.1.1**
- "No" if the medical record does not indicate that the infectious disease consult was obtained before PICC placement.
- "Unknown" if the medical record was silent as to whether the infectious disease consult was obtained before PICC placement.

6.1.1. DID INFECTIOUS DISEASE APPROVE OR RECOMMEND PLACEMENT OF THE PICC?

Instructions: Review the medical record to determine if infectious disease approved or recommended the placement of the PICC.

Select one of the following:

- "Yes" if the medical record indicates that infectious disease approved or recommended the placement of the PICC line.
- "No" if the medical record does not indicate that infectious disease approved or recommended the placement of the PICC line
- "Unknown" if the medical record was silent as to whether or not infectious disease approved or recommended the placement of the PICC line.

6.2. WAS THE NEPHROLOGY CONSULT OBTAINED BEFORE THE PICC WENT IN?

Instructions: Review the medical record to determine if the patient had a nephrology consult obtained before/prior to placement of the PICC of interest.

- "Yes" if the medical record indicates that the nephrology consult was obtained before PICC placement. **Answer question 6.2.1**
- "No" if the medical record does not indicate that the nephrology consult was obtained before PICC placement.
- "Unknown" if the medical record was silent as to whether the nephrology consult was obtained before PICC placement.

6.2.1. DID NEPHROLOGY APPROVE OR RECOMMEND PLACEMENT OF THE PICC?

Instructions: Review the medical record to determine if nephrology approved or recommended the placement of the PICC.

Select one of the following:

- *“Yes” if the medical record indicates that nephrology approved or recommended the placement of the PICC line.*
EXCLUDE: Documentation of Nephrologist’s approval of PICC placement by Care Management
- *“No” if the medical record does not indicate that nephrology approved or recommended the placement of the PICC line*
- *“Unknown” if the medical record was silent as to whether or not nephrology approved or recommended the placement of the PICC line.*

6.3. WAS THE ONCOLOGIST CONSULT OBTAINED BEFORE THE PICC WENT IN?

Instructions: Review the medical record to determine if the patient had an oncologist consult obtained before/prior to placement of the PICC of interest.

Select one of the following:

- *“Yes” if the medical record indicates that the oncologist consult was obtained before PICC placement. **Answer question 6.3.1***
- *“No” if the medical record does not indicate that the oncologist consult was obtained before PICC placement.*
- *“Unknown” if the medical record was silent as to whether the oncologist consult was obtained before PICC placement.*

6.3.1. DID THE ONCOLOGIST APPROVE OR RECOMMEND PLACEMENT OF THE PICC?

Instructions: Review the medical record to determine if the oncologist approved or recommended the placement of the PICC.

Select one of the following:

- *“Yes” if the medical record indicates that the oncologist recommended the placement of the PICC line.*
- *“No” if the medical record does not indicate that the oncologist recommended the placement of the PICC line*
- *“Unknown” if the medical record was silent as to whether the oncologist recommended the placement of the PICC line*

7. DOES YOUR HOSPITAL/INSTITUTION HAVE A NEPHROLOGY-APPROVED POLICY IN PLACE WHICH SPECIFIES PARTICULAR CONDITIONS IN WHICH NEPHROLOGY DOES NOT NEED TO BE CONSULTED FOR A PICC PLACEMENT?

Instructions: Review your hospital's policies for documentation of a nephrology-approved policy which specifies particular conditions in which nephrology does not need to be consulted for a PICC placement.

Select one of the following:

- "Yes" if your hospital/institution has a nephrology-approved policy in place which specifies particular conditions in which nephrology does not need to be consulted prior to PICC placement. **Answer question 7.1**

Reminder: The HMS Coordinating Center will query sites that answer "Yes" to this question to provide their hospital policy and/or required supporting documentation.

- "No" if your hospital/institution does not have a nephrology-approved policy in place which specifies particular conditions in which nephrology does not need to be consulted prior to PICC placement

INCLUDE: Hospital policy that requires Nephrology consult prior to PICC placement for an eGFR < 45 ml/min.

- "Unknown" if it is unknown if your hospital/institution has a nephrology-approved policy in place which specifies particular conditions in which nephrology does not need to be consulted prior to PICC placement

7.1. IF YES, WHICH POLICY?

Instructions: Review your hospital's policies for documentation of which nephrology-approved policy is in place at your site.

Select one of the following:

- "Nephrology consults required for PICC placement only if the patient's eGFR is ≤ 30 ml/min" if your hospital/institution has a policy in place where nephrology does not need to be consulted for a PICC placement unless the eGFR ≤ 30 ml/min.
- "Nephrology/Interventional Radiology Collaboration to determine need for Nephrology Consult prior to PICC placement" if your hospital/institution have a policy in place where interventional radiology collaborates with nephrology to determine need for nephrology consult for a PICC placement for eGFR ≤ 45 ml/min. **Answer question 7.1.1**

7.1.1. DOES THE DOCUMENTATION FOR THIS CASE STATE THIS POLICY/PROCESS WAS FOLLOWED?

Instructions: Review the medical record to determine if this policy/process was followed for this case.

Select one of the following:

- “Yes” if the medical record indicates that the process outlined in your hospital/institution’s policy was followed.
 - “No” if the medical record does not indicate that process outlined in your hospital/institution’s policy was followed.
 - “Unknown” if the medical record is silent as to whether or not process outlined in your hospital/institution’s policy was followed.
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Discharge

1. HAS THE PATIENT BEEN DISCHARGED FROM THE INPATIENT HOSPITALIZATION WHEN THE PICC OF INTEREST WAS PLACED?

Instructions: Review the medical record to determine if the patient was discharged from the inpatient hospitalization when the PICC of interest was placed. There are two (2) options for this question.

INCLUDE: Discharges to another hospital, home, assisted living, skilled nursing facility, sub-acute rehab, inpatient hospice, home hospice, correctional facility, inpatient rehab, inpatient psychiatry. Patient death should be included. Patient that left the hospital against medical advice (AMA).

EXCLUDE: Transfers in level of care, such as to the intensive care unit, step-down unit, medical unit, etc.

- “Yes” if the medical record indicates that the patient has been discharged from the inpatient hospitalization when the PICC of interest was placed. **Answer questions 1.1 through 1.5**
Reminder: Select YES if the patient has been discharged from the hospitalization when the PICC of interest was placed AND the PICC of interest was still in place at the time of discharge.
- “No” if the medical record does not indicate that the patient has been discharged from the inpatient hospitalization when the PICC of interest was placed.

1.1. DISCHARGE LOCATION

Instructions: Review the medical record to determine the discharge location (i.e. where the patient was sent after discharge from the hospital). There are eleven (11) options for this question.

Select one of the following:

- *“Transferred to another hospital”* if the medical record indicates that the patient was transferred to another hospital. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Any transfer to another hospital/health care facility. Also, include long term acute care hospitals (LTACH).
- *“Death (Complete Death Form)”* if the medical record indicates the patient is deceased. **Answer question 1.1.3**
Note: If this is selected, you should have a corresponding entry in the Death Form and the follow up phone call section will not populate.
INCLUDE: Patient expired, patient deceased, termination of life
- *“Discharged home”* if the medical record indicates that the patient was discharged home. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Discharge to patient’s own home, friend’s home, or a family member’s home with or without home care services. Patients that have left the hospital against medical advice (AMA). Patients that return to an adult foster care center, which is the patient’s usual state of residence.
- *“Discharged to assisted living”* if the medical record indicates that the patient was discharged to an assisted living facility. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Assisted living, assisted living facilities (ALF), assisted living residence
- *“Discharged to skilled nursing facility”* if the medical record indicates that the patient was discharged to a skilled nursing facility. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Skilled nursing home, nursing home, skilled nursing facility (SNF)
- *“Discharged to sub-acute rehab facility”* if the medical record indicates that the patient was discharged to a sub-acute rehabilitation facility. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Sub-acute rehabilitation (rehab), sub-acute rehabilitation care, post-acute rehabilitation center
- *“Discharged to inpatient hospice”* if the medical record indicates that the patient was discharged to inpatient hospice. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Inpatient hospice care, hospice inpatient facility
Note: If this selection is made, the follow up phone call section will not appear.
- *“Discharged to home hospice”* if the medical record indicates that the patient was discharged to home hospice. **Answer questions 1.1.1 and 1.1.2**
INCLUDE: Discharged home for palliative care, hospice care, comfort measures only, or comfort care.
Note: If this selection is made, the follow up phone call section will not appear.

- *“Discharged to correctional facility”* if the medical record indicates that the patient was discharged to a correctional facility. **Answer questions 1.1.1 and 1.1.2**

INCLUDE: Correctional facility, jail, prison, penitentiary

- *“Discharged to inpatient rehab”* if the medical record indicates that the patient was discharged to inpatient rehabilitation. **Answer questions 1.1.1 and 1.1.2**

INCLUDE: Acute rehabilitation center, acute rehabilitation services, acute rehab, inpatient rehabilitation facility (IRF), inpatient rehab

Note: An example discharge to inpatient rehab within the same institution might look like this: “A patient is admitted for medical care to XYZ hospital.

After two weeks of acute care, the hospitalist recommends, and the insurance company approves, care in an acute rehabilitation facility. XYZ hospital has an acute rehabilitation unit that is just down the hall. The patient is discharged from XYZ hospital and admitted to XYZ rehabilitation.”

- *“Discharged to inpatient psychiatric facility”* if the medical record indicates that the patient was discharged to an inpatient psychiatric facility. **Answer questions 1.1.1 and 1.1.2**

INCLUDE: Inpatient psychiatric, inpatient psychiatry, inpatient mental health care.

Note: An example discharge to inpatient psychiatric unit within the same institution might look like this: “A patient is admitted for medical care to XYZ hospital. After two weeks of acute care, the hospitalist recommends, and the insurance company approves, care in an inpatient psychiatric facility. XYZ hospital has an inpatient psychiatric unit that is just down the hall. The patient is medically cleared and discharged from XYZ hospital and admitted to XYZ psychiatric unit.”

- *“Other”* if the medical record indicates that the patient was discharged to a location other than what is stated above.

FOR OTHER, PLEASE SPECIFY.

Instructions: Utilize the free text box provided to type in the other discharge location for the patient.

- *“Unknown”* if the medical record is silent as to the discharge location of the patient.

1.1.1. DATE OF DISCHARGE

Instructions: Review the medical record to determine the date of discharge.

Record the date of discharge in the MM/DD/YYYY format. Use 01/01/1900 if the date of discharge is unknown.

1.1.2. WHAT WERE THE ICD 10 CODES ASSOCIATED WITH THE DISCHARGE DIAGNOSES LISTED IN THE DISCHARGE SUMMARY?

Instructions: Review the medical record to determine *ALL* of the ICD-10 codes that are associated with the discharge diagnoses listed in the discharge summary. Use the free text box to enter in all of the ICD-10 codes that are listed in the discharge summary for this hospital encounter. Please make sure all individual ICD-10 codes are separated by a comma, are capitalized, and last ICD-10 code is followed by a semicolon (;).

1.1.3. WHAT WERE THE ICD 10 CODES ASSOCIATED WITH THE FINAL/DISCHARGE DIAGNOSES LISTED AT THE TIME OF THE PATIENT'S DEATH?

Instructions: Review the medical record to determine *ALL* of the ICD-10 codes that are associated with the final/discharge diagnoses listed at the time of the patient's death. Use the free text box to enter in all of the ICD-10 codes that are listed. Please make sure all individual ICD-10 codes are separated by a comma, are capitalized, and last ICD-10 code is followed by a semicolon (;).
Note: No other questions will appear in this section if "Death" is selected as the Discharge Location.

1.2. DURING THE PERIOD OF REVIEW, IS THERE DOCUMENTATION THAT THE PATIENT HAD ONE OF THE FOLLOWING MEDICAL SERVICES (I.E. EMERGENCY ROOM OR OVERNIGHT STAY GREATER THAN (>) 24 HOURS), EXCLUDING THE INDEX HOSPITALIZATION?

Instructions: Review the medical record to determine if there is documentation that the patient had an emergency room encounter or an overnight stay in a medical care facility that lasted greater than (>) 24 hours. There are three (3) options for this question.

Note1: Only include medical services that the patient received post-discharge from the index hospitalization.

Note2: If the patient is discharged from the inpatient hospitalization when the PICC of interest was placed during this period of review to a skilled nursing facility, sub-acute rehab facility, inpatient psychiatric facility, inpatient hospice, LTACH or other nursing facility with their PICC still in place be sure to select YES to "An Overnight Stay in a Medical Care Facility > 24hr".

Note3: If the patient has multiple medical services after the discharge from the inpatient hospitalization when the PICC of interest was placed, please enter the

first two events (ER, inpatient, etc.) that are closest to the discharge date that occurred during the period of review in chronological order.

Select one of the following:

- *“Emergency Room Encounter”* if the medical record indicates that the patient had an emergency room encounter during the period of review. **Answer questions 1.2.1, 1.2.2, and 1.2.6**

INCLUDE: Any patient visit to an Emergency room (ER), emergency department (ED), or Urgent care center directly associated with your hospital. Enter both an emergency room encounter and an overnight stay in a medical care facility >24 hours if the patient was admitted to the hospital as an outcome from the ED/ER encounter. In that scenario, you should enter the ED visit first and the Overnight Stay second.

- *“An Overnight Stay in a Medical Care Facility > 24 hours”* if the medical record indicates that the patient had an overnight stay in a medical care facility that was greater than (>) 24 hours during the period of review. **Answer questions 1.2.3 through 1.2.6**

INCLUDE: Any overnight stay in a medical care facility that is greater than 24 hours in length. Enter both an emergency room encounter and an overnight stay in a medical care facility >24 hours if the patient was admitted to the hospital as an outcome from the ED/ER encounter. In that scenario, you should enter the ED visit first and the Overnight Stay second.

