

# Staff perspectives of a cardiology short stay unit

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## KEY WORDS

short stay unit, procedure, discharge, cardiology, clinical safety

## ABSTRACT

### Objective

To evaluate staff perceptions about working environment, efficiency and the clinical safety of a cardiovascular intervention short stay unit (SSU) during the first year of operation.

### Design

Postal questionnaire.

### Setting

Cardiac catheterisation laboratory (CCL), coronary care unit (CCU), general cardiology ward (GCW) and the short stay unit (SSU) of a tertiary referral hospital situated in the mid coastal region of NSW.

### Subjects

Cardiologists (including visiting medical officers [VMO]), cardiology fellows, cardiology advanced trainees and nurses.

### Results

Responses on the working environment of the SSU and the discharge process were statistically significant. A substantial proportion of both nurses and doctors had concerns about patient safety, even though no adverse events were formally recorded in the database.

### Conclusions

Though the participants of the survey agree on the efficiency of the SSU in providing beds to the hospital, they disagree on aspects that are important in the functioning of the SSU, including the working environment, patient selection and clinical safety. The results highlight potential issues that could be improved or addressed and are relevant to the rollout of SSUs across NSW.

## INTRODUCTION

The concept of the short stay unit (SSU) was initially introduced into surgical services targeting minor surgical procedures that required admission (Marshall and Cregan 2005). This was to expedite the discharge process thereby addressing the pressure for beds, avoiding postponement of other elective procedures and ultimately costs. Cregan (2005) and Khan et al (1997) alluded to an increase in consumer demand and bed blocking as reasons contributing to the pressure for beds. Currently the public health system is experiencing an increase in demand for services that is not being met owing to budget restrictions, thus leading to 'bed blocking'. The concept of a SSU was gradually introduced into other specialties, notably emergency medicine (Khan et al 1997 and Goodacre 1998). The success was variable and consistent data describing cost effectiveness and acceptable clinical satisfaction was lacking (Goodacre 1998). In 2000, this concept was trialled in Sydney in paediatrics with success (Browne 2000). In the same year, a medical short stay unit established in Montreal in 1989 was reviewed. The review recommended further research into cost-effectiveness, to compare definitively the efficiency and outcomes of care delivered to similar patients in the medical short stay unit within the traditional medical inpatient units and to assess the impact of a staff-run medical short stay unit on the training experience of medical students and residents (Abenheim et al 2000). Recently, the department of health has recommended the introduction of SSU to cardiology services attached to all tertiary hospitals with cardiac catheterisation facilities in New South Wales. Through the Clinical Services Redesign Program, NSW Health is developing new models of care for adult acute cardiology patients. The program supports clinicians and managers to redesign and improve a range of patient journeys across multiple care centres in area health services. The objectives of the State-wide Cardiology Project are to enable timely and equitable access to effective and appropriate care across New South Wales, treat patients in order of clinical priority, reduce variations in the length of

stay for patients between and within facilities and enable access by health service teams to a practical and coordinated cardiology service for their patients. One of the four projects developed, the Bed Solutions Project aims to optimise catheterisation laboratory throughput by utilising 23 hour-beds (NSW Health 2007a and NSW Health 2007b). This study seeks to assess the impact and success of this intervention from the perspective of the staff working within the SSU. It has the potential to highlight the need for clinical redesign of the SSU.

## METHODS

This pilot study conducted at tertiary referral hospital evaluated the SSU attached to a busy cardiovascular unit with respect to staff perceptions about length of stay, appropriateness of stay and the procedures requiring admission, the discharge process, transfer of medical information and workplace satisfaction. We also invited the participants to include additional comments. In addition, we also reviewed all the admissions, adverse events and outcomes since the introduction of the SSU in January 2007. We did not survey patients as this was primarily a clinical, not a quality control audit; as such, ethics committee approval was not required.

With the agreement of the service and/or clinical leaders and the team leaders, anonymous self-addressed envelopes containing a questionnaire developed by the investigators (Appendix A) were posted to all cardiologists (including visiting medical officers [VMO]), cardiology fellows, cardiology advanced trainees and nurses who worked in the cardiac catheterisation laboratory (CCL), coronary care unit (CCU), general cardiology ward (GCW) and the short stay unit (SSU).

