23-HOUR CARE CENTRE: CHANGING THE CULTURE OF CARE

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ABSTRACT

Aim:

A 23-hour Care Centre was created at a principal referral hospital in Sydney in 2003. Its primary aim was to provide efficient and high quality care to patients requiring a brief stay in hospital for surgical or medical procedures, within one coordinated unit.

Design:

The features underlying the 23-hour Care Centre as an innovative model of care were the clinical guideline driven approach and nurse-initiated discharge.

Sample:

All patients, emergency and elective as well as surgical and medical, who fitted the following criteria were admitted as '23-hour patients' to the Centre. The criteria were: absolute expectation of discharge within 24 hours; pre-admission screening by a nurse screener (if elective admission); agreed clinical guideline in place; and, agreement to protocol-based, nurse-initiated discharge.

Results:

Following the first three months of the 23-hour Care Centre, 1601 patients utilised the 23-hour Care Centre as follows: 593 day only patients, 410 DOSA (day of surgery admission) patients and 598 23-hour patients. Excluding inappropriate admissions, overall discharge compliance was 83%.

Conclusion:

From the results generated throughout the trial it has become evident that the new clinical area offers a workable system of health care delivery for patients who require a brief stay in hospital, as it promotes an efficient use of hospital beds and services without compromising patient outcomes. However, further research is required to compare the efficiency and outcomes of care directly with that provided by the traditional inpatient hospital system.

INTRODUCTION

In the face of rising health care costs in Australia, the search for effective means to reduce a patient's length of stay while maintaining high quality care have continued. There has been a progressive move toward increased efficiency in the management of patients requiring admission to hospital for short stay procedures. This trend has also been driven by the demand for services and the requirement to decrease cancellation rates due to lack of beds.

In January 2003, a 23-hour Care Centre was opened at Royal North Shore Hospital, a principal referral hospital in Sydney, Australia. In this move, the surgical bed base was remodelled, resulting in consolidation of flexibly available beds for one 25-bed ward. A key feature of the 23-hour Care Centre was that it catered for surgical and medical elective and emergency admissions, through the use of established clinical guidelines and nurse-initiated discharge protocols. Each clinical guideline was department and procedure specific with each member of the relevant department having to agree to the guidelines.

This paper describes the evolution, structure and process encountered in opening the 23-hour Care Centre. The results of a three-month pilot project are presented.

23-HOUR CARE CONCEPT

The 23-hour Care Centre is based on the concept that the episode of surgical care for the majority of patients should be managed within the confines of a single physical unit within a 24 hour time period. At the end of that time period most patients should be able to be discharged home. Those requiring ongoing care would be discharged to an inpatient ward, with those patients requiring intensive or high dependency care being managed within the process.

The fundamental principles underpinning the 23-hour Care Centre are:

- The majority of patients undergoing elective or emergency procedures (surgical and medical) require only pain relief and monitoring in a supervised setting until fit for discharge.
- The majority of surgical and some medical patients can be managed completely within the confines of one single unit.
- clinical guideline driven approach.
- Absolute expectation that the patient will be discharged within 24 hours.
- Nurse-initiated discharge with no need for routine medical review prior to discharge for patients who fulfil the clinical guidelines.
- Facility for elective and emergency admissions requiring overnight care.

While various literature supports the introduction of either a surgical (Romano 2001) or medical (Burgess 1998; Abenhaim et al 2000) short stay or observation unit, there is little published information about combining the two specialties together. These studies reported a shorter length of stay, lower rates of in-hospital complications and lower rates of readmission for patients from short stay units, compared to patients admitted to the general ward areas.

A pure surgical ward has the potential to have fluctuating occupancy levels - due to operating room availability - and therefore not be a cost-effective model of care. Establishing a unit that manages surgical and medical admissions addresses this issue. A 23-hour Care Centre has the potential to generate significant cost savings and efficiencies for an organisation, with decreased length of stay, streamlined admission and discharge process and a more efficient use of staffing and hospital facilities.

