

# Chest Trauma Management at a Regional Health Service – Is Physiotherapy Front and Centre?

**Brooke Winzer<sup>1</sup>**

1 Northeast Health Wangaratta, 35-47 Green Street, Wangaratta, VIC 3677. [Brooke.winzer@nhw.hume.org.au](mailto:Brooke.winzer@nhw.hume.org.au)

## **Background**

Blunt chest trauma is associated with a mortality of 4-20%. The literature recommends early and aggressive chest physiotherapy combined with optimal analgesia to prevent respiratory compromise, particularly in high risk patients. A quality improvement project at Northeast Health Wangaratta (NHW) aimed to ascertain: i) the acuity of chest trauma patients admitted to critical care, ii) whether these patients were reviewed by a physiotherapist within 24hrs of ED presentation, iii) the respiratory interventions required, and iv) the complication rate.

## **Methods**

Medical files were retrospectively audited. Inclusion criteria: patients admitted to critical care (29/4/12 – 30/6/13) with high risk chest trauma i.e. three or more rib fractures, flail segment, bilateral rib fractures or fractured sternum. Patients were identified by searching relevant codes via NHW's database and the critical care admissions log book.

## **Results**

Twenty-three participants were included. The mean number of rib fractures per patient was four (range 1-10). Six patients had seven or more rib fractures. Additional injuries: pneumothorax (n=7), sternal fracture (n=5), lung contusion (n=5), flail (n=3) and bilateral rib fractures (n=2). Ninety-six percent of patients were reviewed by a physiotherapist during their admission; 48% within 24hours of ED presentation. Respiratory interventions included: standard-flow humidified oxygen (n=7), high-flow oxygen (n=1), non-invasive ventilation (n=5), nasopharyngeal suctioning (n=1) and postural drainage (n=3). All patients received mobilisation and deep breathing exercises. Thirty-five percent of patients experienced one or more complications including: pneumonia (n=4), respiratory failure requiring intubation (n=3) and ARDS (n=1).

## **Discussion**

The acuity of chest trauma at NHW is high, thus physiotherapists need to be confident in treating this challenging population. Given the infrequent presentation of these patients, simulation-based training may be useful to upskill junior staff. Earlier chest physiotherapy would likely benefit this patient group. The implementation of a multi-disciplinary pathway may facilitate early allied health intervention and prevent potential complications.