Psychiatric Emergencies in the Hospital Setting

Definition and Epidemiology

- Psychiatric emergencies are acute mental health conditions requiring immediate intervention to prevent harm to the patient or others. This document covers depression with suicidal ideation, catatonia, acute psychosis, mania, and panic disorder, which are common in hospital settings.
- Prevalence Depression affects ~20% of hospitalized patients, with 10-15% reporting suicidal ideation. Acute psychosis occurs in ~1-2% of admissions (e.g., schizophrenia exacerbations). Catatonia is rare (~0.1-0.3%), often linked to mood disorders. Mania and panic disorder each affect ~1-3% of inpatients.
- Risk Factors Prior psychiatric history, substance abuse, medical comorbidities (e.g., delirium), social stressors, medication non-compliance.
- Rare Demographics Pediatric psychosis (e.g., early-onset schizophrenia), postpartum psychosis, autoimmune encephalitis mimicking psychiatric emergencies.

Pathophysiology

- Mechanisms Psychiatric emergencies arise from dysregulation in neurotransmitter systems (dopamine, serotonin, GABA, glutamate) and neural circuits (prefrontal cortex, amygdala, basal ganglia). Depression involves serotonin depletion and HPA axis hyperactivity. Psychosis stems from dopamine excess in mesolimbic pathways. Catatonia reflects GABA-A hypofunction and dopamine dysregulation. Mania involves heightened dopamine and norepinephrine. Panic disorder is linked to amygdala hypersensitivity and serotonin imbalance.
- Effects Altered cognition, mood, and behavior lead to impaired decision-making, self-harm risk, or agitation. Neuroinflammation (IL-6, TNF-α) exacerbates symptoms in medical illness.
- **Molecular Pathways Depression:** Reduced 5-HT1A receptor activity, increased CRH. Psychosis: D2 receptor hyperactivity. Catatonia: NMDA receptor hypofunction. Mania: CREB overactivation. Panic: GABA-A receptor downregulation, CCK-4 surge.
- Key Pathway Neurotransmitter/circuit dysregulation → Acute behavioral changes → Risk of harm or decompensation.

Causes

Category	Common Causes	Rare Causes	Notes
Depression/ Suicidal Ideation	Major depressive disorder, substance withdrawal	Postpartum depression, NMDA encephalitis	SI: 50% linked to MDD
Catatonia	Bipolar disorder, schizophrenia	Anti-NMDA receptor encephalitis, B12 deficiency	70% mood disorder-related
Acute Psychosis	Schizophrenia, substance-induced (methamphetamine)	Wilson's disease, porphyria	Dopamine-driven hallucinations
Mania	Bipolar I, schizoaffective disorder	Hyperthyroidism, B6 toxicity	Rapid cycling in 10-20%
Panic Disorder	Anxiety disorders, caffeine	Pheochromocytoma, carcinoid	Amygdala hyperactivity
Iatrogenic	Steroids, levodopa	Interferon-α, efavirenz	Meds mimic or exacerbate

Clinical Presentation

Symptoms

- **Depression/Suicidal Ideation** Sadness, hopelessness, suicidal thoughts/ plans
- **Catatonia** Stupor, mutism, posturing, waxy flexibility
- **Acute Psychosis** Hallucinations, delusions, disorganized behavior
- **Mania** Elevated mood, grandiosity, decreased sleep
- **Panic Disorder** Sudden panic, palpitations, fear of death
- **Rare Psychomotor retardation** (depression), echolalia (catatonia), command hallucinations (psychosis)

Exam

- **Depression** Flat affect, psychomotor slowing
- **Catatonia** Catalepsy, negativism, Bush-Francis score >4
- **Psychosis** Disorganized speech, agitation, poor eye contact
- **Mania** Pressured speech, hyperactive behavior
- **Panic** Tachycardia, hyperventilation, diaphoresis
- **Rare** Stereotypies (catatonia), Kayser-Fleischer rings (Wilson's)

Red Flags

Active SI with plan, command hallucinations, severe agitation, lorazepam non-response (catatonia)

Labs and Studies

Labs

- CMP Hypokalemia (diuretics, depression), glucose (DM, mania)
- CBC Anemia (chronic disease), leukocytosis (infection)
- Toxicology Methamphetamine, alcohol, cocaine (psychosis, mania)
- Advanced Thyroid (TSH, mania), ceruloplasmin (Wilson's), B12 (catatonia)

Imaging

- CT Head Rule out ICH, tumor in AMS or psychosis
- MRI Brain Encephalitis, stroke (catatonia, psychosis mimics)
- CXR Rule out infection (delirium mimic)
- Advanced PET (psychosis, dopamine uptake), fMRI (amygdala in panic)

Other

- ECG QT prolongation (antipsychotics), tachycardia (panic)
- EEG Non-convulsive status (catatonia, psychosis), slowing (delirium)
- Advanced CSF Autoimmune panel (NMDA encephalitis), 5-HIAA (depression)

SI Assessment

Columbia-Suicide Severity Rating Scale (C-SSRS)

Diagnosis

Criteria

- **Depression/Suicidal Ideation** PHQ-9 ≥15, C-SSRS indicating intent/plan
- **Catatonia** Bush-Francis Catatonia Rating Scale ≥4, lorazepam challenge
- **Acute Psychosis** PANSS score >70, hallucinations/delusions
- **Mania** Young Mania Rating Scale (YMRS) >20, ≥3 DSM-5 criteria
- P**anic Disorder** DSM-5 panic attack, ≥4 symptoms (palpitations, dyspnea)

Differential

Delirium, substance intoxication, NMS, serotonin syndrome, autoimmune encephalitis.

