CLINICAL PATHWAY:

Delirium Emergency Department and Inpatient

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: Any patient in the Emergency Department or Inpatient Med/Surg Units with any of the following:

- Acute mental status change, acute onset hallucinations or delusions, confusion, impaired memory, alteration of attention or arousal, acute catatonia; OR
- Clinical suspicion of delirium based on **Vanderbilt Assessment for Delirium in Infants and Children (VADIC) Assessment Tool** or **Cornell Assessment of Pediatric Delirium (CAPD) Score**
- All patients admitted to Medical/Surgical floors will be screened for delirium

Exclusion Criteria: Patient located in the NICU, ambulatory and perioperative areas, infusion patients, PICU. If in PICU, follow PICU protocol for screening and prevention.

Etiologies to consider:

CNS infection, fever, sepsis/end organ dysfunction (see **Sepsis Pathway**), Multi-system Inflammatory Syndrome in Children (see **MIS-C Pathway**), hypoxemia, hypoglycemia, electrolyte abnormality, CNS abnormality, intoxication, autoimmune encephalitis, SLE, vasculitis, drug withdrawal, metabolic disease, neoplasm

Phase of Care - Navigation Links

Emergency Department

Inpatient and ED (Zone C) Management

Inpatient Prevention and Screening

Inpatient Evaluation and Work Up

Scoring Tools - Navigation Links

Appendix A: Vanderbilt Assessment for Delirium in Infants and Children (VADIC) Assessment Tool

Appendix B: Cornell Assessment of Pediatric Delirium (CAPD) Score

Appendix C: Developmental Anchors

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CLINICAL PATHWAY:

Delirium - Emergency Department Care

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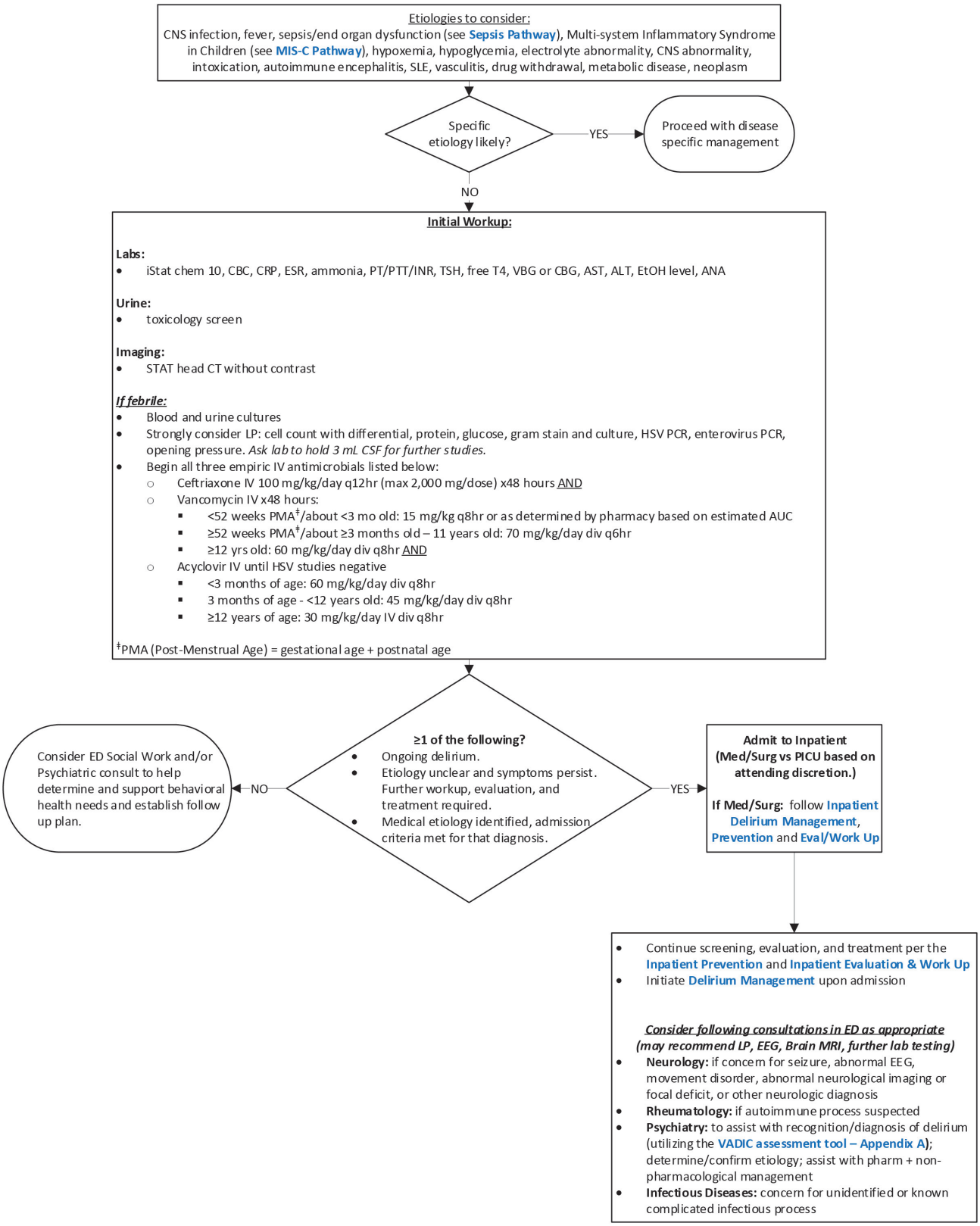