- *“None of the above”* if there is no documentation that the patient had one of the medical services indicated above during the period of review.
- *“Unknown”* if the medical record is silent as to whether the patient had one of the medical services indicated above during the period of review.

1.2.1. DATE OF EMERGENCY ROOM ENCOUNTER

Instructions: Review the medical record to determine the date of the emergency room encounter. Record the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.2.2. CAN YOU SEE A DISCHARGE DIAGNOSIS ICD-10 CODE FOR THE EMERGENCY ROOM ENCOUNTER?

Instructions: Review the medical record to determine if there is a discharge diagnosis ICD-10 code associated with the emergency room encounter.

Select one of the following:

- *“Yes”* If there is documentation in the EMR of a discharge diagnosis ICD-10 code for the emergency room encounter. **Answer question 1.2.2.1**

- “No” If there is no documentation in the EMR of a discharge diagnosis ICD-10 code for the emergency room encounter.
- “Unknown” If the medical record is silent as to the discharge diagnosis ICD-10 code for the emergency room encounter.

1.2.2.1. WHAT IS THE PRIMARY DISCHARGE DIAGNOSIS ICD-10 CODE FOR THE EMERGENCY ROOM ENCOUNTER?

Instructions: Review the medical record to determine the primary discharge diagnosis ICD-10 code for the emergency room encounter. This information may be found in the discharge summary. Use the free text box to enter the ICD-10 code that corresponds with the primary discharge diagnosis.

Note: Enter in one ICD-10 code and make sure that it is capitalized. Do not hit enter while imputing ICD-10 codes into the box.

1.2.3. DATE OF ADMISSION

Instructions: Review the medical record to determine the date of the overnight stay in a medical facility greater than (>) 24 hours in length. Record the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.2.4. CAN YOU SEE AN ADMISSION DIAGNOSIS ICD-10 CODE FOR THE OVERNIGHT STAY IN A MEDICAL CARE FACILITY > 24 HOURS?

Instructions: Review the medical record to determine if there is an admission diagnosis ICD-10 code for the patient for the overnight stay in a medical facility greater than (>) 24 hours in length.

Select one of the following:

- “Yes” if the medical record indicates an admission diagnosis ICD-10 code for the overnight stay in a medical facility greater than (>) 24 hours.

Answer question 1.2.4.1

- “No” if the medical record does not indicate an admission diagnosis ICD-10 code for the overnight stay in a medical facility greater than (>) 24 hours.
- “Unknown” if the medical record is silent as to whether there is an admission diagnosis ICD-10 code for the overnight stay in a medical facility greater than (>) 24 hours.

1.2.4.1. WHAT IS THE PRIMARY ADMISSION DIAGNOSIS ICD-10 CODE FOR THE OVERNIGHT STAY IN A MEDICAL FACILITY > 24 HOURS?

Instructions: Review the medical record to determine the patient's primary admission diagnosis ICD-10 code for the overnight stay in a medical care facility lasting greater than (>) 24 hours. This information may be found in the Admission History and Physical. Use the free text box to enter the ICD-10 code that corresponds with the primary admission diagnosis.

Note: Enter in one ICD-10 code and make sure that it is capitalized. Do not hit enter while imputing ICD-10 codes into the box.

1.2.5. DURING THE PERIOD OF REVIEW, IS THE PATIENT STILL IN THE MEDICAL CARE FACILITY INDICATED ABOVE?

Instructions: Review the medical record to determine if the patient is still currently hospitalized in the medical care facility indicated above. There are three (3) options for this question.

Select one of the following:

- "Yes" if the medical record indicates that the patient is still in the medical care facility indicated above at the end of the period of review.
 - "No" if the medical record does not indicate that the patient is still in the medical care facility indicated above at the end of the period of review.
- Answer questions 1.2.5.1 and 1.2.5.2.***
- "Unknown" if the medical record was silent regarding whether or not the patient is still in the medical care facility indicated above at the end of the period of review.

1.2.5.1. DATE OF DISCHARGE

Instructions: Review the medical record to determine the date of discharge from the overnight stay in a medical facility greater than (>) 24 hours in length. Record the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

1.2.5.1. CAN YOU SEE A DISCHARGE DIAGNOSIS ICD-10 CODE FOR THIS PATIENT?

Instructions: Review the medical record to determine if there is a discharge diagnosis ICD-10 code available for the overnight stay in a medical facility greater than (>) 24 hours in length.

Select one of the following:

- "Yes" if the medical record indicates a discharge diagnosis ICD-10 code for the overnight stay in a medical facility greater than (>) 24 hours.

Answer question 1.2.5.2.1

- “No” if the medical record does not indicate a discharge diagnosis ICD-10 code for the overnight stay in a medical facility greater than (>) 24 hours.
- “Unknown” if the medical record is silent as to whether there is a diagnosis ICD-10 code for the overnight stay in a medical facility greater than (>) 24 hours.

1.2.5.2.1. WHAT IS THE PRIMARY DISCHARGE DIAGNOSIS ICD-10 CODE FOR THE OVERNIGHT STAY IN A MEDICAL FACILITY > 24 HOURS?

Instructions: Review the medical record to determine the patient’s primary discharge diagnosis ICD-10 code for the overnight stay in a medical care facility lasting greater than (>) 24 hours. This information may be found in the Discharge Summary. Use the free text box to enter the ICD-10 code that corresponds with the primary discharge diagnosis. Note: Enter in one ICD-10 code and make sure that it is capitalized. Do not hit enter while imputing ICD-10 codes into the box.

1.2.6. DURING THE PERIOD OF REVIEW, IS THERE DOCUMENTATION THAT THE PATIENT RECEIVED AN ADDITIONAL MEDICAL SERVICES ENCOUNTER (I.E. EMERGENCY ROOM OR OVERNIGHT STAY GREATER THAN (>) 24 HOURS)?

Instructions: Review the medical record to determine if there is documentation that the patient had an additional emergency room encounter or another overnight stay in a medical care facility that lasted greater than (>) 24 hours during the period of review. There are three (3) options for this question.

Select one of the following:

- “Yes” if the medical record indicates that the patient received an additional medical services encounter during the period of review.
Note: If “Yes” is selected, please enter information for the additional emergency room encounter or overnight stay in a medical care facility as you did above.
- “No” if the medical record does not indicate that the patient received an additional medical services encounter during the period of review.
- “Unknown” if the medical record is silent as to additional medical services encounters during the period of review.

2. IS THERE INFORMATION IN THE MEDICAL RECORD OR OTHER RESOURCES THAT SHOW THAT THE PATIENT IS ANY OF THE FOLLOWING ON THE LAST DAY OF THE REVIEW PERIOD:

Instructions: This question will only populate if "No" is selected for the question regarding PICC removal in the Patient Status section. Review the medical record to determine if the patient is in the hospital, inpatient hospice, at an extended care facility, in prison, or deceased at the last day of the review period. There are six (6) options for this question.

Note: This question will help you to determine whether a follow-up phone call should be made. If there is information that the patient is in the hospital, inpatient hospice, home hospice, ECF, prison, or deceased on the last day of the review period OR had their PICC removed, the follow up phone call is not applicable.

Select one of the following:

- *"In the Hospital"* if the medical record indicates that the patient is in the hospital at the end of the period of review.
INCLUDE: Inpatient rehabilitation
- *"Inpatient Hospice"* if the medical record indicates that the patient is inpatient hospice at the end of the period of review.
INCLUDE: Inpatient hospice care, hospice inpatient facility
- *"Home Hospice"* if the medical record indicates that the patient is in home hospice at the end of the period of review.
- *"Extended Care Facility"* if the medical record indicates that the patient is at an extended care facility at the end of the period of review.
INCLUDE: Skilled nursing home, nursing home, skilled nursing facility (SNF), Sub-acute rehabilitation (rehab), sub-acute rehabilitation care, post-acute rehabilitation center.
Note: There must be documentation in the medical record that the patient is in an Extended Care Facility on the 30th day post-discharge to make this selection. Discharge to an Extended Care Facility without confirmation that the patient is still in this facility on the 30th day post-discharge will not count as documentation for this selection.
- *"Prison"* if the medical record indicates that the patient is in prison at the end of the period of review.
INCLUDE: Correctional facility, jail, prison, penitentiary
- *"Deceased (Complete Death Form)"* if the medical record indicates that the patient is deceased at the end of the period of review.
INCLUDE: Patient expired, patient deceased, termination of life

Note: If this is selected you should have a corresponding entry in the Death Form.

- “None of the above or unknown” if the medical record does not indicate that the patient is one of the above or is silent as to the disposition of the patient on the last day of the review period.
-
-

Follow-Up Phone Call

For the 30-day follow-up phone call, ask the patient about things that have happened since the time of discharge until:

- PICC removal (if PICC was removed prior to day 30)
OR
- Day 30 post PICC placement (if PICC still in place at day 30)

The 30-day follow-up phone call must occur 30 days after the date of PICC placement, or within the 7-day leeway window. Please note that, if the 7-day leeway window is used (will allow an extra 7 days beyond the end of the cycle for the completion of data collection), only include information from the date of PICC placement until day 30.

Reminder: Only capture new information provided by the patient or the patient’s durable power of attorney (DPOA) that was not already abstracted during the chart review. If there is information that the patient is in the hospital, inpatient hospice, home hospice, ECF, prison, or deceased on the last day of the review period OR had their PICC removed, the phone call is not applicable, and this form does not need to be completed.

1. NUMBER OF PHONE CALLS

Instructions: Indicate the number of phone call attempts that were made, regardless of whether they were successful or unsuccessful attempts. There are three (3) options for this question.

Select one of the following:

- “1” if one phone call was made. **Answer question 1.1 and 1.4**
- “2” if two phone calls were made. **Answer questions 1.1, 1.2 and 1.4**
- “3” if three phone calls were made. **Answer questions 1.1 through 1.4**

Note: If the patient does not respond on the third phone call attempt, leave a voicemail informing the patient he/she will receive an email from the hospital encouraging participation in a survey related to their PICC line. Obtain the patient's email address from the medical record and click on the "PROs" tab in the database to send the follow-up email to the patient. You will be prompted to enter and confirm the patient's email address. You will also be asked to select the month of the index line insertion. After entering the requested information, please click "submit". If there is no response within 48 hours, the patient will receive a second automated message.

- "N/A- Patient Status Change since end of the period of review" if you were supposed to make the phone call; however, there is information in the medical record or other resources that shows the patient is in the hospital, inpatient hospice, an extended care facility, prison, deceased or the PICC has been removed since the end of the period of review. **Answer question 1.5**

1.1. DATE CALL #1

Instructions: Indicate the date of your first call to the patient, regardless of if the patient answered or not. Indicate the date in the MM/DD/YYYY format.

1.2. DATE CALL #2

Instructions: Indicate the date of your second call to the patient, regardless of if the patient answered or not. Indicate the date in the MM/DD/YYYY format.

1.3. DATE CALL #3

Instructions: Indicate the date of your third call to the patient, regardless of if the patient answered or not. Indicate the date in the MM/DD/YYYY format.

1.4. WERE YOU ABLE TO OBTAIN INFORMATION ABOUT THE PATIENT?

Instructions: Indicate whether you were able to obtain information from the patient on the phone call. Some individuals may not be able to communicate with you directly due to language barriers, cognitive status, lack of education, etc. It is only acceptable to speak to someone other than the patient if you can confirm the identity of the patient and you know the person has the appropriate regulatory authority to speak on behalf of the patient. If you are voluntarily notified by a family member via the phone that the patient is deceased, you should record this information. There are two (2) options for this question. Select one of the following:

- “Yes” if you were able to obtain information from the patient. **Answer question 1.4.1**
INCLUDE: If you were able to reach the patient or patient representative (i.e., family, caregiver, etc.) and obtain any information. Also, if you are voluntarily notified by a family member that the patient was deceased.
- “No” if you were unable to obtain information from the patient. **Answer question 1.4.2**

1.4.1. DO YOU CURRENTLY STILL HAVE YOUR PICC LINE?

Instructions: This question asks whether the patient still has the PICC line (the PICC being abstracted during baseline data collection) in place. Indicate if the PICC is currently in place upon follow-up call. There are two (2) options for this question.

Note: If the patient informs you that their PICC has been removed, but it is outside of the period of review (after 30 days post-PICC placement), you would select “Yes” for this question, as their PICC was still in place on the 30th day in this scenario.

Select one of the following:

- “Yes” if the patient indicates the PICC is still in place. **Answer question 1.4.1.1**

INCLUDE: Any statement from the patient that their PICC is currently still in place.

- “No” if the patient indicates that the PICC is not still in place. **Answer questions 1.4.1.2 and 1.4.1.3**

INCLUDE: Any statement from the patient that their PICC has been removed, replaced, accidentally pulled out, etc.

1.4.1.1. WHERE IS YOUR PICC LINE LOCATED?

Instructions: Indicate the extremity in which the PICC is located. There are two (2) options for this question.

Select one of the following:

- “Left Arm” if the patient indicates that the PICC is located in their left arm.

INCLUDE: Left arm, left upper extremity, left elbow, left forearm, left upper arm, etc.

- “Right Arm” if the patient indicates that the PICC is located in their right arm.

INCLUDE: Right arm, right upper extremity, right elbow, right forearm, right upper arm, etc.

1.4.1.2. DATE REMOVED

Instructions: Indicate the date of PICC removal in MM/DD/YYYY format.

Note: If the date/time of actual removal is unknown, please do the following: Ascertain the date (via medical documentation) on which it is known that the PICC line is present. Compare this to the date of the follow-up Phone call in which the patient confirms the PICC line is no longer in place. Enter the PICC removal date as the date that is in the middle of these two known dates. Then, please indicate that you completed this process to determine the PICC removal date in the Abstractor Notes section.

1.4.1.3. REASON REMOVED

Instructions: Indicate the reason why the patient stated that the PICC was removed. There are six (6) options for this question.