The introduction of observation units within emergency departments (ED) is a trend that has evolved in recent years. In general these units have been aligned to their ED and managed by the emergency physicians. The establishment of such units has assisted in reducing the number of patients who have required a ward bed.

Patients have been admitted to the observation unit if it is anticipated that discharge will occur within 48 hours. Organisations who have established such systems have utilised a 90% discharge compliance to measure the success of their respective units. Similarly, a 90% discharge compliance benchmark was established for the 23-hour Care Centre to allow for direct comparisons with other hospital units

The staff due to work within the 23-hour Care Centre were concerned that the introduction of such a model may lead to a decrease in the clinical expertise of nursing staff as speciality skills are overtaken by the need for generalist skills. From our pilot project, however, we have found that the 23-hour Care Centre provides an opportunity for the exploration of a new speciality and culture within nursing. There has been a flow on effect throughout other wards within the hospital, who are now receiving fewer outlier patients and predominantly higher acuity patients related to their speciality. This provides a different challenge for effective patient management.

A key factor in the successful implementation has been the use of clinical guidelines with nurse-initiated discharge practices. Clinical guidelines incorporate the managed care concept of utilising collaborative and multidisciplinary health care delivery in the pursuit of total patient care (Scott 1994). The procedure specific clinical guidelines, is a structured double-sided document that allocates patient care into six-hourly time periods. These time periods allow for the documentation of care by all members of the health care team with the nursing staff coordinating the patient management and monitoring outcomes. It allows for variances to be highlighted as early as possible so review and possible intervention can occur, thereby not unnecessarily increasing length of stay. The strength of the concept is its ability to address and outline the essential components of care in a coordinated manner (Scott and Scott 1998), whilst providing cost-effective and accessible care to patients (Apker and Fox 2002) in a time-orientated manner.

Nurse-initiated discharge provides a unique opportunity for effective patient management provided by nursing staff, while maintaining a multi-disciplinary team oriented approach. Current practice throughout Australia is very limited in nurse-initiated discharge. Incorporated within the nurse-initiated discharge system is the Modified Post Anaesthetic Discharge Scoring System (MPADSS). The MPADSS system provides an assessment tool for nursing staff to see where the patient is post anaesthetic (Chung et al 1996), as it has five components reflecting:

- vital signs,
- ambulation,
- nausea/vomiting,
- pain, and,
- surgical bleeding.

The combination of procedure specific and anaesthetic related discharge criteria allows clinicians to make decisions regarding patients' readiness for discharge based on a structured reliable guide.

METHOD

Patient selection

Once the hospital accepted a request for admission form, it was assessed by the nurse screener (in the pre-admission clinic) to determine the patient's suitability for the 23-hour Care Centre. Suitability was dependent on the documented admission criteria of the 23-hour Care Centre. If the request for admission form was not a surgical patient, then the clinical bed manager would determine the patient's suitability for the 23-hour Care Centre or an inpatient ward bed. The nurse screener would review the patient's health questionnaire to determine their pre-admission requirements. If a pre-admission clinic appointment was required then the nurse screener coordinates this process in liaison with administrative staff and all pre-operative requirements for the patient are attended. Patients suitable for admission into the 23-hour Care Centre included day only patients, screened day of surgery admissions and 23-hour patients.

Clinical guidelines

Clinical guidelines were developed for each admission type, encompassing both elective and emergency admissions, as well as surgical and medical conditions. Each guideline provided for protocol-based, nurse-initiated discharge, subject to fulfilling agreed criteria. Each clinical guideline was department and procedure specific with each member of the relevant department having to agree to the guidelines. Patients were not accepted into the 23-hour Care Centre unless an agreed clinical guideline was in place.

