

CRITICAL CARE ORDER SET

Adrenal crisis

ICU management of acute adrenal insufficiency. On clinical suspicion, give stress-dose hydrocortisone immediately, resuscitate with isotonic fluids, and correct hypoglycemia and hyperkalemia — draw cortisol and ACTH but never delay treatment for results. Adapt every dose to your institutional protocol and the patient in front of you.

PATIENT -----	MRN -----	WEIGHT (KG) -----	DATE / TIME -----
ALLERGIES -----	ATTENDING -----	ORDERING CLINICIAN -----	CODE STATUS -----

01 General orders, monitoring & nursing

ACT NOW On suspicion, give **hydrocortisone 100 mg IV** immediately, start isotonic fluids, and treat hypoglycemia and hyperkalemia. Death is driven by hypotension, hypoglycemia, and hyperkalemia — treat empirically, do not wait for labs.

ADMISSION

- ☐ Admit / transfer to **ICU**
- ☐ Working diagnosis: **adrenal crisis** (acute adrenal insufficiency) due to presumed [primary AI / secondary AI / chronic steroid use / pituitary disease / sepsis / other]

MONITORING

- ☐ Continuous cardiac monitoring
- ☐ Continuous pulse oximetry
- ☐ Noninvasive BP **q5–15 min**; arterial line if hemodynamically unstable

- ☐ Strict I&O with hourly urine output
- ☐ Daily weight
- ☐ Temperature q4 h

NURSING

- ☐ Vital signs per ICU protocol

NOTIFY MD / APP IF ANY

- ☐ MAP < 65 mmHg despite fluids and vasopressors
- ☐ SBP < 90 mmHg
- ☐ HR > 120 or < 50/min
- ☐ New / worsening altered mental status
- ☐ Urine output < 0.5 mL/kg/h over 2 h

02

Immediate actions — do not delay for labs

STRESS-DOSE GLUCOCORTICOIDS

- ☐ Hydrocortisone 100 mg IV bolus — give STAT
- ☐ Then 50 mg IV q6h (or 100 mg IV q8h; total 200 mg/day)

FLUIDS & HEMODYNAMIC RESUSCITATION

- ☐ Place at least two large-bore peripheral IVs
- ☐ Initial bolus — 1,000 mL NS over first hour (or 20 mL/kg); adjust for CHF / CKD
- ☐ Additional 250–500 mL NS / balanced crystalloid q15–30 min as needed, guided by BP, perfusion, and signs of overload

IF HYPOGLYCEMIA PRESENT OR SUSPECTED

- ☐ Dextrose 25 g IV (50 mL D50W) STAT if BG < 70 mg/dL or altered with suspected hypoglycemia
- ☐ Start D5NS or D10NS infusion if recurrent hypoglycemia — especially in children or very low reserves

03 Diagnostic workup

NOTE Draw labs ASAP — ideally before or right after the first steroid dose — but **never delay steroids** for results.

BASELINE LABS

- | | |
|---|---|
| ☐ BMP (Na, K, Cl, CO ₂ , BUN, Cr, glucose) | ☐ CBC with differential |
| ☐ Serum cortisol (AM if possible; any time in crisis) | ☐ ACTH level (plasma) |
| ☐ ABG or VBG if shock / acidosis | ☐ Serum lactate |
| ☐ LFTs, INR / PTT | ☐ Serum osmolality if severe ↓ Na or HHS / DKA |
| ☐ Troponin ± BNP if cardiopulmonary symptoms | |

IDENTIFY PRECIPITATING CAUSE

- ☐ Blood cultures × 2 if infection suspected
- ☐ Urinalysis and urine culture
- ☐ Chest x-ray (pneumonia, pulmonary edema)
- ☐ ECG (arrhythmia, ischemia, hyperkalemia changes)
- ☐ Consider CT abdomen / adrenals, pituitary MRI, or other imaging by history (not emergent in most cases)

CONSULTS

- ☐ **Endocrinology (urgent)** — diagnosis, further testing, taper plan
- ☐ Infectious Diseases / other specialty as indicated by precipitant

04 Ongoing glucocorticoid therapy

CONTINUE HYDROCORTISONE 200 MG/DAY IV — CHOOSE SCHEDULE

- ☐ Hydrocortisone 50 mg IV q6h

OR

- ☐ Hydrocortisone 100 mg IV q8h

OR

- ☐ Continuous infusion **200 mg/day IV** (institution-specific)

CAUTION Avoid dexamethasone as maintenance if cortisol response must be monitored. Dex is acceptable for the initial dose if the diagnosis is uncertain and an ACTH stim test is planned.

