ICU Centers of Excellence

ICU Liberation Bundle

Data Collection Manual

Society of Critical Care Medicine
The Intensive Care Professionals

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Introduction

This document outlines the Society of Critical Care Medicine's (SCCM) ICU Centers of Excellence data collection process, including key requirements, data pathways, and access to implementation resources. Standardized inclusion and exclusion criteria are provided, along with step-by-step guidance on manual data abstraction and automated data extraction methods to ensure accurate data collection, supporting consistent analysis and reporting in alignment with the ICU Liberation Bundle (A-F).

SCCM worked with both Epic and Cerner to integrate ICU Liberation Bundle flowsheets into their electronic health record (EHR) systems. More details are available on the ICU Liberation web page. Sites that have not yet implemented these flowsheets or use a different EHR platform can participate if their EHR contains discrete data fields for each bundle element to ensure precise data collection, transfer, and analysis.

Compliance and Designation Levels

The ICU Centers of Excellence program defines compliance as ICU Liberation Bundle implementation in at least 80% of eligible patients, allowing for the fact that some bundle elements do not apply to all patients.

A tiered designation system encourages progressive implementation and recognizes varying levels of adoption across sites. Designation levels are achieved by meeting the following compliance requirements:

- **Bronze Level:** 80% compliance with 2 bundle elements
- **Silver Level:** 80% compliance with 4 bundle elements
- **Gold Level:** 80% compliance with all 6 bundle elements

Data Collection Requirements

Quarterly Data Collection:

- Data is collected quarterly for all eligible patients admitted to the ICU each month.
    - Sites may opt to submit a **sample of the first 20 patients admitted each month**, which may be a more practical approach for those using manual data abstraction.
- Data are collected for each patient for each 24-hour period (12:00 a.m. – 11:59 p.m.):
    - **Day 0**: ICU admission day (not included)
    - **Day 1**: First full 24-hour period in the ICU
- Data are recorded on days 1-7, 14, 21, and 28.

Inclusion and Exclusion Criteria

Inclusion and exclusion criteria establish broad guidelines for identifying patients eligible for the ICU Liberation Bundle.

Inclusion Criteria:

- Any patient admitted to the ICU

Exclusion Criteria:

- Patients who die or are discharged within 24 hours of ICU admission (i.e., on ICU Day 0 or 1)
- Patients undergoing active life-support withdrawal and/or documented comfort care measures within the first 24 hours of ICU admission (i.e., on ICU Day 0 or 1)
- Patients whose plan of care transitions from aggressive life support to comfort care within 24 hours after ICU admission (i.e., on ICU Day 0 or 1)

ICU Liberation Bundle Patient Data (Snapshot)

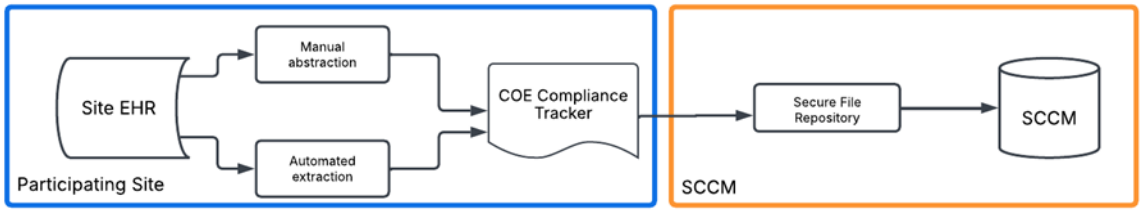
See Appendix A for a detailed description of ICU Liberation Bundle metrics.

ICU Liberation Bundle Element	Documentation Requirements
A: Assess, Prevent, and Manage Pain	Number of documented pain assessments within a 24-hour period
B: Spontaneous Awakening Trial (SAT)	SAT safety screen results and SAT performance
B: Spontaneous Breathing Trial (SBT)	SBT safety screen results and SBT performance
C: Choice of Sedation and Analgesia	Number of documented level-of-arousal assessments within a 24-hour period
D: Delirium: Assess, Prevent, and Manage	Number of documented delirium assessments within a 24-hour period
E: Exercise and Early Mobility	Early mobility safety screen results and level of early mobility performed
F: Family Engagement and Empowerment	Documentation of family engagement

Data Submission Process

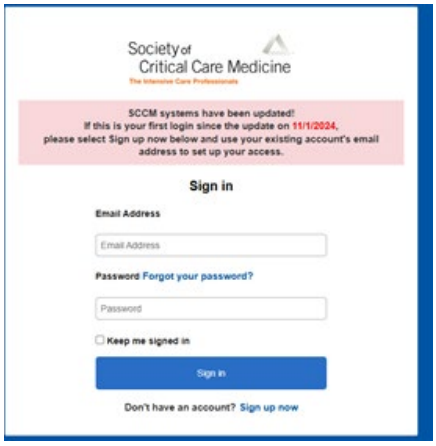
Data submission from participating ICU Centers of Excellence sites will be facilitated through SCCM's Data Coordinating Center (DCC) via a HIPAA-compliant secure file transfer protocol (SFTP). For sites using an automated extraction process, data may be extracted from a data lake or warehouse rather than directly from the EHR.