The questions covered a varied dimension of issues that were considered important for the successful operation of the SSU. The questions were each rated with a response indicating a poor (rating=1) to a good performance (rating=5). A level of '3' is considered satisfactory. Answers were dichotomized, where all responses scoring 3-5 were 'favourable' and those responses scoring 1-2 were 'unfavourable'.

Percentages were calculated and exact binomial 95% confidence intervals generated. Percentages of favourable or unfavourable ratings by doctors and nurses to the same questions were compared using Fisher's exact test.

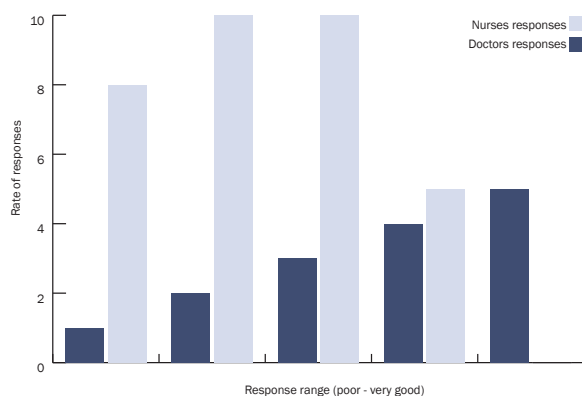
## RESULTS

The response rate was 16/19 (84%) for the doctors and 36/70 (51%) for the nurses. Not all respondents answered all questions. The responses were as follows:

Working environment of the SSU enabling adequate patient care:

Fifteen out of 33 nurses rated the environment to be average to above average (45%, 95% CI 28-64), whereas 13/16 doctors rated the environment to be average to above average (81%, 95% CI 54-96). This difference was statistically significant with a p value of 0.03 and a risk ratio of 1.95 (95% CI 1.15-2.78). Figure 1 illustrates the discrepancy between the answers provided by doctors and nurses.

**Figure 1: Working Environment of the SSU**



Efficiency in providing beds to the hospital:

94% (30/32) of nurses rated the SSU to be average to above average (95% CI 79-99), while 93% (15/16) of doctors rated the SSU to be average to above average (95% CI 70-100). This was not statistically significant with a p value of 1.0 and a risk ratio of 1.0 (95% CI 0.86-1.17).

Transfer of information for clinical management:

80% (28/35) of nurses rated the process to be average to below average (95% CI 63-92), while

69% (11/16) of doctors rated the process to be average to below average (95% CI 41-89). This was not statistically significant with a p value of 0.48 and a risk ratio of 0.86 (95% CI 0.59-1.24).

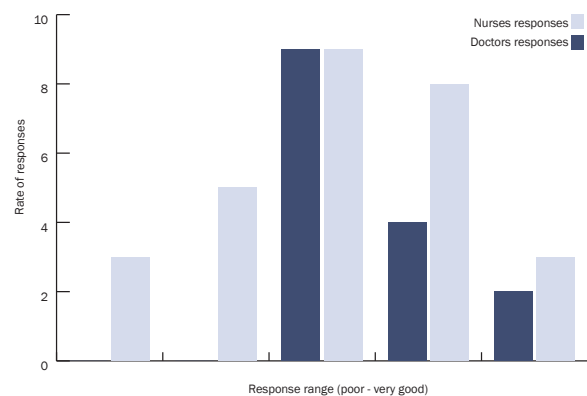
Transfer of information from the referral source:

58% (21/36) of nurses rated the process to be poor to average (95% CI 41-74), while 62% (10/16) of doctors rated the process to be poor to average (95% CI 35-85). This was not statistically significant with a p value of 1.0 and a risk ratio of 1.0 (95% CI 0.67-1.7).

Discharge process from the unit:

71% (20/28) of nurses rated the process to be average to above average (95% CI 51-87), while 100% (15/15) of doctors rated the process to be average to above average (95% CI 78-100). This difference was statistically significant with a p value of 0.036 and a risk ratio of 1.40 (95% CI 1.10-1.77). Figure 2 illustrates the results.

