**Headache**

**Indications for Imaging, Referral and Hospitalization**

**CLINICAL INDICATIONS FOR IMAGING**

* CT scan, noncontrast
  + Indicated for ANY ONE of the following
    - Symptoms suggesting an ominous headache with a possibly more serious, underlying cause, as indicated by ANY ONE of the following:
      * First or worst headache of the patient’s life, particularly if the onset was rapid
      * Suspected subarachnoid hemorrhage when ANY ONE of the following is present (without contrast):
        + Abrupt onset of severe headache
        + Headaches during exertion or sexual intercourse
        + Warning headache, i.e., a recent unusually severe headache with abrupt onset
      * A change in the frequency, severity, or clinical features of the headache attack from what the patient has commonly experienced
      * Onset of headache after 50 years of age
      * A new or progressive headache that persists for days
      * Precipitation of head pain with coughing, sneezing, or bending down
      * Systemic symptoms such as myalgia, fever, malaise, weight loss, scalp tenderness, or jaw claudication
      * Neurologic abnormalities
        + Focal neurologic symptoms
        + Abnormalities on neurologic examination
        + Confusion
        + Any impairment in the level of consciousness
      * Seizure disorder
      * History of cancer
* Magnetic resonance imaging
  + Indicated for ANY ONE of the following:
    - Symptoms suggesting an ominous headache with a possibly more serious, underlying cause, as indicated by ANY ONE of the following:
      * First or worst headache of the patient’s life, particularly if the onset was rapid
      * A change in the frequency, severity, or clinical features of the headache attack from what the patient has commonly experienced
      * Onset of headache after 50 years of age
      * A new or progressive headache that persists for days
      * Precipitation of head pain with coughing, sneezing or bending down
      * Systemic symptoms such as myalgia, fever, malaise, weight loss, scalp tenderness, or jaw claudication
      * ANY ONE of the following neurologic abnormalities:
        + Focal neurologic symptoms
        + Abnormalities on neurologic examination
        + Confusion
        + Any impairment in the level of consciousness
    - Seizure disorder
    - Constitutional symptoms: fever, weight loss, or cough
    - History of cancer
    - HIV positive patient, generally as preferred test

(NOTE that neuroimaging is usually not warranted in patients with migraine and normal neurologic examination).

**CLINICAL INDICATIONS FOR REFERRAL**

* Refer to neurologist for ANY ONE of the following:
  + Diagnosis is unclear, atypical presentation
  + Unsatisfactory response to treatment, assistance needed
  + Focal neurologic findings or altered mental status
  + Change in headache pattern or neuropathic headache
  + Sudden onset of severe headache, with no previous history of headaches, agc<10 or >50
  + Abnormal findings on CT scan or magnetic resonance imaging, congenital disorder, hydrocephalus, abnormal intracranial pressure

**CLINICAL INDICATIONS FOR EMERGENCY EVALUATION**

* Emergency evaluation is indicated for ANY ONE of the following:
  + Suspected organic causes or findings requiring emergency evaluation for diagnosis and therapeutic intervention, including ANY ONE of the following:
    - Subarachnoid or intracranial hemorrhage
    - Unruptured but threatening vascular malformation
    - Venous sinus thrombosis
    - Stroke or seizure
    - Increased intracranial pressure/abnormal funduscopic exam
    - Encephalitis, meningitis, brain abscess, space occupying lesion on image
    - Toxic or metabolic decompensation
    - Head trauma, HIV diagnosis, immunosuppression, cancer history
    - Malignant hypertension
    - Acute neurologic signs
    - Significant and persistent mental status change
  + Severe headache, including rebound headache, with intractable nausea and vomiting unresponsive to outpatient interventions, “thunderclap” headache, suggestion of giant cell arteritis, association with postural change or “worst headache of life:.

**Reference**

Milliman Care Guidelines, “Ambulatory Care”, 23rd Edition, 2/27/2019.