Shunt types:
- Shunts used to treat hydrocephalus:
  - Ventriculo-peritoneal (VP)
  - Ventriculo-atrial (VA)
  - Ventriculo-pleural (VPI)
- Neonatal shunts to treat intraventricular hemorrhage:
  - Ventriculo-subgaleal (VSG)
  - Ventricular reservoir / access device (VAD)
- Cranial shunts not used to treat hydrocephalus:
  - Subdural-peritoneal (SDP)
  - Cysto-peritoneal (CP)
- Spinal shunts:
  - Lumbo-peritoneal (LP)
  - Syringo-pleural (SP)
  - Syringo-subarachnoid (SSA)

Troubleshooting Neurosurgical Shunt for Infection

Identification of patient’s shunt

- Does the patient have fever or concern for a surgical site infection? No → Is there still a shunt concern? Yes → See shunt malfunction
  Yes → Has the patient had shunt surgery, abdominal surgery, or peritonitis in the past six months? No → Based on HPI and exam, consider other diagnoses and W/U
  Yes → Obtain CRP and CBC

- Are these labs normal? Yes → Based on HPI and exam, consider other diagnoses and W/U
  No → Is there an alternate source of infection? No → Is CRP elevated per CMH reference value? Yes → Contact neurosurgery to discuss:
    - Differential
    - Initial care
    - If antibiotics should be initiated
  Yes → Is CRP greater than 7.0 mg/L? Yes → Contact neurosurgery to discuss:
    - Differential
    - Initial care
    - If antibiotics should be initiated
  No → If no alternate source of infection, contact neurosurgery to discuss CSF sampling (LP versus shunt tap)

- Is there a probable alternate primary source of infection? Yes → Based on HPI and exam, consider other diagnoses and W/U
  No → Has the patient been exposed to antibiotics in past two weeks? No → Based on HPI and exam, consider other diagnoses and W/U
  Yes → Is CRP greater than 7.0 mg/L? Yes → Contact neurosurgery to discuss:
    - Differential
    - Initial care
    - If antibiotics should be initiated
  No → If no alternate source of infection, contact neurosurgery to discuss CSF sampling (LP versus shunt tap)