Seasonal Bed Closures in an Intensive Care Unit: A Qualitative Study

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**Objective:** To describe perceptions of the administrative procedures for seasonal bed closures and their consequences in the intensive care unit (ICU), and to critique this example of health care priority setting for legitimacy and fairness.

**Design:** A qualitative study using case study methods and interviews with key participants. We evaluated fairness and legitimacy of the bed closure process using 4 domains of the ethical framework of "accountability for reasonableness."

**Setting:** An university-affiliated medical/surgical ICU in Eastern Canada.

**Participants:** ICU clinicians (9 bedside nurses and 5 physicians), and administrators (3 ICU managers and 2 senior hospital executives).

**Main Outcome Measures:** Perceptions of ICU clinicians and administrators regarding the ICU bed closure decision-making process and its consequences.

**Results:** Emerging themes concerned: (1) bed closure rationale (including arbitrary decision making, bed closure masquerading as a code for a nursing shortage, and suboptimal evidence base for implementing closures); (2) bed closure process (viewed as unclear with insufficient prior publicity and inadequate subsequent review); and (3) adverse consequences (including safety issues, negative professional working relationships, and poor morale). Although an appeals mechanism existed, nurses were not available to staff reopened beds so this condition is only partially met. The relevance, publicity, and enforcement conditions for accountability of reasonableness were not satisfied, offering opportunities for improvement.

**Conclusion:** Clinicians and administrators are readily able to identify shortcomings in the seasonal bed closure process in the ICU. These shortcomings should be targeted for improvement so that intensive care health services delivery is legitimate and fair.

The extensive publicity in Ontario surrounding the unnecessary death of a young patient, when his local hospital was on “critical care bypass” owing to bed shortages, has helped to highlight the problem of balancing patients’ urgent health care requirements with the realities of current budgetary constraints in Canada. These constraints can drive decisions to close hospital beds either temporarily or permanently, reflecting shortages of available staff or the need to meet financial targets. Whenever hospital beds are closed, patients can experience delayed access to appropriate care. In addition, staff may experience pressure to provide care with diminished resources, which may challenge practice standards.

Seasonal bed closure is a common occurrence in Canada. In any hospital setting, decisions to close beds may reflect realities of staff shortages, changes in bed occupancy, holiday shut down of operating rooms, or budgetary constraints. In deciding whether or not to close beds an institution needs to weigh and set priorities regarding potentially conflicting patient health and human resource needs of its public and staff. This type of priority setting has been studied in various health care contexts recently and particularly in relation to cancer care. Within the intensive care unit (ICU), the priority setting process leading to bed closures is less well described. Some observational studies have quantitatively evaluated issues of access and the morbidity and mortality consequences of ICU bed shortage, including effects of discharges at night. Other professional documents have summarized principles for rationing in intensive care. To our knowledge, no studies in the ICU have addressed the bed closure process and its impact on clinical care and professional practice. The objective of this qualitative study is to describe the decision-making process and consequences of seasonal bed closures in a Canadian tertiary referral center ICU and to critique this example of health care priority setting for legitimacy and fairness.
METHODS

Design

We conducted this study in an university-affiliated medical/surgical ICU in Eastern Canada. Two beds were closed (capacity decreased from 13 to 11) during 5 seasonal closure periods (for 1-2 wk) between December 1999 and March 2001. We used case study methods15 to qualitatively study the bed closure process and its impact using the ethical framework of “accountability for reasonableness”16 to assess legitimacy and fairness.

This framework has 4 domains: relevance, publicity, appeals, and enforcement (see Table 1).

Data Sources and Data Collection

We examined hospital policy documents and correspondence regarding reasons for and the timing of proposed seasonal bed closures. From these documents, which focused almost entirely on dissemination of the decision, we identified participants in the decision-making process at the administrative level; we also used this correspondence to formulate interview questions for all study participants.