**Figure 2: Discharge Process from the SSU**



Appropriateness of patient selection to be managed in the SSU:

- 58% (18/31) of nurses rated the selection of *semi-urgent procedure* patients to be average to below average (95% CI 39-75), compared to 81% (13/16) of doctors (95% CI 54-96). This was not statistically significant with a p value of 0.19 and a risk ratio of 1.40 (95% CI 0.96-2.05).
- 84% (26/31) of nurses rated the selection of *elective procedure* patients to be above average to good (95% CI 66-95) compared to 88% (14/16) of doctors (95% CI 62-98). This was not

statistically significant with a p value of 1.0 and a risk ratio of 1.0 (95% CI 0.82-1.3).

- 88% (29/33) of nurses rated the selection of stable patients for *planned procedures* to be above average to good (95% CI 72-97), compared to 81% (13/16) of doctors (95% CI 54-96). This was not statistically significant with a p value of 0.67 and a risk ratio of 0.92 (95% CI 0.71-1.21).

Clinical safety of the SSU:

Only 42% (13/31) of nurses rated the SSU to be safe (95% CI 25-61), compared to 67% (10/15) of doctors (95% CI 38-88). This was not statistically significant with a p value of 0.21 and a risk ratio of 1.59 (95% CI 0.9-2.7). However, on review of the cardiology clinical adverse events database pertaining to the SSU since its introduction in January 2007, there were no events recorded.

**Table 1: Summary of Responses (questions listed in appendix)**

Question#	Doctors	Nurses	Fisher's Exact Test
1	13/16 81%(54-96) <sup>a</sup>	15/33 45% (28-64) <sup>a</sup>	RR=1.79(1.15-2.78) <sup>b</sup> P=0.03
2	15/16 93%(70-100) <sup>a</sup>	30/32 94% (79-99) <sup>a</sup>	RR=1(0.86-1.17) <sup>b</sup> P=1.0
3	11/16 69%(41-89) <sup>a</sup>	28/35 80% (63-92) <sup>a</sup>	RR=0.86(0.59-1.24) <sup>b</sup> P=0.48
4	10/16 62%(35-85) <sup>a</sup>	21/36 58% (41-74) <sup>a</sup>	RR=1.07(0.67-1.7) <sup>b</sup> P=1.0
5	15/15 100%(78-100) <sup>a</sup>	20/28 71% (51-87) <sup>a</sup>	RR=1.4(1.0-1.77) <sup>b</sup> P=0.036
6a	13/16 81%(54-96) <sup>a</sup>	18/31 58% (39-75) <sup>a</sup>	RR=1.4(0.96-2.05) <sup>b</sup> P=0.19
6b	14/16 88%(62-98) <sup>a</sup>	26/31 84% (66-95) <sup>a</sup>	RR=1(0.82-1.3) <sup>b</sup> P=1.0
6c	13/16 81%(54-96) <sup>a</sup>	29/33 88% (72-97) <sup>a</sup>	RR=0.92(0.71-1.21) <sup>b</sup> P=0.67
7	10/15 67%(38-88) <sup>a</sup>	13/31 42% (25-61) <sup>a</sup>	RR=1.59(0.9-2.7) <sup>b</sup> P=0.21

<sup>a</sup> Proportion with a favourable response with 95% confidence interval

<sup>b</sup> 95% confidence interval

## ADDITIONAL COMMENTS

Out of the 36 nurses who responded to the survey, 18 (50%) provided comments, two (11%) disagreeing the SSU is unsafe and 16 (89%) agreeing it is unsafe. The major themes found amongst the comments provided by the nurses were related to the clinical safety of the SSU. 100% of those who agreed the SSU was unsafe stated there is not enough space between the beds and as a result of this, 50% of nurses stated they could not perform their duties (e.g. sheath removal or digital pressure). Closely following these two themes are lack of experienced cardiac nurses (44%), no support (44%) and the location/isolation of the SSU

(44%). Further to this is the nurse to patient ratio, where 38% of nurses thought this to be a problem. Other minor problems mentioned were poor patient facilities (25%), substandard meals being provided to patients (approximately 19%) and the discharge process (approximately 7%). Of the two nurses that thought the SSU was safe, the nurses believed the SSU is staffed well, has sufficient support and has the appropriate type and numbers of patients.

