Study Guide

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MEDICAL TERMINOLOGY & ABBREVIATIONS

Important Prefixes + Suffixes

ante- → before ex.) antepartum = before birth
auto- → same ex.) autologous = self giving
brady- → slow ex.) bradypnea = slow breathing
cephalo- → head ex.) cephalohematoma = hematoma of skull
dys- → pain / difficulty ex.) dysmennorhea = painful menstruation
epi- → above ex.) epigastric = above the stomach
hema / hemo- → blood ex.) hematuria = blood in urine
hypo- → low / below normal ex.) hypokalemia = low Kt levels
hyper- → high / above normal ex.) hypertensive = high blood pressure
intra- → within ex.) intravascular = within the vessels
nephro- → kidney ex.) nephritis = inflammation of kidneys
- ectomy → excision / removal ex.) hysterectomy = uterus removal
- itis → inflammation of ex.) pancreatitis = pancreas inflammation
- (o)stomy → new opening ex.) colostomy = opening of colon
- phagia → eating, swallowing ex.) dysphagia = difficulty swallowing
- poesis → formation ex.) erythropoeisis = RBC formation

BANNED ABBREVIATIONS

u → write mcg (microgram) instead
T.I.W. → write 3 times weekly instead
U → write unit instead
IU → write International Unit instead
QD → write every day instead
Q.O.D. → write every other day instead
HS / hs → write ½ strength or bedtime
D/C → write discharge or discontinue
C.C → write mL instead

Common Abbreviations

Fx = Fracture Hx = History
PMH = past medical history
Dx = diagnosis Tx = treatment
r/t = related to d/t = due to
c/o = complains of Δ = change
a = before p = after
w/c = wheelchair RW = rolling walker
IM = intramuscular SC = subcutaneous
PO = by mouth IV = intravenous
NKA = no known allergies
ETOH = Alcohol SOB = Short of breath
CHF = congestive heart failure

Assessment of Endocrine System

SKIN

Hyperpigmentation – ↑ MSH, ↓ ACTH
Depigmentation – autoimmune endocrine disorders
Striae – ↑ ACTH + cortisol
Dry skin – ↓ Thyroid
Thick, leathery, oily skin – ↑ GH (acromegaly)
Hirsuitism – ↑ ACTH + cortisol

CARDIOVASCULAR

Chest pain – ↑ or ↓ thyroid
Dysrhythmias – ↓ or ↑ PTH or Pheochromocytoma
Hypertension – ↑ Thyroid, Cushing's
Fluid overload – ↑ ADH, myxedema

MUSCULOSKELETAL

Muscle weakness – ↓ PTH, Thyroid, adrenal and pituitary hormones
↓ Muscle mass – ↓ GH + ↑ ACTH
Large long bones and extremities – acromegaly – ↑ GH

NEUROLOGICAL

Lethargy – ↓ Thyroid
Tetany – ↓ PTH causing ↓ Ca^{++}
Seizure – ↑ or ↓ ADH, Pituitary tumor

GASTROINTESTINAL

Constipation – ↓ or ↑ Thyroid

GENITOURINARY

Polyuria – Diabetes mellitus or ↓ ADH
Decreased Urine Output – ↑ ADH

REPRODUCTIVE

Menstrual Irregularities → pituitary ↓, ↓ libido, ↓ fertility ↑ GH, ↓ or ↑ T_3 T_4

HEAD & NECK

Exophthalmos (bulging eyes) – ↑ Thyroid
Moon Face – ↑ cortisol + ACTH
Goiter – ↓ or ↑ Thyroid
Visual changes – pituitary tumor