Select all that apply:

- *"Complication"* if the patient indicates that the PICC was removed due to a complication.
INCLUDE: Patient response that the PICC was removed due to infection (i.e., central line associated blood stream infection), thrombus (i.e., blood clot), dislodgement (i.e., patient pulled PICC out accidentally), inability to flush line (i.e., clotting), kinking, coiling, tip migration, etc.
- *"Accidental removal or dislodgement"* if the patient indicates the PICC was removed because it was accidentally removed/pulled out or became dislodged and resulted in removal.
INCLUDE: PICC removal from patient accidentally pulling out line
- *"Death (Complete Death Form)"* if the PICC was removed due to the patient's death. Please complete the death form.
- *"Treatment Discontinued"* if the patient indicates the PICC was removed because the patient's treatment was discontinued/stopped.
INCLUDE: PICC removal because TPN discontinued.
- *"Other"* if the patient indicates that the PICC was removed for a reason not indicated above.
- *"Unknown"* if the patient indicates that the PICC was removed for an unknown reason.

1.4.2. SPECIFY REASON YOU WERE NOT ABLE TO OBTAIN INFORMATION ABOUT THE PATIENT

Instructions: Indicate the reason(s) why you were not able to obtain information about the patient.

Note: During one of the phone calls, if a reason was indicated that would prompt no future calls (ex: patient refused to participate long term, patient is non-verbal, etc.): for all future calls, enter the date the phone call was supposed to be made and the reason the phone call could not be made. There are seven (7) options for this question.

Select all that apply:

- *“Wrong Number”* if the number called was the incorrect phone number. Be sure to check back in the chart to see if there are other phone numbers listed. **Answer question 1.4.2.1**
- *“Disconnected Number”* if the phone number was disconnected at the time the call attempt was made. **Answer question 1.4.2.1**
- *“No Answer”* if after the final attempt you were still unable to reach the patient by phone. For example, the individual is in jail, currently hospitalized, or not cognitively able to respond. For example, the individual is in jail, currently hospitalized, or not cognitively able to respond. **Answer question 1.4.2.1**

INCLUDE: Another family member answers and indicates the patient is not home/unable to talk at this time.

- *“Patient Refusal”* if the patient refused to provide you with the information.
- *“Patient Unavailable/Unable to Respond”* if the patient was unavailable, unable to respond, or has no contact number.

INCLUDE: You are informed over the phone that the patient is not available to respond because they are in jail, in the hospital, or not cognitively able to respond.

EXCLUDE: Patient unavailable to respond because you are informed they are not home at this time.

- *“Language Barrier”* if you were unable to communicate with the patient due to the patient’s inability to speak English. **Answer question 1.4.2.1**
- *“Patient Deceased (Complete Death Form)”* if the patient was not deceased at the follow-up period, but they were deceased by the time the phone call was made.

Note: If this is selected you should have a corresponding entry in the Death Form.

- *“Deceased since end of the period of review”* if the patient was not deceased at the end of the period of review, but they were deceased by the time the phone call was to be made.
- *“Inpatient hospice since the end of the period of review”* if the patient was not in inpatient hospice at the end of the period of review, but they were inpatient hospice by the time the phone call was to be made.
- *“Home hospice since the end of the period of review”* if the patient was not in home hospice at the end of the period of review, but they were in home hospice by the time the phone call was to be made.
- *“ECF since the end of the period of review”* if the patient was not in an ECF at the end of the period of review, but they were in ECF by the time the phone call was to be made.
- *“Prison since the end of the period of review”* if the patient was not in prison at the end of the period of review, but they were in prison by the time the phone call was to be made.
- *“In hospital since the end of the period of review”* if the patient was not in the hospital at the end of the period of review, but they were in the hospital by the time the phone call was to be made.
- *“PICC removed since the end of the period of review”* if the patient had their PICC in place at the end of the period of review, but there is documentation of PICC removal by the time the phone call was to be made.
- *“PICC still in place since the end of the period of review”* if the patient still has their PICC in place at the end of the period of review, and there is documentation that the PICC is still in place by the time the phone call was to be made.

1.4.2.1. WAS THE PROS PROCESS STARTED?

Instructions: Indicate whether the email PROs process was started for this patient.

Select one of the following:

- *“Yes”* if the email PROs process was/will be started. ***Answer question 1.4.2.1.1***
- *“No”* if the email PROs process was not/will not be started. ***Answer question 1.4.2.1.2***

1.4.2.1.1. WHAT CONTACT INFORMATION IS AVAILABLE?

Instructions: Review the medical record for what contact information is available for the patient to be able to begin the electronic PROs process. Select one of the following:

- *"Email address only"* if the only contact information available for the patient is an email address.
- *"Cell/phone number only"* if the only contact information available for the patient is a phone number.
INCLUDE: Phone numbers that are not specified as to whether they are for a cell phone or landline
- *"Email address and cell/phone number"* if both an email address and a cell/phone number is available for the patient.

1.4.2.1.2. PLEASE PROVIDE A REASON FOR WHY THE PROS PROCESS WAS NOT STARTED.

Instructions: Please specify the reason as to why the electronic PROs process was not/will not be started.

Select one of the following:

- *"Missing email address"* if the email PROs process was not started because the patient did not have a listed email address.
- *"Missing cell phone number"* if the text PROs process was not started because the patient does not have a listed cell phone number.
- *"Other"* if there is another reason as to why the electronic PROs process was not started.

PLEASE DESCRIBE THE "OTHER" REASON FOR WHY THE PROS PROCESS WAS NOT STARTED.

Instructions: In the free text box provided, please describe the reason as to why the electronic PROs process was not/will not be started.

1.5. SPECIFY REASON YOU WERE NOT ABLE TO OBTAIN INFORMATION ABOUT THE PATIENT

Instructions: Indicate the reason(s) why you were not able to obtain information about the patient.

Select all that apply:

- *"Deceased since end of the period of review"* if the patient was not deceased at the end of the period of review however, they were deceased by the time the phone call was to be made.

- *“Inpatient hospice since the end of the period of review”* if the patient was not in inpatient hospice at the end of the period of review however, they were inpatient hospice by the time the phone call was to be made.
 - *“Home hospice since the end of the period of review”* if the patient was not in home hospice at the end of the period of review; however, they were in home hospice by the time the phone call was to be made.
 - *“ECF since the end of the period of review”* if the patient was not in an ECF at the end of the period of review however, they were in ECF by the time the phone call was to be made.
 - *“Prison since the end of the period of review”* if the patient was not in prison at the end of the period of review however, they were in prison by the time the phone call was to be made.
 - *“In hospital since end of the period of review”* if the patient was not in the hospital at the end of the period of review however, they were in the hospital by the time the phone call was to be made.
 - *“PICC removed since the end of the period of review”* if the patient had their PICC in place at the end of the period of review; however, there is documentation of PICC removal by the time the phone call was to be made.
 - *“PICC still in place since the end of the period of review”* if the patient had their PICC in place at the end of the period of review, and there is documentation that the PICC is still in place by the time the phone call was to be made.
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Electronic PROs Capture

Purpose of Electronic PROs Capture

Over time, HMS has observed a decrease in the success rates of patient reported outcomes (PROs) using phone calls as a follow-up method. Therefore, the goal of capturing PROs using electronic methods is to increase the success rate of follow-up after three phone calls have been attempted.

When to Use the PROs Tab

You should use the PROs tab after three unsuccessful phone call attempts. If you were successful in completing a follow up phone call with the patient, you should

not utilize the PROs tab for that case.

Note: At this time, this process applies to the first line only. For all subsequent lines on the same patient, you should not initiate the PROs email process. Please attempt three phone calls on all subsequent lines.

How to Use the PROs Tab

On the third phone call attempt, if there is no answer, please leave a detailed voice message (if able). In the voicemail, state the purpose of the phone call and that the person you are calling will be receiving an email shortly with a survey link to obtain information about their recent hospital stay. If the patient does not have a voicemail, you should still send the email.

After three unsuccessful attempts to reach the patient using a phone call, click on the PROs tab.



Based on the insertion line type selected (PICC/Midline), the following configuration will appear:

PROs Configuration -- PICC

Warning: Once you have configured PROs settings for this subject, you will not be able to modify them. Please check to make sure this information is accurate before pressing submit.

Please use the text box below to enter in the Patient's Email Address

Please re-enter the Patient's Email Address in the text box below to confirm

Please use the drop down menu below to select the Month of Index Line Insertion

Steps:

1. Enter the patient's email address found in the medical record in the first text box
2. Re-enter the patient's email address in the second text box
3. Use the drop-down menu to select the month of index line insertion based on the medical chart

4. Once all information is confirmed correct, click the “Submit” button. After you click “Submit”, you will be returned to the “View” tab. To confirm your email was sent to the patient, click the PROs tab again. The following screen will appear. You can view the date and time the email was sent. Subtract 4 hours from the time sent for Eastern Standard Time, e.g., 19:33:21 is equal to 15:33:21 or 3:33 pm. **Note 1:** Ignore the letters T and Z on the date/time stamp, those are internal indicators.

Project	Request Created	Sent On	Date of activity	Finished	Stats
picc	2021-09-13T19:33:22Z	2021-09-13T19:33:21Z	na	na	

Note 2: The email sent to the patient with the link to complete their follow up survey will expire after 72 hours. If the patient does not complete the survey after 72 hours, they will automatically receive another email with a new link to complete the survey. There is no action you need to take to facilitate the sending of this second email – it will happen automatically. Below is what you will see when someone completes the survey.

Project	Request Created	Sent On	Date of activity	Finished	Stats
picc	2021-09-13T19:33:22Z	2021-09-13T19:33:21Z	2021-09-13T19:45:54Z	True	{"sent":1, "failed":0, "started":1, "bounced":0, "opened":1, "skipped":0, "finished":1, "complaints":0, "blocked":0}

Abstractor Notes

1. DO YOU HAVE ANY NOTES OR DO YOU WANT TO EXCLUDE A FORM?

Instructions: Indicate whether you have any notes that you would like to include regarding any of the baseline data forms or if you would like to remove this form.

There are two (2) options for this question.

Select one of the following:

- “Yes” if you have notes that you would like to include or you would like to remove this form. **Answer question 1.1 through 1.2**
- “No” if you do not have any notes that you would like to include or you do not want to remove this form.

1.1. ABTRACTOR NOTES

Instructions: Use free text to input your notes.

Important: Do not enter any PHI (Protected Health Information)

1.2. DO YOU WANT TO EXCLUDE THIS FORM?

Instructions: This question will default to “No”. If you would like to exclude/remove this form, you must manually change your answer to “Yes”. There are two (2) options for this question.

Select one of the following:

- “Yes” if you would like to exclude/remove this form from data analysis. **Answer question 1.2.1**
- “No” if you would like to include this form in the data analysis.

Note: This is the default.

1.2.1. ARE YOU SURE YOU WANT TO EXCLUDE THIS FORM? IF YES, PLEASE ENTER THE REASON FOR FORM REMOVAL IN THE ABSTRACTOR NOTES SECTION ABOVE.

- “Yes” if you are sure you would like to exclude/remove this form from data analysis. Enter the reason for form removal in the abstractor notes section above.
- “No” if you are sure you would like to include this form in the data analysis.

Note: This is the default.

Blood Cultures (PICC)

Blood Culture

Instructions: For all questions in the database, "No Answer" is the default selection. This field will be considered a blank field and is interpreted as missing data. Be sure to select the appropriate answer for each question.



REMINDER: This form should only be completed if the patient had positive blood cultures drawn during the time frame of abstraction, which begins 14 days prior to PICC placement through day 2 after PICC removal or 30 days after PICC placement, whichever occurs first.

Note: This form needs to be completed for each positive blood culture drawn during the time frame of abstraction. For example, if the patient had 2 positive blood cultures drawn on 2/5/17, you would complete 2 blood culture forms.

INCLUDE: Positive Fungal Blood Cultures.

1. DATE OF PICC PLACEMENT

Instructions: Indicate the date that the PICC of interest was placed. Enter the date in MM/DD/YYYY format.

2. THIS IS SUCCESSFUL PICC # _____ ON THIS DATE.

Instructions: Review the medical record to determine which PICC is entered that corresponds to the date of index placement.

Note1: The default will always be one; however, if this is the second, third, fourth, or fifth PICC line inserted on the same date indicated above, you must manually change the entry using the drop-down box.

Note2: Only enter PICC lines that were entered into the HMS database. For example, if a patient at your institution had two PICC lines inserted on the same date and only one of these resulted in entry into the PICC database, you would indicate this as PICC line #1. If both PICC lines were entered into the HMS database, then the first would be PICC line #1 and the second would be PICC line #2.

Select one of the following:

- "1" if the PICC indicated above is the first PICC inserted on the date indicated above. Note: This is the default answer.
- "2" if the PICC indicated above is the second PICC inserted on the date indicated above.
- "3" if the PICC indicated above is the third PICC inserted on the date indicated above.
- "4" if the PICC indicated above is the fourth PICC inserted on the date indicated above.
- "5" if the PICC indicated above is the fifth PICC inserted on the date indicated above.

3. POSITIVE BLOOD CULTURE- DATE OF CULTURE

Instructions: Review the medical record to determine the date of collection of the positive blood culture (i.e., date the culture was drawn). Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

4. POSITIVE BLOOD CULTURE- SITE OF CULTURE

Instructions: Review the medical record to determine the site of the positive blood culture (i.e., where was the blood culture taken from). This information will likely be on the laboratory report of the blood culture or within the progress notes. There are four (4) options for this question.

