

Part I: ePapers

Winner of Best ePaper

1 DIGITAL TRANSFORMATION OF THE ACUTE MEDICAL TAKE – IMPROVING STANDARDS OF CARE

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Objective With over 50 acute medical referrals per day at Royal Bolton Hospital, an efficient and safe acute medical take process is crucial to maintain high standards of clinical care. The existing process involved multiple non-communicating patient lists to track referrals. It also relied on manual data entry – resulting in patients being missed for clerking or not being identified for senior review – thereby missing national targets. A quality improvement project was designed to i). assess the functionality and safety of the current medical referral process and ii). develop a safer and more usable referral and patient tracking system.

Methods A new automated electronic Acute Medicine Referral List (AMRL) was outlined by the trust's IT team and clinicians. It was designed to integrate into the existing Electronic Patient Record (Allscripts).

The new AMRL system integrates into existing clinical practices of A&E and AMU clinicians. Clinical performance data from the pre-existing process and the new AMRL were benchmarked against Society of Acute Medicine Quality indicators, and analysed to assess the impact on the medical oncall team's working patterns, patient flow and patient outcomes.

A pre-intervention benchmark audit cycle (7 days of admission data) was carried in February 2020. The AMRL and referral process was subsequently implemented in November 2020. Following an interim spot audit and user survey, minor refinements were made to the AMRL. Two post-intervention audit cycles (7 days admission data) were then performed in January (6 weeks post intervention) and April 2021 (5 months post intervention).

Results Since introducing the electronic AMRL, patients waited less time for medical clerking (\bar{x} 00:13 hours) and senior review (\bar{x} 04:58 hours). There was also a 6.4% increase in the proportion of patients clerked within the 4 hour target window. When looking at weekend data, the impact of AMRL is more marked. The waiting times for medical clerking and consultant reviews at the weekend have improved by 25.1% and 26.1% respectively. There was a significant increase in the proportion of patients being reviewed by a consultant within 14 hours. This improvement was sustained through multiple audit cycles.

Overall, there was a measurable improvement in clinical performance against the national clinical quality indicators. The average hospital length of stay reduced by 1.3 days, equating to a reduction of approximately 15600 total occupied bed stays per annum.

Conclusions The introduction of the Acute Medicine Referral List, a single consolidated electronic patient list and referral process, has improved standards of care and patient flow within the organisation. Timely senior decision making has prompted earlier discharges and a reduction in overall

inpatient length of stay – resulting in an estimated cost saving of £3.1 million.

The AMRL demonstrates how the unification of both patient referral listing and workflow systems can improve standards of patient care and experience. The primary reasons for success of the AMRL include: 1) the ability to integrate within established clinical and workflow systems and 2) stakeholders were responsive to feedback from end users, addressing pitfalls promptly to continuously improve on the systems usability and functionality.

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2 EVALUATION OF MAST (MANAGEMENT AND SUPERVISION TOOL) TO SUPPORT NHS COMMUNITY MENTAL HEALTH TEAMS IN IDENTIFYING RISK OF CRISIS AND COMPLEXITY ACROSS CASELOADS

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Objective The Management and Supervision Tool (MaST) helps NHS mental health care professionals identify patients who are most likely to need psychiatric hospital admission or home treatment, due to severe mental illness, through a Risk of Crisis (RoC) algorithm driven by electronic health record (EHR) data analytics. MaST improves the efficiency of case-load management of Mental Health Professionals. We describe the derivation and validation of the MaST RoC algorithm, and its implementation to support preventative mental health-care in the NHS.

Methods The RoC algorithm was developed and evaluated with EHR data from six UK NHS trusts using Ordered Predictor List propensity scores informed by a priori weightings from pre-existing literature, as well as real-world evidence evaluating the associations of clinical risk factors with mental health crisis using NHS EHR data. Mental health crisis was defined as admission to a psychiatric hospital or acceptance to a community crisis service within a 28-day period. Predictor variables included age, gender, accommodation status, employment status, Mental Health Act (MHA) status (under section or Community Treatment Order), and previous mental health service contacts (including hospital admissions and crisis services). Data were analysed using Ordered Predictor List propensity scores. The algorithm was derived using structured EHR data from 2,620 patients in a single NHS trust and externally validated using data from 107,879 patients in five other NHS trusts. Qualitative and quantitative data on feasibility, acceptability and system efficiency impacts of MaST implementation were obtained through staff surveys and local audits.

Results The factors associated with greatest propensity for mental health crisis included recent previous crisis, multiple previous crises, higher number of mental health service contacts in recent weeks, MHA section, accommodation status and employment status. The RoC algorithm identified 64% and 80% crises in its top quintile. Sentiment analysis of staff surveys suggested that the use of MaST improved productivity by reducing time taken to access patient information to