



# Well-performed interdisciplinary rounds as a strategy to increase quality of care in the intensive care unit

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## Abstract

### Introduction

An interdisciplinary round is a patient-focused communication system aimed to agree to, understand and execute the appropriate plan of care for the patient by specialists from different disciplines. In the intensive care unit, interdisciplinary rounds are increasingly recommended because ineffective interdisciplinary communication among medical teams is a leading cause of preventable patient harm and a source of severe conflicts.

In recent years, intensive care unit management and staff have conducted these interdisciplinary rounds by bringing different disciplines in the same meeting to discuss diagnosis and disease management of the intensive care unit patient. Nevertheless, it proves difficult to adequately perform these meetings, because each profession within the intensive care unit has a unique perspective and professional culture. Previous studies about interdisciplinary rounds were in particular survey studies, which described the differences between doctors and nurses regarding status/authority, gender, training and patient care responsibilities. We therefore developed performance improvements, based on 60 videotaped interdisciplinary rounds, literature reviews and Delphi Rounds, aimed at supporting and

increasing the quality of performance in IDRs.

We discuss here the applications of these performance improvements with reference to processes within interdisciplinary rounds as a strategy for improving ICU care.

### Conclusion

This review discusses the observation and intervention applications of performance improvements for interdisciplinary rounds. Depending on the characteristics of the intensive care unit, such as staffing level and open versus closed unit type, work rounds being interdisciplinary rounds in crowded hallways, or teaching obligations, the intensive care unit staff have some options to choose for which instrument(s) to apply.

### Introduction

The implementation of interdisciplinary teams in the intensive care unit (ICU) to provide patient-centred care has focused attention on the relevance of interdisciplinary communication. Previous studies have shown that if communication, teamwork and problem solving among ICU staff is of inferior quality, this may lead to poor understanding of shared goals and worse patient outcome<sup>1-3</sup>. In these situations, vigorous efforts are needed to critically examine and increase the quality of care and teamwork within ICU teams. Meaningful and sustained improvement of ICU performance requires a systems-oriented approach via a persistent process of studying and changing the ICU structures and processes. This approach involves the following steps: (i) measuring relevant indices of ICU performance, (ii) making

interventions aimed to improve performance and (iii) remeasuring the indices to document the effect of the intervention<sup>4</sup>.

In recent years, interdisciplinary rounds (IDRs) in the ICU were considered to be important to support quality improvement in patient care. For this reason, IDRs in the ICUs are endorsed by the Society of Critical Care Medicine<sup>5</sup>. An IDR is a patient-focused communication system aimed to agree to, understand and execute the appropriate plan of care for the patient by specialists from different disciplines<sup>6-8</sup>. IDRs reflect the main processes within the ICU, such as the continuity of care, information transfer, teaching obligations and effective communication and planning within the team<sup>9,10</sup>.

Since there is no gold standard for well-performed IDRs, the quality of IDRs vary because rounds are complicated by factors including limited time, multiple targets, patient instability, highly technical therapies and varied responsibilities of different providers<sup>5,11-14</sup>. After extensive reviewing of literature and analysing videotaped IDRs by Delphi Rounds, we developed a new tool, the IDR Assessment Scale, which includes a gold standard. In this tool, nineteen quality indicators of the IDR Assessment Scale are subdivided into two domains, namely 'patient plan of care' and 'process'. The 'patient plan of care' domain reflects the technical performance from the initial identification of a patient-related goal to the evaluative phase. The 'process' domain reflects the ICU processes that are important to ensure that the appropriate plan of care is agreed upon, understood and performed as

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planned by all involved caregivers. Ten out of nineteen quality indicators are *essential* indicators. To meet the gold standard for well-performed IDRs in the ICUs, these essential indicators need to be rated as 'yes' or 'not applicable'<sup>7</sup>.

Development of the IDR Assessment Scale, including the gold standard and a survey, was a starting point of several performance improvements for IDRs in multiple studies<sup>6-8</sup>. In this review, we discuss the application of these tools, and the potential for performance improvements in IDRs in general ICUs.