Patient management

On day of surgery, a patient will have a nursing assessment and pre-operative checklist completed by a member of the nursing staff. The patient waits in the pre-operative waiting area until called for surgery, at which time they change into a hospital gown, ready for escort to operating rooms. The purpose of keeping the patients in the waiting area for as long as possible is to keep them in their own clothes and allow them independence until the time of their procedure.

Following completion of the procedure, day only patients are transferred to stage 1 recovery, (located within the operating room complex), until such time as their clinical condition is assessed as stable. At this point, the patient is brought back to the 23-hour Care Centre for stage 2 recovery. Once a day only patient is considered to have stable haemodynamic observations and they are neurologically alert and orientated, the patient is assisted to change into their own clothes and then progress to the recliner chairs in the stage 3 recovery/discharge lounge area. The patient continues to be observed in this area until they are discharged.

23-hour patients are managed in a similar fashion to the day only patients. The main exception is that all these patients have a clinical guideline, which outlines the specific care they need to receive in the post-operative period. The stage 3 recovery/discharge lounge area is also utilised once the patient has been assessed by the nursing staff as ready for discharge. The patients do not sleep in the stage 3 area and are considered discharged once they have left the stage 3 recovery/discharge lounge area. Those patients who present to hospital for procedures which require a post-operative length of stay beyond 23-hours, are transferred from stage 1 recovery to a suitable inpatient ward area for the remainder of their hospitalisation.

All 23-hour patients are given a follow up phone call on the day following discharge to see if they have any specific questions and to check on their recovery. This is an excellent tool for assessing if some patients have had delayed responses to any medications and provides a personal touch for the patients regarding their stay in hospital.

RESULTS

Throughout the three month pilot project, 1601 patients utilised the 23-hour Care Centre, comprising 593 day only, 598 23-hour and 410 day of surgery admission (DOSA) patients. The departments of: hand surgery; ear, nose and throat; and, gastrointestinal surgery, managed greater than 50% of their patients as 23-hour patients, which reduces the pressure on bed managers to find ward beds for these patients. The significance of the pilot project results is the representation of nine specialties that were able to manage more than 25% of their patient admissions through the 23-hour concept.

Throughout the introduction of the 23-hour Care Centre, it was imperative to ensure that day only and DOSA patient numbers did not reduce as a result of the changes t o the structure of surgical beds. Throughout the pilot project, 27 day only patients required admission overnight. For these patients the predominant reason for the extended length of stay was clinical grounds where additional procedures were required due to the findings at time of the original procedure.

The percentage of day only surgical admissions in general has increased from the corresponding time period in the previous year. The trend for the year 2003 of continually having a DOSA rate above 80% is a significant improvement from the previous year. The introduction of the 23-hour Care Centre will further enhance the ability of the hospital to manage patients as DOSA.

Emergency admissions accounted for 47% of 23-hour patients. The ability of the Centre to manage fluctuating workloads within short time periods and assist with relieving the pressure on the ED is crucial to its function

and long term viability. The 23-hour Care Centre must always be open every day, all day in order to manage the large numbers of patients who present to hospital at short notice for either surgical intervention or medical care.

Activity within the 23-hour Care Centre varied throughout the week. From review of the total activity, average patient numbers were taken for each day of the week. Wednesday was found to have the highest day of total patient activity with an average of 29 patients (table 1).

The review of 23-hour patient activity is important because it assists in identifying the volume of patients that will be in the Centre on any given day, thereby assisting in roster planning, allocation of staff throughout the area and the coordination of shift times.

On weekends the volume of patients does diminish, however, there is still a need for this service on weekends and the potential is there for a further improvement of patient numbers as the service expands with an increase in the number and range of clinical guidelines.

Table 2 demonstrates compliance among departments with the 90% discharge benchmark. Whilst only three departments achieved the discharge compliance benchmark, there were a further seven departments whose percentage of discharge compliance was above the Centre's average of 77%. Further encouragement from the data is the fact that there were 61 patients whose discharge occurred between 0-4 hours after the designated 23-hour benchmark. These 61 patients represented 10% of all 23-hour patients. In total, 136 patients stayed longer than 23-hours post-operatively, as shown in figures 1 and 2.