Lab Reference Values

ACTH
Morning – <120 pg/mL
Evening – <85 pg/mL

Aldosterone
upright – 7–30 ng/dL
supine – 3–16 ng/dL

Growth Hormone
Men <4 ng/mL
Women <18 ng/mL

TSH – 0.4 – 4.2 μU/mL

T_3 – Age 20-50 – 70-204 ng/dL
Age 50+ – 40 – 181 ng/dL

T_4 – 4.6 – 11.0 mcg/dL

Cortisol 20 – 90 mcg / 24 hours

Fasting Blood Glucose – 70 – 90 mg/dL

Parathyroid Hormone – 50 – 330 pg/mL

ENDOCRINE DISORDERS

Adrenal Hormones

Addison's ↓ ACH

S/Sx: decreased vascular tone, hypotension, bronze skin tone, weight loss + weakness

Tx: lifelong replacement of glucocorticoids or mineralcorticoids

Cushing's ↑ ACH / Cortisol

S/Sx: moon face; weight gain, hypertension, fragile skin

Tx: glucocorticoid treatment, adrenalectomy with synthetic glucocorticoid replacement therapy for life.

Antidiuretic Hormone

Diabetes Insipidus ↓ ADH

S Sx: Excretion of large amounts of dilute urine. Polydipsia, headache, Low specific gravity, dehydration

Tx: Vasopressin therapy. Avoiding foods/beverages that are diuretics

Growth Hormone

Acromegaly ↑ GH

S/Sx: Giantism, long arms and extremities, oily skin, deep voice, hyperglycemia

Tx: Suppress GH with a GH inhibition medication

Pituitary Dwarfism ↓ GH

S/Sx: Short height, reduced Cardiac Output, moderate Obesity

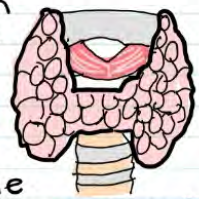
Tx: If caught early, can be cured with GH supplementation

Thyroid Hormone

Hyperthyroidism ↑ T_3+T_4

S/Sx: Tremors, nervousness, tachycardia, weight loss, cramps + diarrhea

Tx: Antithyroid medications that inhibit the creation of thyroid hormone



Hypothyroidism ↓ T_3 T_4

S/Sx: Drowsiness, fatigue excessive hunger, weight gain

Tx: Thyroid hormone replacement therapy based on T_3 + T_4 levels

Diabetes Mellitus

Type I - inability to make insulin

S/Sx: Polyuria, Polydipsia, Polyphagia, weight loss, blurred vision

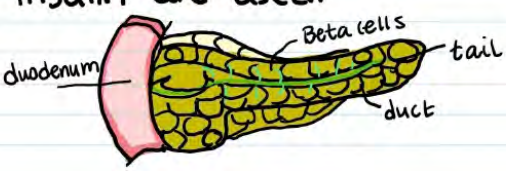
Tx: Consistency in food intake, close monitoring + correction of blood glucose levels.

Low → eat a carb heavy snack High → admin insulin or exercise

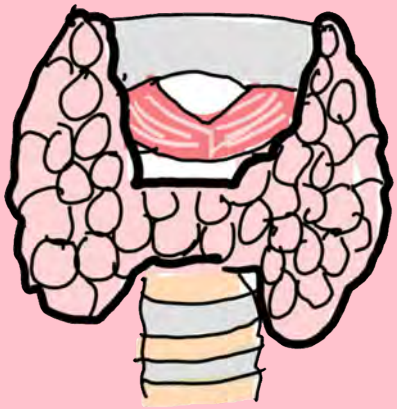
Type II - inability to absorb insulin

S/Sx: Polyphagia, Polydipsia, poor wound healing, weight gain

Tx: Exercise, diet changes + weight loss are preferred treatment, but if these are unsuccessful medications like metformin and insulin are used.