Flowsheet

- Step 1 History/Exam Psych history, recent meds, SI, psychosis, catatonia signs
- Step 2 Labs Tox screen, CMP, thyroid; rule out infection (cultures)
- Step 3 Studies CT/MRI (AMS), EEG (seizures), ECG (QT)
- Step 4 Apply Criteria PHQ-9, C-SSRS, Bush-Francis, PANSS, YMRS
- Step 5 Differential Delirium (CAM), NMS (rigidity), serotonin syndrome (clonus)

Treatment

General Principles

Ensure safety (1:1 sitter for SI), stabilize agitation, and address underlying causes with interdisciplinary care (psychiatry, social work).

Supportive Care

- Safety Suicide precautions, remove sharps (SI), restraints if agitated
- Sedation Lorazepam 1-2 mg IV/IM q4h PRN (agitation, catatonia)
- Monitoring Vitals q4h, neuro checks, C-SSRS daily (SI)

Specific Therapies

- **Depression/Suicidal Ideation** SSRI (sertraline 50 mg PO daily), ketamine 0.5 mg/kg IV (acute SI), ECT, CBT
- **Catatonia** Lorazepam 1-2 mg IV q4-6h, ECT if non-responsive (3-6 sessions)
- **Acute Psychosis** Haloperidol 2-5 mg IM q4h, olanzapine 10 mg IM (agitation)
- **Mania** Lithium 600-900 mg PO BID (level 0.6-1.2 mEq/L), valproate 20 mg/kg/day
- **Panic Disorder** Lorazepam 0.5-1 mg PO q6h, SSRI (escitalopram 10 mg PO daily)

Advanced

Aripiprazole 10 mg IM (psychosis), IV ketamine (SI, depression), amantadine (catatonia), ECT

Rare Causes

IVIG (NMDA encephalitis), thyroidectomy (thyroid storm mania)

Monitoring

Daily PHQ-9 (depression), YMRS (mania), Bush-Francis (catatonia)

ECG q24h (antipsychotics), lithium/valproate levels q3 days

Psychiatry consult within 24h, social work for disposition

Complications

Acute

- Suicide Completion risk 1-2% in severe depression with SI
- Seizures Catatonia (ECT-related), psychosis (antipsychotic withdrawal)
- Torsades de Pointes QT prolongation (haloperidol, SSRIs)

Long-Term

- Chronic Disability Relapse in 50% of depression, 30% of psychosis
- Medication Side Effects Tardive dyskinesia (antipsychotics), SI (SSRIs)
- Rare Post-ECT cognitive deficits, lithium toxicity (renal failure)

Clinical Scenarios

Case 1 Depression with Suicidal Ideation

- **Presentation** 40 y/o F with MDD presents with hopelessness, plan to overdose. Vitals BP 120/80, HR 80, SpO2 98%, RR 16. Exam Flat affect, slow speech.
- **Labs/Studies** PHQ-9 22, C-SSRS High risk, CMP Normal. Tox screen Negative.
- **Interpretation** Severe depression with active SI.
- **Management** 1:1 sitter, sertraline 50 mg PO daily, ketamine 0.5 mg/kg IV. Psychiatry consult. SI resolves by day 5, discharge to outpatient.

Case 2 Catatonia in Bipolar Disorder

- **Presentation**: 30 y/o M with bipolar disorder presents with mutism, posturing. Vitals BP 130/80, HR 90, SpO2 96%, RR 14. Exam Waxy flexibility, Bush-Francis 8.
- **Labs/Studies** EEG Slowing, B12 normal, MRI Normal. CMP K+ 3.8 mEq/L.
- **Interpretation** Catatonia, bipolar-related.
- **Management** Lorazepam 2 mg IV q6h, ECT planned (non-responsive). Lithium 600 mg PO BID. Symptoms improve by day 7, ECT x 3 sessions.

Case 3 Acute Psychosis

- **Presentation**: 25 y/o M with methamphetamine use presents with auditory hallucinations, paranoia. Vitals BP 160/90, HR 110, SpO2 94%, RR 20. Exam Disorganized, agitated.
- **Labs/Studies** Tox screen Methamphetamine, PANSS 80. CT head Normal.
- **Interpretation** Substance-induced psychosis.
- **Management** Haloperidol 5 mg IM q4h, lorazepam 2 mg IM. Tox consult, inpatient psych. Psychosis clears by day 4, discharge to rehab.

Expert Tips

- Use C-SSRS for SI; active plan warrants 1:1 sitter, psych consult
- Lorazepam challenge (1-2 mg IV) confirms catatonia; non-response suggests NMS
- Haloperidol for psychosis; avoid in QTc >500 ms (use olanzapine)
- Monitor lithium levels q3 days; toxicity (>1.5 mEq/L) causes tremor, AMS
- Suspect autoimmune encephalitis in new psychosis; check CSF NMDA antibodies
- Pitfall Missing delirium; CAM-ICU differentiates from psychosis
- Advanced Ketamine for acute SI (rapid effect), fMRI-guided therapy (panic disorder)

Key Pearls

- Psychiatric emergencies require safety, sedation, and psychiatry consult
- Depression with SI needs C-SSRS, SSRIs, or ketamine for acute risk
- Catatonia responds to lorazepam, ECT; psychosis to antipsychotics
- Mania uses lithium/valproate; panic disorder uses SSRIs, benzodiazepines
- Rare autoimmune or substance-induced cases need specialized workup

References

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