

Improving Patient Care Continuity Through e-Discharge and e-Prescribing

Peninsula Health Victoria, Australia

Peninsula Health is the major health care provider serving the metropolitan and rural areas on Victoria's Mornington Peninsula in Australia. With close to 800 beds, they provide a wide range of services from obstetrics to aged care, rehabilitation, emergency and intensive care, oncology, psychiatric services and Hospital in the Home (HITH).

In addition to providing quality, accessible health care services, Peninsula Health is a teaching hospital and has a history of contributing to medical research.

While they have many facilities across a number of sites, their organization is structured to offer integrated health care providing a wide range of coordinated services to the community.



Need for a New System

To date, the region's population has grown to nearly 290,000 people, with a continued seasonal influx of visitors of up to 100,000. The population is growing at a faster rate than most other regions, with a growth rate of 18.9% predicted over the next decade, compared to a growth rate of 13.6% in Melbourne and 11.8% Victoria-wide.

The area is a prime retirement location and there is a high proportion of older people, with age profiles over 60 higher than the state average. The number of people over 70 is expected to double in the next ten years. There are also more people under the age of 19 than the state average.

Efforts to improve the continuity of the patient care journey from acute care settings to primary care have increasingly emphasized the role of information technology. The need to avoid medical errors, and prevent unnecessary hospital readmissions through enhanced communications with General Practitioners (GPs) has been well documented.

The Australian Council for Safety and Quality in Health Care has recommended the use of e-Prescribing coupled with the accurate transfer of information between hospital and community settings to reduce medication incidents. These recommendations are supported by other national health authorities. More than half of preventable medication incidents are associated with prescribing errors. A number of Australian controlled studies have indicated the provision of medication summaries to patients and their GPs improves patient outcomes and reduces medication incidents.

Overview

"Orion Health's technology has drastically reduced reporting errors and resulted in a 25% increase of the number of doctors using e-Prescribing."

Bob Ribbons
Manager of Clinical Informatics and
Project Manager, Peninsula Health

Customer Profile

Peninsula Health
Victoria, Australia

Customer Website

<http://www.peninsulahealth.org.au/>

Scenario

- ePrescribing
- eDischarge
- Optimized Workflow
- Integration System
- Electronic Health Record

Business Situation

Peninsula Health needed a way to reduce patient reporting errors caused by paper-based information sharing.

Business Solution

Orion Health's Concerto Medical Application Portal provides Peninsula Health the ability to improve patient care through e-Discharge and e-Prescribing, resulting in lower costs and a reduction in reporting errors.

Poor communication between hospitals and GPs has been identified as an obstacle to effective integrated health care. A number of authors have also highlighted the serious limitations of the current system of handwritten discharge summaries, while others have suggested discharge summaries of inadequate quality may have serious impacts on subsequent patient care.

A Time for Change

Like many Australian healthcare organizations, information sharing at Peninsula Health (PH) had historically been paper-based and ineffective. A survey conducted by PH and the Mornington Peninsula Division of GPs in 2000 revealed only 16% of the GP respondents had received a patient discharge summary within three days of the patient's discharge. Many respondents had received discharge summaries up to three months post-discharge. Of the discharge summaries that had been received only 27% were legible.

Peninsula Health sought to improve this critical area of patient care and identified a health IT vendor with a track record of innovation in healthcare technologies and collaborative partnerships at the acute care/primary care interface. This case study highlights the outcomes of implementing an innovative informatics project and outlines multiple quality improvement cycles initiated to reduce medical errors and improve communication with GPs.

The aims of the project were:

1. Improve the quality of discharge prescribing and reduce the opportunities for medication errors through the use e-Prescribing;
2. Improve the continuum of care between acute and primary care by providing a legible and accurate medication list via the use of e-Discharge Summaries;
3. Enhance the quality, legibility and timeliness of discharge information communicated to primary care practitioners to reduce unnecessary hospital readmissions.

A Turn Around

In light of evidence from a survey of the Peninsula Health GP referral base and on available literature, PH examined a number of potential solutions. In consultation with the Mornington Peninsula Division of GPs, it was decided that the Orion Health Concerto™ Medical Application Portal clinical information system represented the solution of choice.

