

patients on general hospital wards'.

Aim: The aim of this systematic review update was to determine the effectiveness of Early Warning Systems and Critical Care Outreach services on hospital mortality rates, ICU admission patterns, length of hospital stay and incidence of serious adverse events of adult patients who deteriorate on general hospital wards.

Methods: A comprehensive search strategy of Central, CDSR, DARE, HTA, NHS-EED, Embase, Cinhal (EBSCO), Amed, Clinical Trails.gov, HMIC, Medline, PsychINFO and WHO International Clinical Trials Registry Platform (ICTRP) databases, citation searching and a grey literature search by contacting critical care professional associations, Outreach forums and networks was undertaken to locate the evidence. All randomised controlled trials, controlled before and after and interrupted time series designs that met the inclusion criteria for the review were included. The criteria for considering studies for the review were clearly identified prospectively in a published protocol (McGaughey et al, 2005). All titles and abstracts were screened independently by three reviewers. Full text copies of potentially relevant studies were independently assessed by two reviewers and conflicts resolved. Data was abstracted from the included studies using a modified version of the EPOC data collection tool and the methodological quality of the included studies was assessed independently reviewed by two reviewers.

Findings: The findings from this systematic review highlight the heterogeneity and the poor methodological rigour of current research on the effectiveness of Outreach and Early Warning Systems. The conclusions and recommendations for practice will be discussed.

INTENSIVE INSULIN THERAPY IMPLEMENTATION BY MEANS OF PLANNED VERSUS EMERGENT CHANGE APPROACH.

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Aims: To compare a planned change and an emergent change implementation approach to introduce an intensive insulin therapy to an intensive care unit.

Background: Nurses' participation in decisions about new care procedures and protocols is potentially of benefit for patient outcomes. Whether nurses' participation in decisions is allowed in the implementation of innovations depends on the implementation approach used for the introduction. A planned change implementation approach does not allow it, an emergent change implementation approach does.

Design: A prospective comparative study in an ICU in the Netherlands comparing two teams of nurses using either implementation approach.

Methods: Pre-introduction the comparability of the two teams was assessed. The nurse compliance to the protocol was assessed as being nurses' behaviour according to the protocol and leading to acceptable glucose values. The effectiveness of the implementation was assessed by measuring the percentage of patients' glucose values within the target range, the occurrence of hypoglycaemic events and the time to glucose value normalization.

Results: In the emergent change approach team there were better nurse compliance measurements than in the planned change approach team, a better percentage of glucose values in the target range and a shorter time to glucose value normalization.

Conclusion: The implementation approach allowing nurse participation was associated with better nurse compliance and patient outcome measurements. The implementation approach did not conflict with introducing an evidence based innovation. It was also associated with more effective adaptation of the protocol to changing circumstances.

STAFFING LEVELS AND VARIANCE IN QUALITY INDICATORS IN RESIDENTIAL LONG-TERM CARE FACILITIES IN GERMANY: A MULTI-LEVEL ANALYSIS.

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Background: The ratio of nurses to long-term care residents in Germany's long-term care system is based on the level of residents' dependency. However, the nursing resources required by patients within the same level often differ more than the nursing resources required both those in different levels. The aim of this study was to demonstrate that randomly varying staff levels explain a

major part of the variance in a possible quality indicator.

Method: We used an observer-based measurement of workload to gather data in 61 nursing homes with 2028 residents. The data were analyzed using multi-level models.

Results: Randomly varying staffing levels had a significant impact on the variance in quality indicators.

Conclusion: The staffing system in Germany does not equally distribute resources among different nursing homes. Further research is needed to explain the random variation in staffing levels; to review the medical services provided through health insurance; to examine the high variance in care, which leads to changes before assessments can be repeated; and to investigate the management of nursing homes.

APPLICATION OF THE ITEM RESPONSE THEORY IN NURSING SCIENCE ON THE MEASUREMENT INSTRUMENT OF HOME CARE QUALITY IN GERMANY

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Background: The Item Response Theory (IRT) is another measurement theory that allows the measurement of a latent state or trait. In educational sciences it is used regularly, but seldom in nursing research. Out of various models of the IRT the Rasch Model for binary items was disposed to the quality audit instrument, the so called Pflege-Transparenzvereinbarung ambulanz (PTVA). Quality of German home care services as a latent trait are measured in audits once a year with the PTVA. Results are released in terms of school grades in the world wide web (1= best, 5= worst grade). In July 2016 the overall average grade of all HCS in Germany was 1.2. Most home care services receive excellent grades and it is doubtful if their quality as a latent variable is distinguished well enough with the PTVA and if results of these audits are reliable and valid.

Method: In this study 989 datasets from audits of 144 HCS from three German provinces (Rheinland-Pfalz, Saarland, Baden-Württemberg) in 2010 and 2011 were statistically analysed. Out of the IRT group the Rasch Model was used to examine the validity of the PTVA. It was tested if valid scores can be generated for each item and transferred into school grades.

Results: show that the Rasch Model cannot be fitted to the datasets, which are produced with the PTVA. A further development of the PTVA is impossible and leads to a discussion of resources of instrument development and appropriate measurement theories in nursing research.

In conclusion: the IRT is an adequate measurement theory for inconsistent latent traits such as quality of a home care service. Before the development of a quality measurement instrument, the construct of home care quality in Germany with all dimensions has to be researched and empirically tested under consideration of psychometric quality criterion.

THE IMPACT OF TEAMWORK BETWEEN PHYSICIANS AND NURSES ON PATIENT OUTCOME (IN PRIMARY CARE): A SYSTEMATIC REVIEW OF SYSTEMATIC REVIEWS.

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Background: The changing organization of health care is due to a number of trends. First, the global ageing of the population. Second, the increasing demand of patients for more accessible and, at the same time, high qualitative health care. Third, the demand of professional caregivers for a better work life balance and, to finish, the decrease of financial resources while the demand for financial support is increasing. In an attempt to reorganize health care as a whole, the following quadruple aim should be kept in mind: improving the health of populations, improving the experience of care, diminishing the workload for professional caregivers and reducing per capita costs of health care. The increasing prevalence of chronic diseases will lead to a shift of chronic disease management from secondary to primary care. In order to avoid hospital admissions, primary care has the obligation to take on the responsibility of organizing accessible and high qualitative healthcare. Organizing primary care more efficiently, diminishing the workload of general practitioners and allowing the general practitioner to focus on the practice of medicine might be possible by introducing the nurse work force in general practices.

Objectives: To provide an overview of patient outcomes in a context where physicians and nurses collaborate. To draw conclusions for the primary care setting where general practitioners and practice nurses collaborate in the care for a comparable patient population.