Select one of the following:

- "Vein" if the medical record indicates that the site of the positive blood culture was a vein.
INCLUDE: Documentation that the site from which the blood culture was obtained was from a vein, such as (but not limited to) right antecubital (AC), left AC, right basilic, left basilic, right cephalic, left cephalic, etc., blood peripheral
- "PICC Catheter Lumen (not other CVC's)" if the medical record indicates that the site of the positive blood culture was from a lumen of the PICC catheter.
INCLUDE: Documentation that the site from which the blood culture was obtained was from a lumen (catheter) of a PICC.
- "Port" if the medical record indicates that the site of the positive blood culture was a port.
INCLUDE: Documentation that the site from which the blood culture was obtained was from a port, mediport, chest port, etc.
- "Dialysis Catheter" if the medical record indicates that the site of the positive blood culture was a dialysis catheter.

- “CVC (not PICC)” if the medical record indicates that the site of the positive blood culture was a central venous catheter (CVC) that is not a PICC line.

Note: A medport would be included in the “Port” selection.

- “Other” if the medical record indicates that the site of the positive blood culture was not identified above.

INCLUDE: If the blood culture was obtained from an arterial line

FOR OTHER SITE, PLEASE SPECIFY

Instructions: Use free text to indicate the site.

- “Unknown” if the medical record is silent as to the site of the positive blood culture.

5. POSITIVE BLOOD CULTURE - PATHOGEN IDENTIFIED

Instructions: Review the medical record to determine the pathogen identified on the positive blood culture. Pathogens are classified by genus and species. The genus and species of the pathogen will be found on the laboratory report. First, indicate the genus, which is the broad or generic name. Once genus is selected, you will be prompted to indicate the species.

Note: Enter the specific isolate result from the culture (genus, species) and not the gram stain result.

Select one of the following:

- “*Achromobacter*”
- “*Acinetobacter*”
- “*Actinomyces*”
- “*Aerobacter*”
- “*Aerococcus*”
- “*Aeromonas*”
- “*Alcaligenes*”
- “*Alpha-hemolytic Streptococcus, not S pneumonia*”
- “*Arachinia*”
- “*Arcanobacterium*”
- “*Aspergillus*”
- “*Arthrobacter*”
- “*Bacillus*”
- “*Bacterionema*”
- “*Bacteroides*”
- “*Branhamella*”
- “*Brevibacillus*”
- “*Brevibacterium*”

- *Burkholderia*
- *Candida*
- INCLUDE: Yeast and *Torulopsis Glabrata*
- *Citrobacter*
- *Clostridium*
- *Corynebacterium*
- *Cupriavidis*
- *Dermabacter*
- *Dermacoccus*
- *Diphtheroids*
- *Elizabethkingia*
- *Enterobacter*
- *Enterococcus*
- *Escherichia*
- *Francisella*
- *Friedlander's*
- *Fusobacterium*
- *Gordonia*
- *Granulicatella*
- *Haemophilus*
- *Histoplasma*
- *Kluyvera*
- *Kocuria*
- *Klebsiella*
- *Legionella*
- *Listeria*
- *Levinea*
- *Micrococcus*
- *Microbacterium*
- *Monilia*
- *Moraxella*
- *Morganella*
- *Neisseria*
- *Nocardia*
- *Oidium*
- *Paeni*
- *Pantoea*
- *Pasteurella*

- *"Padiococcus"*
- *"Peptococcus"*
- *"Peptostreptococcus"*
- *"Prevotella"*
- *"Pneumocystis"*
- *"Propionibacterium"*
- *"Propioniferax"*
- *"Proteus"*
- *"Providencia"*
- *"Pseudomonas"*
- *"Raoultella"*
- *"Rhodococcus"*
- *"Rothia"*
- *"Rummeliibacillus"*
- *"Salmonella"*
- *"Sarcina"*
- *"Scedosporium"*
- *"Serratia"*
- *"Solibacillus"*
- *"Staphylococcus "*
- *"Stenotrophomonas"*
- *"Streptococcus"*
- *"Trueparella"*
- *"Tsukamurella"*
- *"Tufted Mitior"*
- *"Turicella"*
- *"Viridans Group"*
- *"Xanthomonas"*
- *"Yersina"*
- *"Bacteria Not Specified"*

EXAMPLES: 1. Final result notes gram negative bacilli, without pathogen identification due to low colony count. 2. Institutional practice deems a culture positive based only on a positive gram stain result without further pathogen identification. 3. Culture result noted as "gram positive cocci" or "gram positive bacilli" without specification

- *"Other (See the CDC's complete list in the knowledge base)"*

FOR OTHER, PLEASE SPECIFY

Instructions: Do not use the selection "Other" until you have contacted the coordinating center for guidance. Use free text to indicate other.

EXCLUDE: ESBL (extended spectrum beta-lactamase), Beta Lactamase

INCLUDE: Streptococcus Intermedius, Gemella Morbillorum

6. FOR THE POSITIVE BLOOD CULTURE, WAS THERE AN ADDITIONAL PATHOGEN IDENTIFIED?

Instructions: Review the medical documentation to determine if there was an additional pathogen found on the laboratory report for the culture being entered.

Select one of the following:

- "Yes" if the medical record indicates that the patient had a second pathogen identified within the positive blood culture. **Answer question 6.1**
- "No" if the medical record does not indicate that the patient had a second pathogen identified within the positive blood culture.
- "Unknown" if the medical record is silent as to whether the patient had a second pathogen identified within the positive blood culture.

6.1. PATHOGEN (#2) IDENTIFIED

Instructions: Review the medical record to determine if there was a second pathogen identified on this blood culture. Repeat the steps outlined above for up to five pathogens.

7. IS THERE DOCUMENTATION THAT THE POSITIVE BLOOD CULTURE IS CONTAMINATED?

Instructions: Review the medical documentation to determine if there was documentation in the laboratory report that the positive blood culture was contaminated.

Select one of the following:

- "Yes" if the medical record lab results indicate that the positive blood culture was contaminated or possibly contaminated.
INCLUDE: Documentation of contamination in the microbiology report/lab results for the culture.
EXCLUDE: Documentation of contamination by the provider in a progress note.
- "No" if the medical record lab results do not indicate that the positive blood culture was contaminated or possibly contaminated.
- "Unknown" if the medical record lab results are silent as to whether the positive blood culture was contaminated or possibly contaminated.

8. IS THIS THE FIRST POSITIVE BLOOD CULTURE ENTERED FOR THIS DATE?

Instructions: Review the medical record to determine if this is the first positive blood culture entered for this date.

Note: If “Yes” is selected as the response to this question, the “Major Complications CLABSI Symptoms” section will populate. If “No” is selected as the response to this question, the “Symptoms” section will not populate, as you do not need to enter this information more than once for a single date.

Select one of the following:

- “Yes” if this is the first positive blood culture entered into the database for this date.
- “No” if this is the second (or more) blood culture entered into the database for this date.

Major Complications CLABSI - Symptoms

1. DID THE PATIENT EXPERIENCE A FEVER > 38 DEGREES CELSIUS OR > 100.4 FARENHEIT DURING THE 3 DAYS BEFORE, THE DAY OF, OR THE 3 DAYS AFTER THE POSITIVE BLOOD CULTURE SAMPLE WAS COLLECTED?

Instructions: Review the medical record to determine if there is documentation that the patient had a fever greater than (>) 38 degrees Celsius or greater than (>) 100.4 degrees Fahrenheit on the three days before, the day of, or the 3 days after the positive blood culture sample was collected. If there is documentation on one of those days that the patient was febrile (i.e., had a fever), review the progress note to determine if the temperature was greater than 38 degrees Celsius or 100.4 degrees Fahrenheit. There are three (3) options for this question.

INCLUDE: Any documented temperature that was greater than 38°C (or greater than 100.4°F) during the 3 days before, the day of, or the 3 days after the positive blood culture sample was collected. Include any temperature that meets this criteria, during this time frame (3 days before, the day of or the 3 days after the positive blood culture even if it falls outside the period of review For example, if the PICC was removed the day of the blood culture collection, but the patient was febrile the day after the PICC was removed, you should select “Yes” to this question.

EXCLUDE: Temperatures equal to or below 38 degrees Celsius or 100.4 degrees Fahrenheit.

Select one of the following:

- “Yes” if the medical record indicates that the patient had a fever > 38 degrees Celsius or 100.4 degrees Fahrenheit during the 3 days before, on the day of, or during the 3 days after the positive blood culture sample was collected. **Answer question 1.1**
- “No” if the medical record does not indicate that the patient had a fever > 38 degrees Celsius or 100.4 degrees Fahrenheit during the 3 days before, on the day of, or during the 3 days after the positive blood culture sample was collected.
- “Unknown” if the medical record was silent as to the patient’s temperature during the 3 days before, on the day of, or during the 3 days after the positive blood culture sample was collected.

1.1 IF YES, DATE OF ONSET

Instructions: Review the medical record to determine the date of fever onset. In other words, indicate the first date the patient had a documented fever (i.e. greater than 38°C) during the 3 days before, on the day of, or during the 3 days after the positive blood culture sample was collected. Indicate the date in the MM/DD/YYYY format.

2. DID THE PATIENT EXPERIENCE CHILLS DURING THE 3 DAYS BEFORE, THE DAY OF, OR THE 3 DAYS AFTER THE POSITIVE BLOOD CULTURE SAMPLE WAS COLLECTED?

Instructions: Review the medical record to determine if the patient experienced chills during the three days before, on the day of, or during the 3 days after the positive blood culture sample was collected. This information is likely to be found within the physician progress notes. There are three (3) options for this question. **INCLUDE:** Explicit documentation that the patient experienced chills, rigors, or shivering during the three days before, on the day of, or during the 3 days after the positive blood culture sample was collected. Include any documentation of chills, during this time frame (3 days before, the day of, or the 3 days after the positive blood culture even if it falls outside the period of review. (e.g., the PICC was removed the day of the blood culture collection, or it is 33 days post-PICC placement, etc.)

Select one of the following:

- “Yes” if the medical record indicates that the patient experienced chills during the three days before, the day of, or the 3 days after the positive blood culture sample was collected. **Answer question 2.1.**
- “No” if the medical record does not indicate that the patient experienced chills during the three days before, the day of, or the 3 days after the positive blood

culture sample was collected.

- “Unknown” if the medical record was silent as to whether the patient experienced chills during the three days before, the day of, or the 3 days after the positive blood culture sample was collected.

2.1 IF YES, DATE OF ONSET

Instructions: Review the medical record to determine the date of onset of the chills. In other words, indicate the first date the patient had documented chills during the three days before, the day of, or the 3 days after the positive blood culture sample was collected. Indicate the date in the MM/DD/YYYY format.

3. DID THE PATIENT EXPERIENCE HYPOTENSION DURING THE 3 DAYS BEFORE, THE DAY OF, OR THE 3 DAYS AFTER THE POSITIVE BLOOD CULTURE SAMPLE WAS COLLECTED?

Instructions: Review the medical record to determine if the patient experienced hypotension (i.e., sudden drop in blood pressure), which is defined as a systolic blood pressure of less than 90 mmHg during the three days before, on the day of, or during the 3 days after the positive blood culture sample was collected. This information is likely to be found within the physician progress notes and/or vital signs. There are three (3) options for this question.

INCLUDE: Explicit documentation that the patient experienced hypotension (a systolic blood pressure of less than 90 mmHg) during the three days before, the day of, or the 3 days after the positive blood culture sample was collected. This may be found in the documentation, for example, as a non-invasive blood pressure (NIBP), arterial BP, etc. Include any documentation of hypotension (a systolic blood pressure of less than 90 mmHg) during this time frame (3 days before, the day of, or the 3 days after the positive blood culture) even if it falls outside the period of review. (e.g., the PICC was removed the day of the blood culture collection, or it is 33 days post-PICC placement, etc.)

EXCLUDE: Documentation that the patient’s systolic blood pressure was greater than or equal to 90mmHg.

Select one of the following:

- “Yes” if the medical record indicates that the patient experienced hypotension during the three days before, the day of, or the 3 days after the positive blood culture sample was collected. **Answer question 3.1.**
- “No” if the medical record does not indicate that the patient experienced hypotension during the three days before, the day of, or the 3 days after the positive blood culture sample was collected.

- *“Unknown”* if the medical record was silent as to whether the patient experienced hypotension during the three days before, the day of, or the 3 days after the positive blood culture sample was collected.

3.1. IF YES, DATE OF ONSET

Instructions: Review the medical record to determine the date of the onset of the hypotension. In other words, indicate the first date the patient had documented hypotension during the three days before, the day of, or the 3 days after the positive blood culture sample was collected. Indicate the date in the MM/DD/YYYY format.

4. DID THE MEDICAL RECORD REFLECT AN INFECTION AT ANOTHER SITE (OTHER THAN BLOOD) THAT WAS CONFIRMED BY A POSITIVE CULTURE WITHIN THE 14 DAYS PRIOR TO THE DATE OF THIS BLOOD CULTURE COLLECTION, ON THE DATE OF THIS BLOOD CULTURE COLLECTION, OR WITHIN 3 DAYS AFTER THE DATE OF THIS BLOOD CULTURE COLLECTION?

Instructions: Review the medical record to determine if the patient had an infection at another site (other than blood) that was confirmed by a positive culture any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection). This question looks to answer whether the patient had any infection at a site other than a blood-related infection. There are three (3) options for this question.

INCLUDE: Any documented infection that is at another site other than blood any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection). In order to be considered an infection at another site, it must be confirmed via a positive culture (example: sputum culture, urine culture, etc.), positive smear (ex: sputum, etc.), positive tip culture from a non-PICC device (example: Medport Tip, Permacath, etc.), positive PICC tip culture that is not the PICC of interest, or results obtained through molecular testing (ex: positive h-pylori antigen detected). A physician diagnosis or other diagnostics (ex: chest x-ray) is not enough documentation to support an infection at another site.