We selected the 19 study participants based on knowledge of, or experience with, the decision-making process regarding bed closures and/or its impact. The 19 interview participants (ICU nurses and physicians, ICU managers, and hospital executives), their experience, and eligibility are described in Table 2. The ICU managers and senior executives were selected on the basis of their direct involvement with the bed closure process. Participants were asked for written informed consent on the basis of security, integrity, and anonymity of original data. Semi-structured private interviews were then conducted individually by one investigator (G.M.R.), with training in research interview skills. Interviews lasted approximately 30 minutes and were audiotaped and transcribed in entirety. Participants, who were unaware of the participation of particular colleagues, were asked to address several issues relevant to their views and experience of the bed closure process (see Table 3).

Data Analysis

We used modified thematic analysis to identify key concepts and overarching themes related to priority setting decision making that emerged from participant interviews. We enhanced the validity of our findings in 3 ways: (1) participants represented several disciplines; (2) we used a consensus approach among the 4 investigators to develop the final coding system for themes emerging from the transcriptions; and (3) earlier drafts of this article were reviewed by 10 study participants representing all groups (including key administrators) as a “member check” exercise and for feedback. We used verbatim quotes from transcripts to bolster the verisimilitude of the emerging themes.

Research Ethics

The study was approved by the institution’s Research Ethics Board.

RESULTS

The 19 interviews generated 84 pages of transcripts from which 3 major themes emerged. These concerned: (1) the bed closure rationale (which included arbitrary decision making, bed closure masquerading as a code for a nursing shortage, and suboptimal evidence base for implementing closures); (2) the bed closure process (which was seen...
as unclear with insufficient prior publicity and inadequate subsequent review); and (3) the consequences (which generally were adverse including negative effects on safety, professional working relationships, and morale (see Tables 4 and 5). In Table 6, we summarize our evaluation of these themes against the domains of accountability for reasonableness. In the following section we present quotations we thought were most illustrative of the various themes.

The Bed Closure Rationale

**Arbitrary decision-making**

The ICU physicians and nurses were unsure what necessitated bed closures and in general thought the processes were arbitrary. They cited reasons such as contractual obligation to staff to honor holidays, operating room schedules, or that these decisions were "dictated to the physicians by the administration." For example one physician stated, "My impression is that it's based on a more historical precedent, that they always close 2 beds at each unit. . .and that the justification for this is based on bed utilization and, you know, requirements. . .budget cuts for nursing, basically. The drive comes from nursing, to save money, but it's cleared with the ICU physician."

All 4 participant groups thought that the number of closed ICU beds reflected arbitrary decision making: One manager said, "It is just an arbitrary number that is picked out of the air to be very honest."

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| Overwork and safety | "We had sick people that had to come here and then one of us had to leave cause her father was sick you know so we were tripled doubled or something, the charge nurse had a patient, it was just a horrible day all along . . . and so the charge nurse filled out an unsafe situation and that went to the Union."
| | "Doubling is not that bad, it is a part of life as long as you have safe doubles. But if you have 2 patients who are ventilated, who are on inotropes, who have not been stable, or one is semistable, but still on 2 or 3 drugs, you are not going to give your 100% to that patient. These sick patients have families who have needs too. So you feel like you are only doing a partial job. Not giving your best. It is not safe."
| | "We have had so much overtime just in the past couple of months I mean people are getting burnt out so you can't rely on your overtimers every shift, so we have been in situations where it has been very unsafe you know and patients aren't getting looked after properly."

| Effects beyond the ICU | "It's very frustrating for us. It's not so much that the nurses are concerned about working hard. There isn't anybody out here who won't step out to the plate and work hard, but if we're working this hard and the patients are this sick and yet we're pushing people out the door that are still very sick, what about the floors?"
| | "I think there is no doubt that you download a lot of heavier patients, who would ordinarily have stayed in the Unit an extra day, out to the floor. So I think we kind of download a lot of our problems downstream and so I think that when we get busy, everyone gets busy because they end up looking after who they ordinarily would not be looking after." |

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| Deteriorating relationships | "Well, people are getting short tempered. People are burned out because they feel like they are getting nowhere. Why put all these lovely ideas, rules, and regulations in place if you are not going to follow them? We are not supposed to be running 14 patients, having the 14th one in recovery room. That wasn't the plan. If that's the plan then open the beds and give us the staff to do it with. People are getting short tempered with each other too. Not just nurse to nurse, nurse to doctor, resident to doctor, respiratory, everybody is involved. The phone rings nonstop, and you get it across the phone!"
| Morale | "They are asked to do more with less and the average age is about 44 for a nurse and they can no longer do what they did at 25. They can't work more for less at the same rate that they used to do. More than that, their soul is not in it anymore."
| | "We are basically working the nurses we have to the point where they just can't take it any more. They are having to do so much overtime, they are having to fill in so much, that it becomes a chore and a number of them leave and that's inherently wrong. It should not be that way." |
Physicians and ICU managers viewed bed closures as attempts to manage nursing shortages. One said, “It becomes virtually impossible to manage [the ICU] in times of bed closures. There is no such thing as a bed closure for us. What that means is a nurse shortage.”

“...it’s as though sometimes people are unwilling to admit that we are facing a nursing shortage.”

Suboptimal evidence base for bed closures

Concerns were expressed by all 4 participant groups about the accuracy of the information on which bed closure decisions were made. For example an ICU physician said, “That position [data manager] was eliminated as a cost saving measure. As a consequence of that we are now using data which we know to be flawed.”

The Bed Closure Process

Lack of clarity

We found that the decision-making process was viewed as opaque. In particular, it was unclear which clinician groups were involved or consulted. Two administrators commented independently, “I don’t exactly know the dynamics of the consultation,” and “There is no policy...It’s been quite informal. Often, you know, quite frankly it’s on the fly when the physician is going down the hall.”

Insufficient publicity

Both clinicians and administrators were concerned about the lack of publicity regarding forthcoming bed closures and independently expressed this concern as follows, “I totally think we should be more up front with them. Nothing gets a family more angry than to feel that the decisions are being made with their loved ones that are arbitrary, without reason.”

“I think the biggest thing is we have to be honest about what is happening, not just with ourselves, but with the public as well. People need to know what is happening, and where we sit, what they can expect, because I think our biggest problem right now is we keep telling people that everything is fine. You are going to get the highest quality of care, going to get this and that. . . when you need something it is going to be there! That is not reality!”

Inadequate subsequent review

Clinicians, and nurses in particular, were less confident than administration about the nature of any policy review process. Two nurses commented independently, “Look at the people writing the policies, they don’t work in this setting, they don’t know what its like—have them walk a mile in my shoes here and then write the policies.”

“Therefore, I think that they still won’t get the picture. They will continue to try to do bed closures and we will still continue to try to provide the care with less numbers.”

Bed reopening was deemed reasonably straightforward by all groups, but not always. Administration’s view was of relative flexibility, “And so what we do is empower that front line to open—of course that makes an assumption they can get the staffing resources to open beds.”

Adverse Consequences

Nurses consistently described stresses of working during a busy recent March break bed closure
period. Bed closures and understaffing were perceived to have a significant impact on patient safety, in and beyond the ICU, and on staff morale (see Tables 4 and 5). In addition, several nurses and physicians commented on deteriorating interpersonal professional relationships that worsened during seasonal closures (Table 5). Those who worked extra shifts during holidays paradoxically felt resentment when additional shift work went underappreciated. “We were sitting at 8 [RNs] for 11 beds at the start of a lot of shifts over Christmas. Well, where are you going to get help if we do hit 11 beds. The comment when you come back, is... Oh I see you got lots of overtime over Christmas... not I’m glad you came in over Christmas to help out. It’s I see you got lots of time! Its very insulting.”

One administrator’s comment regarding morale was illuminating for its frankness and in its recognition of impact on patients, “We try and punch all that stuff through a small pipe we burn out the staff we destroy the morale and quite frankly we piss off the patients.”

Meanwhile, and in regard to the most recent bed closure period, another administrator stated, “Well I didn’t hear anything that was negative about it. So my assumption was that it was OK.”

