



The Effectiveness of Utilizing Business Intelligence (BI) in Visualizing Data on Pressure Injuries in the Operating Room



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Background

Taiwan's Medical Quality Promotion Association, accredited by the International Society for Quality in Health Care Ltd. (ISQua), incorporated pressure injuries into Taiwan's Clinical Performance Indicator (TCPI) care indicators in 2015. In 2016, the Ministry of Health and Welfare designated the prevention of surgical pressure injuries as an annual objective, recommending evaluation of risk factors during surgery and the development of relevant monitoring and improvement plans. However, clinical nursing staff face challenges in integrating and analyzing nearly 3500 patient data entries per month, hindering real-time presentation of operating room pressure injury conditions and timely preventive measures provision.

Method

Introduction of BI facilitates rapid visualization of data, aiding data managers in extracting meaningful information from large datasets. Monthly, the system automatically converts hospital's pressure injury reporting system data into SQL, allowing staff to generate visual charts by month, department, bed position, pressure injury site, etc. This eliminates manual sorting, enabling real-time analysis and issue identification for timely improvement measures provision.

Result

After the completion in August 2022, upon reviewing a large volume of annual data, it was found that supine patients in cardiovascular surgery were most prone to pressure injuries, followed by prone patients in orthopedic surgery. Following multiple discussions and on-site inspections by members of the operating room team, measures were taken specifically for prone patients. In 2023, the operating room independently designed special fabric bed sheets for prone patients, which proved to be significantly effective. As a result, the annual incidence rate of pressure injuries for prone patients decreased from 0.08% in 2022 to 0.04% in 2023.

Conclusion

Both annual and monthly pressure injury incidence rates decreased. BI enables rapid review of new data, facilitating effective preventive measures implementation. BI is vital for monitoring pressure injury indicators, ensuring patient safety and healthcare quality.

