

# **Concord Repatriation General Hospital**

## **Demand Management Unit (DMU)**

### **Occupancy Management Program - Predictability Tool**

#### **ABSTRACT**

Concord Hospital has developed and implemented a predicability tool as part of its occupancy management program. The Predictability Tool enables workload and resources to be identified to proactively manage bed capacity requirements in advance, based on projections of planned and unplanned admissions and expected patient discharges.

The Hospital has sustained its concerted efforts to reduce Access Block by creating data driven tools and an organisational culture to proactively manage and reliably predict Bed Occupancy throughout the Hospital. The Health Department's Dashboard system is used in conjunction with a locally developed data base (Predictive Tool). Meaningful graphical reports based on this data are made available to ED staff, hospital executive, NUM's and department heads.

#### **AIM**

To have a comprehensive understanding of the mechanisms that affect the flow of patients in a hospital, and hence resource requirements, via the use of a predictive bed management tool.

#### **NATURE OF PROBLEM**

Bed Capacity must be matched to Demand. Unused capacity cannot be passed forward, thus admission and discharge variability must be managed. Historically during winter there are periods of high activity where there has been a mismatch between admissions and discharges leading to system wide congestion. ( CRGH has adopted a policy of continuing with all elective surgery, even when there are high pressures placed upon the hospital's bed capacity)

Bed Management (patient flow, occupancy issues) were raised as a priority concern in 2005 to address access block issues.

#### **EXTENT OF PROBLEM**

A multidisciplinary team, consisting of Senior Clinicians, Nurses, Administrators, Nursing Home Directors and representatives from the Community and the Ambulance Service reviewed discharge times, outlier patients and their length of stay, the timing of ward rounds and utilisation of the hospital's Discharge Lounge.

Subsequent to this information being collated and interpreted, it was determined that a need existed for the development of tools to assist in the prediction of periods of high Capacity. When discharge activity does not meet admission activity this is known as "Exit Block". A review of the data suggested that a better match between patient inflow and outflow required a way of predicting activity.

## **STRATEGIC IMPORTANCE**

This submission relates to the NSW Department of Health Strategic Direction:

Create better experiences for people using health services and NSW Health Goals of:

- Emergency care without delay
- Shorter waiting times for non-emergency care
- High quality clinical treatment

These goals and values are reflected in Concord Hospital's Capacity Management Program which was established to manage the ever increasing demand for beds with limited resources. The hospital identified this as a key priority for improvement in line with the DOH Key Performance Indicators.

By increasing access and egress through the Emergency Department, by providing greater available capacity, the hospital has reduced access block, better managed surgical waiting times and has become more responsive to community healthcare requirements.

## **PLANNING AND IMPLEMENTING SOLUTIONS**

The Occupancy Management Program implemented in Concord is a hospital wide redesign process to allow the hospital to become more responsive to the needs of individual patients. This program was further enhanced by a Clinical Redesign Project which focused on many of the key issues already identified by the hospital's bed management committee. This allowed the previous work to be refined and redeveloped to make the system changes sustainable and non person specific.

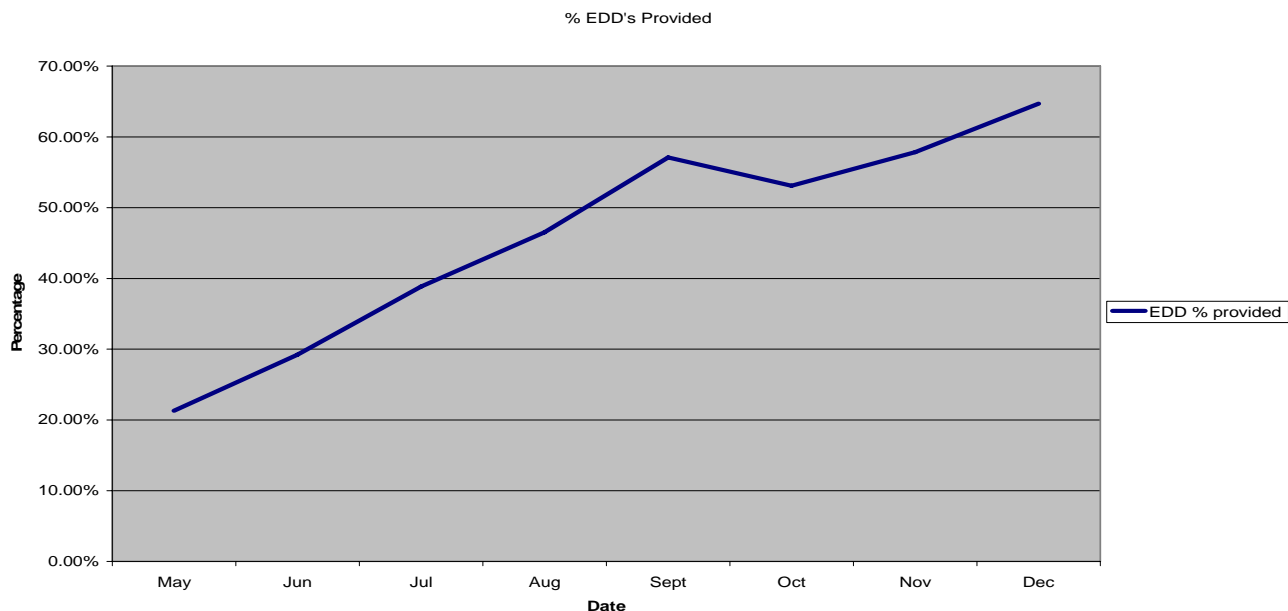
Since then, the Clinical Redesign system process has undergone several changes:

- The creation of the Patient Flow Unit – now known as the Demand Management Unit which combined the Discharge Planner and the Bed Manager into one area.
- The Estimated Date of Discharge (EDD) is entered directly onto the hospital's Clinical Information System by ward staff. A comprehensive

report is available that assists in the prediction of potential vacant beds and allows variation monitoring.