### Measuring relevant indices of ICU performance

#### *Measuring quality of patient plan of care discussions*

An objective assessment of the care plan of ICU patients with multiple conditions can help identify important information that otherwise may not be noticed, such as inadequacies in standard of care, need for patient discharge planning or exploration of patient care alternatives (see Table 1)<sup>7,12,13</sup>.

In one report, we videotaped and analysed 60 IDRs including 495 patient discussions in two hospitals in five, closed-format, units for adult patients. We showed that the ICU staff that was located in the university medical centre and which organised daily IDRs had surprisingly lower 'yes' ratings on the quality indicators 'the main problem discussed' and '(potential) goal formulated' and 'long-term interventions discussed'. The quality indicators 'secondary problems discussed' and 'short-term interventions discussed' revealed higher 'yes' scores<sup>15</sup>. This may indicate that the patients' main problem is not clear to or has not been shared with all ICU team members. Such findings can be helpful to a program designed to improve team cooperation and shared understanding of treatment and care goals.

**Table 1 Performance improvements: The IDR Assessment scale including the patient plan of care and process domain and the essential indicators to guide and train leadership skills**

	IDR Assessment scale	Checklist leading IDR
	Containing	Containing
<b>Domain: Patient plan of care</b>		
<b>Main problem discussed</b>	X	X
<b>Diagnostic plan discussed</b>	X	X
<b>The (provisional) goal formulated</b>	X	X
<b>Long-term interventions (≥ 16 h) discussed</b>	X	X
<b>Patient greatest risk discussed</b>	X	X
Secondary problems discussed	X	
Plan of care for secondary problems discussed	X	
Short-term (<16 h) interventions discussed	X	
<b>Domain: PROCESS</b>		
<b>Expectations made clear by consultants</b>	X	X
<b>Input of junior physicians encouraged</b>	X	X
Are there questions for junior physicians?	X	
Junior physician asks for advice/information	X	
Leader checks whether junior physician knows what to do according to patient plan of care	X	
<b>Input of nurses encouraged</b>	X	X
Are there questions for nurse?	X	
ICU nurse acts proactively and assertively about patient plan of care	X	
Leader checks whether the nurse knows what to do according to patient plan of care	X	
<b>Summary given</b>	X	X
<b>It is clear who is responsible for performing tasks</b>	X	X

IDR, Interdisciplinary round. Essential indicators are noted in bold text

Clearly, the list of eight quality indicators within the domain 'patient plan of care' of our IDR Assessment Scale has the benefit of being simple; it is derived from daily practice and is easily applicable for real-time rating.

#### *Measuring quality of team process*

In regard to the team process, studies within the acute medical setting found that open communication, and in particular where listening to trainees and nurses was concerned, was not only associated with a decrease in

adverse events, but it also improved the atmosphere and motivated nurses to stay in that environment<sup>15-17</sup>. A less open and less professional culture may lead to conflicts or needless irritation between ICU medical and nursing staff with perceived differences regarding responsibilities, status and authority<sup>1</sup>.

The domain 'process' of our IDR Assessment Scale is an objective tool to observe the interdisciplinary approach; it assesses the transfer of information and coordination and

includes indicators about teaching obligations (see Table 1)<sup>12</sup>.

Our results of videotaped and analysed IDRs in two hospitals showed that the ICU staff of the centre which organised *daily* IDRs had higher 'yes' ratings on the quality indicators that reflected the input of the ICU nurse, such as 'are there questions for the nurse'<sup>7,8</sup>. Quality indicator 'summary given' was rated low. Both hospitals had a high 'yes' rating on the indicator about the consultant specialists and low 'yes' ratings on indicators about junior physicians reflecting teaching obligations. The indicator 'it is clear who is responsible for performing tasks' was also rated low in both hospitals. Upon asking, leading intensivists confirmed this low score on coordination and recognised that appointments made during IDRs frequently needed confirmation or extra explanation to junior physicians and ICU nurses because of different interpretations. This phenomenon could be an explanation for or may contribute to miscommunication among ICU team members.

