COHESIVE HEALTHCARE MANAGEMENT & CONSULTING

Mangum Regional Medical Center

TITLE		POLICY
Pediatric Triage		**EMD-007**
MANUAL	EFFECTIVE DATE	REVIEW DATE
Emergency Department		
DEPARTMENT	REFERENCE	
Emergency Department		

SCOPE

This policy applies to Mangum Regional Medical Center for the assessment and prioritization of pediatric patients based on level of acuity and resources using an evidence based five-level triage assessment tool for patients presenting to the Emergency Department (ED).

PURPOSE

The Hospital has adopted the Emergency Severity Index (ESI) for triaging pediatric patients arriving in the ED to improve the quality and safety of patient care. The ESI is an evidence based five level triage scale that facilitates the prioritization of pediatric patients based on the urgency of treatment for the patients' condition. The triage nurse should initially perform a quick assessment of the pediatric patient using the Pediatric Assessment Triangle (See Attachment A) :

The triage nurse should quickly determine whether the pediatric patient requires life-saving interventions to assign a triage acuity level by assessing the pediatric patient's appearance, breathing and circulation (ABC). This assessment will determine how long a patient can safely

wait to be seen by a physician/mid-level provider and receive a medical screening examination (MSE) and treatment.

In 2010 the American College of Emergency Physicians (ACEP) and the Emergency Nurses Association (ENA) revised their original statement regarding the use of triage scales as follows: "*the ACEP and ENA believe that the quality of patient care benefits from implementing a standardized emergency department (ED) triage scale and acuity categorization process. Based on expert consensus of currently available evidence, ACEP and ENA support the adoption of a reliable, valid five level triage scale such as the Emergency Severity Index (ESI)*." In 2010 the Centers for Disease Control and Prevention National Center for Health Statistics provided a report that categorized acuity on arrival as a five-level based on how urgently the patient needed to be seen by the physician or healthcare provider and included the following categories:

Acuity Level	Time Seen
Level 1 - Immediate	Immediately
Level 2 - Emergent	1-14 minutes
Level 3 - Urgent	15 – 60 minutes
Level 4 – Semi-Urgent	1 – 2 hours
Level 5 – Non-Urgent	2 – 24 hours

Finally, the triage nurse is responsible for determining resources necessary to move the pediatric patient to a final disposition (admission, discharge, or transfer) for those patients who do not meet a high acuity level. This process ensures pediatric patients are placed in the right location at the right time to receive the appropriate level of care and facilitates the allocation of the appropriate resources to meet the patient's medical needs.

DEFINITIONS

A. **Acuity:** refers to the severity of the illness or injury, as well as the potential for complications. Acuity is determined by the stability of the patient's vital functions and the potential for the threat to life, limb or organ.

B. **Disposition:** means where the patient is being discharged to such as admitted to the hospital, discharged to home or transferred to another facility.

C. **Emergency Severity Index (ESI):** an evidence-based five-level triage scale developed as a triage tool to help facilitate the prioritization of patients arriving in the ED based on the urgency of the patients' condition.

D. **High-Risk Situation:** refers to a patient with a condition that could easily deteriorate or presents with symptoms suggestive of a condition requiring time-sensitive treatment. This patient presents with a potential for a threat to life, limb or organ. Examples include but not limited to active chest pain, signs of stroke, suicidal or homicidal patient.

E. **Infant:** refers to a child less than one (1) year of age and has not reached their first birthday.

F. **Medical Screening Examination (MSE):** means an examination performed by a licensed physician or Qualified Medical Person (QMP) including any ancillary services to determine with reasonable clinical confidence whether an emergency medical condition (EMC) does or does not exist.

G. **Neonate:** refers to a child who is less than 28 days old

H. **Pediatric Assessment Triangle:** refers to an assessment tool used in the ED to rapidly to determine the acuity of a child and can be used to determine whether the child is in respiratory distress, respiratory failure or shock.

I. **Resources:** refers to the number of resources a patient is expected to consume for a disposition decision to be reached. Resources would include but not limited to hospital services, tests, procedures, consults or interventions that are above and beyond the history and physical, or simple interventions such as applying a bandage.

J. **Triage:** entails the clinical assessment of the patient's presenting signs and symptoms at the time of arrival at the hospital, in order to prioritize when the patient will be seen by the physician or other QMP.