Below is an overview of the flow of data from the site to SCCM:



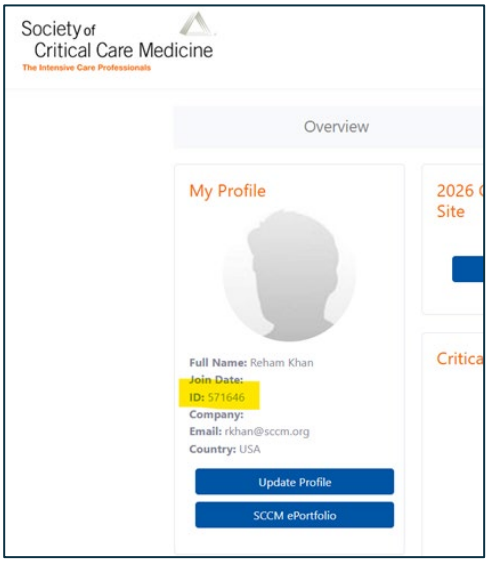
Instructions for Accessing the Data Transfer Portal in REDCap Cloud

1. Log in to mysccm.org with your email address and SCCM password, then proceed to step 3 below. If you do not have an SCCM account, click "Sign up now" at the bottom of the page and proceed to step 2 below.



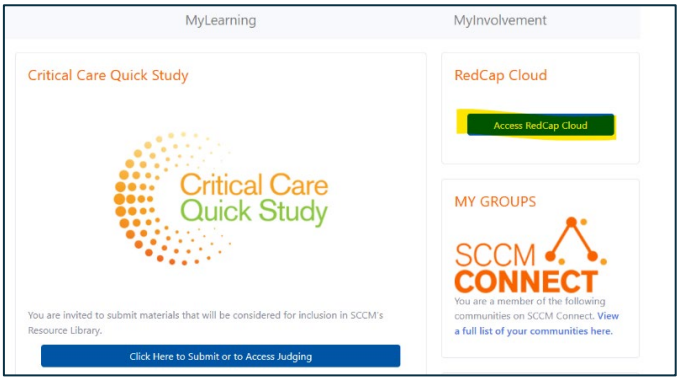
2. To create a new account:
    a. Enter your email address then click Send verification code. A verification code will be sent to the email address you entered. The email will be from "Microsoft on Behalf of SCCM."
    b. Enter the verification code and click "Verify Code."
    c. Fill in the following fields:
        - New Password (must be 8 to 64 characters and include at least 3 of the following: a lowercase letter, an uppercase letter, a number, or a symbol)
        - Confirm New Password
        - First Name
        - Last Name
        - Profession
        - Country/Region
    d. Click "Create." Your account has been created.

3. After signing in to your My SCCM account, note your ID number located in the top left-hand corner under “My Profile.”



After you create or sync your account, email Reham Khan (rkhan@sccm.org) with your email and ID number to be added to the ICU Centers of Excellence file repository.