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CLINICAL PATHWAY:

Delirium - Inpatient and Zone C Management

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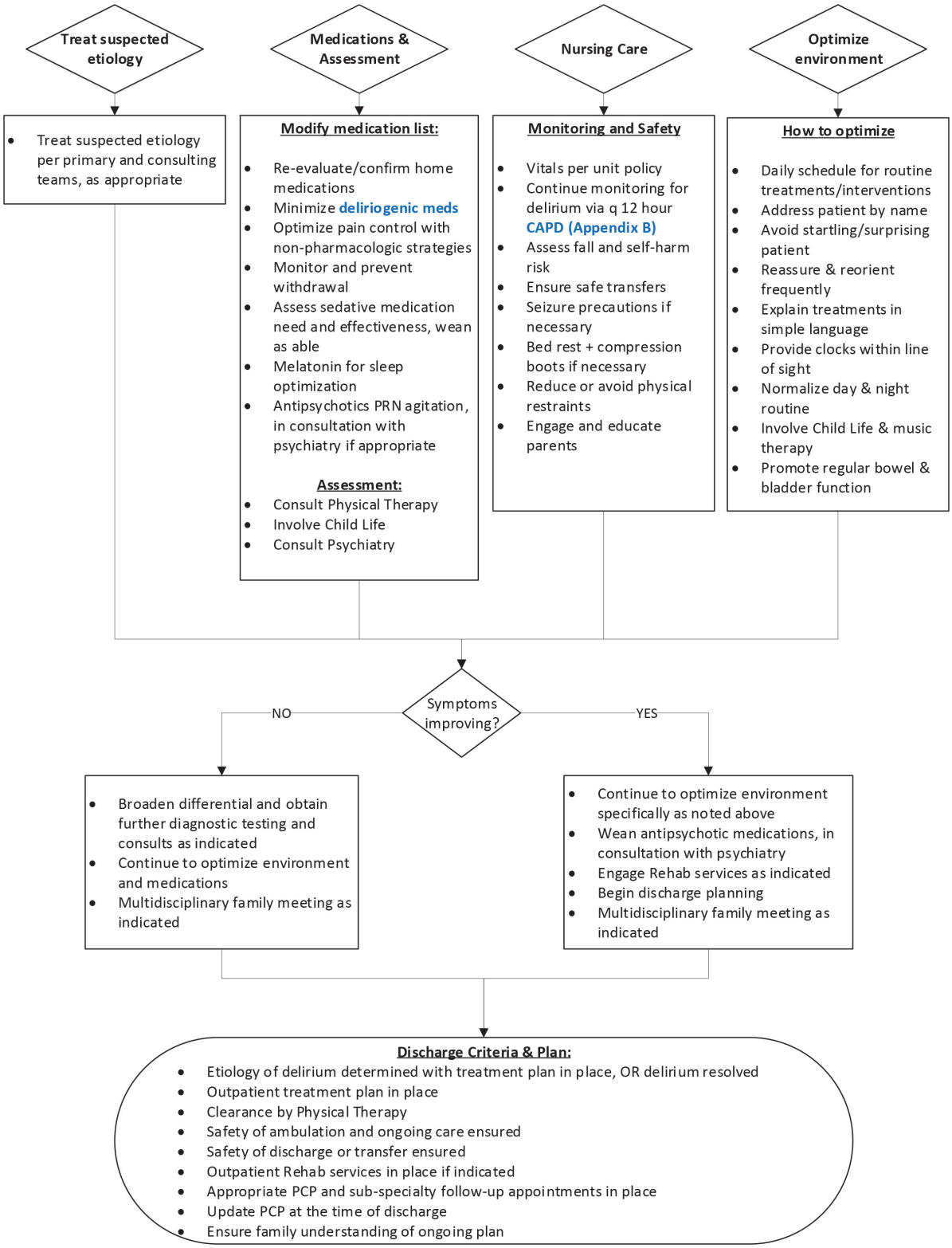