List of Infections (examples): (Must have a positive culture (i.e., sputum, urine, wound etc.) that confirms the infection)

Arterial or venous infection	Meningitis or ventriculitis
Breast abscess or mastitis	Myocarditis or pericarditis

Burn Infection	Necrotizing enterocolitis
Clostridium difficile infection	Oommphlitis
Conjunctivitis	Oral Cavity Infection (e.g., thrush)
Decubitus ulcer infection	Osteomyelitis
Disc Space Infection	Other infection of the male or female reproductive tract
Ear, mastoid infection	Other infection of the lower respiratory tract
Endocarditis	Pneumonia
Endometritis	Prosthetic Joint Infection
Episiotomy Infection	Sinusitis
Eye infection, other than conjunctivitis	Skin infection
Gastroenteritis	Soft Tissue Infection
Gastrointestinal tract infection	Spinal abscess without meningitis
Hepatitis	Surgical Site Infection
Intraabdominal infection	Upper respiratory tract infection, pharyngitis, laryngitis, epiglottitis
Intracranial Infection	Urinary Tract Infection
Joint or Bursa Infection	Vaginal Cuff Infection
Mediastinitis	

EXCLUDE: sepsis, septicemia, bacteremia, septic syndrome, blood stream infection (BSI), Positive WBC found in stool sample, lactoferrin positive in stool, candida in stool as it is almost always a commensal (not pathogen), positive antibodies (ex: EBV VCA Ab IgG and Hep A Total Ab, are a few examples), viral infections (e.g. positive for HSV-2 DNA Amplification), a positive sputum gram stain with no associated positive sputum culture, positive MRSA or VRE swab, positive strep screen, positive genital direct smear and/or trichomonas antigen.

Note2: If a culture (blood culture/PICC tip culture) was collected and you are awaiting results of the culture beyond the period of review and the PICC was

removed, mark this question “Yes” if other positive cultures were collected (sputum, etc.) the same day (or earlier) and are noted in the medical record during the time you are waiting for the culture results.

For example,

Culture Collected	PICC Removal	14 Day Review Date	Culture Results Available
Blood Culture 4/18/17 Sputum Culture 4/18/17	4/18/17	4/19/17	Blood Culture Results Available: 4/21/17 Sputum Culture Results Available: 4/20/17 (Positive for Pneumonia)
Since the PICC was removed, enter the infection at another site because other positive cultures (results not available at the time of PICC removal) indicating an infection was noted.			

Select one of the following:

- “Yes” if the medical record indicates that the patient had an infection at another site (other than blood) that was confirmed by a positive culture any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection). **Answer question 4.1 and 4.2.**
- “No” if the medical record does not indicate that the patient had an infection at another site (other than blood) any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).

- *“Unknown”* if the medical record was silent as to whether the patient had an infection at another site (other than blood) any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).

4.1 DATE OF THE INFECTION AT ANOTHER SITE DURING THE PERIOD OF REVIEW (14 DAYS PRIOR TO DATE OF THIS BLOOD CULTURE COLLECTION, ON THE DATE OF THIS BLOOD CULTURE COLLECTION, OR WITHIN 3 DAYS AFTER THE DATE OF THIS BLOOD CULTURE COLLECTION)?

Instructions: Review the medical record to determine the date of collection of the positive culture indicating an infection at another site any time during the period of review (14 days prior to date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection). Indicate the date in the MM/DD/YYYY format.

Reminder: If there is notation of more than one secondary infection during the period of review, select the date of the infection at another site that is closest to the date of the positive blood culture being entered.

4.2 FOR INFECTION AT ANOTHER SITE, PLEASE INDICATE THE TYPE OF INFECTION(S) THAT WAS PRESENT DURING THE PERIOD OF REVIEW (14 DAYS PRIOR TO DATE OF THIS BLOOD CULTURE COLLECTION, ON THE DATE OF THIS BLOOD CULTURE COLLECTION, OR WITHIN 3 DAYS AFTER THE DATE OF THIS BLOOD CULTURE COLLECTION) (CHECK ALL THAT APPLY)

Instructions: Review the medical record to determine the type of infection(s) during the period of review. Select the type of infection that is most appropriate for the type of positive culture in the medical record. A specific diagnosis is not required to make a selection for this question. There are ten (10) options for this question.

- *“Cellulitis”* if the medical record indicates that the individual has an infection from cellulitis any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *“Endocarditis”* if the medical record indicates that the individual has an infection from endocarditis present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).

- *"Osteomyelitis"* if the medical record indicates that the individual has an infection from osteomyelitis present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *"Pancreatitis"* if the medical record indicates that the individual has an infection from pancreatitis present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *"Peritonitis"* if the medical record indicates that the individual has an infection from peritonitis present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *"Pneumonia"* if the medical record indicates that the individual has an infection from pneumonia present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *"Surgical Site Infection"* if the medical record indicates that the individual has an infection from a surgical site infection present any time during the period of review 14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *"Urinary Tract Infection"* if the medical record indicates that the individual has an infection from a urinary tract infection present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).
- *"Other"* if the medical record indicates that the individual has an infection at other than that is listed above present any time during the period of review (14 days prior to the date of this blood culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).

FOR OTHER SITE, PLEASE SPECIFY

Instructions: Use free text to indicate the site.

- *"Unknown"* if the medical record is silent as to the type of infection present any time during the period of review (14 days prior to the date of this blood

culture collection, on the date of this blood culture collection, or within 3 days after the date of this blood culture collection).

Abstractor Notes

1. DO YOU HAVE ANY NOTES OR DO YOU WANT TO EXCLUDE A FORM?

Instructions: Indicate whether or not you have any notes that you would like to include regarding any of the death data or if you would like to remove this form.

There are two (2) options for this question.

Select one of the following:

- “Yes” if you have notes that you would like to include or you would like to remove this form. **Answer questions 1.1 and 1.2.**
- “No” if you do not have any notes that you would like to include or you do not want to remove this form.

1.1 ABTRACTOR NOTES

Instructions: Use free text to input your notes.

Important: Do not enter any PHI (Protected Health Information) into this field.

1.2 DO YOU WANT TO EXCLUDE THIS FORM?

Instructions: This question will default to “No”. If you would like to exclude/remove this form you must manually change your answer to “Yes”. There are two (2) options for this question.

Select one of the following:

- “Yes” if you would like to exclude/remove this form from data analysis. **Answer question 1.2.1.**
- “No” if you would like to include this form in the data analysis.

Note: This is the default.

1.2.1 ARE YOU SURE YOU WANT TO EXCLUDE THIS FORM? IF YES, PLEASE ENTER THE REASON FOR FORM REMOVAL IN THE ABSTRACTOR NOTES SECTION ABOVE.

- “Yes” if you are sure you would like to exclude/remove this form from data analysis. Enter the reason for form removal in the abstractor notes section

above.

- “No” if you are sure you would like to include this form in the data analysis.

Note: This is the default.

PICC Exchange

Peripherally Inserted Catheter Exchange



Instructions: For all questions in the database, "No Answer" is the default selection. This field will be considered a blank field and is interpreted as missing data. Be sure to select the appropriate answer for each question.

1. DATE OF PICC PLACEMENT

Instructions: Indicate the date that the PICC of interest (the PICC being exchanged) was placed. Enter the date in MM/DD/YYYY format.

Note: If there is more than one PICC exchange during the period of review, the date of initial PICC placement for the original index PICC should be entered.

2. THIS IS SUCCESSFUL PICC # _____ ON THIS DATE.

Instructions: Review the medical record to determine which PICC is entered that corresponds to the date of index placement.

Note1: The default will always be one (1); however, if this is the second, third, fourth, or fifth PICC line inserted on the same date indicated above, you must manually change the entry using the drop down box.

Note2: Only enter PICC lines that were entered into the HMS database. Example, if a patient at your institution had two PICC lines inserted on the same date and only one of these resulted in entry into the PICC database, you would indicate this as PICC line #1. If both PICC lines were entered into the HMS database, the first would PICC line #1 and the second would be PICC line #2.

Select one of the following:

- "1" if the PICC indicated above is the first PICC inserted on the date indicated above. Note: This is the default answer.
- "2" if the PICC indicated above is the second PICC inserted on the date indicated above.
- "3" if the PICC indicated above is the third PICC inserted on the date indicated above.

- "4" if the PICC indicated above is the fourth PICC inserted on the date indicated above.
- "5" if the PICC indicated above is the fifth PICC inserted on the date indicated above.

3. DATE OF EXCHANGE

Instructions: Review the medical record to determine the date that the peripherally inserted central catheter (PICC) of interest was exchanged. A PICC may be exchanged for the same or a different type of catheter (such as switching from a single lumen to a double lumen PICC or switching from a regular catheter to an antimicrobial-coated catheter). The existing PICC catheter **MUST** be replaced with a new PICC line using a guide wire, and the PICC line remains in the same location/vein as the original PICC of interest to be considered an exchange. Indicate the date of exchange in the MM/DD/YYYY format.

Note 1: A line is considered an exchange only if it is documented as a successful exchange, and the exchange occurred over a PICC that was 'at some point' a fully-functioning PICC.

Note: Be sure to indicate the date of PICC exchange, and not the date the PICC was ordered for exchange.

EXCLUDE: PICC exchanged to a midline, as conversion to a midline is considered a "PICC removal."

4. INDICATION FOR EXCHANGE

Instructions: Review the medical record to determine the indication for PICC exchange (i.e. the documented reason for why the PICC was exchanged). There are nine (9) options for this question.

Check any that apply:

- "*Dislodgement*" if the medical record indicates that the PICC was exchanged because of dislodgement.

INCLUDE: Any documentation that the PICC was exchanged due to dislodgement of the PICC. Examples include (but not limited to): the PICC being accidentally or partially pulled out by the patient or caregiver, was caught on the bed or IV pole, etc.

- "*Malfunction*" if the medical record indicates that the PICC was exchanged because of malfunction.

INCLUDE: Any documentation that the PICC was exchanged due to malfunction. Examples include (but not limited to): catheter breakage, coiling, tear or leak, etc.

- *"Change in catheter style (eg. non-power/ power)"* if the medical record indicates that the PICC was exchanged for a change in catheter style (non-power/power).
INCLUDE: Any documentation that the PICC was exchange to switch catheter style (i.e. power, non-power, antimicrobial coated, or antithrombotic coated).
Examples include (but not limited to): switching from a non-power PICC to a power PICC so that the patient can receive IV contrast.
- *"Change in the number of lumens"* if the medical record indicates that the PICC was exchanged for a change in the number of lumens.
INCLUDE: Any documentation that the PICC was exchanged to change the number of lumens (i.e. single, double, triple, or quadruple). Examples include (but not limited to): switching from a single lumen PICC to a double lumen PICC, or switching from a multi-lumen PICC to a single lumen PICC prior to discharge.
- *"Catheter Migration"* if the medical record indicates that the PICC was exchanged due to catheter migration.
INCLUDE: Any documentation that the PICC exchanged due to external movement of the catheter (e.g., increase in the amount of catheter exposed on skin, external movement of the catheter as measured by catheter length on skin etc.)
- *"Malposition"* if the medical record indicates that the PICC was exchanged due to malposition of the PICC catheter.
INCLUDE: Any documentation that the PICC was exchanged due to malposition in the internal jugular vein, axillary or subclavian vein, high superior vena cava, etc.
- *"Occlusion"* if the medical record indicates that the PICC was exchanged due to irreversible occlusion of the PICC catheter.
INCLUDE: Any documentation that the PICC was exchanged due to occlusion that was not reversible using medical approaches (e.g., flushing the catheter, use of tPA, etc.)
- *"Other"* if the medical record indicates that the PICC was exchanged for a reason not specified above.

FOR OTHER, PLEASE SPECIFY

Instructions: Free text the reason specified for PICC exchange.

- *"Unknown"* if the medical record is silent as to the indication/reason the PICC was exchanged.

5. NUMBER OF ATTEMPTS TO PLACE THE PICC

Instructions: Review the medical record to determine the number of attempts (i.e. the number of tries) it took to exchange the PICC successfully. There are seven (7)

options for this question.

INCLUDE: Documented # of attempts, passes, insertions, etc.

EXCLUDE: Number of operators, number of adjustments.

Select one of the following:

- "1" if the medical record indicates that the PICC was exchanged successfully on the first attempt.
- "2" if the medical record indicates that the PICC was exchanged successfully on the second attempt.
- "3" if the medical record indicates that the PICC was exchanged successfully after a third attempt.
- "4" if the medical record indicates that the PICC was exchanged successfully after a fourth attempt.
- "5+" if the medical record indicates that the PICC was exchanged successfully on the fifth or greater attempt.
- "Multiple" if the medical record documentation states the PICC was placed successfully after "multiple" attempts.
- "Unknown" if the medical record is silent as to the number of attempts were taken to successfully perform the PICC exchange.

6. IS THERE DOCUMENTATION IN THE MEDICAL RECORD THAT INDICATED THE PATIENT EXPERIENCED PICC LINE KINKING OR COILING?

Instructions: Review the medical record to determine if the patient experienced kinking or coiling of the PICC during the period of review (from the date of PICC insertion until 30 days post-PICC placement, patient death, or PICC removal, whichever comes first). There are three (3) options for this question.

INCLUDE: Documentation of PICC kinking, twisting, or that the PICC catheter is bent. PICC occlusion due to kinking. Kinking may occur near the insertion site, or may be found per x-ray. X-ray report of PICC kinking. Documentation of a coiled or looped PICC. X-ray report of PICC coiling or looping. For example, an x-ray report may indicate that the PICC coiled in the subclavian vein.

Select one of the following:

- "Yes" if the medical record indicates that the patient experienced kinking or coiling of the PICC. **Answer question 6.1**
- "No" if the medical record does not indicate that the patient experienced kinking or coiling of the PICC.
- "Unknown" if the medical record was silent as to whether the patient experienced kinking or coiling of the PICC.

