

2007 NSW Health Awards Entry

Entry Title (50 characters or less)
Better patient health using electronic medical scheduling
Abstract (120 Words)
<p>Macquarie Hospital stand-alone Mental Health facility accommodates 185 medium to long-stay patients. Failure to conduct routine physical health checks with this patient population can result in significant medical complications, especially to patients receiving psychotropic agents, even placing patient's lives at risk.</p> <p>The introduction of a software package to track and reschedule routine patient physical health checks resulted in significant improvements in the efficiency and effectiveness of procedures related to this task.</p> <p>Key outcomes included:</p> <ul style="list-style-type: none"> - 50% improvement in associated performance indicators -Overdue reviews falling from 6 months overdue to less than one month overdue -Return of 44 staff hours per week to direct clinical work. <p>The results of this project are replicable to health care facilities that provide medium and / or long-term care.</p>
Aim (30 Words)
To decrease staff time dedicated to the management of physical health checks, increase the timeliness of required tests, and increase compliance with health check policies.
Nature of the Problem (100 words)
<p>NSW Health clinical policies require 26 routine patient physical health checks to Macquarie's 185 patients. The previous manual tracking and re-scheduling system was labour intensive and failed to achieve requirements.</p> <p>Historically Registrars assigned to In-Patient Units were responsible for review and scheduling of patient health checks. Each Unit managed the process independently, and provided instruction every six months to rotated Registrars. While omissions resulting in serious harm to patients were rare, they did occur. Many were identified and resolved, however some came to light retrospectively when responding to other medical issues . The potential harm for patients was unacceptably high.</p>
Extent of the problem (150 words)
<p>Retrospective analyses of reported incidents, patient file reviews, and discussions with stakeholders and management found that the potential for sentinel events linked to omissions of review was high. Clinical patient information capture was difficult, often requiring new Registrars to review multiple volumes per patient. Check up schedules were manually determined. Because the manual system was highly fragmented, and without a formal governance structure for this issue, omission rates could not be adequately quantified.</p> <p>A study was undertaken by the Hospital Quality Manager. The findings showed an automated medical information system would significantly improve policy compliance rates and timeliness of physical checks. It was also estimated from stakeholders that an average of 3-4 hours per week, per Registrar was spent conducting file reviews and identifying and scheduling physical checks.</p>

Strategic importance (100 words)

Costs of health care are an increasing share of government resources. Effective use of finite resources is of growing importance.

This project represents a realignment of resources to support prevention and early intervention of known sequelae of long-term use of psychotropic medications and long-term institutional living. This in turn reduces iatrogenic complications and burden on health facilities. With better physical health, patients can expect a better quality of life.

Medical staff are more productively engaged, doing clinical rather than administrative tasks. Results from the current study show an effective increase of around 44 hours per week of medical staff time.

Planning and implementing solutions (300 words)

Having identified major difficulties inherent in a manual system, an investigation into computer based systems began, along with a search of best practise solutions in similar Hospitals. A system that most matched Macquarie's needs was found at The Park Hospital, Brisbane, using a software package called Medical Director. While originally designed for the overall management of a GP medical practice, it was clear it could be adapted for use in tracking and automatically scheduling physical checks within a Hospital setting.

The earlier problem of management fragmentation was addressed by locating the physical check tracking function centrally within the Hospital clinic. The software was subsequently acquired for \$495, and installed on clinic PC's.

A one-day Staff training seminar was provided by The Park Hospital staff, on-site at Macquarie. As the system was being installed and relevant data entry completed, phone support was provided both by The Park, and the software supplier.

Discrete secretarial time was set aside to enter all existing screening data, recent physical exams and results, BMI and other data. Arrangements were made for Area pathology providers to electronically download existing patient history into the software.

The physical check schedules as mandated in NSW and Area policies were then incorporated into the software database. As a result dates for all subsequent routine checks were automatically calculated by the software.

Once the database was complete, clinic staff generated a recall list for the Hospital, highlighting all checks to be done and/or overdue and forwarded these to the relevant Unit NUM's. All follow-up and data updates are managed within the clinic.

On-going maintenance of the process is given under the Sustaining Change section below.

Outcomes and Evaluation (200 words)

Four assessment indicators were used – number of fasting blood's ordered, number of ECG's ordered, number of overdue lithium level's, and time overdue (worst case / high water mark).

A five-month pre and post implementation comparison for fasting blood tests showed 100 tests conducted pre-implementation. In the five months following implementation, this had increased to 158 tests, an improvement of 58% of pre-implementation orders.

Similarly, over the five-month period preceding implementation, 72 ECG's were undertaken. The post-implementation five-month period showed 118. This represents a 64% improvement above pre-implementation performance.

The monthly ECG levels had also increased, representing a consistent pattern rather than a short-term response. Pre-implementation this stood at 14 per month, and subsequently rose to 24 – an increase of 71% over pre-implementation figures.

Lithium statistics were more striking. The three-month comparison found lithium checks were overdue by as much as six months. Post-implementation, over the corresponding period this high-water mark fell to less than one month and well within the required three-month guideline. Data was not available for five-month comparison.

For the five-month post-implementation period, only 13 lithium checks were overdue: a reduction from the 75 overdue checks estimated for the corresponding pre-implementation period - a fall (improvement) of 83%.

Sustaining change (100 words)

Each month a report is generated by the hospital clinic showing pending and overdue Patient review details and sent to the relevant Unit NUMs. They inform the Registrar and provide details of completion to the clinic. The clinic then updates the centrally located database. Overdue check-ups continue to be highlighted until completed.

Patients new to the hospital are added to the database as part of the standard admission procedure.

In this way, the data remains comprehensive, software skills are reinforced and stable, and there is a continuous process of review and follow-up.

Future Scope (100 words)

An automated system along with an uncomplicated support process allows Macquarie Hospital to fulfill its obligations to both patients and staff regarding the management of patient physical health checks.

The project highlights how inefficient manual systems can easily be improved through use of computing technology.

Minimal cost software has been outweighed multiple times through reclaimed staff time, immeasurable savings from better Patient care and risk reduction.

Patients have a right to comprehensive, holistic care. Staff have a right to systems of support that are contemporary, efficient, and effective.

This monitoring system is adaptable to other hospital settings across NSW