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CLINICAL PATHWAY:

Delirium - Inpatient Prevention and Screening

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Concurrent implementation of preventive strategies and delirium screening as outlined below

Preventive Strategies

Environmental Considerations:

- Provide orienting environment (proper use of Whiteboard, clearly visible clocks)
- Promote healthy sleep
- Ensure early mobility and exercise; involve PT/OT
- Encourage family and developmentally appropriate engagement
- Please refer to **Inpatient Delirium Management**

Medication Considerations:

- Re-evaluation/ confirmation of home medications
- Assess, prevent and manage pain effectively
- Assess sedative medication need and effectiveness, wean as able
- Monitor and prevent withdrawal
- Minimize polypharmacy and deliriogenic medications as appropriate**

Delirium Screening

RN to perform routine delirium screening using **CAPD (Appendix B)** q12hr and document in medical record on the following patient groups:

- Transferring out of PICU; post-operative
- Presenting with altered mental status, status epilepticus, loss of consciousness, meningitis/encephalitis, toxin ingestion/poisoning/ overdose, trauma
- Diagnosed with COVID-19 infection, Multi-Inflammatory Syndrome in Children (MIS-C), Kawasaki disease, sepsis/septic shock, sickle cell acute pain crisis, neurosurgical shunt infection, neurosurgical shunt malfunction
- Requiring high flow nasal cannula
- Taking benzodiazepines or opioids in the past 3 days

Consider screening for delirium for the following patient groups who are at high risk for delirium *[Note: must add "at risk for delirium" to patient's problem list in Care Navigator to initiate routine screening]*

- On deliriogenic medications (not including benzodiazepines or opioids which require automatic screening)**
- Critically or acutely ill patients (i.e., severe illness)
- Prolonged hospitalization
- Need for any respiratory support

High clinical suspicion of delirium:
1) CAPD ≥ 9
OR
2) Clinical recognition of delirium via the following features (≥1):

- Acute mental status change
- Acute onset of hallucination or delusions
- Confusion or impaired memory
- Alterations of attention or arousal
- New catatonic features

No → Continue prevention and ongoing monitoring via CAPD q12hr and standard clinical assessments

Yes →

- Notify provider from primary medical or surgical team.
- Provider to initiate a bedside assessment of patient and proceed to **Inpatient Delirium Evaluation**

****Deliriogenic Medications:**

- Benzodiazepines and Barbiturates
- Opioids
- Anti-cholinergics (e.g. atropine, diphenhydramine)
- Anti-convulsants (e.g. carbamazepine, phenytoin)
- Anti-depressants (e.g. tricyclics, SSRIs)
- Anti-emetics (e.g. promethazine)
- Anti-microbials and anti-virals (e.g. fluoroquinolones)
- Corticosteroids
- H2 receptor blockers (e.g. ranitidine, famotidine)
- Metoclopramide
- Muscle relaxants

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CLINICAL PATHWAY:

Delirium – Inpatient Evaluation and Work Up

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

- Provider bedside evaluation of patient.
- Initiation of **Inpatient Delirium Management** while evaluation and workup is occurring simultaneously.