While the inability to achieve the benchmarked 90% discharge within 23-hours post-operative across the entire service is disappointing, the significance of the results obtained must be acknowledged. The introduction of the 23-hour concept has been a significant cultural shift for the organisation as previously patient management and discharge instructions were always dependent on medical orders and post-operative review. Several factors throughout the pilot project have impacted on the ability of the 23-hour Care Centre to operate to its full potential.

These factors included the inability of medical staff to complete discharge prescriptions and summaries at the time of procedure, thereby creating the need for medical review of patients by default for the completion of paperwork. There was also reluctance by some nursing staff to discharge the patients, based solely on the documented discharge criteria because it was a change in practice and previously they had not had the autonomy and authority to action their patient assessments against a specific discharge criteria.

Of the 136 patients with a post-operative stay greater than 23 hours, there were 35 inappropriate admissions to the 23-hour Care Centre. Inappropriate admissions were those patients who did not have a clinical guideline in place, an essential feature outlined in the admission policy for the Centre. These patients were often admitted to the 23-hour Care Centre after hours when the after hours nurse

Table 1: 23-hour Care Centre activity average patient numbers per day of week

Patient numbers	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
23-hour	8	7	10	8	7	3	4
Day only	8	11	12	7	7	1	1
DOSA	8	7	7	4	6	0	0
Total	**24**	**25**	**29**	**19**	**20**	**4**	**5**

Table 2: Discharge compliance from 23-hour Care Centre for 23-hour patients

Specialty	% Discharge within 23-hours
Cardiothoracic	92%
Endocrine	78%
Ear, nose and throat	90%
Gastroenterology	100%
Hand surgery	87%
Neurosurgery	86%
Opthalomogy	78%
Orthopaedics	58%
Plastic surgery	86%
Radiology	100%
Gastrointestinal surgery	64%
Urology	70%
Vascular	83%

Figure 1: Breakdown of patient numbers in time periods beyond 23-hours

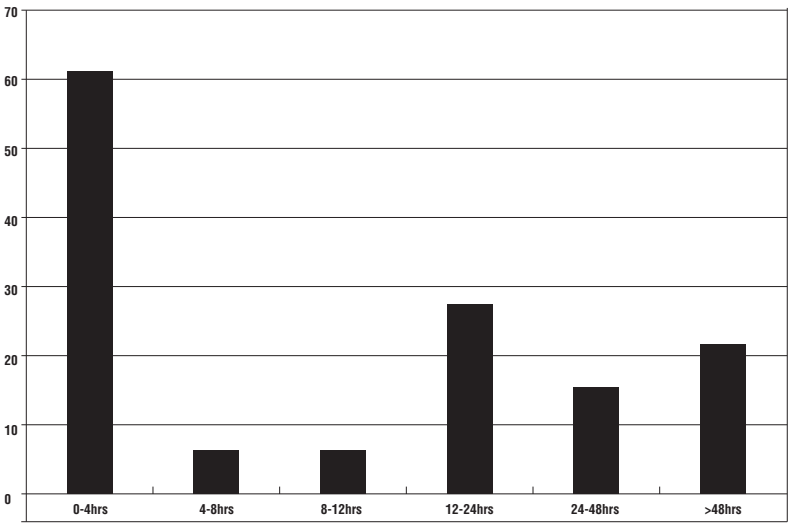


Figure 2: Breakdown of patient numbers in time periods beyond 23-hours

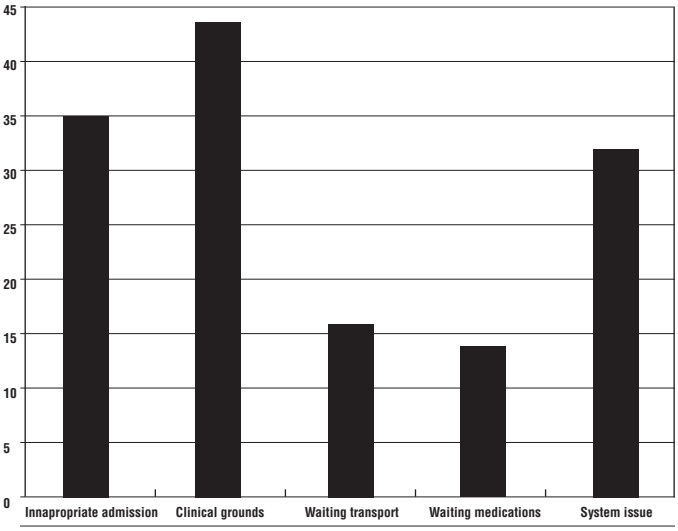
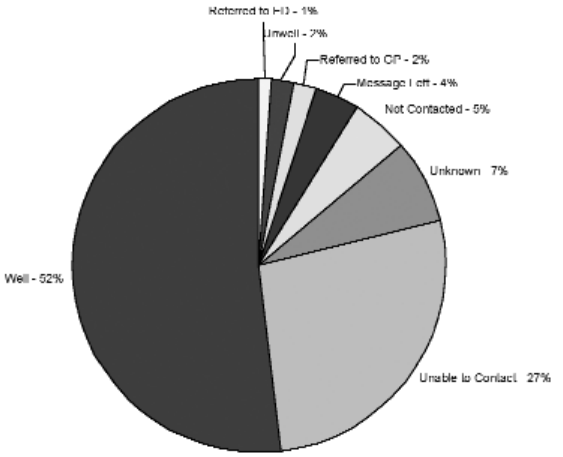


Figure 3: Patients' condition 24-hours post discharge on follow up phone call



manager had difficulty obtaining inpatient ward beds. Excluding these inappropriate admissions increases the overall discharge compliance rate to 83%. In discussions with the after hours nurse managers it was revealed that inappropriate admissions resulted from a lack of awareness regarding the specifics of the admission policy of the 23-hour Care Centre and the pressure for beds within the hospital at various times. Some of these issues can be addressed through further education and publicity about the admission policy of the 23-hour Care Centre and distribution of the results from the pilot project. Further work remains to be done on addressing system issues, which include notification and referral to community nursing, coordination of adequate staffing and skill mix on shifts.

Throughout the pilot project, the 23-hour Care Centre has accepted patients from the day surgery centre and ED. Two hundred and fortythree 23-hour patients have been admitted to the 23-hour Care Centre from the ED. This is a reflection of the nature of admissions to the hospital and supports the operating principles of the Centre to accept elective and emergency admissions. In addition to these patients there have also been 12 patients admitted through the ED, then later discharged the same day from the 23-hour Care Centre.

The ability of the 23-hour Care Centre to be open on weekends has also assisted in managing more appropriately those patients who present as day only admissions. There were also 20 patients who had their surgical procedure performed in the stand-alone day surgery centre then transferred to the 23-hour Care Centre for stage 2 recovery. Through accepting patients from the day surgery centre it assisted in enhancing operating room utilisation of both the main operating rooms and the day surgery centre.

An essential component of the clinical guidelines and the 23-hour concept was patients receiving follow up phone calls the day following discharge to determine if any adverse outcomes had occurred as well as to maintain connection with the service. From a review of 365 clinical guidelines the results illustrated in figure 3 were achieved. Only 3% of patients required referral back to the ED or their general practitioner for ongoing clinical issues. 27% did not return phone messages left. With 52% of patients well on follow up phone call is a positive reflection of the quality of care received within the 23-hour Care Centre.

The telephone survey provided an opportunity to review all components of the hospital admission from a patient's perspective. In reviewing patient feedback, the emphases of all comments were positive reflections on the excellent nursing care received and the friendly nature of the staff. Other issues identified by patients included the limited space around trolleys, and a delay in waiting for discharge medications.

Through the introduction of the 23-hour Care Centre it was anticipated there would be a reduction in the number of cancelled operating room cases because of no post-operative ward beds. In reviewing the cancelled cases log compiled by the operating suite, the data showed five cases cancelled during February-April 2002, compared to four cases cancelled during the similar time period in 2003. While the data does demonstrate a reduction, the small volume of patient numbers has minimal impact on hospital services. It must be noted, however, that there has also been a decrease in the surgical bed-base in 2003, due to the consolidation of surgical beds in late 2002, so further review of this data over a longer time period would be beneficial.

The introduction of the 23-hour Care Centre has contributed to a decrease in length of stay for certain procedures. Table 3 provides representation of episode length of stay, comparing data obtained throughout the pilot project to data obtained from the previous financial year. Until DRG (Diagnosis Related Group) data has been calculated for the pilot period by the casemix

Table 3: Comparative length of stay data

Procedure	2001/02	Patient numbers	Jan 28-Apr 27 2003	Patient numbers
Laparoscopic cholecystectomy	2.8 days	103	2.2 days	25
Hysterectomy	4.3 days	67	4.0 days	8
Inguinal and femoral hernia	1.7 days	80	1.7 days	32

and statistical unit it is difficult to make comparisons for all procedures.

Staff feedback

Due to the significant change in practice within the organisation with the introduction of the new service, the potential for differing feedback among staff existed. The staff highlighted the limited space within the area as a key issue impacting on patient care delivery. The pilot project has received positive comments from the staff within the hospital community and the impact that the Centre has had on other clinical areas.

The introduction of the clinical guideline has highlighted changes in work practice for nursing staff. Whilst the clinical guideline was designed to ensure staff spent less time documenting notes and more time on direct patient care, it has been a practice which has taken time to change. In response to staff feedback regarding the clinical guideline, modifications were made to the template.

Other hospital departments have also been affected by the introduction of the Centre. There has been an increase in the workload for pharmacy, food services, laboratory service, linen supply and cleaning services as a direct result of the increased throughput in the area and increase in operating hours. From an administrative perspective there has been the streamlining of work practices and greater emphasis placed on improving data integrity, without a significant increase in the workload volume.

In summary, the feedback from patients reinforces that the 23-hour Care Centre is a concept that is able to adequately address their needs and provide excellent patient care within an efficient system.

CONCLUSION

In evaluating all the data obtained from the pilot project, the introduction of the 23-hour Care Centre has been a success for the organisation and patients. Positive feedback from patients and reductions in length of stay for particular procedures has enabled the streamlining of patient admission and reductions in episode length of stay. The 243 23-hour patients that have been admitted directly from the ED is indicative of the Centre's ability to assist in reducing pressure within the ED by providing access to beds for patients who are requiring an overnight hospital admission. The link established with the day surgery centre has assisted in enhancing operating room utilisation, which in turn assists in managing and reducing more effectively waiting lists.

In summary, the 23-hour Care Centre has created and defined an innovative model of care, which can be adapted for other organisations. The results also indicate several areas where the service can be further improved and increased efficiencies obtained. This innovative model of care is developing the opportunity for changes in nursing care delivery, creating its own specialty as unique nursing knowledge, skills and competencies are required. The development of a nurse practitioner role could be seriously considered in the future of the 23-hour Care Centre.

The success of the 23-hour Care Centre was directly related to the hard work and dedication of all the staff within the Centre who were able to implement the change and continued to provide excellence in patient care, within an autonomous working environment. The large number of specialties, the autonomy to facilitate nurse-initiated discharge and the variety of clinical skills utilised within the 23-hour Care Centre establish it as an exciting place to work. These attractions offered by the 23-hour Care centre can be utilised to compete with the recruitment and retention of nursing staff during the existing shortages.

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