Assessing Impact of Cardiac Chair Protocols on Pressure Injury Formation in Spinal Injury Patients with Wearable Technology

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ABSTRACT

The repositioning history of patients who develop pressure injuries is often difficult to determine. Documentation is often incomplete or inconsistent. Retrospective analysis using wearable technology can provide additional cues to position patients based on individual patient turning parameters.

TECHNOLOGY IMPLEMENTATION

Wearable technology * was used to monitor and document repositioning history implemented on a 36-bed ICU of a Level I Trauma Center.

CASE DESCRIPTION

- 30-y/o male with new paraplegia was admitted to ICU post MCC
- Q2 turn protocol and physician orders for cardiac chair three-times daily initiated
- Developed Stage 4 Pressure Injury on sacrum

SENSOR DATA ANALYSIS

- Repositionings in bed were shallow, likely due to difficulty with spinal stabilization device
- Difficulty positioning patient onto right lateral position due to orthopedic injury to right arm

RESULTING PRACTICE CHANGES

Immediate response:
- Training on seated repositioning provided to nursing staff
- Q15-minute lateral tilt protocol adopted for seated patients
- Criteria for seated protocol was lowered to 40-degree upright angle to include reclining patients
- Increased frequency of skin checks

CONCLUSIONS

- Turning intervals used for patients in bed are not frequent enough for seated patients and may create additional pressure injury risk especially for new para/quadriplegic patients.
- Seated patients should have frequent skin checks and limit the time in chair or elevated HBO angles in order to provide pressure relief.

Automatic sensor data can help pinpoint pressure injury root causes to reveal protocol improvement and education opportunities.

BACKGROUND

The repositioning history of patients who develop pressure injuries is often difficult to determine:
- Incomplete or inconsistent EMR documentation
- Repositioning activity charted retrospectively at the end of the shift

This complicates root cause analysis and consequent changes to prevention and treatment policies.

TECHNOLOGY IMPLEMENTATION

Wearable technology * to monitor and document repositioning history was implemented on a 36-bed ICU of a Level I Trauma Center

Provides a full record of all position changes and real-time visual cues to position patients based on individual patient turning parameters.

REFERENCES

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