6.1 DATE

Instructions: Review the medical record to determine the date kinking or coiling of the PICC was first identified. Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

7. SUCCESSFULLY INSERTED BY

Instructions: Review the medical record to determine the classification (i.e. type of professional) of the individual that exchanged the PICC. Select the individual that physically exchanged the PICC, and not the ordering physician. This piece of information is likely to be found on a PICC procedure note. There are seven (7) options for this question.

Select one of the following:

- *"Vascular Access Nurse"* if the medical record indicates that the PICC was exchanged by a vascular access/PICC nurse.
INCLUDE: PICC Registered Nurse (RN), Vascular Access Nurse, PICC certified nurse, Vascular Nurse, Vascular Access-Board Certified Nurse (VA-BC), Certified Registered Nurse Infusion (CRNI), etc.
- *"Interventional Radiologist"* if the medical record indicates that the PICC interest was exchanged by an interventional radiologist.
INCLUDE: Interventional Radiologist (IR), Vascular Radiologist, etc.
- *"Physician"* if the medical record indicates that the PICC was exchanged by a physician.
INCLUDE: Medical Doctor (MD), Doctor of Osteopathic Medicine (DO), etc.
- *"Advanced Practice Professional (Non-IR)"* if the medical record indicates that the PICC was exchanged by an advanced practice professional that is not part of Interventional Radiology.
INCLUDE: Nurse Practitioner (NP), Clinical Nurse Specialist (CNS), Certified Nurse Midwife (CNM), Certified Registered Nurse Anesthetist (CRNA), or Physician Assistant (PA or PA-C), etc.
- *"Advanced Practice Professional (IR)"* if the medical record indicates that the PICC of interest was inserted by an advanced practice professional that is part of interventional radiology.
- *"Other"* if the medical record indicates that the PICC was exchanged by someone with a classification not listed above.
- *"Unknown"* if the medical record is silent as to the classification of the individual who exchanged the PICC.

8. WERE MULTIPLE OPERATORS INVOLVED IN EXCHANGING THE PICC?

Instructions: Review the medical record to determine if there were multiple operators (people) involved in the exchange of the PICC. This question refers to whether or not there were multiple operators who intended on actually placing the line instead of an assistant. There are three (3) options for this question.

INCLUDE: Examples include (but not limited to), PICC exchange that required two PICC Nurses, a Nurse and an Advanced Practice Professional, a PICC Nurse followed by an Interventional Radiologist, etc.

EXCLUDE: Do not include cases where a medical professional assisted with the procedure; for example, a scenario where an interventional radiologist placed the PICC in IR and there was an RN who assisted with the procedure.

Select one of the following:

- "Yes" if the medical record indicates that there were multiple operators (i.e. more than one person) involved in exchanging the PICC.
- "No" if the medical record indicates that there were not multiple operators (i.e. only one person) involved in exchanging the PICC.
- "Unknown" if the medical record is silent as to the number of operators involved in exchanging the PICC.

9. WAS SEDATION USED FOR THE PLACEMENT OF THE PICC?

Instruction: Review the medical record to determine if sedation was used for the placement of the exchanged PICC.

INLCUDE: Any explicit statement stating that sedation was used for the placement of the PICC. Documentation of anesthesia involvement related to systemic sedation rather than local anesthesia used for the placement of the PICC.

Select one of the following:

- "Yes" if the medical record indicates that sedation was used for the placement of the exchanged PICC.
- "No" if the medical record indicates that sedation was not used for the placement of the exchanged PICC.
- "Unknown" if the medical record is silent as to whether or not sedation was used for the placement of the exchanged PICC.

10. CATHETER STYLE

Instructions: Review the medical record to determine the style of the exchanged PICC catheter. The style of catheter indicates whether or not the PICC is conventional/standard or if it can be used for power injection (i.e. contrast dye injection, etc.). This piece of information is likely to be found on a PICC procedure note. There are three (3) options for this question.

Select one of the following:

- *"Non-Power PICC"* if the medical record indicates that the PICC is a non-power PICC.

INCLUDE: Examples include (but not limited to): Groshong PICC, Poly Per-Q-Cath, Per-Q, Cath, PolyRad PICC, Silicone PICC, Turbo Flo PICC

- *"Power PICC"* if the medical record indicates that the PICC is a Power PICC or a Power Injectable catheter.

INCLUDE: Examples include (but not limited to): PowerGroshong PICC, PowerPICC, PowerPICC SV, PowerPICC SOLO², Turbo-Ject Power-injectable PICC, if the PICC can be used for CT injection.

- *"Unknown"* if the medical record is silent as to the style of the exchanged catheter.

11. IS THE PICC ANTIMICROBIAL COATED?

Instructions: Review the medical record to determine if the PICC was coated with an antimicrobial agent (i.e. helps to kill organisms and/or inhibit their growth). There are three (3) options for this question.

INCLUDE: Any documentation that the PICC was antimicrobial coated/impregnated. Examples include (but not limited to): Minocycline + Rifampin Impregnated, Turbo-Ject Minocycline/Rifampin Impregnated Power-injection PICC; Arrow PICC with Chlorag+ard™ Technology, Arrowg+ard Blue Advance PICC; chlorhexidine coated PICC, etc.

Select one of the following:

- *"Yes"* if the medical record indicates that the PICC is antimicrobial coated.
- *"No"* if the medical record does not indicate that the PICC is antimicrobial coated.
- *"Unknown"* if the medical record is silent as to whether or not the PICC is antimicrobial coated.

12. IS THE PICC ANTI-THROMBOTIC COATED?

Instructions: Review the medical record to determine if the exchanged PICC was anti-thrombotic (i.e. helps to prevent clotting) coated. There are three (3) options for this question.

INCLUDE: Any documentation that the PICC was anti-thrombotic coated. For example (but not limited to): Arrow PICC with Chlorag+ard™ Technology Antithrombogenic PICC; Arrowg+ard Blue Advance PICC; BioFlo PICCs; Heparin coated PICCs.

Select one of the following:

- *"Yes"* if the medical record indicates that the PICC is anti-thrombotic coated.

- "No" if the medical record does not indicate that the PICC is anti-thrombotic coated.
- "Unknown" if the medical record is silent as to whether or not the PICC is anti-thrombotic coated.

13. LINE THICKNESS/GAUGE (FR)

Instructions: Review the medical record to determine the thickness/French (F, FR, Fr.) size of the exchanged PICC catheter. The French catheter scale is commonly used to measure the size and external diameter of catheter. This piece of information is likely to be found on a PICC procedure note. There are nine (9) options for this question.

Select one of the following:

- "2" if the medical record indicates the thickness of the PICC is 2 FR.
INCLUDE: 2 F, 2 Fr., 2 FR, 2 French
- "3" if the medical record indicates the thickness of the PICC is 3 FR.
INCLUDE: 3 F, 3 Fr., 3 FR, 3 French
- "4" if the medical record indicates the thickness of the PICC is 4 FR.
INCLUDE: 4 F, 4 Fr., 4 FR, 4 French
- "4.5" if the medical record indicates the thickness of the PICC of interest is 4.5 FR.
INCLUDE: 4.5 F, 4.5 Fr., 4.5 FR, 4.5 French
- "5" if the medical record indicates the thickness of the PICC is 5 FR.
INCLUDE: 5 F, 5 Fr., 5 FR, 5 French
- "5.5" if the medical record indicates the thickness of the PICC of interest is 5.5 FR.
INCLUDE: 5.5 F, 5.5 Fr., 5.5 FR, 5.5 French
- "6" if the medical record indicates the thickness of the PICC is 6 FR.
INCLUDE: 6 F, 6 Fr., 6 FR, 6 French
- "7" if the medical record indicates the thickness of the PICC is 7 FR.
INCLUDE: 7 F, 7 Fr., 7 FR, 7 French
- "Unknown" if the medical record is silent as to the thickness of the PICC.

14. LUMENS

Instructions: Review the medical record to determine the number of lumens the PICC has. The term lumen refers to the number of openings the line has, or IV access lines. PICCs can have one, two, three, or four lumens. There are five (5) options for this question.

Select one of the following:

- *“Single”* if the medical record indicates that the PICC has one (1) lumen or is a single lumen.
- *“Double”* if the medical record indicates that the PICC has two (2) lumens or is double lumen.
- *“Triple”* if the medical record indicates that the PICC has three (3) lumens or is triple lumen.
- *“Quadruple”* if the medical record indicates that the PICC has four (4) lumens or is Quad lumen.
- *“Unknown”* if the medical record is silent as the number of lumens the PICC has.

15. TOTAL PICC LENGTH (CM)

Instructions: Review the medical record to determine the total length of the exchanged PICC in centimeters (CM). The total PICC length refers to the total length of the line inserted, including the length of catheter on the skin. Indicate the total PICC length as a numeric value between 25- 70 cm. For example, if the total PICC line was 58 CM, the number “58” should be entered into this field. This piece of information is likely to be found on a PICC procedure note.

Note: Capture the total PICC length, which includes the length of catheter on skin. If the total PICC length is not documented, please enter the number “0” in this field.

16. MANUFACTURER

Instructions: Review the medical record to determine the manufacturer of the exchanged PICC. This piece of information is likely to be found on the PICC procedure note or in the image section of the EMR there may be a scanned document of the PICC packaging which indicates the manufacturer, etc. There are seven (7) options for this question.

Select one of the following:

- *“BARD”* if the medical record indicates that the exchanged PICC is manufactured by BARD.
INCLUDE: BARD, BARD Access Systems, PowerPICC SOLO*2 Catheter, PowerPICC* Catheter, PowerPICC* SV Catheter, PowerGroshong* PICC, Groshong* PICC, Poly Per-Q-Cath* PICC, Per-Q-Cath* PICC, Poly RadPICC* Catheter. Select if documentation states placement confirmed with a “Sherlock”.
- *“COOK”* if the medical record indicates that the exchanged PICC is manufactured by COOK.
INCLUDE: Silicone Catheter Spectrum® Technology PICC, Silicone Catheter with Micropuncture® Peel-Away® Sheath Introducer, Spectrum Turbo-Ject®, Minocycline/Rifampin Power-Injectable PICC, Turbo-Flo® and Twin Turbo-Flo,

Polyurethane Catheter with Micropuncture® Peel-Away® Sheath Introducer, Turbo-Ject® Power-Injectable PICC

- *"Arrow"* if the medical record indicates that the exchanged PICC is manufactured by ARROW.

INCLUDE: Arrow PICC single lumen, Arrow PICC double lumen, Arrow PICC triple lumen, etc.

- *"Angiodynamics"* if the medical record indicates that the exchanged PICC is manufactured by Angiodynamics.

INCLUDE: BioFlo PICC, Morpheus Smart PICC, Celerity

- *"Navilyst"* if the medical record indicates that the exchanged PICC is manufactured by Navilyst.

INCLUDE: Xcela Power Injectable PICC, Xcela PICC's with PASV Valve Technology, Xcela Hybrid PICC with PASV Valve Technology, Vaxcel PICCs with PASV Valve Technology, Vaxcel PICCs

- *"Other"* if the medical record indicates that the exchanged PICC is manufactured by a company not specified above.

- *"Unknown"* if the medical record is silent as to the manufacturer of the exchanged PICC.

17. WHAT IS THE DOCUMENTED DEVICE TYPE/NAME FOR THE EXCHANGED PICC?

Instructions: Review the medical record to determine the device type or name of the exchanged PICC.

Select one of the following:

- *"Angiodynamics BioFlo PICC"* if the medical record indicates that the exchanged PICC is a BioFlo PICC.
- *"Arrow Peripherally Inserted Central Catheter (PICC)"* if the medical record indicates that the exchanged PICC is an Arrow Peripherally Inserted Central Catheter or Arrow PICC.
- *"Arrow PICC with Chlorag+ard Technology"* if the medical record indicates that the exchanged PICC is an Arrow PICC with Chlorag+ard Technology.
- *"Arrow PICC with Chlorag+ard Technology with Pressure Injectable Catheter with Blue FlexTip"* if the medical record indicates that the exchanged PICC is an Arrow PICC with Chlorag+ard Technology with Pressure Injectable Catheter with Blue FlexTip.
- *"BARD Groshong PICC Catheter"* if the medical record indicates that the exchanged PICC is a Groshong PICC.

- *"BARD Per-Q-Cath PICC Catheter"* if the medical record indicates that the exchanged PICC is a Per-Q-Cath PICC Catheter.
- *"BARD Poly Per-Q-Cath PICC Catheter"* if the medical record indicates that the exchanged PICC is a Poly Per-Q-Cath PICC Catheter.
- *"BARD Poly RadPICC"* if the medical record indicates that the exchanged PICC is a Poly RadPICC.
- *"BARD PowerGroshong PICC Catheter"* if the medical record indicates that the exchanged PICC is a PowerGroshong PICC Catheter.
- *"BARD PowerPICC Catheter"* if the medical record indicates that the exchanged PICC is a PowerPICC Catheter.
- *"BARD PowerPICC Provena Catheter"* if the medical record indicates that the exchanged PICC is a PowerPICC Provena Catheter.
- *"BARD PowerPICC SOLO2 Catheter"* if the medical record indicates that the exchanged PICC is a PowerPICC SOLO2 Catheter.
- *"BARD PowerPICC SV Catheter"* if the medical record indicates that the exchanged PICC is a PowerPICC SV Catheter.
- *"Cook Silicone Peripherally Inserted Central Venous Catheter"* if the medical record indicates that the exchanged PICC is a Cook Silicone Peripherally Inserted Central Venous Catheter or a Cook Silicone PICC.
- *"Cook Spectrum Silicone Minocycline + Rifampin Impregnated PICC"* if the medical record indicates that the exchanged PICC is a Spectrum Silicone Minocycline + Rifampin Impregnated PICC.
- *"Cook Spectrum Turbo-Ject PICC Set – Minocycline/Rifampin Impregnated"* if the medical record indicates that the exchanged PICC is a Minocycline/Rifampin Impregnated Spectrum Turbo-Ject PICC.
- *"Cook Turbo-Flo Peripherally Inserted Central Venous Catheter"* if the medical record indicates that the exchanged PICC is a *Turbo-Flo* or *Turbo-Flo Peripherally Inserted Central Venous Catheter*.
- *"Cook Turbo-Ject Power Injectable PICC"* if the medical record indicates that the exchanged PICC is a *Turbo-Ject Power Injectable PICC*.
- *"Navilyst Vaxcel PICC"* if the medical record indicates that the exchanged PICC is a Vaxcel PICC.
- *"Navilyst Vaxcel PICC with PASV Valve Technology"* if the medical record indicates that the exchanged PICC is a Vaxcel PICC with PASV Valve Technology.
- *"Navilyst Xcela Hybrid PICC with PASV Valve Technology"* if the medical record indicates that the exchanged PICC is an Xcela Hybrid PICC with PASV Valve Technology.