- The development of a predictive tool to predict patient flows in and out of hospital to enable forward planning.
- Surgeons have been engaged to provide an EDD on all 'Request for Admission' forms.

The EDD predictive tool utilises real time Casemix Acuity and inpatient caseload data to forecast discharge activity, as opposed to the trending of historical information. This allowed the Bed Manager to provide instant and reliable feedback of past and future occupancy and discharge performance. The program adopted an innovative approach in that nursing staff have become empowered to become champions in its implementation.



Graph 1 showing increase in percentage of EDDs reported / entered which assists in planning capability

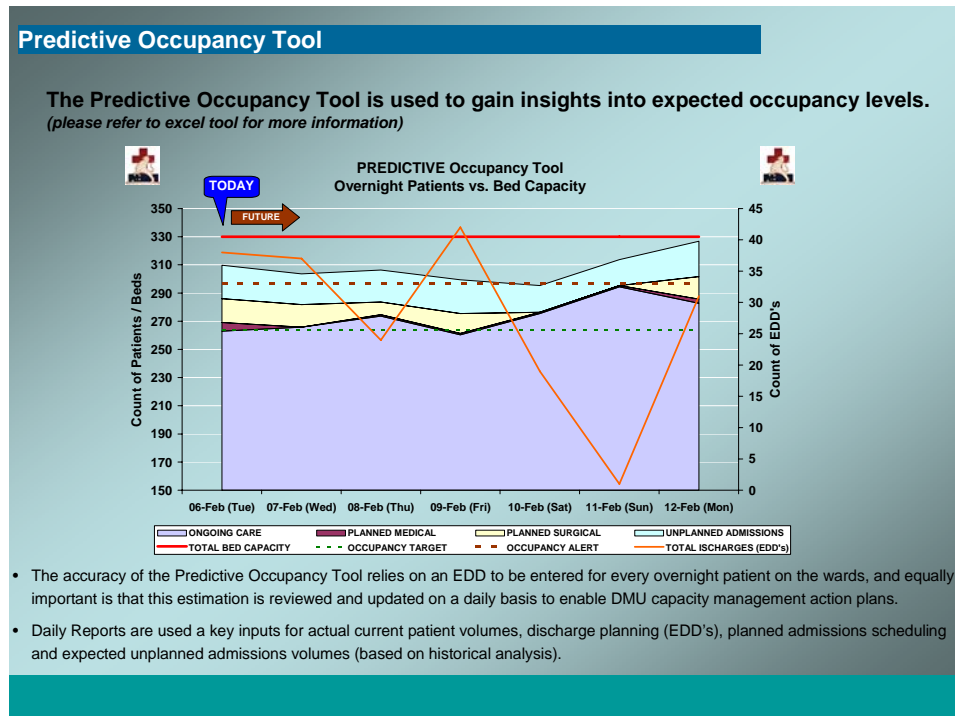
## OUTCOMES AND EVALUATION

Hospital occupancy levels have been controlled to a monthly average of 88% over the winter period for 2006

One of the issues identified was the lack of a consistent EDD for all patients. A hospital wide approach was undertaken to educate all staff on the need to increase capacity and reduce the demand on beds. This combination has led to greater satisfaction of staff, increased patient safety due to most patients being in home wards

Ongoing evaluation of the program reveals a sustained commitment from clinicians to better predict workflow so as to improve resource utilisation in periods of high throughput. Locating patients in their home wards has been proven to generally reduce LOS and adverse events. Such a reduction resulted in reduced ED overcrowding, difficulties offloading Ambulance Stretchers, bed block to the Intensive Care Unit and the potential for suboptimal care.

The increased availability of beds has reduced recovery room exit block, average patient waiting times for surgery and the number of long wait surgical patients.



Sample of graph data available from the Predictive Tool which is used to assist in managing and planning hospital occupancy.

## SUSTAINING CHANGE

Forecasting of future activity based on real time clinical data from the "bottom up", is now firmly embedded in the organisation. The Demand Management Unit is seen as the 'engine room' of the hospital – it drives performance.

This proactive approach in identifying the variance of patient flow into and out of the hospital, promotes better management of optimal bed occupancy.

A cultural change has resulted from a system where the basis for decision making was previous experience and instinct; to one where decisions are driven by contemporary, objective, real time and reliable data. Clinical care has been enhanced as a result of clinicians acknowledging that the Program offers the

means by which to plan for individual real time exit and therefore address the specific needs of a patient earlier.

Through a continued commitment and presence throughout the hospital, the DMU has been the change agent in a cultural conversion from a reactive approach to occupancy management, to a planned and proactive one. This cultural change has been sustained through extensive communication, collaboration, education and refinement.

## **FUTURE SCOPE**

This tool could be used to improve the prediction of occupancy and hospital throughput across NSW Health, at a negligible resource cost. The basis of data collection is the Cerner Clinical Information System, a common system throughout NSW Health.

This tool could also be utilised for predicting future workforce requirements and could become the platform engine by which all hospitals are managed in the future.

The Predictive tool and interventions allow hospitals to:

- Be more responsive to time specific demands
- Prevent or reduce ED access block
- Reduce ambulance off stretcher time
- Prevent / reduce elective surgery cancellations by preventing Recovery Exit block
- Prioritise access for unplanned medical and surgical admissions.