POLICY

Triage is a process that will be initiated upon the pediatric patient's arrival to rapidly assess the severity of the pediatric patient's injury or illness and assign priorities of care to be provided. This process ensures pediatric patients are placed in the right location at the right time to receive the appropriate level of care and facilitates the allocation of the appropriate resources to meet the pediatric patient's medical needs. Goals of triage include:

- Rapid identification of life-threatening illnesses or injuries
- Prioritizing care for patients with emergent needs
- Facilitate the flow of patients through the ED
- Refer patients to the appropriate level of care in the ED

The ED triage assessment of the pediatric patient will include the rapid systematic collection of subjective and objective data that is relevant to each pediatric patient. The triage nurse will then assign an acuity level using the ESI Triage Algorithm (see EMD-006A) and the Pediatric Assessment Triangle to determine how long the patient can safely wait before receiving an MSE and treatment by a physician/mid-level provider. Once the triage nurse has determined the pediatric patient does not require life-saving intervention, the nurse will perform a primary assessment using an ABCDE (airway, breathing, circulation, disability and exposure) format. The triage nurse will obtain a pertinent history using the mnemonic CIAMPEDS (chief complaint; immunizations/isolation; allergies; medications; past health history; events preceding problem; diet/elimination; symptoms associated with problem) to ensure avoiding missing important information.

If the triage nurse determines the pediatric patient is not a high acuity patient, then the triage nurse will then determine the number of resources the pediatric patient is going to consume for the patient to reach a disposition decision. The triage nurse will estimate the number of resources based on the pediatric patient's brief subjective/objective assessment, past medical history, allergies, medications, age/gender and ED standards of practice. The triage nurse will review the pediatric patient's vital signs and if outside accepted parameters the nurse will consider upgrading the pediatric patient to a Level 2 based on the ESI Triage Algorithm. If all ED beds are full and the pediatric patient is stable enough to wait in the ED waiting room, reassessment will be performed at defined intervals. Any significant symptoms will be reassessed, and acuity level will be increased if necessary. The triage nurse will use ESI criteria to determine the triage level and assign ED room assignment regardless of method of arrival.

PROCEDURE

A. All patients presenting to the ED will initially be triaged using the ESI Triage Algorithm in order to identify life-threatening conditions and prioritize pediatric patients according to acuity.

B. Pediatric patients presenting to the ED will be assessed in a standardized manner.

1. To determine high acuity level criteria the triage nurse will perform a brief urgent assessment using the Pediatric Assessment Triage tool (See Pediatric Nursing Flowsheet, Attachment C) and assess the following three areas:

a. Appearance:

i. Tone (muscle tone):

- Normal: good movement in all extremities with good tone, moves spontaneously. Strong resistance by infants to straighten limbs, resists examination, sits or stands (age appropriate).
- Abnormal: limp, rigid, absent muscle tone.

ii. Interactiveness:

- Normal: appears alert/engaged with clinician or caregiver, interacts well with people /environment, reaches for objects.
- Abnormal: Unable to stimulate the infant/child to engage with clinician or environment. Indicators of altered mental status or obstructed airway.

iii. Consolability:

- Normal: able to console or comfort infant/child by normal caregivers (i.e. parents). Normal response to environmental stimuli by infant/child.
- Abnormal: normal caregivers unable to console or comfort infant/child.

iv. Look (gaze)
- Normal: infant/child is able to make eye contact.
- Abnormal: unable to make eye contact, vacant stare. Infant/child may not be able to recognize normal caregivers.

v. Speech
- Normal: able to express self in an age appropriate manner. Speech (or crying for infants) is normal.
- Abnormal: unable to express self in an age appropriate manner. Absent or abnormal speech (or crying for infants).

b. Work of Breathing:
i. assess/observe the infant/child for respiratory effort and signs of respiratory distress.
ii. Signs of increased work of breathing include but not limited to:
- Retractions
- Noisy breathing (i.e. grunting)
- Use of accessory muscles to breathe
- Nasal flaring

iii. Signs of decreased work of breathing include but not limited to:
- Breathing to slow (bradypneic).
- Too weak to use the muscles required to breathe.

c. Circulation to Skin:
i. assess/observe for signs of pallor, cyanosis, and other obvious signs of bleeding.

d. Abnormalities in any of these three areas, the triage nurse will triage the pediatric patient as a high acuity patient and taken directly to an ED room and seen by a physician/mid-level provider within the identified time parameters based on their assigned triage level.