ENDOCRINE



DIABETES NURSING CARE

ASSESSMENT

SUBJECTIVE DATA
- Past health Hx
- Medications
- Recent surgery
- Thirst
- Hunger
- Poor healing
- frequent urination
- abdominal pain

OBJECTIVE DATA
- sunken eyeballs
- dry skin
- hypotension
- weak tachy HR
- dry mouth
- fruity breath
- OGTT > 200mg/dL
- FBG > 126 mg/dL

RISK FACTORS

I	II
- genetics	- Obesity
- autoimmune disease	- genetics
	- ↑ triglycerides

DIAGNOSIS
- Ineffective health management
- Risk for unstable blood glucose levels
- Risk for injury
- Risk for peripheral neurovascular dysfunction

PLANNING + GOALS
- keep pt. involved in their care
- have few hyper/hypoglycemic emergencies
- Adjust lifestyle to accommodate their diagnosis + needs

IMPLEMENTATION
- Monitor blood glucose frequently, especially during acute illness
- Assess the patient's ability to perform SMBG and insulin injection
- Assess patient's knowledge of proper diet + exercise
- Teach pt. the signs + symptoms of hypo/hyperglycemia + what to do in each case
- Provide frequent oral care
- Inspect feet daily + encourage pt. to wear proper footwear
- Ensure patient is prepared for travel with enough supplies
- Teach importance of wearing a medical ID bracelet

DIETARY CONSIDERATIONS
- Should have consult w/ a dietician
- healthy balance of nutrients is essential
- Minimum of 130g of carbs per day
  - ↳ fruits, veg. whole grain, legumes
- Limit saturated fat to less than 7%
- Limit cholesterol to < 200 mg/day
- Eat healthy fats that come from plants
  - ↳ olives, nuts, avocados
- Protein should be 15% - 20% of calories
- Limit alcohol intake because it stops gluconeogenisis → high risk of hypoglycemia

COMPLICATIONS

Diabetic ketoacidosis (DKA)
↳ ensure airway, establish IV, give fluids, give insulin drip

Hyperosmolar hyperglycemic syndrome
↳ IV insulin + NaCl, replace K+

Hypoglycemia → BG < 70mg/dL
↳ Give 15g of simple carb + recheck BG level again in 15 minutes

MEDICAL TREATMENTS

Hypoglycemia - 50% dextrose IV push or glucagon IM

Hyperglycemia - insulin therapy + fluid replacement

Pancreas Transplant
↳ For type I diabetics

Bariatric Surgery
↳ For type II diabetics

Nursing Management

ASSESSMENT

- Lung Sounds
- VS
- SaO_2 %
- Health Hx
- Medications
- Recent Surgeries
- Smoking
- mobility level
- fatigue

LABS → ABGs, Sputum Culture, WBCs

NURSING Dx

- Impaired gas exchange
- Ineffective breathing Pattern
- Acute pain
- Activity Intolerance

C - confusion
U - BUN >20
R - Respiratory rate ≥ 30
B - BP - Systolic < 90
diastolic < 60
65 - ≥ 65 years old

Interventions

- Teach good handwashing
- Change positions frequently
- Promote expectoration
- Limit visitors to prevent spread of infection
- Encourage adequate rest
- Educate pt. to report chest pain, fever, changes in sputum or altered sensorium
- Provide comfort for pain
- Administer antipyretics as ordered
- Continuously monitor pulse oximetry
- Suction secretions as needed
- Encourage early ambulation / mobilization to speed up recovery

Holistic Care

- use therapeutic comm. to ease pt's anxiety
- Provide extra pillows/ support to ensure pt is comfortable in bed
- Ensure environment is soothing + clean

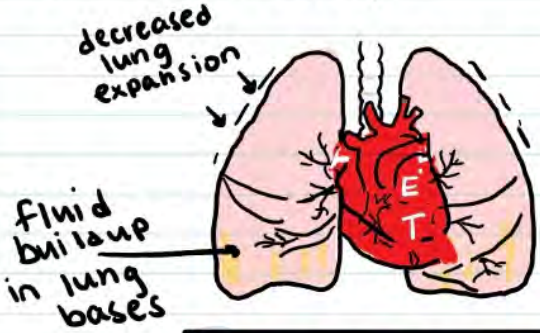
NUTRITIONAL CONSIDERATIONS

Fruits + vegetables build immune system

Protein rich foods
↳ help repair tissue

Drink plenty of water + fluids to maintain fluid/electrolyte balance

Avoid throat irritating foods like milk that can cause excess secretions



PREVENTION

+ wash hands frequently
+ eat a balanced diet
+ get adequate rest
+ exercise regularly
+ cough + sneeze into elbow
+ Stop Smoking
+ avoid others who are ill

ANALGESICS

Types of Pain

Nociceptive
Chemical, thermal & mechanical pain

Neuropathic
burning/stabbing caused by CNS damage

Idiopathic
Pain of unknown origin or caused by anxiety/stress

Acute Pain
- ↑HR, RR, BP
- Nausea
- Diaphoresis
- Dilated pupils
- Elevated glucose

Chronic Pain
- ↓ HR, RR, BP
- depression can occur
- long duration of dull persistent pain

Pain Assessment

1. Onset of Pain
2. Location of Pain
3. Depth of Pain
4. Quality of Pain
5. Duration of Pain
6. Severity of Pain
7. Body Language

Opiate Analgesics

- Morphine (MS contin)
- Fentanyl (Duragesic)
- Methadone (Dolophine)
- codeine sulfate
- Oxycodone (Oxycontin)
- hydromorphone (Dilaudid)
- Ultram (Tramadol)
- meperidine (Demerol)

Purpose & Action

To relieve pain without producing loss of consciousness or reflex activity

Opiates act on mu receptors to alter perception of and reduce severe pain

Nursing Considerations

- Assess pain level frequently and document effectiveness
- Take baseline vitals before administering and hold if RR drops to below 12/min.
- Administer IV opioids slowly
- Educate patients on long-term high dosage to wean off slowly

Side Effects

- **Respiratory Depression** → monitor vital signs and have naloxone available. Avoid administering with other CNS depressants

- **Constipation** → ensure pt. is adequately hydrated, encourage mobility, and administer stool softeners or stimulant laxatives to avoid constipation.

- **Urinary Retention** → encourage patients to void at least every 4 hours. Monitor I&O and obtain an order to bladder scan if needed.

- **CNS depression & Sedation** → Advise clients to avoid hazardous activities like driving.

CRITICAL CARE NURSING

HEMODYNAMICS

Cardiac output
↳ volume of blood pumped by the heart in one minute (in L)

Cardiac Index
↳ cardiac output adjusted for the patient's body surface area (BSA)

Stroke volume
↳ volume ejected with each heartbeat

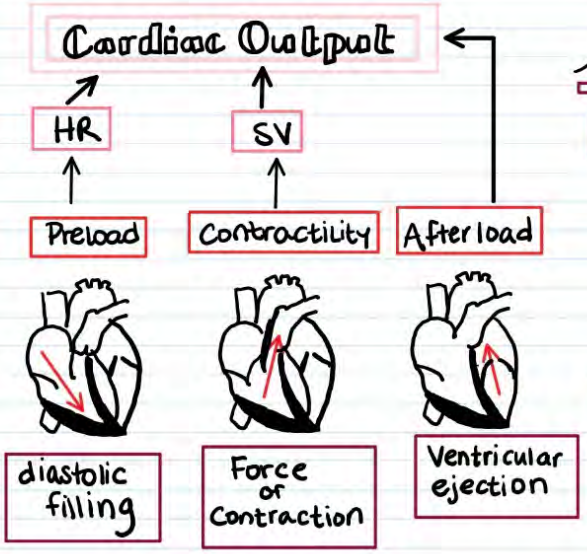
Stroke volume index
↳ Stroke volume adjusted for BSA

Systemic vascular resistance
↳ resistance to blood flow returning to the left ventricle

Pulmonary vascular resistance
resistance to blood flow returning to the right ventricle