- “Navilyst Xcela PICC with PASV Valve Technology” if the medical record indicates that the exchanged PICC is an Xcela PICC with PASV Valve Technology.
- “Navilyst Xcela Power Injectable PICC” if the medical record indicates that the exchanged PICC is an Xcela Power Injectable PICC.
- “Unknown” if the medical record is silent or the device type/name for the exchanged PICC is unknown.
- “Other” if the medical record indicates a device type/name for the exchanged PICC is not listed above. (Note: Contact the Coordinating Center for approval before using this option). Answer question 16.1

17.1. IF OTHER, PLEASE SPECIFY

Instructions: Free text the full device name of the exchanged PICC. Contact the Coordinating Center for approval before entering a device name.

EXCLUDE: product lot numbers.

INCLUDE: AngioDynamics Morpheus

18. WAS A CATHETER TO VEIN RATIO DOCUMENTED?

Instructions: Review the medical record to determine if a catheter to vein ratio was documented. Some examples include: Minimum vein diameter 2 x’s the catheter size or 3x’s the catheter size.

Note: If the only notation of catheter to vein ratio that you see is “line occupies less than X % of the vessel” (rather than a range [40-44%] or a whole percentage [33%]): Select “No” to the question “Was a catheter to vein ratio documented?”- IF you can see a vein size documented, AND there is either a line thickness (fr) or catheter size (mm) documented.

Select “Yes” to the question “Was a catheter to vein ratio documented?”- IF you cannot see a vein size documented (regardless of line thickness or catheter size documentation); select “Other” to the question “What was the catheter to vein ratio?” and capture the documentation you have in the free text box.

Select one of the following:

- “Yes” if the medical record indicates a catheter to vein ratio was documented.

Answer question 18.1

INCLUDE: If the only notation of catheter to vein ratio is “line occupies less than X % of the vessel” (rather than a range [40-44%] or a whole percentage [33%]) and you **cannot** see a vein size documented.

INCLUDE: Statement of “Percentage of venous occlusion by catheter”

- “No” if the medical record does not indicate a catheter to vein ratio was measured.

INCLUDE: If the only notation of catheter to vein ratio is "line occupies less than X % of the vessel" (rather than a range [40-44%] or a whole percentage [33%]) and you **can** see a vein size documented, **AND** there is either a line thickness (fr/gauge) or catheter size (mm) documented.

- "Unknown" if the medical record is silent as to whether a catheter to vein ratio was measured.

18.1 IF YES, WHAT WAS THE CATHETER TO VEIN RATIO/PERCENTAGE?

Instructions: Review the medical record to determine the catheter to vein ratio.

Select one of the following:

Note: If the catheter to vein ratio is reported as a ratio, please convert it to a percentage and make the appropriate corresponding selection. (Example: 1:2 ratio corresponds to $\geq 50\%$, 1:3 ratio corresponds to 30-34%)

- "< 20%" if the medical record indicates < 20% as the catheter to vein ratio/percentage.
- "20-24%" if the medical record indicates 20-24% as the catheter to vein ratio/percentage.
- "25-29%" if the medical record indicates 25-29% as the catheter to vein ratio/percentage.
- "30-34%" if the medical record indicates 30-34% as the catheter to vein ratio/percentage.
- "35-39%" if the medical record indicates 35-39% as the catheter to vein ratio/percentage.
- "40-44%" if the medical record indicates 40-44% as the catheter to vein ratio/percentage.
- "45-49%" if the medical record indicates 45-49% as the catheter to vein ratio/percentage.
- " $\geq 50\%$ " if the medical record indicates $\geq 50\%$ as the catheter to vein ratio/percentage.
- "Unknown" if the catheter to vein ratio is unknown.
- "Other" if the medical record indicates as the catheter to vein ratio that is not one listed above. (Please contact the coordinating center before selecting "Other" for catheter to vein ratio documentation)

FOR OTHER, PLEASE SPECIFY CATHETER TO VEIN RATIO

Instructions: Free text the catheter to vein ratio.

19. IS THERE DOCUMENTATION OF CATHETER SIZE IN MM?

Instructions: Review the medical record to determine if there is documentation of catheter size in mm.

Select one of the following:

- “Yes” if the medical record indicates a catheter size in mm was documented.

FOR YES, PLEASE SPECIFY CATHETER SIZE IN MM

Instructions: Free text the catheter size in mm.

- “No” if the medical record indicates a catheter size in mm was not documented.
- “Unknown” if the medical record is silent as to whether a catheter size in mm was documented.

20. IS THERE DOCUMENTATION OF VEIN SIZE IN MM?

Instructions: Review the medical record to determine if there is documentation of vein size in mm.

Select one of the following:

- “Yes” if the medical record indicates a vein size in mm was documented. (Note: This is a free text, numerical entry only)

FOR YES, PLEASE SPECIFY VEIN SIZE IN MM

Instructions: Free text the vein size in mm.

- “No” if the medical record indicates a vein size in mm was not documented.
- “Unknown” if the medical record is silent as to whether a vein size in mm was documented.

21. WAS A PICC TIP DETECTOR SYSTEM USED TO CONFIRM PLACEMENT OF THE PICC?

Instructions: Review the medical record to determine if a PICC Tip Detector System (i.e. electromagnetic detection or ultrasonography-based evaluation of the PICC tip to assist the operator in guiding the tip to a desired location) was used to confirm placement of the during the PICC exchange. There are three (3) options for this question.

INCLUDE: Any documentation that a tip detector device/system or electromagnetic position sensing device was used during PICC insertion. Examples include (but not limited to): BARD Sherlock^{*} II Tip Location System, Sherlock 3CG^{*} Tip Confirmation System, ARROW/Teleflex Vasonova Tip System, Nautilus Tip Verification System. Ultrasound use if there is an explicit statement that is was used to detect the place of the PICC tip.

Select one of the following:

- “Yes” if the medical record indicates that a PICC tip detector system was used to confirm placement during the PICC exchange.

- “No” if the medical record does not indicate that a PICC tip detector system was used to confirm placement during the PICC exchange.
- “Unknown” if the medical record is silent as to whether a PICC tip detector system was used to confirm placement during the PICC exchange.

22. ON INITIAL PLACEMENT, WAS THE LOCATION OF THE PICC TIP CHECKED VIA A METHOD OTHER THAN THE PICC TIP DETECTOR SYSTEM?

Instructions: Review the medical record to determine if the location of the PICC tip was checked via a method other than the PICC tip detector system on initial placement of the exchanged PICC.

Select one of the following:

- “Yes” if the medical record indicates that the location of the PICC tip was confirmed by a method other than a PICC tip detector system or in addition to a PICC tip detector system. **Answer question 22.1 through 22.2.**
- “No” if the medical record indicates that the location of the PICC tip was not checked on checked by a method other than the PICC tip detector system.
- “Unknown” if the medical record is silent regarding location of PICC tip being checked.

22.1. CONFIRMATION TYPE

Instructions: Indicate the method used to check the PICC tip location (i.e. What was used to verify the location of the PICC tip)? There are four (4) options for this question.

Select one of the following:

- “X-ray” if the medical record indicates that the PICC tip was checked on initial placement via x-ray.
INCLUDE: X-ray, Chest x-ray (CXR), XRAY, Radiograph
- “Fluoroscopy” if the medical record indicates that the PICC tip was checked on initial placement via fluoroscopy.
INCLUDE: Fluoroscopy, Fluoroscope
- “Other” if the medical record indicates that the PICC tip was checked on initial placement via a method other than x-ray or fluoroscopy.
- “Unknown” if the medical record is silent as to the type of method that was used to check the PICC line location.

22.2 WAS THE PICC CONFIRMED VIA THIS METHOD(S) TO BE IN THE CORRECT LOCATION?

Instructions: Review the medical record to determine if the location of the exchanged PICC tip was confirmed to be in the correct location on initial placement. PICC tip confirmation is usually performed prior to use of the PICC to ensure that the tip of the catheter is properly placed. PICC tip confirmation is usually performed with an x-ray or under fluoroscopy. There are three (3) options for this question.

- "Yes" if the medical record indicates that the location of the PICC tip was confirmed to be in one of the following correct/appropriate locations upon initial placement. **Answer question 22.2.1**

INCLUDE: The correct/appropriate termination points include: cavoatrial junction (CAJ), cava atrial junction, superior vena cava (SVC) atrial junction, right atrial junction, lower 1/3rd of SVC, right atrium

- "No" if the medical record indicates that the location of the PICC tip was documented upon initial placement, but it is not in one of the correct/appropriate termination points (listed in the YES response above).

Answer question 22.2.2

INCLUDE: Some example(s) of incorrect/inappropriate locations are: The catheter tip terminates over the right superior mediastinum, SVC (without any further documentation), Tip projecting over the proximal SVC, Tip projecting over the expected region of the mid-superior vena cava, Lower SVC (without any further documentation), PICC inserted in the interval with its tip at the junction of the right brachiocephalic vein and SVC, Mid-distal SVC

- "Unknown" if the medical record is silent as to whether the location of the PICC tip was confirmed to be in the correct/appropriate location upon initial placement (i.e. "PICC tip confirmed in an acceptable location").

22.2.1 WHAT IS THE DOCUMENTED LOCATION OF THE PICC TIP?

Instructions: Review the medical record to determine the PICC tip location that was documented upon initial placement that is one of the correct/appropriate termination points. Enter the location of the PICC tip that is documented. There are three (3) options for this question.

Choose one of the following answers:

- "Cavoatrial Junction"

INCLUDE: Cava atrial junction, Superior vena cava (SVC) atrial junction, Right Atrial/SVC junction, Right Atrial Junction, lower 1/3 of the SVC.

- "Right Atrium"

- Other"

FOR OTHER, PLEASE SPECIFY

Instructions: Contact the coordinating center for guidance before using the "Other" selection. Free text the location of the PICC tip.

22.2.2 WHAT IS THE DOCUMENTED LOCATION OF THE PICC TIP?

Instructions: Review the medical record to determine the PICC tip location that was documented upon initial placement, but is not one of the correct/appropriate termination points stated above. Enter the location of the PICC tip that is documented. There are fourteen (14) options for this question. Choose one of the following answers:

- *"Arm veins (Basilic, Cephalic)"*
- *"Azygous Vein"*
- *"Axillary Vein"*
- *"Brachial Vein"*
- *"Brachiocephalic Vein"*
- *"Contralateral Subclavian Vein"*
- *"Inominate Vein"*
- *"Ipsilateral Subclavian Vein"*
- *"Jugular Vein"*
- *"Radial Vein"*
- *"Right Atrium Vein"*
- *"Right Ventricle"*
- *"Subclavian Vein"*
- *"SVC"*
- *"Distal SVC"*
- *"Lower SVC (not specified)"*
- *"Mid SVC or Middle 1/3rd SVC"*
- *"Proximal SVC"*
- *"Upper 1/3rd SVC"*
- *"Other"*

FOR OTHER, PLEASE SPECIFY.

Instructions: Contact the coordinating center for guidance before using the "Other" selection Free text the location of the PICC tip.

23. DID THE MEDICAL RECORD STATE THAT THE PICC TIP NEEDS TO BE ADJUSTED WITHIN 24 HOURS OF INSERTION?

Instructions: Review the medical record to determine if there is documentation that states that the exchanged PICC tip needs to be adjusted within 24 hours of

insertion. There are three (3) options for this question.

INCLUDE: Any documentation that indicates the PICC needed to be advanced and/or inserted more or needed to be pulled back/retracted.

Select one of the following:

- “Yes” if the medical record indicates there is documentation that states the PICC tip needs to be adjusted within 24 hours of insertion. **Answer question 23.1**
- “No” if the medical record does not indicate that the PICC tip needs to be adjusted within 24 hours of insertion.
- “Unknown” if the medical record is silent regarding documentation that the PICC tip needs to be adjusted within 24 hours of insertion.

23.1 IF YES, WHERE DID IT STATE THE PICC TIP NEEDS TO BE ADJUSTED?

Instructions: Indicate where in the medical documentation did it state the exchanged PICC tip needed to be adjusted? There are four (4) options for this question.

Check any that apply:

- “X-ray” if the medical record indicates that the PICC tip needs to be adjusted on initial placement via x-ray.
INCLUDE: X-ray, Chest x-ray (CXR), XRAY, Radiograph
- “Fluoroscopy” if the medical record indicates that the PICC tip needs to be adjusted on initial placement via fluoroscopy.
INCLUDE: Fluoroscopy, Fluoroscope
- “Other” if the medical record indicates that the PICC tip needs to be adjusted on initial placement via a method other than x-ray or fluoroscopy.
- “Unknown” if the medical record is silent as to if the PICC tip needs to be adjusted on initial placement.

24. WAS THE NEWLY PLACED PICC TIP VIA THE EXCHANGE ADJUSTED WITHIN 24 HOURS OF INSERTION?

Instructions: Review the medical record to determine if the exchanged PICC tip was adjusted (i.e. pull back or advance) within 24 hours of insertion. There are three (3) options for this question.