4. On the top right-hand corner of your screen, click the “Access REDCap Cloud” icon.

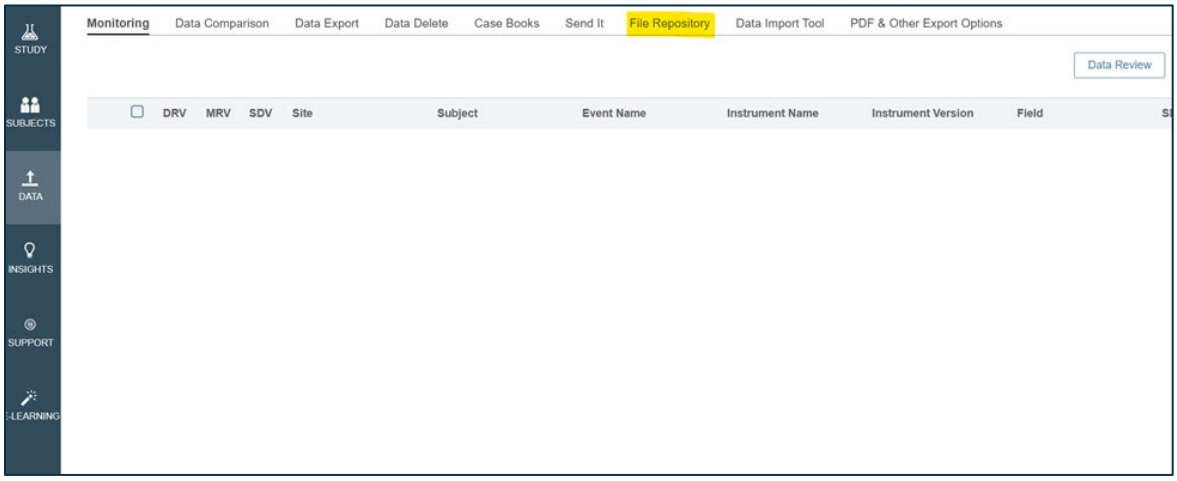


5. Enter your SCCM ID number followed by @sccm.org and click “Sign in.”

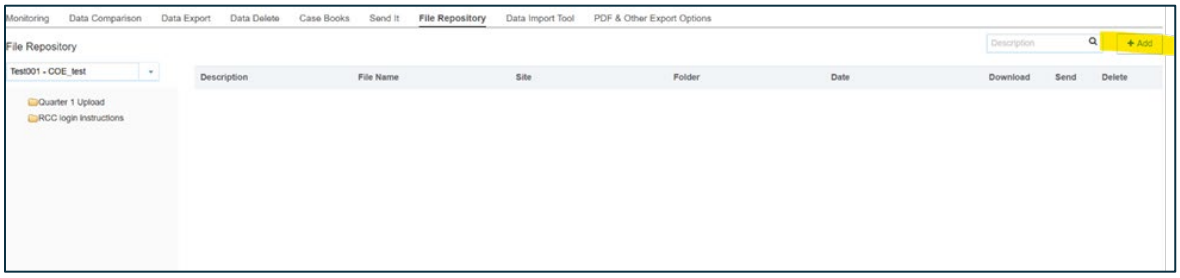
6. You will taken to the My SCCM login screen. Enter your email and password again and click “Sign in.”

7. You should now see the REDCap Cloud home page. Under the Study Name column, find “ICU Centers of Excellence.” Click to access the file repository.

8. On the study page, click “Data” on the left-hand toolbar. Then click “File Repository” on the top header.



In the file repository, click the dropdown menu to access your site. Click “Add” to upload your Excel file to the repository.



9. Select the folder and file you wish to upload. Click “Save and Exit.”

Data Collection Pathways

All sites will use one of two data collection pathways: **Manual Data Abstraction** or **EHR-Based Extraction**. Both pathways provide flexibility while ensuring consistency in reporting. Upon submission, dashboards aligned with the minimum data set will be available to sites, enabling them to effectively track compliance.

Manual Data Abstraction:

Sites manually abstract patient data from the EHR and enter it into the ICU Centers of Excellence Compliance Tracker to standardize data collection and comply with security and privacy regulations.

Key aspects of this approach include:

- **Data collection:** Detailed instructions are provided for accurately and consistently entering each ICU Liberation Bundle element in the tracker.
- **Secure data submission:** Once data entry is complete, sites upload the tracker's Excel file to SCCM's secure, HIPAA-compliant repository.
- **Estimated time needed to sample abstraction for each element:**
    - For sites with standardized documentation embedded in the EHR:
        - 10 hours per quarter for elements A through D
        - 20 hours per quarter for elements E and F
    - For sites without standardized documentation embedded in the EHR, varying time estimates depending on the number of elements submitted for compliance tracking

Automated Data Extraction

For sites with standardized EHR flowsheets, SCCM will provide data logic to assist with automated extraction of patient data. This method allows sites with embedded ICU Liberation flowsheets to streamline data collection, ensuring an efficient and standardized process.

Key aspects of this approach include:

- **Data logic guidance:** SCCM-developed standardized logic ensures consistent extraction of ICU Liberation Bundle metrics. Data logic guidance is under development and expected to be disseminated in May 2025.
- **Custom code development:** Sites use SCCM's logic as a framework to write custom scripts or queries for EHR data extraction.
- **Automated population of the ICU Centers of Excellence Compliance Tracker:** This efficient and accurate method automatically populates the tracker with patient data, reducing the need for manual data entry.

Frequently Asked Questions

1. **How often will sites submit data to SCCM?**
   Quarterly.

2. **Are sites required to submit data for all ICU Liberation Bundle elements?**
   No, sites are required to submit data only for the elements on which they are focusing based on their chosen designation level. ICU champions, along with SCCM guidance, will inform SCCM which bundle elements the site is focusing on.

3. **How do I access my dashboard? How are data displayed?**
   SCCM will provide quarterly site dashboards to track compliance of bundle elements.

4. **How does the data transfer process work?**
   SCCM's DCC uses an SFTP process through a HIPAA-compliant file repository. SFTP allows large files of sensitive data to be accessed, transferred, and managed remotely. Sites will upload patient data directly to the DCC. The data are protected using transport layer security encryption.

5. **Are sites required to obtain institutional review board (IRB) approval?**
   No, SCCM has received an IRB-exempt designation. The ICU Centers of Excellence program is considered a quality improvement project.

6. **If the patient is transferred out of the ICU and returns back to the ICU or discharged from the hospital and then readmitted within 30 days, is the patient automatically re-enrolled in the project or is the patient counted as a new patient for the second ICU admission?** Data will only be entered into the project database that pertains to the patient's initial ICU stay. This means that each patient will be entered into the project database only one time per hospital admission.

For other questions, please contact Christina Kordik at ckordik@sccm.org.

APPENDIX A

ICU Liberation Bundle Metrics: Adult & Pediatric Patient Data Collection

These metrics allow SCCM to evaluate compliance with the ICU Centers of Excellence program requirements and ICU Liberation evidence-based practices, measure the effectiveness of bundle implementation, and maintain consistency across participating sites.

ADULT PATIENT DATA COLLECTION

A: Assess, Prevent, and Manage Pain

Compliance Criteria:

- At least 6 pain assessments are performed for each patient within a 24-hour period, using one of these SCCM-accepted methods:
    - Self-report (yes/no)
    - Numeric rating scale (NRS)
    - Behavioral Pain Scale (BPS)
    - Critical-Care Pain Observation Tool (CPOT)

Potential Exclusions:

- Patient is chemically paralyzed.
- Patient was away from the ICU for a test or procedure for longer than 4 hours in a 24-hour period.

