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Nursing application of the NEXUS spinal rules in minor trauma: Implementing available evidence

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Evidence-practice gap

- Using clinical decision rules such as the NEXUS spinal rule to assess cervical spine (c-spine) injuries increases accurate assessment. This reduces the amount of radiology performed and the length of time a patient is immobilised in a hard collar.
- Clinical assessment of the c-spine can be applied reliably by nurses, provided they are adequately trained.

Flinders Medical Centre allocates minor trauma patients to treatment areas according to their triage scale. Prior to this project only medical officers carried out clinical assessment of the c-spine. As a result, when the department was busy, patients who received a lower triage category spent long periods of time immobilised in a hard collar, waiting for medical assessment.

In a pre-intervention audit of 24 patients, the average length of time spent immobilised in a hard collar was 47 minutes. Five of these patients (21%) would have met the criteria for clinical clearance of the c-spine using the NEXUS clinical rule, therefore avoiding hard collar immobilisation.

Project aim

This project aimed to improve best practice by introducing the NEXUS (National Emergency X-Radiography Utilization Study) guidelines for clearance of c-spine in minor trauma patients by ED nursing staff.

Planning and implementation

This project was conducted across a major metropolitan and regional hospital:

1. Base line data was collected from 24 patients with a hard collar in situ or applied on arrival in the ED at both sites including: time of arrival in the ED, area of ED where the patient was treated, time of clinical c-spine assessment, whether the collar was removed without radiology, and the time at which the collar was removed.

2. An education program was developed consisting of two theoretical sessions:

- anatomy and physiology and the mechanisms of c-spine injury
- introduction of the NEXUS clinical rule with a practical demonstration by the ED Clinical Director on applying the NEXUS rule

Participants were required to have a minimum of two years ED and trauma resuscitation room experience.

A 100% pass mark in the post-education questionnaire had to be achieved and the first three clinical assessments had to be supervised and accredited by an ED Consultant before any unsupervised clinical assessments were undertaken.

Key findings

- Eleven Registered Nurses (RNs) underwent education on application of the NEXUS clinical rule.
- Only five staff successfully completed the assessment requirement. Issues cited for non-completion included:
 - The department was too busy to complete a c-spine assessment
 - An ED Consultant was not readily available to supervise the assessment
 - The nurses were no longer working in the triage/early assessment area of the ED and had a reduced opportunity to assess patients

Implications for clinical practice

- A visible team or collaborative approach would support effective implementation of changes in clinical practice. The project was challenging as it was conducted across a major metropolitan and regional hospital, the project lead was on staff at the regional hospital.
- Clinical champions should be incorporated into project planning and implementation.
- Barriers and enablers should be clearly identified and addressed before attempting to implement change.
- Communication methods should be clearly defined and agreed to enable any concerns or queries to be addressed effectively.

Next steps

This project has been a useful 'pilot' that has identified the barriers to successful change. The next steps include a review of the implementation plan to establish a protocol for c-spine clearance at the regional site including the following strategies:

- Clinical assessment of the c-spine and application of the NEXUS rule as part of the required clinical competencies for ED RNs. Clinical assessment will be conducted by trained nursing and medical staff who possess the appropriate competencies
- When a patient attends the ED requiring a c-spine assessment, and if the patient provides consent, several staff may have the opportunity to complete a supervised assessment and apply the NEXUS rule
- Re-assessment introducing nurse-led c-spine assessment at the Flinders Medical Centre ED. This will require identification and commitment from a number of clinical champions from the ED Consultants and senior clinical nursing staff to drive the change process effectively.

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