2. After the initial brief assessment/observation the triage nurse or ED nurse will perform a primary assessment using the ABCDE format (See Pediatric Nursing Flowsheet, Attachment C).
- **A**irway: airway patency.
- **B**reathing: respiratory rate and quality.
- **C**irculation: heart rate, skin temperature, capillary refill, blood pressure (where clinically indicated, i.e. cardiac or renal disease).
- **D**isability: assess neurological status including level of consciousness and pupillary reaction.
- **E**xposure: assess for injury or illness (need to undress to assess, promptly re-dress when assessment completed).

3. After an initial assessment has been obtained the triage/ED nurse will obtain a pertinent history from the pediatric patient using a standardized format (CIAMPEDS, See Pediatric Nursing Flowsheet, Attachment B) to ensure important information is not missed.
    - **C** = chief complaint
    - **I** = immunizations and isolation
    - **A** = allergies
    - **M** = medications
    - **P** = past health history
    - **E** = events preceding problem
    - **D** = diet and elimination
    - **S** = symptoms associated with the problem
4. The triage/ED nurse will obtain vital signs for the pediatric patient as follows:
    - Heart Rate (HR)
    - Respiratory Rate (RR)
    - Temperature
        - Neonates and infants will have rectal temperatures.
    - Oxygen saturation (SpO2)
    - Blood pressure (as clinically indicated)

    a. SpO2 will be obtained for pediatric patients who present to the ED with respiratory complaints or signs/symptoms of respiratory distress or as otherwise clinically indicated.

    b. The triage/ED nurse will use the appropriate equipment and size when obtaining vital signs to ensure accurate assessment and findings.
5. The triage/ED nurse will consider the pediatric patient's clinical condition, immunizations completed and age when the patient presents with a fever.
    a. neonates presenting with a fever of 100.4°F(38°C) or greater will be triaged as high-risk (Level 2) as the patient may have a serious infection.

    b. infants between the ages of 1to 3 months who presents with a fever of 100.4°F(38°C) or greater will be triaged as high-risk (Level 2) as the patient may have a serious infection.

    c. The triage nurse will obtain an immunization history for all pediatric patients at the time of triage if possible.
        i. The CDC Recommended Child and Adolescent Immunization Schedule for ages 18 years and younger for the current year (See Attachment C) will be posted in triage and the ED.

    d. For pediatric patients greater than 2 years of age who have not completed their primary immunization series the triage/ED nurse will consider the patient a higher risk based on the patient's clinical condition and age.
        i. These patients will be considered a minimum ESI Level 3 if there is no obvious source of the fever identified.

6. The triage/ED nurse will assess pediatric patients presenting with signs/symptoms of pain with a validated pediatric pain scale such as the Wong-Baker Faces scale (See EMD Form C) or the FLACC (Face, Legs, Activity, Cry and Consolability) scale (see EMD Form D) and by clinical observation.
    a. The triage/ED nurse should use clinical judgment in assigning an ESI Level 2 triage assignment for pediatric patients who meet a pain score of ≥ 7 criteria. The triage/ED nurse will use the clinical condition of the pediatric patient in making the decision to assign an ESI Level 2.

C. Assigning ESI Levels for Pediatric Patients
1. ESI Level 1 criteria
    a. If the pediatric patient requires life-saving intervention, the triage process is complete, and the patient will be triaged as a Level 1 and taken directly to an ED room and seen by a physician/mid-level provider immediately.
    b. To determine ESI Level 1 criteria the triage nurse will utilize the Pediatric Assessment Triangle to perform a brief initial assessment of the pediatric patient.
    c. Once Level 1 criteria has been met and the pediatric patient has been taken to an ED room a full set of vital signs will be obtained which should include the following:
        i. Heart Rate (HR)
        ii. Respiratory Rate (RR)
        iii. Temperature
            1. rectal temperatures in neonates and infants
        iv. Oxygen Saturation (SpO2) (if clinically indicated)
        v. Blood Pressure (if clinically indicated)
    d. Examples of ESI Level 1 conditions include but are not limited to:
        - Respiratory arrest
        - Cardiopulmonary arrest
        - Major head trauma with hypoventilation
        - Active seizures
        - Unresponsiveness
        - Petechial rash with altered mental status (regardless of vital signs)
        - Respiratory failure:
            - Hypoventilation
            - Cyanosis
            - Decreased muscle tone
            - Decreased mental status
            - Bradycardia (late finding, concerning for impending cardiopulmonary arrest)
        - Shock/sepsis with signs of hypoperfusion:
            - Tachycardia
            - Tachypnea