1. Number of Documented Pain Assessments

This is the key metric for measuring compliance with the A element of the ICU Liberation Bundle.

Metric Description: Tracks the number of pain assessments performed within a 24-hour period per patient using the SCCM-accepted tools listed above.

Sources: Patient's medical record, nursing flowsheets, or other documentation.

Documentation Requirements:

- **Document the total number of pain assessments performed** within a 24-hour period based on the criteria outlined above. Sites must perform at least 6 pain assessments within a 24-hour period for each patient.
    - If multiple assessments are performed, count each one separately as part of the total for the 24-hour period.
- **Document as exempt** for patients who meet the specific exclusion criteria listed above.

B: Both SAT and SBT

SAT Compliance Criteria:

- Patient passes safety screen, and SAT is performed.
- Patient fails safety screen, and SAT is not performed.

SBT Compliance Criteria:

- Patient passes safety screen, and SBT is performed.
- Patient fails screen, and SBT is not performed.

Potential Exclusions:

- Patient is not receiving continuously infused medication for the purpose of sedation.
- Patient is not receiving invasive mechanical ventilation.

Sedative and/or Opioid Administration
Sites may use the administration of continuously infused or intermittently scheduled sedatives and/or opioids used for sedative purposes in the previous 24 hours as a clinical prompt when evaluating the need for an SAT.

Submission of this data is optional but may be included as part of the COE program's data tracking efforts.

Some medications that might trigger an SAT, include:

- Propofol
- Dexmedetomidine
- Midazolam
- Lorazepam
- Diazepam
- Fentanyl
- Morphine
- Hydromorphone
- Remifentanil
- Etomidate
- Ketamine

1. Mechanical Ventilation

This is a key indicator for determining the patient's eligibility for an SAT and an SBT.

Metric Description: Tracks whether the patient was receiving **invasive** mechanical ventilation during the previous 24-hour period. Non-invasive ventilation, such as positive airway pressure ventilators using nasal or face masks, does not meet the definition for this metric.

Sources: Patient's medical record, including respiratory therapy notes, ICU nursing flowsheets, or ventilator records.
Note: In some systems, the documentation of an **LDA (Lines, Drains, Airways)** field for an artificial airway (such as an endotracheal tube or tracheostomy) may serve as a **trigger** for initiating the mechanical ventilation care pathway. This field provides discrete confirmation that the patient is invasively ventilated and may help differentiate from those receiving only non-invasive support.

Documentation Requirements:

- **Document as yes** if the patient received invasive mechanical ventilation during the previous 24 hours.

- **Document as no** if the patient did not receive invasive mechanical ventilation during the previous 24 hours, including patients for whom only noninvasive methods were used.

2. SAT Safety Screen Results

Metric Description: Tracks the outcome of the SAT safety screen, consisting of daily criteria used to assess whether it is safe to stop continuously infused or intermittently scheduled sedative medications.

SAT Safety Screen Inclusion Criteria: All patients receiving continuously infused medication **for the purpose of sedation** must undergo a daily safety screen.

The following are examples of exclusions that may prevent SAT performance. Sites may have additional or alternative exclusions based on clinical guidelines or patient needs. These exclusions are dependent on the patient's status, which may change daily.

SCCM recommends that safety screens assess the following criteria:

- Active seizures
- Active alcohol withdrawal
- Agitation (Richmond Agitation-Sedation Scale [RASS] score > +2)
- Chemical paralysis
- Active myocardial ischemia
- Increased intracranial pressure

Sources: Patient's medical record or other documentation.

Documentation Requirements:

- **Document as passed** when the patient passes all safety screen criteria.
- **Document as failed** when the patient fails safety screen criteria.
- **Document as not performed/not documented** when the SAT safety screen is not performed, or no documentation is available.
- **Document as exempt** when the patient is not receiving continuously infused medication for the purpose of sedation.

3. SAT Performance

This is a key metric for measuring compliance with the B element of the ICU Liberation Bundle.

Metric Description: Tracks whether an SAT is performed on a patient. An SAT involves stopping all continuous and intermittent scheduled sedative medications (e.g., benzodiazepines, propofol, opioids).

Sources: Patient's medical record, including nursing flowsheets and other documentation related to medication administration or SAT status.

Documentation Requirements:

- **Document as yes** when SAT is documented as performed for the patient.
- **Document as no** when SAT is not performed.
- **Document as not documented** when no SAT performance documentation is available.

4. SBT Safety Screen Results

Metric Description: Tracks the outcome of the SBT safety screen, consisting of daily criteria used to determine whether it is safe to discontinue mechanical ventilation.

SBT Safety Screen Inclusion Criteria: All patients receiving invasive mechanical ventilation must undergo a daily safety screen.

The following are examples of exclusions that may prevent SBT performance. Sites may have additional or alternative exclusions based on clinical guidelines or patient needs. These exclusions are dependent on the patient's status, which may change daily.

- Patient not receiving mechanical ventilation
- Agitation (RASS score > +2)
- Oxygen saturation < 88%
- FIO_2 > 50%
- Positive end-expiratory pressure (PEEP) > 7.5 cm H_2O
- Active myocardial ischemia
- Moderate- to high-dose vasopressors
- Lack of inspiratory effort

Sources: Patient's medical record, including ventilator weaning flowsheets, nursing notes, or ICU progress notes.