Etiologies to consider:
CNS infection, fever, sepsis/end organ dysfunction (see **Sepsis Pathway**), Multi-system Inflammatory Syndrome in Children (see **MIS-C Pathway**), hypoxemia, hypoglycemia, electrolyte abnormality, CNS abnormality, intoxication, autoimmune encephalitis, SLE, vasculitis, medication effect, drug withdrawal, metabolic disease, neoplasm

Specific etiology likely? — YES → Treat suspected etiology as appropriate and continue delirium management **Inpatient Delirium Management**

NO

Primary Work Up

Labs:
- iStat chem 10, CBC, CRP, ESR, ammonia, PT/PTT/INR, TSH, free T4, VBG or CBG, AST, ALT, EtOH level, ANA

Urine:
- Toxicology screen

Imaging:
- Consider STAT head CT without contrast based on history and physical exam

Etiology determined? — YES → Treat suspected etiology as appropriate and continue delirium management **Inpatient Delirium Management**

NO

Secondary Work Up

If febrile:
- Blood and urine cultures
- Strongly consider LP: cell count with differential, protein, glucose, gram stain and culture, HSV PCR, enterovirus PCR, opening pressure. *Ask lab to hold 3 mL CSF for further studies.*
- Begin all three empiric IV antimicrobials listed below:
  - Ceftriaxone IV 100 mg/kg/day q12hr (max 2,000 mg/dose) x48 hours AND
  - Vancomycin IV x48 hours:
    - <52 weeks PMA‡/about <3 mo old: 15 mg/kg q8hr or as determined by pharmacy based on estimated AUC
    - ≥52 weeks PMA‡/about ≥3 months old – 11 years old: 70 mg/kg/day div q6hr
    - ≥12 yrs old: 60 mg/kg/day div q8hr AND
  - Acyclovir IV until HSV studies negative
    - <3 months of age: 60 mg/kg/day div q8hr
    - 3 months of age - <12 years old: 45 mg/kg/day div q8hr
    - ≥12 years of age: 30 mg/kg/day IV div q8hr

Consider following consultations (who may recommend further work up):
- Neurology *(if concern for seizure, abnormal EEG, movement disorder, abnormal neurological imaging or focal deficit, or other neurologic diagnosis)*
- Rheumatology *(if autoimmune process suspected)*
- Psychiatry *(to assist with recognition/diagnosis of delirium utilizing the* **Vanderbilt Assessment for Delirium in Infants and Children (*VADIC*) *assessment tool – Appendix A***; *determine/confirm etiology; assist with pharm + non-pharmacological management; help with ongoing monitoring/ response to therapies; for ongoing co-management)*
- If diagnosis or treatment plan involves multidisciplinary approach, strongly consider family meeting.

‡PMA (Post-Menstrual Age) = gestational age + postnatal age

Etiology determined? — YES → Treat suspected etiology as appropriate and continue delirium management **Inpatient Delirium Management**

Tertiary Work Up:
- Consult Infectious Diseases
- Infectious Encephalitis Panel:
  - Blood: Mycoplasma IgM/IgG, bartonella IgM/IgG, lyme IgM/IgG, West Nile IgM/IgG (June-Nov), Anaplasma Phagocytophilium IgG/IgM (June-Nov), Anaplasma (Ehrlichia) blood smear (June-Nov), Rickettsial Disease Panel (June-Nov, travel to endemic area)
  - CSF: (add on to previously obtained CSF). Meningitis/Encephalitis PCR panel (Biofire; if criteria for use met), EBV PCR, Adenovirus PCR, VDRL (at risk patients), Arbovirus Ab panel (June-Nov)
  - Respiratory: Viral Respiratory Culture (Dec-May)
- Consider evaluation for Autoimmune Encephalitis
  - Brain MRI
  - Blood: ANA, Anti-ENA, Anti-DNA, Anti-phospholipid antibodies, ANCA, Von Willebrand Factor antigen,ACE level, TPO
  - CSF: (add on to previously obtained CSF) Autoimmune Encephalitis Panel

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VANDERBILT ASSESSMENT FOR DELIRIUM IN INFANTS AND CHILDREN (VADIC)

Clinician:		**Patient ID:**
Age:	**Patient Intubated?** ☐ **YES** ☐ **NO**	**Date/Time:**

Pertinent medication exposure ≤ 24 hrs. prior to assessment (DRUG / DOSE)

1.	4.
2.	5.
3.	6.