- Alteration in pulses (diminished or bounding):
    - Alteration in capillary refill time > 3-4 seconds
    - Alteration in skin appearance: cool/mottled or flushed appearance
    - Widened pulse pressure
    - Hypotension (often late finding in the prepubescent patient)
- Anaphylactic reaction (onset in minutes to hours):
    - Respiratory compromise (dyspnea, wheeze, stridor, hypoxemia)
    - Reduced systolic blood pressure
    - Hypoperfusion (example: syncope, incontinence, hypotonia)
    - Skin and/or mucosal involvement (hives, itch-flush, swollen lips, tongue or uvula)
    - Persistent gastrointestinal symptoms

2. ESI Level 2 criteria
    a. If the triage nurse determines the pediatric patient does not meet ESI Level 1 criteria and does not need immediate life-saving treatment, the triage nurse will determine if the patient can safely wait to be seen by a physician/mid-level provider. The triage nurse will consider three (3) questions and obtain pertinent objective and subjective information through a brief focused assessment to determine if the patient meets Level 2 criteria:
        - Is this a high-risk situation?
        - Is this patient confused, lethargic or disoriented?
        - Is the patient in severe pain or distress?
    b. To determine ESI Level 2 criteria the triage nurse will perform a brief assessment of the pediatric patient using the ABCDE format.
        i. In most cases a high-risk pediatric patient will not require a detailed physical assessment or vital signs.
    c. The triage nurse will assess pediatric patients presenting with signs and symptoms of pain with a validated pain scale such as the FLACC pain scale or the Wong-Baker Faces pain scale and clinical observation (i.e. crying, grimacing, irritability, etc.)
    d. Once Level 2 criteria has been met and the pediatric patient has been taken to an ED room a full set of vital signs will be obtained which should include the following:
        i. Heart Rate (HR)
        ii. Respiratory Rate (RR)
        iii. Temperature
            1. rectal temperatures in neonates and infants
        iv. Oxygen Saturation (SpO2) (if clinically indicated)
        v. Blood Pressure (if clinically indicated)

e. Examples of ESI Level 2 conditions include but are not limited to:
    - Syncope
    - Immunocompromised patients with fever
    - Hemophilia patients with possible acute bleeds
        - Joint pain or swelling
        - History of fall or injury
        - Vital signs and/or mental status outside of baseline
    - Febrile infant < 28 days of age with fever ≥ 38°C rectal
    - Hypothermic infants >90 days of age with temperature <36.5°C rectal
    - Suicidal
    - Rule out meningitis (headache, stiff neck, fever, lethargy, irritability)
    - Seizures – prolonged postictal period (altered level of consciousness)
    - Moderate to severe croup
    - Lower airway obstruction (moderate to severe)
        - Bronchiolitis
        - Reactive airway disease (asthma)
        - Respiratory distress
            - Tachypnea
            - Tachycardia
            - Increased effort (nasal flaring, retractions)
            - Abnormal sounds (grunting)
            - Altered mental status

3. ESI Level 3, 4 and 5
    a. If the triage nurse determines the pediatric patient does not meet Level 2 criteria, the nurse will then make an estimation of the number of resources the pediatric patient will need to reach a disposition decision based on the patient's brief standardized CIAMPEDS assessment and ED evidence-based standards of practice.
    b. To differentiate between ESI Levels 3, 4 and 5 the nurse will need to estimate if the pediatric patient needs one (Level 4), two (Level 3), or no (Level 5) resources to reach a disposition decision.
    c. Once the nurse determines the pediatric patient needs two or more resources there is no need to continue to estimate resources.
    d. The triage nurse should not count the number of individual test when estimating resources. The triage nurse should only estimate the number of resources. Example:
        i. CBC and electrolyte panel equals one resource (lab test)
        ii. CBC and chest x-ray equal two resources (lab test, x-ray)
        ii. Cervical spine x-ray and head CT scan equals two resources (x-ray and CT scan)

e. List of resources include but are not limited to:

