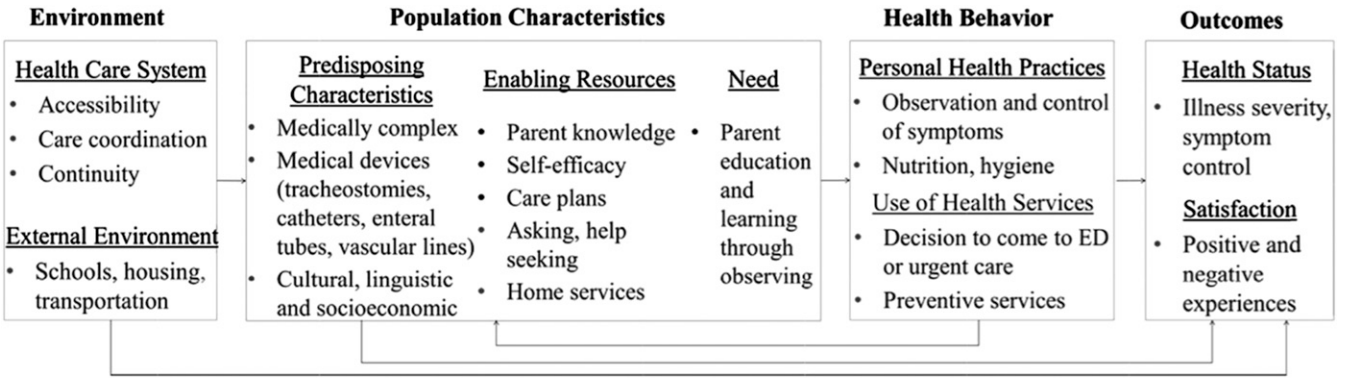
# Supplemental Information




**SUPPLEMENTAL FIGURE 2** Conceptual model for health care use due to device complications in CMC. Previously adapted from Nelson BB, Coller RJ, Saenz AA, et al. How avoidable are hospitalizations for children with medical complexity? Understanding parent perspectives. *Acad Pediatr*. 2016;16(6):584.

**SUPPLEMENTAL TABLE 6** Likelihood of Encounter due to Device Complication Scale

| Rating | Details | Example Case Scenarios |
|---|---|---|
| 0: Encounter planned because of original device placement and not because of device complication | Includes planned hospitalizations for placement of device that was not previously in use. | Patient with history of muscle spasticity is admitted for placement of a baclofen pump. |
| 1: Encounter unrelated to device complication in most circumstances | Includes planned hospitalizations when reasons are unrelated to the device. | Patient with tracheostomy is admitted for femur fracture. |
| | May involve the device in diagnosis or management during encounter but was not likely the cause of the hospitalization. | Patient with gastrostomy tube presents to ED for fever, respiratory symptoms, and has suspected upper respiratory tract infection. |
| | Device function may have been assessed during encounter but was found to be functioning well. | Patient with a central venous catheter presents to the ED, but there is no concern for central venous catheter infection or other complication. |
| 2: Uncertain | Encounter could have been due to a device complication, but it is unclear. | Patient with central venous catheter presents with fever and altered mental status. Central line infection is unable to be ruled out. Patient receives empirical treatment because cultures were obtained after antibiotics. |
| | | Patient with ventricular shunt presents to ED with altered mental status. Imaging and neurosurgical consultation conclusions are conflicting. |
| | | After a device is manipulated during a procedure, a patient's symptoms improve, but it is not clear whether the procedure or other factors lead to the improvement. |
| 3: Encounter related to device complication in most circumstances | Device complications can be because of natural history of a device (eg, tracheostomy mucous plug) or suspected nonideal care for any reason (eg, insufficient caregiver education, support, training, or maintenance, postprocedure complication or infection, child pulling out device). | Patient with a tracheostomy presents with fever and increased secretions. They are treated for presumed bacterial tracheitis. |
| | Encounters can include infections or mechanical complications directly related to the device. | Patient with a gastrostomy tube is admitted for poor feeding tolerance, and the device is found to be malpositioned. |
| | ED visit for suspected but not confirmed conditions (eg, central venous catheter infection). | Patient with a gastrojejunostomy tube who is fed through the jejunostomy presents with aspiration pneumonia.[a] |
| | Includes planned hospitalizations when reasons are related to the device, such as to address a suspected or confirmed failure or complication of the device. | Patient with a jejunostomy tube presents because tube fell out. |
| | | One wk after a new tracheostomy was placed, the patient is admitted with wound infection. |
| | | Patient with BiPAP has ongoing difficulty tolerating BiPAP overnight. They have a planned admission to continue adjusting settings. |

[a] Aspiration pneumonia in the setting of enteral feeding tubes was coded as likely related to a device complication for children with gastrojejunostomy tubes who were fed through the jejunal portion (under the hypothesis that a well-functioning jejunal tube should substantially reduce changes for aspiration pneumonia). Recognizing that someone may have aspiration pneumonia from oral secretions, even in the setting of a functional jejunal tube, if the chart documentation indicated suspicion for this latter situation, the encounter was coded as unrelated to a device complication. If the patient was fed through the gastrostomy portion of a gastrojejunostomy tube (or if they only had a gastrostomy tube), we did not consider aspiration pneumonia as a complication of the device.