Adrenal Insufficiency	
PowerPlan/ Ordersets	MICU adrenal stim testing, Endo AMB adrenal disorders
Definition	Impaired secretion of the adrenal glucocorticoid and/or mineralocorticoid hormones either by adrenal destruction, dysgenesis, impaired steroidogenesis, or deficient stimulation. • **Primary**: failure to produce adrenal cortical hormones including cortisol and aldosterone. ▪ Cortisol deficiency leads to hypotension and hypoglycemia. ▪ Aldosterone deficiency leads to hypotension, hyponatremia, hyperkalemia. • **Secondary**: Pituitary dysfunction leads to impaired release of ACTH and subsequent cortisol deficiency, particularly in situations of physiologic stress • **Tertiary**: Hypothalamic dysfunction leads to impaired release of corticotropin releasing hormone (CRH) and subsequent decreased ACTH production
Presentation	N/V, abd pain, salt craving, fatigue, dizziness, syncope, orthostatic hypotension; in infants: poor feeding, lethargy
Diagnostic Studies	Chemistry: ↓ Na, ↑ K, ↓ Glu, metabolic alkalosis, ketonemia, or ketonuria, Antibodies against 21-hydroxylase for autoimmune AI, ↑ ACTH >100pg/mL w/ ↓ cortisol < 10 µg/dL Early morning (4-8am) cortisol: < 3 µg/dL suggestive. > 18 µg/dL rules out Cosyntropin stimulation test: (can be performed at any time)
Acute Treatment	• Hydrocortisone 50 mg/m2/dose (max 100 mg/m2) IV x1 then 25 mg/m2/dose IV Q6hr, Normal saline bolus then 1.5 to 2 x maintenance of dextrose containing isotonic fluids ▪ In addition to glucocorticoid effect, hydrocortisone also has some mineralocorticoid effect, so aldosterone replacement (fludrocortisone) is not required while a patient is on stress dose hydrocortisone (but this is not true of prednisolone, prednisone, or dexamethasone, which have no mineralocorticoid activity) • Stress dose steroids: Hydrocortisone 50 – 100 mg/m2/day divided q6 hours (IV, PO or IM) ▪ Give for fever > 101F, surgery or anesthesia, vomiting/dehydration, fracture ▪ Give in times of stress, until adrenal recovery has been confirmed
Maintenance Therapy	Cortisol 6-20 mg/m^2/day divided 2-3 times per day depending on etiology; For primary AI, fludrocortisone acetate 0.05-0.2 mg PO qday, Salt supplementation may be required in infants

Diabetic Ketoacidosis	
PowerPlan/ Ordersets	DKA ICP order set, MICU DKA order set, NODM CPG order set, Also see DKA card - note: 2-bag method card PENDING
Definition	Plasma glucose> 200 mg/dL AND acidemia (venous pH<7.3, arterial pH<7.35, or venous HCO3<15 mmol/L) AND moderate or large ketonuria or ketonemia (the presence of ketones in the blood)***
Pathophysiology	Hyperglycemia → ↑ plasma osmolality → osmotic diuresis ; ↓ Insulin → impaired K entry into cells ; Decr phosphate intake; ↓ Insulin + met acidosis → phosphate shift out of cells; ↓ Na, ↓ K, ↓ Phos
Presentation	Hyperglycemia, vomiting, abd pain, dehydration, AMS Hx: Wt loss, polyuria, polydipsia
Diagnostic Studies	D stick, VBG, CBC, Chem 10, serum osmolality and beta-hydroxybutyric acid, HgbA1C, UA, EKG. Consider pancreatic autoantibodies if new onset, if not clearly type 1 diabetes. ▪ Consider ABG in very ill patient ▪ Check D sticks q1 and VBG, Chem 10 and beta-hydroxybutyric acid q2h until anion gap closes ▪ Check UA q void

Diabetic Ketoacidosis continued on next page →