Resources	Not Resources
Labs (blood, urine	History & physical (including pelvic)
ECG, x-rays, CT-MRI-ultrasound, angiography	Point of care testing
IV fluids (hydration)	Saline or heplock
IV, IM, or nebulized medications	PO medications, Tetanus immunization, Prescription refills
Specialty consultations	Phone call to PCP
Simple procedure = 1 (lac repair, Foley cath)	Simple wound care (dressing, recheck)
Complex procedure = 2 (conscious sedation)	Crutches, splints, slings

d. Pediatric patients may require sedation in certain situations. When sedation is required the patient will be triaged as an ESI Level 3 secondary to the establishment of IV access and the administration of IV medications. Examples of situations that may require the use of sedation for pediatric patients include but are not limited to the following:

- Fracture/dislocation repair
- Chest tube insertion
- Facial lacerations
- Intraoral lacerations
- Lacerations requiring a multilayered closure
- Lacerations across the vermillion border
- Extremely dirty wounds
- MRI/CT procedures
- Image guided procedures
- Joint aspiration with ultrasound
- Lumbar punctures (except in infants)

D. Five-Level ESI Categories and Reassessment Objectives

1. ESI Level 1 – Immediate

a. Any condition presenting an immediate threat to the patient's life or limb requiring immediate interventions to save the patient's life or to prevent irreversible damage.

b. Time to Treatment: Immediate

c. Reassessment: Continuous

d. Presentation: Includes but not limited to pediatric patients that are unresponsive, cool/mottled/flushed appearance, decreased mental status, decreased muscle tone, tachycardia, tachypnea.

e. When Level 1 criteria is met the triage process must stop and the patient taken directly to an ED room and seen immediately by a physician/mid-level provider and treatment initiated.

2. ESI Level 2 – Emergent
    a. Any condition that potentially threatens the patient's life or limb and could worsen without intervention.
    b. Time to Treatment: Immediate.
    c. Reassessment: Every 15 to 30 minutes, and PRN (as needed).
    d. Presentation: Includes but not limited to pediatric patients that present with syncope, fever ≥38°C, reactive airway disease, seizures, suicidal.
    e. When Level 2 criteria is met the triage process must stop and the patient taken directly to an ED room and the patient evaluated by a physician/mid-level provider within 10 minutes.
3. ESI Level 3 – Urgent
    a. Any condition that requires evaluation and treatment, is not time-critical, and will not worsen if left untreated for several hours.
    b. Time to Treatment goal: Less than 1 hour
    c. Reassessment: Every 1 hour, and PRN
    d. Presentation: Pediatric patients requiring two or more resources with vital signs that are not in the danger zone.
4. ESI Level 4 – Semi-Urgent
    a. Any condition that requires evaluation and treatment, is not time-critical, and will not worsen if left untreated for several hours.
    b. Time to Treatment goal: 2 to 4 hours
    c. Reassessment: Every 2 to 4 hours, and PRN
    d. Presentation: Pediatric patients who only require one (1) resource.
5. ESI Level 5 – Non-Urgent
    a. Any condition that requires minimal interventions and will not worsen if treatment is delayed for several hours to days.
    b. Time to Treatment goal: 2 to 8 hours
    c. Reassessment: Every 2 to 4 hours, and PRN
    d. Presentation: Pediatric patients requiring no resources.

E. If all ED beds are full and the pediatric patient's condition is stable enough to wait in the ED waiting room, reassessment should be performed at appropriate intervals. Any significant symptoms should be reassessed for change and the acuity category increased if necessary. Reassessment guidelines are as follows based on the five-level ESI categories:

Acuity Level	Reassessment
Level 1 - Immediate	Continuously
Level 2 - Emergent	Every 15 minutes
Level 3 - Urgent	Every 1 hour, PRN
Level 4 – Semi-Urgent	Every 2 hours, PRN
Level 5 – Non-Urgent	Every 4 hours, PRN

Triage is a dynamic process; a pediatric patient's condition may improve or deteriorate at any time during the patient's wait in the ED.

F. If the triage nurse is in doubt regarding a triage category, the triage nurse should choose the higher triage acuity level to avoid under-triaging a patient.