Documentation Requirements:

- **Document as passed** when the patient passes all safety screen criteria.
- **Document as failed** when the patient fails safety screen criteria.
- **Document as not performed/not documented** when the SBT safety screen is not performed, or no documentation is available.
- **Document as exempt** when the patient is not receiving invasive mechanical ventilation.

5. SBT Performance

This is a key metric for measuring compliance with the B element of the ICU Liberation Bundle.

Metric Description: Tracks whether a Spontaneous Breathing Trial (SBT) is performed on a patient to assess their ability to breathe without ventilator support. The trial typically involves placing the patient on **PS5/CPAP 5**, with no rate, or on a **T-piece** to evaluate spontaneous breathing readiness for removal from ventilator support.

Sources: Patient's medical record, including respiratory therapy notes, ventilator settings, nursing flowsheets, or ICU progress notes.

Documentation Requirements:

- **Document as yes** when SBT is documented as performed for the patient.
- **Document as no** when SBT is not performed.
- **Document as not documented** when no SBT performance documentation is available.

C: Choice of Sedation and Analgesia

Compliance Criteria:

- At least 6 level-of-arousal assessments are performed for each patient within a 24-hour period, using one of these methods:
    - Richmond Agitation-Sedation Scale (RASS)
    - Riker Sedation-Agitation Scale (SAS)

Potential Exclusions:

- Patient is chemically paralyzed.
- Patient was away from the ICU for a test or procedure for longer than 4 hours in a 24-hour period.

1. Documented Sedation Target Level

Metric Description: Tracks whether a sedation target was documented for ICU patients receiving continuous sedation. A sedation target, defined as a clinician-ordered or protocolized goal using a standard sedation scale (e.g., RASS or SAS), is typically required and may be a specific value or range.

Sources: Patient's medical record, including clinician orders, ICU sedation protocols, nursing flowsheets, or progress notes.

Documentation Requirements:

- **Document as yes** when a sedation target is ordered and documented for the patient.
- **Document as no** when a sedation target is not ordered or documented for the patient.

2. Number of Documented Level-of-Arousal Assessments

This is the key metric for measuring compliance with the C element of the ICU Liberation Bundle.

Metric Description: Tracks the number of documented level-of-arousal assessments performed within a 24-hour period using the SCCM-accepted tools listed above and focuses on optimizing sedation and arousal assessment practices.

Sources: Patient's medical record, nursing flowsheets, sedation and arousal assessment documentation, and other RASS or SAS score documentation.

Documentation Requirements:

- **Document the total number of sedation assessments performed** within a 24-hour period based on the criteria outlined above.
- **Document as exempt** for patients who meet the specific exclusion criteria listed above.

D: Delirium: Assess, Prevent, and Manage

Compliance Criteria:

- At least 2 delirium assessments are performed within a 24-hour period for each patient, using one of these SCCM-accepted tools:
    - Confusion Assessment Method for the ICU (CAM-ICU)
    - Intensive Care Delirium Screening Checklist (ICDSC)

Potential Exclusions:

- Patient was away from the ICU for a test or procedure for longer than 4 hours in a 24-hour period.
- Patient is in a coma (medically induced or otherwise).
- Patient has a RASS score of -4 or -5.

1. Number of Documented Delirium Assessments

This is the key metric for measuring compliance with the D element of the ICU Liberation Bundle.

Metric Description: Tracks the number of documented delirium assessments using the SCCM-accepted tools listed above.

Sources: Patient's medical record, nursing flowsheets, or other documentation.

Documentation Requirements:

- **Document the total number of delirium assessments performed** within a 24-hour period using the criteria outlined above.
    - If multiple assessments are performed, count each one separately as part of the total for the 24-hour period.
- **Document as exempt** for patients who meet the specific exclusion criteria listed above.

E: Exercise and Early mobility

Compliance Criteria:

- Patient passes safety screen, and acceptable mobility is performed.
- Patient fails safety screen, and no mobility is performed.

1. Early Mobility Safety Screen Result

Metric Description: Tracks the result of the early mobility safety screen, which is used daily to determine whether it is safe to mobilize or exercise a patient in the ICU.

Early Mobility Safety Screen: All patients must undergo a daily safety screen.

The following are **examples** of exclusions that may prevent early mobility performance. Sites may have additional or alternative exclusions based on clinical guidelines or patient needs. These exclusions are dependent on the patient's status, which may change on a daily basis. Sites can design their own safety screen based on their own protocols and clinical judgment.

SCCM recommends that safety screens assess the following criteria:

- FIO_2 > 60%*

- PEEP > 10 cm H_2O*
- RASS score < -2
- New or increased vasopressor dose in the past 2 hours
- New arrhythmias requiring treatment
- Active myocardial ischemia
- Therapies restricting mobility (e.g., pelvic fixator, balloon pump)
- Injuries contraindicating mobility (e.g., unstable fractures, active GI bleeding)
- Physician order excluding mobility

*These criteria are adaptable and should not preclude early mobility when appropriate. Their application may require team discussion, guided by clinical expertise and patient-specific considerations.

