

Conference abstract

Methods for predicting risk of emergency hospitalisation: promoting self-care and integrated service responses in the home to the most vulnerable

Nick Goodwin, Dr., Senior Fellow, Health Policy, King's Fund, London, UK

Natasha Curry, Ms., Fellow, Health Policy, King's Fund, London, UK

Correspondence to: Nick Goodwin, E-mail: ngoodwin@kingsfund.org.uk

Abstract

Purpose: This project/development paper outlines the development of an algorithm-based predictive model in England (the King's Fund's PARR tool) that uses routine data to identify people at risk of re-admission to hospital. It examines how the model, when linked with data collected from general practices, can and has been used as a method for organizing integrated care services in the home environment to vulnerable at-risk individuals.

Context: The use of a 'combined predictive model' in the development of a community matrons intervention in Croydon PCT (a local health economy in South London, UK) to show how integrated health and social care services may respond quickly to meet the needs of at-risk patients.

Data sources: Systematic literature review using international studies to summarise and assess the principal approaches to predicting risk within the health arena. Development of risk algorithm using routine data and assessment of the accuracy of the PARR software tool and Combined Predictive Model to identify patients most at risk of future emergency re-admission to hospital.

Case description: Croydon PCT has been using the Combined Predictive Model in its *virtual wards* project whereby people identified by the model as having a very high risk of future hospitalisation are put on a 'virtual ward'. These people are provided with preventive care in their own homes by a multi-disciplinary team who use the systems, timetable and staffing of a hospital ward but without the physical building. Admission to the virtual ward is determined solely by the output of the Combined Predictive Model. Patients' risk scores are monitored over time and can be used to prompt the virtual ward staff to discharge patients when appropriate—and offer admission to a patient at higher risk.

Conclusions: The improving accuracy of predictive risk modeling enables 'at-risk' individuals and populations to be identified prior to an emergency admission or acute episode. Health care systems, through integrated and multi-professional interventions, can potentially reduce hospitalisation rates and improve dependency.

Discussion: Predictive risk modeling has great potential as a tool to enable the development of pro-active integrated care to vulnerable patients. However, the tool requires accurate and up-to-date public health and service utilisation data whilst the system needs to overcome professional and institutional boundaries to enable the necessary integrated care response.

Keywords

emergency care, home care, self care, hospitalisation, predictive risk modeling, England

Presentation slides available from:

<http://www.integratedcarenetwork.org/Sweden2008/slides/02-06-goodwin.ppt>