TAPERING – ONCE STABLE

- ☐ After stabilization (usually **24–72 h**), taper toward physiologic dosing (e.g., 50 mg IV q8h → 25 mg IV q8h, then oral) with endocrinology
- ☐ Maintain stress-dose coverage if ongoing critical illness or major procedures

05 Mineralocorticoid replacement

PRIMARY AI (ADDISON, BILATERAL ADRENAL DESTRUCTION)

- ☐ High-dose hydrocortisone usually provides adequate mineralocorticoid effect acutely; fludrocortisone often deferred initially
- ☐ Once stable and HC reduced — consider **fludrocortisone 0.05–0.1 mg PO daily** (per endocrinology)

SECONDARY / TERTIARY AI (PITUITARY, HYPOTHALAMIC, LONG-TERM STEROIDS)

- ☐ Mineralocorticoid replacement typically not needed

06 Fluid, electrolyte & glucose management

FLUIDS

- ☐ Continue isotonic saline; switch to **D5NS / D5½NS** when hypoglycemia risk is high or glucose falls < **100 mg/dL** repeatedly

HYPONATREMIA

- ☐ Monitor serum Na at least **q6–12 h** initially
- ☐ Avoid correcting > **8–10 mmol/L** in 24 h

SEVERE If symptomatic (e.g., seizures): **3% hypertonic saline** per ICU protocol with neurology / nephrology guidance.

HYPERKALEMIA

- ☐ Serial K⁺ checks (initially q4–6 h)

IF K⁺ ≥ 6.0 MEQ/L OR ECG CHANGES

- ☐ Calcium gluconate **1–2 g IV**
- ☐ Insulin **10 units IV + 25 g dextrose IV**
- ☐ Nebulized albuterol per protocol
- ☐ Consider loop diuretic; dialysis if refractory or in renal failure

GLUCOSE

- ☐ POC glucose q1–2 h initially, then q4 h when stable
- ☐ Treat hypoglycemia — dextrose **25 g IV (D50W)**; repeat as needed
- ☐ Treat steroid-induced hyperglycemia per ICU insulin protocol (target **140–180 mg/dL**)

07

Hemodynamic & vasopressor management

TARGET MAP ≥ 65 mmHg. Expect improved pressor responsiveness after adequate hydrocortisone — reassess daily to down-titrate.

- ☐ Assess volume status clinically and with POCUS / echo where available

IF HYPOTENSION PERSISTS AFTER 2–3 L CRYSTALLOID (LESS IN CHF / CKD)

- ☐ Norepinephrine IV infusion — titrate to MAP ≥ 65 mmHg
- ☐ Add vasopressin IV infusion if catecholamine-resistant shock

08

Treat precipitating / associated conditions

COMMON Infection, trauma, surgery, abrupt steroid withdrawal, MI, GI illness, DKA.

INFECTION

- ☐ Broad-spectrum IV antibiotics if sepsis suspected (per local sepsis protocol)
- ☐ De-escalate based on cultures and clinical response

CHRONIC STEROID DEPENDENCE

- ☐ Clarify steroid history — dose, duration, last dose, indication
- ☐ Hold other chronic steroids; replace with hydrocortisone stress-dose regimen (convert back if indicated)

OTHER PRECIPITANTS

- ☐ MI per ACS protocol; DKA / HHS per institutional protocol
- ☐ Trauma, surgery, GI bleeding, pancreatitis, etc., per standard ICU pathways

09

Neurologic & symptom management

- ☐ Frequent neurologic exams (mental status, GCS)
- ☐ Avoid excessive sedatives where possible; use lowest effective doses
- ☐ Treat nausea / vomiting (e.g., ondansetron) to reduce aspiration risk
- ☐ Consider CT head if focal deficits, seizures, or unexplained mental status changes not improving with therapy

10

Prophylaxis & supportive care

DVT PROPHYLAXIS

- ☐ Enoxaparin 40 mg SC daily
- ☐ Or heparin 5,000 units SC q8–12 h (adjust for renal function / bleeding risk)

STRESS ULCER PROPHYLAXIS

- ☐ PPI (e.g., pantoprazole) or H2 blocker per ICU protocol

NUTRITION

- ☐ NPO initially if vomiting or unstable; otherwise start enteral nutrition when stable and aspiration risk acceptable
- ☐ Dietitian consult for caloric / protein goals once stabilized

LINES / TUBES

- ☐ Foley catheter for strict I&O; reassess daily for necessity

- ☐ Central line and arterial line as indicated by shock severity and vasoactive needs

11 Reassessment & disposition

- ☐ Reassess BP, MAP, HR, urine output, mental status at least **hourly** during initial stabilization

SERIAL LABS

- ☐ BMP, Mg, Phos **q6–12 h** until stable; daily CBC, LFTs, coags as needed
- ☐ Adjust hydrocortisone dose and wean vasopressors as clinical status improves

PLAN TRANSITION

- ☐ From IV to oral glucocorticoids; introduce / adjust mineralocorticoid if primary AI

EDUCATE PATIENT / FAMILY BEFORE ICU DISCHARGE

- ☐ Stress-dose steroid rules for illness / procedures
- ☐ Medical alert identification
- ☐ Emergency steroid injection kit (per endocrinology)

EDUCATIONAL USE ONLY

Not a substitute for clinical judgement. Verify doses, allergies, renal function, and contraindications. Adapt all agents and thresholds to your institutional protocols, formulary, and the individual patient.

Spreading knowledge
Improving outcomes