LEVEL OF CONSCIOUSNESS (check one)

Combative	☐ YES
Agitated	☐ YES
Restless	☐ YES
Alert and Calm	☐ YES
Drowsy: Not fully alert but easily demonstrates sustained awakening with stimulation only from voice	☐ YES
Lethargy: Arouses to **voice** but difficult to maintain the aroused state	☐ YES
Obtundation: Responds to stimulation other than pain. May briefly open eyes or have movement, doesn't interact with person or environment	☐ YES
Stupor: Responsive **only** to pain	☐ YES
Coma: **Unresponsive** to pain	☐ YES

MENTAL STATUS

State of current mental status – *Check one option*

☐ At Baseline ☐ Acute Change ☐ Chronic Change

Pattern of mental status – *past 24 hours*

☐ Stable ☐ Fluctuating

PERCEPTION

Hallucinations: ☐ *auditory* ☐ *visual*	☐ N/A	☐ NO	☐ YES
Hyperacusis present? *Comments:*	☐ N/A	☐ NO	☐ YES
Atypical response to normal stimuli? *(stuffed animals, familiar toys)*	☐ N/A	☐ NO	☐ YES
Unable to sooth when fearful stimuli removed?	☐ N/A	☐ NO	☐ YES

Comments:

ATTENTION and COGNITION

DECREASED ability to:

Focus attention:	☐ NO	☐ YES
Sustain attention:	☐ NO	☐ YES
Shift attention:	☐ NO	☐ YES

ORIENTATION: ☐ Person ☐ Place ☐ N/A

Comments:

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DECREASED indication of **consistent preference** for objects such as a favorite toy, rattle, pacifier, blankie, book, iPad? ☐ NO ☐ YES
DECREASED ability to **screen out** extraneous stimuli? (Easily distracted by noise, people) ☐ NO ☐ YES
DECREASED ability to **interact** with toys/objects appropriately? (No interaction/recognition, uses toy inappropriately) ☐ NO ☐ YES
DECREASED **social smile** in response to toys or stuffed animals? ☐ NO ☐ YES
Object permanence present? (interacts with Peek-a-boo, hide-and-seek) ☐ NO ☐ YES

SLEEP-WAKE CYCLE

Normal Nap Patterns (Q2-4h infants, Q6h toddlers, QD preschool): ☐ NO ☐ YES
Nocturnal Disturbance : (initial, middle, terminal insomnia, phase shift) ☐ NO ☐ YES
Day-Night Reversal (more difficult to recognize in infants) ☐ NO ☐ YES

Comments:

AFFECT

Excessive energy for age and context/environment? ☐ NO ☐ YES
Irritability or anger ☐ NO ☐ YES
Inconsolability ☐ NO ☐ YES
Inappropriate Affect ☐ NO ☐ YES
Describe Affect:

Confounders present? ☐ Anxiety ☐ Pain ☐ Volitional ☐ None

LANGUAGE and THOUGHT

☐ **Not Present** *(immature development or developmental delay)*
☐ **Present**

Receptive Language:
One - Step Command ☐ NO ☐ YES
Two - Step Command ☐ **NO** ☐ **YES**
Three - Step Command ☐ **NO** ☐ **YES**
Does not follow commands (check reason below):
☐ Unable due to immaturity/illness (intubated)
☐ Inappropriately not following commands

Describe baseline speech and language per parent/nurse if available:
☐ Appropriate
☐ Decreased amount
☐ Decreased spontaneity
☐ Increased latency
☐ Change from baseline
☐ Circumstantial
☐ Tangential
☐ Obstructed due to disease or device

IS ACUTE DELIRIUM PRESENT?

☐ **UTA**	When LOC severely depressed, unable to directly clinically assess patient **AND** prior clinical assessment not available.	
☐ **NO**	If NO consider → **Subsyndromal delirium(SS)** (Delirium probable but NOT all criteria met): ☐ **NO** ☐ **YES**	
☐ **YES**	If YES then choose type → ☐ **HYPOACTIVE** ☐ **HYPERACTIVE** ☐ **MIXED**	Drug Withdrawal? ☐ **N/A** ☐ **NO** ☐ **YES**

24-HOUR assessment → IS DELIRIUM PRESENT? ☐ **PRESENT** ☐ **ABSENT** ☐ **SUBSYNDROMAL** ☐ **UTA**

☐ 1. Acute change Mental Status	☐ 3. Inattention present	☐ 5. Change in Cognition	☐ 7. Change in Affect
☐ 2. Fluctuating Course	☐ 4. Inconsolability	☐ 6. Change in Language/Thought	☐ 8. Change in Sleep/Wake Cycle

DELIRIUM = 1+2+3+5+7 AND 4 OR 6 OR 8

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Cornell Assessment of Pediatric Delirium (CAPD) Score – Revised

Figure 1. Cornell Assessment of Pediatric Delirium (CAPD) revised

Please answer the following questions based on your interactions with the patient over the course of your shift:

	Never	Rarely	Sometimes	Often	Always	Score
	4	3	2	1	0	
1. Does the child make eye contact with the caregiver?						
2. Are the child's actions purposeful?						
3. Is the child aware of his/her surroundings?						
4. Does the child communicate needs and wants?						
	Never	Rarely	Sometimes	Often	Always	
	0	1	2	3	4	
5. Is the child restless?						
6. Is the child inconsolable?						
7. Is the child underactive—very little movement while awake?						
8. Does it take the child a long time to respond to interactions?						
					TOTAL	

*Please see **Appendix C – Developmental Anchors**, to reference normative behaviors based on age and developmental level.*

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	NB	4 weeks	6 weeks	8 weeks	28 weeks	1 year	2 years
1. Does the child make eye contact with the caregiver?	Fixates on face	Holds gaze briefly Follows 90 degrees	Holds gaze	Follows moving object/caregiver past midline, regards examiner's hand holding object, focused attention	Holds gaze. Prefers primary parent. Looks at speaker.	Holds gaze. Prefers primary parent. Looks at speaker.	Holds gaze. Prefers primary parent. Looks at speaker
2. Are the child's actions purposeful?	Moves head to side, dominated by primitive reflexes	Reaches (with some discoordination)	Reaches	Symmetric movements, will passively grasp handed object	Reaches with coordinated smooth movement	Reaches and manipulates objects, tries to change position, if mobile may try to get up.	Reaches and manipulates objects, tries to change position, if mobile may try to get up and walk
3. Is the child aware of his/her surroundings?	Calm awake time	Awake alert time Turns to primary caretaker's voice May turn to smell of primary care taker	Increasing awake alert time Turns to primary caretaker's voice May turn to smell of primary care taker	Facial brightening or smile in response to nodding head, frown to bell, coos	Strongly prefers mother, then other familiars. Differentiates between novel and familiar objects	Prefers primary parent, then other familiars, upset when separated from preferred care takers. Comforted by familiar objects especially favorite blanket or stuffed animal	Prefers primary parent, then other familiars, upset when separated from preferred care takers. Comforted by familiar objects, especially favorite blanket or stuffed animal
4. Does the child communicate needs and wants?	Cries when hungry or uncomfortable	Cries when hungry or uncomfortable	Cries when hungry or uncomfortable	Cries when hungry or uncomfortable	Vocalizes /indicates about needs, e.g., hunger, discomfort, curiosity in objects, or surroundings	Uses single words or signs	3 to 4 word sentences, or signs. May indicate toilet needs, calls self or me
5. Is the child restless?	No sustained awake alert state	No sustained calm state	No sustained calm state	No sustained awake alert state	No sustained calm state	No sustained calm state	No sustained calm state
6. Is the child inconsolable?	Not soothed by parental rocking, singing, feeding, comforting actions	Not soothed by parental rocking, singing, feeding, comforting actions	Not soothed by parental rocking, singing, feeding, comforting actions	Not soothed by parental rocking, singing, comforting actions	Not soothed by usual methods, e.g., singing, holding, talking	Not soothed by usual methods, e.g., singing, holding, talking, reading	Not soothed by usual methods, e.g., singing, holding, talking, reading (may tantrum, but can organize)
7. Is the child underactive—very little movement while awake?	Little if any flexed and then relaxed state with primitive reflexes (Child should be sleeping comfortably most of the time)	Little if any reaching, kicking, grasping (still may be somewhat discoordinated)	Little if any reaching, kicking, grasping (may begin to be more coordinated)	Little if any purposive grasping, control of head and arm movements, such as pushing things that are noxious away	Little if any reaching, grasping, moving around in bed, pushing things away	Little if any play, efforts to sit up, pull up, and if mobile crawl or walk around	Little if any more elaborate play, efforts to sit up and move around, and if able to stand, walk, or jump
8. Does it take the child a long time to respond to interactions?	Not making sounds or reflexes active as expected (grasp, suck, moro)	Not making sounds or reflexes active as expected (grasp, suck, moro)	Not kicking or crying with noxious stimuli	Not cooing, smiling, or focusing gaze in response to interactions	Not babbling or smiling/laughing in social interactions (or even actively rejecting an interaction)	Not following simple directions. If verbal, not engaging in simple dialogue with words or jargon	Not following 1–2 step simple commands. If verbal, not engaging in more complex dialogue

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