G. The triage nurse will use ESI criteria to determine the triage level and assign ED room assignment regardless of method of arrival.
    1. Arriving by ambulance will not be used a criterion to assign a higher-level acuity and place the pediatric patient in an available ED room.

H. Any pediatric patient with a cough or fever and/or a rash will be assessed by the triage nurse to determine if isolation is required. If the nurse determines the patient requires isolation a mask will immediately be placed on the patient and the patient will be placed in the isolation ED room. The triage nurse will immediately notify the physician/mid-level provider of the presence of patients requiring isolation.
    1. A pediatric patient presenting with a petechial rash and altered mental status will be triaged as an ESI Level 1 secondary to a risk of meningococcemia and possible shock.

I. Documentation
    1. The triage assessment and triage level must be documented in the appropriate area of the Pediatric Nursing Flowsheet, including the date and time the assessment was completed.
    2. All re-assessments should be documented including date and time completed in the Pediatric Nursing Flowsheet.
    3. Documentation should be clear, concise and objective.
    4. Documentation should include the time to nurse and time to physician times documented in the Pediatric Nursing Flowsheet.

VII. QUALITY MONITORING

The Quality Manager will review all ED patients presenting to the ED for accurate triage level or a minimum of 20 charts per month. The Quality Department will track and monitor the door-to-triage time as it is a key indicator of a vital emergency department processes. The goal of the ED will be to assign an accurate triage score for immediate, emergent and urgent cases in less than 5 minutes.

Hospital leadership including but not limited to, the Quality Manager and Chief Nursing Officer are responsible for ensuring that all hospital staff adhere to the requirements of this policy, procedures are implemented and followed at the Hospital. All instances of non-compliance with the policy should be reported to the Quality Manager and the Chief Nursing Officer and an incident report completed. All incidents will be reported to following committees: Quality, Medical Staff and Governing Board.

VIII. EDUCATION

All nursing staff (RN and LPNs) are required to have initial orientation and annual education and competency (except as otherwise noted) in the following:

- Emergency Severity Index course
- Emergency Department core competencies

All nursing staff will also be certified in CPR, ACLS, and all RNs will be certified in PALS according to the American Heart Association (AHA) standards of training. All clinical staff is required to have CPR certification.

IX. ATTACHMENTS

Attachment A: Pediatric Assessment Triangle
See EMD-006A: ESI Triage Algorithm
Attachment B: Pediatric Nursing Flowsheet
Attachment C: CDC Recommended Child & Adolescent Immunization Schedule
For Ages 18 years and younger
See EMD Form C: Wong-Baker Pain Scale
See Form EMD E: FLACC Pain Scale

X. REFERENCES

Agency for Healthcare Research and Quality (2012) *Emergency Severity Index (ESI): A triage tool for Emergency Department care. Version 4. Implementation Handbook 2012 Edition.* [Electronic Version]. Retrieved on 01/27/20 from https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/esi/esihandbk.pdf

American College of Emergency Physicians (ACEP) (2015). Screening questions and streamlining triage. *ACEP Emergency Medicine Practice Committee.* [Electronic Version] Retrieved on 01/26/20 from https://www.acep.org/globalassets/uploads/uploaded-files/acep/clinical-and-practice-management/resources/administration/triage_screening_quest-resources-final_110215.pdf

Emergency Nurses Association (2018). *Emergency Nursing: Core Curriculum. 7th Edition.*

Domagala, S.E., MSN RN; and Vets, J. BSN RN (2015). Emergency nursing triage: Keeping it safe. *Journal of Emergency Nursing* [Electronic Version]. Retrieved on 01/27/20 from https://www.jenonline.org/article/S0099-1767(15)00025-2/pdf

Reiter, M., MD; and Scaletta, T. MD (2008). On your mark, get set, triage! *Emergency Physicians Monthly.* [Electronic Version]. Retrieved on 01/27/20 from https://epmonthly.com/article/on-your-mark-get-set-triage/

Thim, T.; and Krarup, N.; et al. (2012). Initial assessment and treatment with the Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach. *International Journal of General Medicine* [Electronic Version]. Retrieved on 02/10/20 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3273374/pdf/ijgm-5-117.pdf

REVISIONS/UPDATES

Date	Brief Description of Revision/Change