The Orion, Peninsula Health Active Technology System (TOPHATS) project was formed and commenced system implementation in February 2002. Interfaces to the hospital's patient master index, pharmacy database, drug compendium, radiology database and external pathology provider's database were constructed over the ensuing four months. The system went 'live' in two pilot wards in early July 2002.

Following the pilot, the production system was made available to all acute care areas in August 2002 and has now been implemented in all clinical areas.

The system uses browser-based technology to integrate multiple hospital information systems providing clinicians with a set of clinical information tools including e-Discharges, discharge e-Prescribing as well as a clinical document viewer for Radiology reporting, cumulation, and charting of Pathology results. Concerto™ provides a seamless 'single patient view' of clinical information. The e-Discharge component affords an easy to use, 'point and click' method of generating discharge summaries with integrated e-prescribing utilizing clinical decision support.

Business Benefits

- Reduced workloads and costs
- Improved clinician and patient satisfaction
- Reduced reporting errors
- Remote access
- Lower cost of ownership
- Complete Information Fast
- Improved Diagnostic Accuracy
- Easy to Use
- Personalized Workflow

Technology Benefits

- Easy to maintain and configure
- Web-based
- Scalable
- Flexible
- Universal Access to Information
- Secure

Technology In Use

The solution currently in operation at Peninsula Health includes:

Concerto™ Medical Application Portal clinical information system

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Upon discharge, the summary is transmitted to the GP's practice via auto fax or directly to the GPs patient management system (e.g. Medical Director) via a secure network (HealthLink). Completed summaries are guaranteed to arrive at the GPs practice within 24 hours of the patient's discharge.

Measureable Success

An increase in e-Prescribed medications resulted from 1,948/month in March 2003 to 12,901/month in March 2007. This represents an increase in the number of e-Prescribed medications from 0.87 to 5.01 per non-same day patient episode. The number of doctors using e-Prescribing during this time increased from 22 to 89, representing 95% of prescribing doctors.

From 1/1/05 to 5/31/06, the e-Prescribing system alerted doctors to 100 possible duplicate medications; 9% of these drugs were not ordered. In the same period, there were 79 drug interaction alerts. In 17 (21.5%) instances, the doctor accepted the warning. An audit after the introduction of e-Prescribing suggests that we have reduced prescribing errors by around 19%. The prescribing error rate determined from 665 randomly selected, e-Prescribed medications were 4.36 errors/100 items. A previous study at Frankston Hospital revealed the prescribing error rate from 633 written prescription items was 5.37 errors/100 items. In addition, although not measured, the increased legibility of orders should reduce dispensing errors.

How it Works

The Concerto™ clinical information system provides GPs with a number of significant benefits. In addition to the timely receipt of well structured, quality discharge information, the generation of clear, typed documents including discharge medications virtually eliminates the potentially serious consequences resulting from illegible discharge summaries.

These factors translate into more appropriate and better-informed follow up care. The transmission of discharge summaries via electronic data interchange effectively decreases practice costs as this system reduces the need for fax paper and costly digital scanning of handwritten discharge summaries.

Concerto's Top Features

The Concerto Portal provides physicians with the right information, right where they need it. It works with your organization's existing information systems to deliver one view - delivering more for your organization's existing investment, without the cost of replacing it.

The Concerto Portal provides a universal, easy to use solution that delivers accurate patient information and results where and when clinical staff needs it to increase diagnostic accuracy, improve patient safety and reduce costs.

Orion Health's Concerto Portal Delivers:

- Single Complete Source of Information
- Reduced Workloads and Costs
- Improved Physician and Patient Satisfaction
- Rapid Physician Adoption
- More for Your Money
- Enterprise Wide Information Foundation

Layering on top of existing data structures, a unified view portal solution can provide single view capabilities for physicians, providing simplified, real-time access to a selected patient's clinical information, wherever it may reside.

Long Term Improvements

The TOPHATS project has delivered a fully integrated clinical information system designed to enhance the continuity of patient care by improving the discharge prescribing process and communication of discharge information between PH and GPs on the Mornington Peninsula. Currently, PH is one of only a handful of Australian hospitals utilizing integrated e-Discharge and e-Prescribing. Furthermore, the use of Six Sigma, a successful and commonly used quality process in other industries, has rarely been implemented in Australian health care settings.