Of the 19 doctors who responded to the survey, only five provided comments; three (60%) disagreed the SSU was unsafe and two (40%) agreed it was unsafe. The two doctors that thought the SSU was unsafe

provided similar comments to the nurses, stating SSU needs to be staffed with experienced cardiac nurses and the accommodation is inappropriate. These comments highlight a discrepancy between the doctors who thought the SSU was clinically safe and the nurses who thought it to be unsafe.

## DISCUSSION

There was broad agreement between doctors and nurses that the major strengths of the SSU were in providing extra beds, facilitating efficient discharges and in handling elective and planned procedures well. There was also broad agreement between doctors and nurses that there was poor transfer of information, worse for information from referring centres than from within the hospital itself. There was also agreement the SSU worked less well for semi-urgent patients. These results highlight issues that need to be followed-up to ensure that SSUs work well and may need chart review to objectively detail the perceived shortcomings in process.

The major discrepancy between doctors and nurses was regarding adequacy of patient care in SSU; this may reflect the differing levels of involvement between doctors and nurses with the minutiae of SSU processes. These perceptions may influence staff satisfaction and retention and need to be explored more fully, perhaps through chart review and objective data on whether care met accepted guidelines and benchmarks and through patient surveys. There was also a perception the clinical safety was compromised within the SSU, although there have been no adverse events recorded on the formal database. However, up to 5% of the SSU patients have needed admission into the hospital beds. This may indicate adequate safe guards have been set to back up the SSU, or the current pre-admission criteria may need to be reviewed. Qualitative interviews with nurses and doctors may pick up 'near-misses' and improve safety processes for the future.

From the comments provided by the nurses surveyed, it was evident most of the issues revolve around the practical functioning of the SSU. A majority of nurses surveyed believe this environment to be unsafe. Of

importance was the lack of experienced cardiac nurses available to work in the SSU for any given shift. This affects their ability to perform sheath removals, apply digital pressure and give medications as the available support are surgical nurses as SSU is shared with surgical services. Many respondents commented about the issue of nurse patient ratio. The other major issue is one of location. Many nurses feel the SSU though close to the CCL, is isolated from the CCU and GCW. Other issues highlighted are the discharge process, poor patient facilities and narrow beds, poor lighting within the SSU and substandard meals for those patients admitted to the SSU. There may be additional reasons, which were not brought out by this survey, which would need a further study.

The majority of doctors surveyed found the SSU functioned well. However, they highlighted areas which required improvement to be medical support after hours, availability of experienced cardiac nurses, medical discharge process including transfer of information to the patients' general practitioner and availability of beds in the SSU.

## CONCLUSION

In summary, these results highlight certain issues that need to be addressed in the future running of the SSU including:

- improved transfer of information, both from referring centres and within other sections of the hospital;
- procedures for semi-urgent patients;
- adequacy and safety of patient care; and
- numbers of experienced cardiac nurses should be reviewed.

Although these results are based on self-reported surveys and are perceptions from a small number of staff in one SSU, they indicate potential areas for improvement and need to be addressed given that they may influence the functioning of the unit as well as staff morale and satisfaction. Follow-up using chart reviews and qualitative interviews also appear warranted.

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## APPENDIX

This is an anonymous questionnaire.

Please tick the appropriate box.

If you wish to provide additional comments regarding the SSU, please attach a separate sheet.

Professional status						<input type="checkbox"/> Doctor	<input type="checkbox"/> Nurse
1. Please rate if the environment of the SSU is adequate for patient care	1	2	3	4	5		
	1 = Poor			5 = Good			
2. Does the SSU increase efficiency to provide beds to the hospital?	1	2	3	4	5		
	1 = Poor			5 = Good			
3. Is the transfer of information between CCL, SSU, CCU and GCW adequate for clinical management?	1	2	3	4	5		
	1 = Poor			5 = Good			
4. Is the transfer of information between the referring centers and the John Hunter Cardiology Unit (JHCU) acceptable?	1	2	3	4	5		
	1 = Poor			5 = Good			
5. Is the discharge process from the SSU acceptable?	1	2	3	4	5		
	1 = Poor			5 = Good			
6. The appropriateness of the SSU to manage patients who have had:							
Semi-urgent procedures	1	2	3	4	5		
Elective procedures	1	2	3	4	5		
Planned procedures	1	2	3	4	5		
	1 = Poor			5 = Good			
7. Is the SSU clinically unsafe? (Please list your reasons on a separate sheet)						<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree