# Hydrocephalus Referral Guideline

**SYMPTOMS AND LABS**

- **High Risk**
  - Shunt failure/breakage WITH headache, nausea, vomiting or mental status change
  - Shunt infection
  - New diagnosis hydrocephalus with headache, nausea, vomiting or mental status change

- **Moderate Risk**
  - Primary/secondary intracranial hypertension (formerly known as pseudotumor) WITHOUT shunt
  - Symptomatic primary/secondary intracranial hypertension (formerly known as pseudotumor) WITH shunt
  - Shunt failure/breakage WITHOUT headache, nausea, vomiting or mental status change

- **Low Risk**
  - Normal Pressure Hydrocephalus
  - Establish care for existing shunt
  - Incidental ventriculomegaly/hydrocephalus

**SUGGESTED PREVISIT WORKUP**

For any of the above symptoms - NPO and acute referral to ER for any symptoms listed in the above high risk category

**SUGGESTED WORKUP**

- For primary/secondary intracranial hypertension WITHOUT shunt - neurology workup before neurosurgery referral for diagnostic lumbar puncture, medical management, ophthalmology exam and venogram (CTV or MRV)
- For symptomatic primary/secondary intracranial hypertension WITH shunt - neurosurgery referral
- For shunt failure/breakage WITHOUT headache, nausea, vomiting or mental status change - shunt x-ray series and noncontrast CT before referral

**SUGGESTED MANAGEMENT**

- For normal pressure hydrocephalus please consider Neurology evaluation including MRI and demonstrable improvement with high volume lumbar puncture
- Establish care for existing shunt - please assure updated and all prior brain imaging (DICOM images) available and provide prior surgical/clinical notes from neurosurgery
- For incidental ventriculomegaly/hydrocephalus - MRI brain without contrast and ophthalmology referral

**CLINICAL PEARLS**

- Like many clinical entities hydrocephalus can span a continuum that is anchored at one end by an acute life-threatening event to something that can be a longstanding and nearly asymptomatic entity at the other end of that spectrum. A patient who has hydrocephalus and presents with acute neurological decline should be treated attentively, and often the emergency room is the most appropriate option to provide that. These specific symptoms can vary from patient to patient but can variously encompass nausea, vomiting, lethargy, and headache amongst others.

---

These clinical practice guidelines describe generally recommended evidence-based interventions for the evaluation, diagnosis and treatment of specific diseases or conditions. The guidelines are: (i) not considered to be entirely inclusive or exclusive of all methods of reasonable care that can obtain or produce the same results, and are not a statement of the standard of medical care; (ii) based on information available at the time and may not reflect the most current evidenced-based literature available at subsequent times; and (iii) not intended to substitute for the independent professional judgment of the responsible clinician(s). No set of guidelines can address the individual variation among patients or their unique needs, nor the combination of resources available to a particular community, provider or healthcare professional. Deviations from clinical practice guidelines thus may be appropriate based upon the specific patient circumstances.