Preload = volume in the ventricle at the end of diastole

Afterload = pressure the heart must eject blood against during systole (contraction)



Invasive Pressure Monitoring

Arterial BP

Indications: acute hypertension + hypotension, resp. failure, shock, neuro injury, or acute sepsis
Measurements: systolic, diastolic + Mean arterial pressure
Nursing: ECG + pressure tracings for diminished arterial BP which is an urgent situation

Arterial Pressure-Based Cardiac Output (APCO)

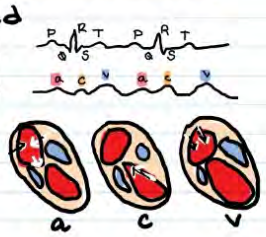
Indications: to assess a patient's ability to respond to fluids by increasing stroke volume
Measurements: continuous cardiac output (cco), Stroke vol., Continuous cardiac Index (CCI + SVI
Contraindications: children and those on IABP therapy

Pulmonary Artery Flow-Directed Catheter

Indications: cardiogenic shock, MI w/ complications, severe chronic HF, Ddx of pulm. HTN
Measurements: PAD pressure + PAWP

Central Venous or Right Atrial Pressure (CVP)

Measurements: Right ventricular preload
Interpretation: ↑CVP = R ventricular failure or volume overload
↓ CVP = hypovolemia
a wave - atrial contraction
c wave - tricuspid bulge into R atrium
v wave - atrial filling



Venous O_2 Saturation

Measurements: O_2 saturation in venous blood ($ScvO_2$), mixed venous O_2 (SvO_2)

Interpretation:

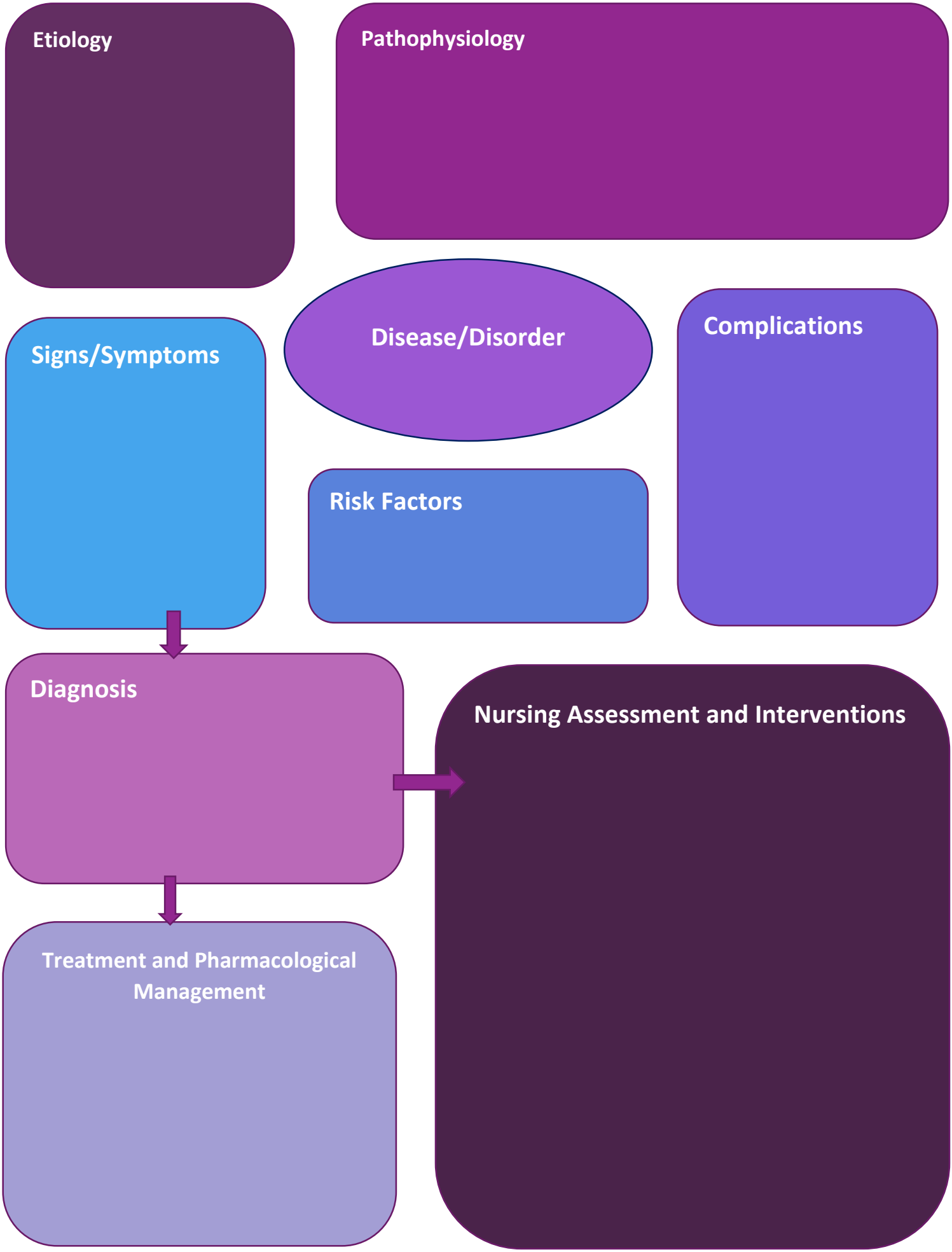
↑ $ScvO_2$ or SvO_2 (80-95%)
= ↑ O_2 supply + ↓ O_2 demand
- more O_2 than needed - ↓ ability to use O_2 - hypothermia