Sources: Patient's medical record, including nursing documentation, therapy notes, or other documentation.

Documentation Requirements:

- **Document as passed** when the patient passes the criteria and mobility is performed.
- **Document as failed** when the patient fails the criteria and mobility is not performed.
- **Document as not documented** when the early mobility safety screen is not performed or no documentation is available.

2. Documentation of an Acceptable Level of Mobility Performed

This is the key metric for measuring compliance with the E element of the ICU Liberation Bundle.

Metric Description: Tracks the highest level of acceptable mobility (as defined by SCCM) achieved during a 24-hour period for each patient.

Acceptable Levels of Activity: The following activities meet SCCM's minimal mobilization criteria.

- **Dangle:** Sit at the side of the bed.
- **Stand:** Stand at the bedside.
- **Active transfer:** Move from bed to chair.
- **March in place:** Step in place while standing.
- **Walk in room:** Ambulate in the patient's room.
- **Walk in hall:** Ambulate outside the room in the hallway.

Sources: Patient's medical record, including nursing documentation, therapy notes, or other documentation.

Documentation Requirements:

- **Document as yes** when the patient completes at least one of the acceptable activities listed above within the 24-hour period.
- **Document as no** if early mobility is not performed due to safety screen failure or contraindications.

- **Document as not performed** when the patient passes the safety screen but early mobility is not performed.
- **Document as not documented** if there is no clear documentation in the patient's record regarding whether early mobility is performed during the 24-hour period.

F: Family Engagement and Empowerment

Compliance Criteria:

- Engaging family members, significant persons, or surrogates in at least one aspect of care related to the ICU Liberation Bundle **at least once** daily.

Potential Exclusions:

- No family member, significant person, or surrogate decision-maker is with the patient.
- No family member, significant person, or surrogate decision-maker is present during the hospitalization.

1. Documentation of Family Engagement and Empowerment

This is the key metric for measuring compliance with the F element of the ICU Liberation Bundle.

Metric Description: Tracks the extent to which family members, significant persons, or surrogate decision-makers are actively engaged in the patient's ICU care. The metric emphasizes their engagement in understanding the ICU Liberation Bundle, participating in care discussions, and being involved in the delivery of care aligned with the bundle. The goal is to ensure that key individuals in the patient's life are informed, involved, and empowered in decisions and actions that impact the patient's care and outcomes.

Family member/significant person definition: A broad definition of family is used, which includes direct family members as well as other people significant to the patient, such as close friends, members of the patient's spiritual community, or anyone who has a close relationship with the patient. It may be difficult to know when visitors are present and what their relationship is to the patient, since this is not always documented.

SCCM recommends the following evidence-based patient engagement activities*:

- Family receives ICU Liberation Bundle education.
- Family are invited to participate in multiprofessional team rounds to discuss patient care plans.
- Family are invited to attend family conferences to discuss patient care plans.
- Family are invited to participate in the delivery of care related to the ICU Liberation Bundle.
- Family are invited to participate in tasks related to any or all parts of the ICU Liberation Bundle.

*While the goal is to implement evidence-based strategies as part of the ICU Liberation Bundle, SCCM recognizes that the approach to family engagement varies among ICUs. The focus remains on fostering meaningful family involvement in patient care. Some sites may already have acceptable forms of engagement that align with this goal.

Sources: Patient's medical record, the patient themself, or a care team member. Engagement activities are typically documented during rounds or care conferences.

Documentation Requirements:

- **Document as yes** if family members, significant persons, or surrogates engage in at least one aspect of care related to the ICU Liberation Bundle **at least once** daily.
- **Document as no** if family members, significant persons, or surrogates do not engage in at least one aspect of care related to the ICU Liberation Bundle **at least once** daily.

PEDIATRIC PATIENT DATA COLLECTION

A: Assess, Prevent, and Manage Pain

Compliance Criteria:

- At least 6 pain assessments are performed for each patient within a 24-hour period, using one of these SCCM-accepted methods:
    - Self-report (yes/no)
    - Numeric rating scale (NRS)
    - revised Face, Legs, Activity, Cry, and Consolability [r-FLACC]
    - FACES Pain Scale,
    - Visual Analogue Scale [VAS]
    - Oucher scale

Potential Exclusions:

- Patient is chemically paralyzed.
- Patient was away from the ICU for a test or procedure for longer than 4 hours in a 24-hour period.

1. Number of Documented Pain Assessments

This is the key metric for measuring compliance with the A element of the ICU Liberation Bundle.

Metric Description: Tracks the number of pain assessments performed within a 24-hour period per patient using the SCCM-accepted tools listed above.

Sources: Patient's medical record, nursing flowsheets, or other documentation.

Documentation Requirements:

- **Document the total number of pain assessments performed** within a 24-hour period based on the criteria outlined above. Sites must perform at least 6 pain assessments within a 24-hour period for each patient.
    - If multiple assessments are performed, count each one separately as part of the total for the 24-hour period.
- **Document as exempt** for patients who meet the specific exclusion criteria listed above.

B: Breathe

Compliance Criteria:

- Patient passes safety screen, and Extubation Readiness Trial (ERT) is performed.
- Patient fails safety screen, and Extubation Readiness Trial (ERT) is not performed.

