

# Patient Safety Learning Advisory

## Patient Safety Event:

Development of Compartment Syndrome

### Why was this a Critical Incident?

Improper immobilization of a patient's lower limb fracture may have contributed to the development of compartment syndrome.

### What happened in the incident?

A patient arrived at an emergency department (ED) with a foam splint applied on a fractured limb. An orthopedic specialist advised that:

- the foam splint should be removed and replaced with a back-slab plaster cast
- the patient should be transferred to the site where orthopedic surgeries are performed.

There was a 48-hour delay in transferring the patient due to weather and high use of emergency transport services. The foam splint remained in place during this time. Compartment syndrome signs and symptoms went unrecognized as a possible complication of injury.

Once the patient was transferred and assessed by an orthopedic surgeon, the patient was diagnosed with compartment syndrome.

### What are the recommendations?

Start to use Stretcher Services when appropriate in all regional centers to minimize delays in patient transfer.

Review facility policies related to interfacility transfers and information transfer at care to include a process for delays greater than 12 hours. This may include:

- requesting status updates on transport services estimated time of arrival
- reporting changes in patient status to ensure the chosen method/mode of transportation remains appropriate and safe.

Review the process of triaging non-urgent transfers via Medical Transportation Coordination Center (MTCC).

Educate all emergency room physicians (ERPs) and nurses on compartment

syndrome/orthopedic emergencies. This education should include:

- patients most at risk for the development of compartment syndrome
- use of back slabs, intra-compartmental pressure monitors, which patient(s) should be assessed more attentively for compartment syndrome
- when there is a delay in transport/admission, reassess the splints/back slabs for patients waiting orthopedic surgery/consults
- How to use a compartment syndrome assessment tool (Elsevier)

Update consultation form to include SBAR (Situation, Background, Assessment and Recommendation) format to help document phone or verbal conversations that provide recommendations.

**Keywords:** Compartment syndrome, immobilization of fracture, transfer delays

### Glossary:

**Compartment syndrome** - is a painful condition that occurs when pressure within the muscles builds to dangerous levels.

**Immobilization of a fracture** – use of a brace or splint to hold a fractured limb steady or still to prevent further harm and pain.

Your privacy is important to us, so in this summary we have removed any details which would help identify the subject of this event. It's important that we can learn from safety events and make changes to improve the care we provide.