**DISCUSSION**

In this study we describe perceptions of administrative procedures at a Canadian university-affiliated hospital related to seasonal bed closures and their consequences in the ICU. These perceptions were provided by participating hospital administrators (senior executives and managers) responsible for implementing these bed closures and by clinicians (physicians and nurses) who experienced the impact. We believe that the comments made by experienced and dedicated bed-side clinicians represent much more than discontent from a sense of frustration. Rather, they show the reality of trying to continue to cope with consistent patient workloads in an era of diminishing resources. Our study is novel in its qualitative approach to this example of priority setting in acute care medicine. This study documents the mismatch between the views and expectations of clinical staff in an ICU and the misunderstandings between the ICU clinicians and the hospital administration in regard to bed closure issues, though this may not come as a surprise to ICU practitioners who have to deal with consequences of down-sizing of ICUs. We used a bioethical model (accountability for reasonableness) to evaluate ICU bed closures against a framework for legitimate and fair priority setting.14,16

According to accountability for reasonableness, institutions engaged in a priority setting have a valid claim to legitimacy and fairness if they satisfy all 4 conditions of relevance, publicity, appeals, and enforcement (see Table 1).14,16 In this study, the descriptions we recorded failed to satisfy these conditions (see Table 6). Our results highlight opportunities based on these conditions to improve institutional processes in general and ICU bed closure decision making in particular. The relevance condition would be satisfied more effectively if key participants were involved more closely in the priority setting process. The publicity condition would be better served if decisions and their rationales could be made publicly accessible in the hospital’s newsletter, on its web site or in local newspapers. Collection of accurate data about the acuity and severity of patient illness to inform bed closure decisions would seem to be fundamental and was perceived as necessary for optimal planning. Accurate data also can serve as a basis for an appeal. In addition, if the real reason for bed closure is a nursing shortage, then we believe that an institution should state this explicitly. Solutions to the problems of nursing shortage may include improved human resource management17 and coordinated and effective triage at city and provincial levels at times of resource stress.

The single study setting limits the generalizability of our findings to other university-affiliated health care organizations facing similar seasonal bed closure issues. Extending our study to other hospitals would not only increase the validity and generalizability of our findings, but also serve as a starting point for more broad-based multicenter studies of priority setting issues in intensive care. We acknowledge that the participant nurses may not be representative of the entire ICU nursing staff. In addition, use of other data collection methods (eg, focus groups) would have further strengthened our findings. We accept that this study has identified a problem but not whether any specific intervention has resulted in improvements to the bed closure process. However, bed closure issues are of increasing relevance in many clinical settings and nursing shortages in the ICU is an increasingly important issue in North America in
general. Others may benefit from our experience when dealing with priority setting decisions and their ramifications elsewhere. We did not seek patient and family opinions nor did we collect data on nursing shortage caused by illness or injury. We did not attempt to directly measure patient-centered outcomes (eg, the numbers of delayed or declined admissions), although many participants alluded to safety issues. It was neither our intention to critique the ethical framework or its domains, nor to ask our participants to conduct such an analysis.

Our study clearly showed that experienced clinicians and particularly administrators were readily able to identify numerous shortcomings in the seasonal ICU bed closure process in their own institution and for which they were responsible. Two particularly distressing consequences were the potential negative effects on patient safety and on staff morale (Tables 4 and 5). Increases in patient-nurse ratios and the need for nocturnal discharges from the ICU has been associated with excess ICU mortality. In today’s health care climate of declining morale and increasing professional frustration, clinicians and administrators together should target shortcomings in priority setting processes for improvements. This is particularly relevant to the context of an aging population and a projected increased need for intensive care. Improvement initiatives require clear understanding of the bed closure process. Engendering priority-setting processes that are explicit, well-publicized, and involve multiple stakeholders has led to increased resource allocation in response to need.

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As the evidence base for this approach grows, our goal should be legitimate and fair decision making about acute care bed closures in health care institutions today and throughout the year.

REFERENCES

19. Smith R: Why are doctors so unhappy? There are probably many causes, some of them deep. BMJ 322:1073-1074, 2001