1. Mechanical Ventilation

Metric Description: Tracks whether the patient was receiving invasive mechanical ventilation during the previous 24-hour period. This is a key indicator for determining the patient's eligibility for an ERT.

Noninvasive ventilation, such as positive airway pressure ventilators using nasal or face masks, does not meet the definition for this metric.

Sources: Patient's medical record, including respiratory therapy notes/flowsheets, ICU nursing flowsheets, or ventilator records.

Documentation Requirements:

- **Document as yes** if the patient received invasive mechanical ventilation during the previous 24 hours.
- **Document as no** if the patient did not receive invasive mechanical ventilation during the previous 24 hours, including patients for whom only noninvasive methods were used.

2. Extubation Readiness Trial (ERT) Safety Screen Results

Metric Description: Tracks the outcome of the ERT safety screen.

ERT Safety Screen: All patients on invasive conventional mechanical ventilation must undergo a daily safety screen.

The following are examples of exclusions that may prevent ERT performance. Sites may have additional or alternative exclusions based on clinical guidelines or patient needs. These exclusions are dependent on the patient's status, which may change daily.

SCCM suggests that safety screens assess the following criteria:

- No scheduled trips to the operating room in the next 12-24 hours
- No significant escalation of ventilator support in the last 12 hours
- Positive end-expiratory pressure ≤6-8
- Fraction of inspired oxygen ≤0.4-0.5 to keep oxygen saturation ≥90% (oxygen saturation in goal range for patients with cyanotic congenital heart disease)
- Peak inspiratory pressure ≤22-25 for tidal volume 5-8 mL/kg
- No escalation of vasoactive support in last 12 hours
- Blood pressure and heart rate within normal range for age
- Patient spontaneously breathing
- Has cough and/or gag
- State Behavioral Scale 0 to −1, Richmond Agitation Sedation Scale 0 to −2, COMFORT Behavior scale 11 to 22
- No abnormal intracranial pressure
- No active seizures
- No use of paralytics

Sources: Patient's medical record or other documentation.

Documentation Requirements:

- **Document as passed** when the patient passes all criteria, and an ERT is performed.
- **Document as failed** when the patient fails the criteria, and an ERT is not performed.

- **Document as not performed/not documented** when the ERT safety screen is not performed, or no documentation is available.

3. ERT Performance

This is a key metric for measuring compliance with the B element of the ICU Liberation Bundle.

Metric Description: Tracks whether an ERT is performed on a patient. An ERT is a purposeful interruption of mechanical ventilation to assess a patient's ability to breathe without ventilator support.

Sources: Patient's medical record, including respiratory therapy notes, ventilator settings, nursing flowsheets, or ICU progress notes.

Documentation Requirements:
- **Document as yes** when ERT is documented as performed for the patient.
- **Document as no** when ERT is not performed because of safety screen failure or contraindications.
- **Document as not performed/not documented** when ERT is not performed, or no documentation is available.

C: Choice of Sedation and Analgesia

Compliance Criteria:
- At least 6 level-of-arousal assessments are performed for each patient within a 24-hour period, using one of these methods:
    - Richmond Agitation-Sedation Scale (RASS)
    - State Behavioral Scale (SBS)
    - Comfort-B Scale

Potential Exclusions:
- Patient was away from the ICU for a test or procedure for longer than 4 hours in a 24-hour period.

1. Documented Sedation Target Level

Metric Description: Tracks whether a sedation target was documented for ICU patients receiving continuous sedation. A sedation target, defined as a clinician-ordered or protocolized goal using a standard sedation scale, is typically required and may be a specific value or range.

Sources: Patient's medical record, including clinician orders, ICU sedation protocols, nursing flowsheets, or progress notes.

Documentation Requirements:
- **Document as yes** when a sedation target is ordered and documented for the patient.
- **Document as no** when a sedation target is not ordered or documented for the patient.

2. Number of Documented Level-of-Arousal Assessments

This is the key metric for measuring compliance with the C element of the ICU Liberation Bundle.

Metric Description: Tracks the number of documented level-of-arousal assessments performed within a 24-hour period using the SCCM-accepted tools listed above and focuses on optimizing sedation and arousal assessment practices.

Sources: Patient's medical record, nursing flowsheets, sedation and arousal assessment documentation, and other RASS, SAS or Comfort-B score documentation.

Documentation Requirements:

- **Document the total number of sedation assessments performed** within a 24-hour period based on the criteria outlined above.
- **Document as exempt** for patients who meet the specific exclusion criteria listed above.

D: Delirium: Assess, Prevent, and Manage

Compliance Criteria:

- At least 2 delirium assessments are performed within a 24-hour period for each patient, using one of these SCCM-accepted tools:
    - Cornell Assessment of Pediatric Delirium (CAPD)
    - Pediatric CAM-ICU
    - Preschool CAM-ICU

Potential Exclusions:

- Patient was away from the ICU for a test or procedure for longer than 4 hours in a 24-hour period.
- Patient has a RASS score of -4 or -5, or equivalent on other pediatric validated sedation score.

2. Number of Documented Delirium Assessments

This is the key metric for measuring compliance with the D element of the ICU Liberation Bundle.

Metric Description: Tracks the number of documented delirium assessments using the SCCM-accepted tools listed above.

Sources: Patient's medical record, nursing flowsheets, or other documentation.

