

# Coma

(March 2023)

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## Rationale

Coma is a state of prolonged and pathologic unconsciousness. It may be defined as a score of 8 or less on the Glasgow Coma Scale. Coma is a medical emergency and requires urgent evaluation to avoid permanent brain injury or death.

## Causal Conditions

(list not exhaustive)

- Focal disease
  - a. Space-occupying lesion (e.g., tumour, abscess)
  - b. Stroke (e.g., brainstem infarction)
  - c. Trauma
  
- Diffuse disease
  - a. Vascular (e.g., hypertensive encephalopathy, eclampsia)
  - b. Infectious (e.g., meningitis, encephalitis)
  - c. Metabolic (e.g., uremia, hypercalcemia, hypoglycemia)
  - d. Toxins (e.g., lead, carbon monoxide, alcohol, opioids)
  - e. Seizures (including postictal state)
  - f. Diffuse ischemia (e.g., shock)
  - g. Trauma

## Key Objectives

Given a patient in coma, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient in coma, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a complete history and corroboration of information from appropriate sources;
  - b. the identification of most likely causes of coma by means of a complete physical examination including appropriate neurologic examination; and
  - c. the determination of level of consciousness using an appropriate assessment tool (e.g., Glasgow Coma Scale);
- list and interpret critical investigations, including laboratory investigations (e.g., toxin screen, glucose), diagnostic imaging (e.g., computed tomography, magnetic resonance imaging), and others (e.g., lumbar puncture, electroencephalography); and
- construct an effective initial management plan, including
  - a. initiating immediate and emergent care (e.g., airway, breathing, circulation) and appropriate empiric treatment as indicated (e.g., narcotic/benzodiazepine reversal, glucose);
  - b. initiating other urgent treatment as indicated (e.g., antibiotics, anticonvulsants);
  - c. referring the patient for specialized care (e.g., neurosurgery) if necessary; and
  - d. seeking clarification of proxy decision-making while the patient is incapacitated.