INCLUDE: Any documentation that the PICC was advanced and/or inserted more or was pulled back/retracted within 24 hours of the PICC exchange.

Select one of the following:

- “Yes” if the medical record indicates that the PICC tip was adjusted within 24 hours of insertion. **Answer question 24.1**

- “No” if the medical record indicates that the PICC tip did not require an adjustment within 24 hours of insertion.
- “Unknown” if the medical record is silent regarding adjustment to the PICC tip within 24 hours of insertion.

24.1 NUMBER OF ADJUSTMENTS

Instructions: Indicate the number of adjustments made to the exchanged PICC within 24 hours of insertion. There are six (6) options for this question.

Choose one of the following:

- “1” if the medical record indicates that the PICC of interest required one (1) adjustment.
- “2” if the medical record indicates that the PICC of interest required two (2) adjustments.
- “3” if the medical record indicates that the PICC of interest required three (3) adjustments.
- “4” if the medical record indicates that the PICC of interest required four (4) adjustments.
- “5+” if the medical record indicates that the PICC of interest required five or more adjustments.
- “Unknown” if the medical record is silent as to the number of adjustments that were made to successfully place the PICC line.

25. WAS THE REMOVED PICC TIP SENT FOR CULTURE?

Instructions: Review the medical record to determine if the removed PICC tip (i.e. the tip of the PICC that was removed during this exchange) was sent for microbiological culture. This information is likely to be found in the physician progress notes, vascular nursing notes, and/or laboratory (i.e. microbiology) information. There are three (3) options for this question.

INCLUDE: Documentation and/or order for the removed PICC tip to be sent for culture. Laboratory results of the PICC tip (i.e. of the PICC removed during this exchange) culture.

Select one of the following:

- “Yes” if the medical record indicates that the removed PICC tip was sent for culture. **Answer question 25.1**
- “No” if the medical record does not indicate that the removed PICC tip was sent for culture.
- “Unknown” if the medical record was silent as to whether or not the removed PICC tip was sent for culture.

25.1. WAS THE REMOVED PICC TIP CULTURE RESULT POSITIVE?

Instructions: Review the medical record to determine if the removed PICC tip culture was positive (i.e. the culture was positive for pathogen growth) during the period of review. There are three (3) options for this question.

INCLUDE: Physician documentation of a positive culture of the removed PICC tip, or laboratory result that indicates that the removed PICC tip was positive for a pathogen.

Select one of the following:

- "Yes" if the medical record indicates that the patient had a positive removed PICC tip culture result. *Answer question 25.1.1 through 25.1.3*
- "No" if the medical record does not indicate that the patient had a positive removed PICC tip culture result.
- "Unknown" if the medical record was silent as to whether the patient had a positive removed PICC tip culture result.

25.1.1. POSITIVE PICC TIP CULTURE - DATE OF CULTURE

Instructions: Review the medical record to determine the date of the first positive PICC tip culture (i.e. date the culture was collected). Indicate the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

25.1.2 POSITIVE PICC TIP CULTURE – PATHOGEN (#1) IDENTIFIED

Instructions: Review the medical record to determine the pathogen identified on the PICC tip culture. Pathogens are classified by genus and species. The genus and species of the pathogen will likely be found on the laboratory report; however, they may also be found within the progress notes. First, indicate the genus, which is the broad or the generic name. Once genus is selected, you will be prompted to indicate the species. There are thirty-three (33) options for this question.

Select one of the following:

- "Achromobacter"
- "Acinetobacter"
- "Actinomyces"
- "Aerobacter"
- "Aerococcus"
- "Aeromonas"
- "Alcalignes"
- "Alpha-hemolytic Streptococcus, not S. pneumoniae"

- "Arachnia"
- "Arcanobacterium"
- "Arthrobacter"
- "Aspergillus"
- "Bacillus"
- "Bacterionema"
- "Bacteroides"
- "Bordetella"
- "Branhamella"
- "Brevibacillus"
- "Brevibacterium"
- "Burkholderia"
- "Candida" INCLUDE: Yeast and Torulopsis Glabrata
- "Citrobacter"
- "Clostridium"
- "Corynebacterium"
- "Coryneform"
- "Cupriavidus"
- "Dermabacter"
- "Dermacoccus"
- "Diphtherioids"
- "Elizabethkingia"
- "Enterobacter"
- "Enterococcus"
- "Escherichia"
- "Francisella"
- "Friedlander's"
- "Fusobacterium"
- "Gordonia"
- "Granulicatella"
- "Haemophilus"
- "Histoplasma"
- "Klebsiella"
- "Kluyvera"
- "Kocuria"
- "Legionella"
- "Levinea"
- "Listeria"

- *"Micrococcus"*
- *"Microbacterium"*
- *"Monilia"*
- *"Moraxella"*
- *"Morganella"*
- *"Neisseria"*
- *"Nocardia"*
- *"Oidium"*
- *"Paeni"*
- *"Pantoea"*
- *"Pasteurella"*
- *"Pediococcus"*
- *"Peptostreptococcus"*
- *"Pneumocystis"*
- *"Prevotella"*
- *"Propioniferax"*
- *"Propionibacterium"*
- *"Providencia"*
- *"Proteus"*
- *"Pseudomonas"*
- *"Raoultella"*
- *"Rhodococcus"*
- *"Rothia"*
- *"Rummeliibacillus"*
- *"Salmonella"*
- *"Sarcina"*
- *"Scedosporium"*
- *"Solibacillus"*
- *"Serratia"*
- *"Staphylococcus"*
- *"Streptococcus"*
- *"Trueparella"*
- *"Tsukamurella"*
- *"Tufted Mitior"*
- *"Turicella"*
- *"Viridans Group Streptococci"*
- *"Yersina"*
- *"Stenotrophomonas"*

- *“Streptococcus species”*
- *“Xanthomonas”*
- *“Other (See the CDC’s complete list in the knowledge base)”* **Answer question 25.1.2.1**
- *“Bacteria Not Specified”*

25.1.2.1. FOR OTHER, PLEASE SPECIFY

Instructions: Do not use the selection “Other” until you have contacted the coordinating center for guidance. Use free text to indicate other.

INCLUDE: Streptococcus Intermedius, Gemella Morbillorum

25.1.3 FOR THE POSITIVE PICC TIP CULTURE, WAS THERE AN ADDITIONAL PATHOGEN IDENTIFIED?

Instructions: Review the medical record to determine if an additional pathogen was identified on the laboratory report for the PICC tip culture.

Select one of the following:

- *“Yes”* if the medical record indicates that the patient had a second pathogen identified within the PICC tip culture. **Answer question 25.1.3.1.**
- *“No”* if the medical record does not indicate that the patient had a second pathogen identified within the PICC tip culture.
- *“Unknown”* if the medical record is silent as to whether the patient had a second pathogen identified within the PICC tip culture.

25.1.3.1 POSITIVE PICC TIP CULTURE - PATHOGEN (#2) IDENTIFIED

Instructions: Review the medical record to determine if the patient had a second pathogen identified on the PICC tip culture. Repeat the steps outlined above for up to five pathogens.

Abstractor Notes

1. DO YOU HAVE ANY NOTES OR DO YOU WANT TO EXCLUDE A FORM?

Instructions: Indicate whether or not you have any notes that you would like to include regarding any of the death data or if you would like to remove this form.

There are two (2) options for this question.

Select one of the following:

- “Yes” if you have notes that you would like to include or you would like to remove this form. **Answer questions 1.1 and 1.2.**
- “No” if you do not have any notes that you would like to include or you do not want to remove this form.

1.1 ABTRACTOR NOTES

Instructions: Use free text to input your notes.

Important: Do not enter any PHI (Protected Health Information) into this field.

1.2 DO YOU WANT TO EXCLUDE THIS FORM?

Instructions: This question will default to “No”. If you would like to exclude/remove this form you must manually change your answer to “Yes”. There are two (2) options for this question.

Select one of the following:

- “Yes” if you would like to exclude/remove this form from data analysis. **Answer question 1.2.1.**
- “No” if you would like to include this form in the data analysis.
Note: This is the default.

1.2.1 ARE YOU SURE YOU WANT TO EXCLUDE THIS FORM? IF YES, PLEASE ENTER THE REASON FOR FORM REMOVAL IN THE ABTRACTOR NOTES SECTION ABOVE.

- “Yes” if you are sure you would like to exclude/remove this form from data analysis. Enter the reason for form removal in the abstractor notes section above.
- “No” if you are sure you would like to include this form in the data analysis.
Note: This is the default.

Death (PICC)

Death Form

Instructions: This form should only be completed if the patient died during the period of review (prior to PICC removal or on the day of PICC removal). For all questions in the database, "No Answer" is the default selection. This field will be considered a blank field and is interpreted as missing data. Be sure to select the appropriate answer for each question. Note: This is a repeating form in the event that the patient had two lines in place at the time of death.



1. DATE PICC PLACEMENT

Instructions: Indicate the date that the PICC of interest was placed. Indicate the date in the MM/DD/YYYY format.

2. THIS IS SUCCESSFUL PICC # _____ ON THIS DATE.

Instructions: Review the medical record to determine which PICC is entered that corresponds to the date of index placement. There are five (5) options for this question).

Note1: The default will always be one; however, if this is the second, third, fourth, or fifth PICC line inserted on the same date indicated above, you must manually change the entry using the drop down box.

Note2: Only enter PICC lines that were entered into the HMS database. For example, if a patient at your institution had two PICC lines inserted on the same date and only one of these resulted in entry into the PICC database, you would indicate this as PICC line #1. If both PICC lines were entered into the HMS database, the first would be PICC line #1 and the second would be PICC line #2.

Select one of the following:

- "1" if the PICC indicated above is the first PICC inserted on the date indicated above. Note: This is the default answer.
- "2" if the PICC indicated above is the second PICC inserted on the date indicated above.

- “3” if the PICC indicated above is the third PICC inserted on the date indicated above.
- “4” if the PICC indicated above is the fourth PICC inserted on the date indicated above.
- “5” if the PICC indicated above is the fifth PICC inserted on the date indicated above.

3. INDICATE THE DATE OF DEATH

Instructions: Review the medical record to determine the date of death. Record the date in the MM/DD/YYYY format. Use 01/01/1900 if the date is unknown.

Note: If at all possible, enter a date of death even if you are unable to determine the actual confirmed death date.

4. IS THE DATE...

Instructions: Indicate whether the date of death is estimated/approximated or confirmed based on the information provided in the medical record and/or phone call. There are two (2) options for this question.

Select one of the following:

- “*Estimated*” if the medical record indicates that the patient is deceased, but you are unable to confirm the exact date. The date entered is, therefore, an estimated date. For example, if during the phone call, a patient’s family member indicates the patient died about 2 weeks ago, you can estimate a date of death based upon this time frame.
- “*Confirmed*” if the medical record indicates the exact date of death, this date is therefore confirmed.

5. INDICATE THE CAUSE OF DEATH

Instructions: Review the medical record to determine the cause of death. In the absence of a specific cause of death documented, a diagnosis from the last progress note/discharge summary may be used to answer this question. There are eight (8) options for this question.

Check all that apply:

- “*VTE*” if the medical record indicates that the cause of death was venous thromboembolism (VTE). **Answer question 5.1**
INCLUDE: Venous thromboembolism (VTE), deep vein thrombosis (DVT), pulmonary embolism (PE)
- “*CLABSI*” if the medical record indicates that the cause of death was central line associated blood stream infection (CLABSI).

- *“Sepsis (or Suspected Sepsis)”* if the medical record indicates that the cause of death was sepsis or suspected sepsis.
 - *“Cardiac Arrest”* if the medical record indicates that the cause of death was cardiac arrest.
 - *“Respiratory Failure”* if the medical record indicates the cause of death was respiratory failure.
- INCLUDE: reason for death documented as “terminal wean”
- *“Cancer”* if the medical record indicates the cause of death was cancer.
 - *“Other”* if the medical record indicates that the cause of death was due to something other than those options listed above.

FOR OTHER, INDICATE THE CAUSE OF DEATH

Instructions: Use free text to indicate the cause of death.

- *“Unknown”* if the medical record is silent as to the cause of death.

5.1. TYPE OF VTE

Instructions: Review the medical record to determine the type of venous thromboembolism (VTE) that was the cause of death. There are three (3) options for this question.

Check any that apply:

- *“DVT”* if the medical record indicates that the cause of death was deep vein thrombosis (DVT)
- *“PE”* if the medical record indicates that the cause of death was pulmonary embolism (PE)
- *“VTE (Not Specified)”* if the medical record indicates that the cause of death was a venous thromboembolism but was not specific on the type.

Abstractor Notes

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There are two (2) options for this question.

Select one of the following:

- “Yes” if you have notes that you would like to include or you would like to remove this form. **Answer questions 1.1 and 1.2.**
- “No” if you do not have any notes that you would like to include or you do not want to remove this form.

1.1 ABTRACTOR NOTES

Instructions: Use free text to input your notes.

Important: Do not enter any PHI (Protected Health Information) into this field.

1.2 DO YOU WANT TO EXCLUDE THIS FORM?

Instructions: This question will default to “No”. If you would like to exclude/remove this form you must manually change your answer to “Yes”. There are two (2) options for this question.

Select one of the following:

- “Yes” if you would like to exclude/remove this form from data analysis. **Answer question 1.2.1.**
- “No” if you would like to include this form in the data analysis.
Note: This is the default.

1.2.1 ARE YOU SURE YOU WANT TO EXCLUDE THIS FORM? IF YES, PLEASE ENTER THE REASON FOR FORM REMOVAL IN THE ABTRACTOR NOTES SECTION ABOVE.

- “Yes” if you are sure you would like to exclude/remove this form from data analysis. Enter the reason for form removal in the abstractor notes section above.
- “No” if you are sure you would like to include this form in the data analysis.
Note: This is the default.