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Practice Analytics: Development of an Interactive Dashboard for Clinical Use

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Abstract

The integration of administrative and clinical data offers valuable insights into healthcare delivery and enables the optimization of care processes. Given growing demands on the healthcare system, transparent and accessible data are becoming key to enhancing the efficiency of care processes. To support data-informed decision-making in clinical practice, we developed an interactive dashboard utilizing patient data from hospitals in Upper Austria. The tool combines two complementary datasets from the “*Nursing Documentation*” (NUDOCU) and “*Leistungsvergleich Medizin*” (LeiVMed) projects. Its primary aim is to enhance operational transparency and to support planning as well as continuous improvement processes in nursing and medical teams. The dashboard is designed for use by nurses as well as physicians and enables visualization of key patient metrics. These include demographic variables (e.g., age, gender, ASA classification, BMI, type of surgery etc.), the type and volume of diagnostic services (radiological and laboratory) delivered per patient and per nurse across various departments, as well as the estimated time for nursing activities, rates and types of complications. Moreover, it presents patient risk-adjusted comparisons between departments, covering nursing service volume, radiological and laboratory utilization, and complication rates. Additionally, the system allows patient-level data to be accessed and displayed, enabling case-specific insights. All dashboard components are interactive, enabling detailed subgroup analyses. By enabling a fast and intuitive exploration of complex patient characteristics, the dashboard may contribute to improved care processes. This research was funded by the Austrian Research Promotion Agency (FFG) as part of the project “Nursing Documentation (NUDOCU)” (Grant No. [FO999892173]).

Biography

Michael Rotzer is a research associate at the University of Applied Sciences Upper Austria. He holds a bachelor's degree in Process Management and business Intelligence. Since 2024, he has been involved in the “*Nursing Documentation (NUDOCU)*” project as well as the benchmarking initiative “*Leistungsvergleich Medizin (LeiVMed)*”, which focuses on benchmarking in Austrian hospitals.