Documentation Requirements:

- **Document the total number of delirium assessments performed** within a 24-hour period using the criteria outlined above.
    - If multiple assessments are performed, count each one separately as part of the total for the 24-hour period.
- **Document as exempt** for patients who meet the specific exclusion criteria listed above.

E: Exercise and Early mobility

Compliance Criteria:

- Patient passes safety screen, and acceptable mobility is performed.
- Patient fails safety screen, and no mobility is performed.

3. Early Mobility Safety Screen Result

Metric Description: Tracks the result of the early mobility safety screen, which is used daily to determine whether it is safe to mobilize or exercise a patient in the ICU.

Early Mobility Safety Screen: All patients must undergo a daily safety screen.

The following are **examples** of exclusions that may prevent early mobility performance. Sites may have additional or alternative exclusions based on clinical guidelines or patient needs. These exclusions are dependent on the patient's status, which may change on a daily basis. Sites can design their own safety screen based on their own protocols and clinical judgment.

SCCM suggests that safety screens assess the following criteria:

- FIO_2 > 60%*
- PEEP > 10 cm H_2O*
- RASS score < -2
- New or increased vasopressor dose in the past 2 hours
- New arrhythmias requiring treatment
- Therapies restricting mobility (e.g., pelvic fixator, balloon pump)
- Injuries contraindicating mobility (e.g., unstable fractures, active GI bleeding)
- Physician order excluding mobility

*These criteria are adaptable and should not preclude early mobility when appropriate. Their application may require team discussion, guided by clinical expertise and patient-specific considerations.

Sources: Patient's medical record, including nursing documentation, therapy notes, or other documentation.

Documentation Requirements:

- **Document as passed** when the patient passes the criteria and mobility is performed.
- **Document as failed** when the patient fails the criteria or meets exclusion criteria and mobility is not performed.
- **Document as not documented** when the early mobility safety screen is not performed or no documentation is available.

4. Documentation of an Acceptable Level of Mobility Performed

This is the key metric for measuring compliance with the E element of the ICU Liberation Bundle.

Metric Description: Tracks the highest level of acceptable mobility (as defined by SCCM) achieved during a 24-hour period for each patient.

Acceptable Levels of Activity: The following activities meet SCCM's minimal mobilization criteria.

Age < 24 months

- Passive range of motion
- Active engagement in play
- Sitting upright
- Out of bed

Age 24 months and up

- Passive range of motion
- Dangle
- Active transfer
- Walking

Sources: Patient's medical record, including nursing documentation, physical/occupational therapy notes, or other documentation.

Documentation Requirements:

- **Document as yes** when the patient completes at least one of the acceptable activities listed above within the 24-hour period.
- **Document as no** if early mobility is not performed due to safety screen failure or contraindications.
- **Document as not performed** when the patient passes the safety screen but early mobility is not performed.
- **Document as not documented** if there is no clear documentation in the patient's record regarding whether early mobility is performed during the 24-hour period.

F: Family Engagement and Empowerment

Compliance Criteria:

- Engaging family members, significant persons, or surrogates in at least one aspect of care related to the ICU Liberation Bundle **at least once** daily.

Potential Exclusions:

- No family member, significant person, or surrogate decision-maker is with the patient and/or is unable to be contacted by phone.
- No family member, significant person, or surrogate decision-maker is present during the hospitalization.

2. Documentation of Family Engagement and Empowerment

This is the key metric for measuring compliance with the F element of the ICU Liberation Bundle.

Metric Description: Tracks the extent to which family members, significant persons, or surrogate decision-makers are actively engaged in the patient's ICU care. The metric emphasizes their engagement in understanding the ICU Liberation Bundle, participating in care discussions, and being involved in the delivery of care aligned with the bundle. The goal is to ensure that key individuals in the patient's life are

informed, involved, and empowered in decisions and actions that impact the patient's care and outcomes.

Family member/significant person definition: A broad definition of family is used, which includes direct family members as well as other people significant to the patient, such as close friends, members of the patient's spiritual community, or anyone who has a close relationship with the patient. It may be difficult to know when visitors are present and what their relationship is to the patient, since this is not always documented.

SCCM recommends the following evidence-based patient engagement activities*:

- Family receives ICU Liberation Bundle education.
- Family are invited to participate in multiprofessional team rounds to discuss patient care plans.
- Family are invited to attend family conferences to discuss patient care plans.
- Family are invited to participate in the delivery of care related to the ICU Liberation Bundle.
- Family are invited to participate in tasks related to any or all parts of the ICU Liberation Bundle.

*While the goal is to implement evidence-based strategies as part of the ICU Liberation Bundle, SCCM recognizes that the approach to family engagement varies among ICUs. The focus remains on fostering meaningful family involvement in patient care. Some sites may already have acceptable forms of engagement that align with this goal.

Sources: Patient's medical record, the patient themself, or a care team member. Engagement activities are typically documented during rounds or care conferences.

Documentation Requirements:

- **Document as yes** if family members, significant persons, or surrogates engage in at least one aspect of care related to the ICU Liberation Bundle **at least once** daily.
- **Document as no** if family members, significant persons, or surrogates do not engage in at least one aspect of care related to the ICU Liberation Bundle **at least once** daily.