Normal $ScvO_2$ or SvO_2 (60-80%)
= balanced O_2 supply + demand

↓ $ScvO_2$ or SvO_2 (< 60%)
= ↓ Hgb, ↓ SaO_2, ↓ CO, ↑ O_2 demand
- anemia or bleed - cardiogenic shock
- hypoxemia from ↓ O_2 supply

Concept Map Template Bundle

Concept Map Bundle



Report Sheet 1

Patient Info

Name:

Room #

Age:

DOB

Allergies

Code Status
Full DNR DNI

Admitting Dx:

Activity/Ambulation:

Cane RW WC Lift

IV Fluids:

Hx:

I/O + -

Precautions
- ☐ Aspiration
- ☐ Bleeding
- ☐ Fall
- ☐ Seizure
- ☐ Neutropenic
- ☐ MRSA
- ☐ Airborne
- ☐ Droplet
- ☐ _____

Radiology

X-Ray

CT Scan

MRI

US

Tubes

Drainage

Catheters

Feed/NG

Vital Signs

HR:

Resp:

Temp:

BP:

O2 Sat:

☐ Room Air ☐ NC ☐ NRB
LPM _____

Pain:

Plan/Interventions

1.

2.

3.

4.

5.

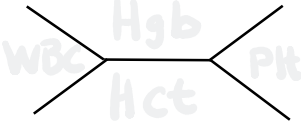
6.

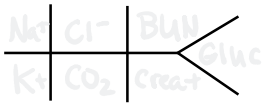
7.

8.

9.

Labs





Other
RBC___Mag____PO_4____
PT____INR____ PTT____
Ca_____

Cultures
☐ Blood ☐ Urine ☐ Flu

Cardio – EKG, Rhythm, Pulses

Respiratory – IS, Sounds, SOB, Cough

Musculoskeletal – Fx, Sprains, Arthritis

Skin – Color, Edema, Wounds

GU – Catheter, U/A, UTI, CBI

Abdominal/GI – Last BM, bowel sounds

Neuro/LOC – PERRLA, GCS

HEENT - Mucosa, teeth, hearin

Nutrition/Diet – liquids, Cardiac, crushed

Medications:

Notes:

Report Sheet 2