Device Fact Sheet
Ventricular-Peritoneal Shunts (VPS)

This Device Fact Sheet was compiled by the BCM Transition Medicine Clinic for primary care providers to have important information regarding patients with the above device. Our clinic wants to partner with you to provide the best care for patients. Please call 713-798-6333 if you have questions.

What is a VPS?
- Shunts are used for the treatment of symptomatic hydrocephalus.

- Parts of a shunt:
  1) Proximal catheter that enters the lateral ventricle
  2) A valve to prevent CSF from being siphoned due to effects of gravity
  3) A catheter that ends in the peritoneal cavity or alternate drainage site such as the pleural space of the lungs or right atrium of the heart

- Types of shunt valves: Older shunt valves regulate drainage based on fluid pressure. Newer shunts valves are programmed non-invasively using a magnet. Metal detectors and MRI machines can alter the settings on programmable shunts and should be avoided by patients who have this type of shunt.

Complications
- Infection: The greatest risk for infection is in first three months following surgery and most commonly due to Staphylococcus. May consider gram negatives and anaerobes in latent infections due to connection with peritoneum.
  - Symptoms: fever, lethargy, irritability, pain/redness along shunt device system, abdominal discomfort, or apnea.
  - Order: CT head with shunt series, blood culture, CBC, and CSF cultures are done by neurosurgery

- Over drainage of the ventricles after shunt revision
  - Symptoms: postural headache while sitting up. A mild headache may persist for several weeks while fluid pressure adjusts
  - Rarely, a subdural hematoma may develop if there is rapid decompression of the ventricles due to tearing of the bridging veins of the dura as the brain shifts into the space previously occupied by the ventricles. Get CT head without contrast if severe or persistent headache or neurological changes.

- Abdominal complications:
  - Bowel perforation, ileus, pseudocyst or abscesses are potential problems. In rare instances, catheter migration has been documented to cause perforation or scrotal hydrocele.
  - If inter-abdominal infection or surgery, neurosurgery should be consulted as shunt may have to be externalized to prevent/treat meningitis

- Shunt malfunction or obstruction: Due to changes in abdominal pressure (pregnancy, constipation, etc) or tube kinking
  - Symptoms: severe headache, seizures, vision change, vomiting, gait change, cognitive/behavior change
  - Order: CT head without contrast and shunt series, consult neurosurgery if concern

- Cognition:
  - Patients with shunts have a higher incidence of cognitive disability including intellectual disability, learning disability (especially in math and reading comprehension), and executive function limitations
  - Consider neurocognitive and executive function testing
  - Evaluate for need of assistance with independent living, self-management, and education/employment