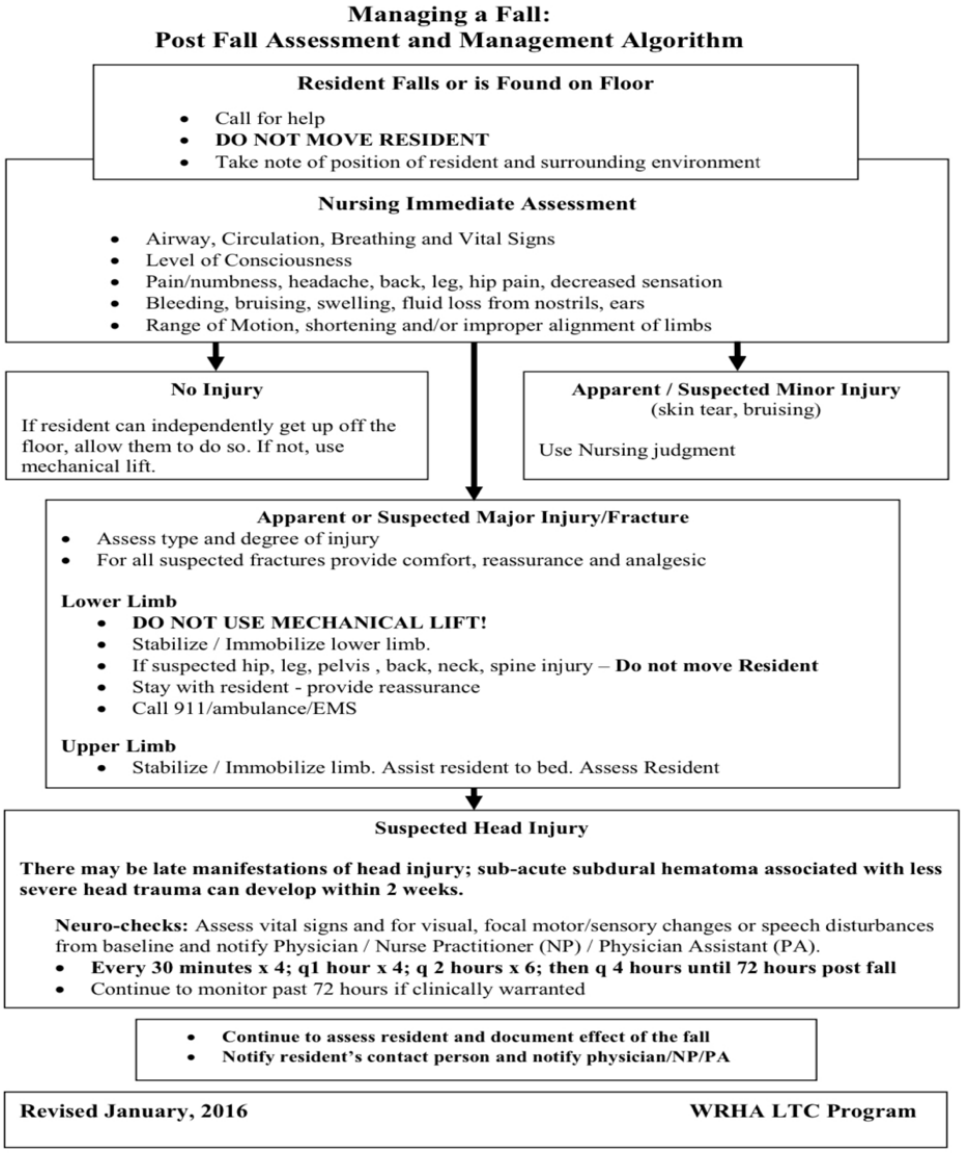
General Principles of Falls and Fracture Management in LTC

Things to consider when a resident stays on site after a fall with a suspected fracture:

-WRHA policy indicates suspected lower body fractures should be sent to hospital, suspected upper limb fractures may need to be sent to ER depending on severity.
-There is no funding or staffing for urgent Portable X-ray requests, resident could wait up to 1 week for X-ray.
-CTS therapists are not funded or staffed to provide urgent coverage, resident could wait up to 7-10 days to be seen by PT or OT.
-There is no urgent coverage for orthopaedic boots or splints, residents could wait up to 2-4 weeks for fracture stabilization.

WRHA Falls Policy Algorithm



Immobilization of the suspected fracture *

- A basic rule of temporary splinting is that the joint above and below the broken bone should be immobilized to protect the fracture site. For example, if the lower leg is broken, the splint should immobilize both the ankle and the knee.
- Splints can be ready-made or can be made from basic materials. For example, layers of cardboard, or a foam. These materials should be wrapped completely around the splinted extremity to secure the splint but should not be so tight as to block circulation.
- Ankle injuries and foot injuries can be wrapped alone. Use a figure-of-eight pattern. Splinting supports can also be used along the back and sides of the ankle to prevent excessive movement. The foot should be kept at a right angle, if able, in the splint to immobilize the ankle.
- Using tensor bandages to create a sling works for immobilizing collarbone, shoulder, and upper arm injuries extending down to the elbow. The arm sling is wrapped to the person's body with a large tensor bandage encircling the person's chest.
- Injury to the forearm and wrist requires a straight supportive splint that secures and aligns both sides of the injury.

***Temporary splinting is a nursing task**

If the nurse is unaware of how to perform temporary splinting they must immediately alert their nurse manager, nurse educator or Director of care for instruction.

Management of the resident

Suspected lower limb fracture

- Resident should remain on bedrest until proper stabilization of the fracture site occurs. **Resident should not be transferred using the sit to stand lift or total lift.**
- Positioning information sheets should be posted. Staff should be aware not to lay resident directly on their affected limb and limb should be completely supported during all bed positioning.
- Consider implementing other skin protective measures. (E.g. sliders, booties)
- Once x-ray has been completed, physician **must provide direction** on how the fracture will be properly stabilized (e.g.boot, splint, casting), weight-bearing restrictions (e.g.NWB), and activity orders (e.g.May transfer up to chair).
- Displaced fractures likely require hospital emergency visit or onsite orthopaedic input.

Suspected upper limb fracture

- Transfers require re-assessment to determine level of assistance needed. Resident may be able to manually transfer if affected limb is fully supported by temporary sling. Sit to stand lift transfers are contraindicated.
- Positioning information sheets should be posted. Staff should be aware not to lay resident directly on their affected limb and limb should be completely supported during all bed positioning.
- Once x-ray has been completed, physician **must provide direction** on how the fracture will be properly stabilized (e.g.sling, splint, casting) and weight-bearing restrictions (e.g.NWB L arm)
- Displaced fractures may require hospital emergency visit or onsite orthopaedic input.

CTS does not manage splinting for seriously displaced fractures.

COMPLICATIONS OF FRACTURES

Fractures are associated with a range of potential complications. Acute complications occur as a direct result of the trauma sustained and can include damage to vascular structures, nerves, or soft tissue. Delayed complications may occur after initial treatment or in response to treatment.

LIFE-THREATENING CONDITIONS — Certain fractures can cause severe hemorrhage or predispose to other life-threatening complications. For example, Femur fractures that disrupt the femoral artery or its branches are potentially fatal.

ARTERIAL INJURY — Proper fracture healing requires adequate blood supply to the injured site. However, fractures can involve sharp bone fragments that injure adjacent arteries, causing hemorrhage and potentially impairing bone healing. Certain fractures are associated with particular arterial injuries.

NERVE INJURY — Certain nerves are particularly susceptible to injury because of their proximity to common fracture sites. As an example, the median nerve is often injured in association with distal radius fractures. Immediate reduction and immobilization is required for any fracture associated with neurovascular compromise.

Complete or partial nerve transection, or excessive nerve stretch or compression, from fracture fragments or the force of the initial trauma can lead to chronic nerve injury.

COMPARTMENT SYNDROME — The muscle groups of human limbs are divided into sections, or compartments, formed by strong, potentially unyielding, fascial membranes. Acute compartment syndrome (ACS) occurs when increased pressure within a compartment compromises the circulation and function of tissues within that space. With fractures, bleeding or swelling within a fascial compartment creates the increased pressure. Long bone fractures are the injuries most commonly associated with ACS, particularly fractures of the tibia, distal radius, supracondylar area of the humerus, and femur. Early recognition of ACS and immediate fasciotomy may be limb sparing. Early symptoms and signs can include pain out of proportion to the apparent injury, persistent deep ache or burning pain, paresthesias, and pain with passive stretching of muscles in the affected compartment.

THROMBOEMBOLIC DISEASE — Major orthopedic trauma substantially increases the risk for venous thrombosis. Even minor fractures are associated with an increased risk for DVT.

OPEN FRACTURES — Open fractures are those with direct communication between the fracture and the environment due to traumatic disruption of the intervening soft tissue and skin. All open fractures require emergency care.

FAT EMBOLISM SYNDROME — Fat embolism syndrome (FES) is a diagnosis associated with closed long bone fractures of the lower extremity and pelvis. FES typically manifests 24 to 72 hours after injury with dyspnea, tachypnea, and hypoxemia. Neurologic abnormalities and a petechial rash may be present. Severe respiratory distress and death can occur.