#### *Measuring mutual agreement about patient plan of care*

To crosscheck the results of the analysed patient discussions with (parts of) the IDR Assessment Scale, instead of measuring patient outcomes, a 14-item survey was developed. The survey was adapted from Pronovost's 'daily goal sheet' and aimed at measuring how information about patient care plan among the different disciplines is *interpreted* apart from whether or not it is rated<sup>13</sup>. The survey was obtained directly after daily IDRs.

From the results of 90 filled-out surveys, about 30 ICU patients demonstrated that the range of mutual agreement with patient care between the intensivists, junior physicians and ICU nurses was low after IDRs. Before our survey, most ICU care professionals considered their IDRs to be performed adequately. Clearly,

our observations suggest otherwise. We found a discrepancy between ICU nurses and junior physicians regarding perceptions about patient's condition and the plan of care. Overall, intensivists and ICU nurses tended to agree more with each other.

#### **Making interventions aiming to improve performance**

##### *Training program leading skills for ICU fellows*

From the perspectives of both patient plan of care and team processes, strong leadership includes a focus on goals to improve the ability of team members to work in a coordinated and collaborative manner. Strong leading skills also concern a clear understanding of joint responsibilities, along with continuous active cross-checking, to prevent key activities from escaping attention. All these aspects of leadership contribute significantly to a good patient outcome, such as reduced length of stay<sup>9,14,18</sup>.

Considerations to develop a leadership training to improve performance were the low ratings on quality indicators of the IDR Assessment Scale in two ICUs. Secondly, a training program for ICU fellows corresponds to the hierarchical structure of most ICU teams. Third, training fellows, future intensivists, is a less costly intervention to influence team behaviour than training the entire current ICU medical and nursing staff. Finally, we also think that leadership behaviour is an observable, learnable competency, more than a trait<sup>16,19</sup>.

We conducted a non-randomised intervention study in four units in our university medical centre. An intensive 1-day training session was given in a simulated environment with workplace-based feedback sessions. All participants were fellow intensivists who had no formal training in leading IDRs. The ten *essential* quality indicators of the IDR Assessment Scale were used to assess and train leadership skills<sup>7,8</sup>.

During the training program, all participants improved their leadership skills. More interesting, however, is whether this improvement retains in daily practice.

#### **Remeasuring the indices to document effects**

##### *Post-test of the quality of the performed IDRs*

The ten *essential* quality indicators of the IDR Assessment Scale were used to re-measure the efficacy of the intervention<sup>7,8</sup>. Re-measurement included nine videotaped and analysed IDRs (total 99 patient discussions) lead by the (fellow) intensivists who received the intervention (leadership) training.

Results of 99 patient discussions after training of leading skills training, guided and measured with the ten essential quality indicators, showed that this intervention was able to improve quality of performed IDRs in the ICUs. Furthermore, the sustained effect of the intervention, as measured at six weeks after the training, suggested that the training was still effective and useful for daily practice<sup>8</sup>.

#### **Discussion**

The authors have referenced some of their own studies in this review. These referenced studies have been conducted in accordance with the Declaration of Helsinki (1964), and the protocols of these studies have been approved by the relevant ethics committees related to the institution in which they were performed. All human subjects, in these referenced studies, gave informed consent to participate in these studies.

It appears to be difficult to reflect on own performances in daily IDRs. The attention of clinicians is claimed by medical choices in diagnostics and therapeutic strategies; however other aspects such as focus on short- and long-term goals in care and coordination of activities should also be well-run. Attention to the

communication process is easily confused with friendliness, as opposed to ensuring that the choices that have been made have been applied appropriately and uniformly.

A starting point of well-performed IDRs and strong leading skills is the focus on goals. Goals refer to both clinical outcomes and important measurable processes concerned with the delivery of care of high quality and are especially important in interdisciplinary as opposed to unidisciplinary rounds<sup>14,20</sup>. From the perspective of the team process, a focus on goals improved the ability of team members to work in a coordinated and collaborative manner<sup>18,21</sup>. A unifying purpose is helpful in removing the traditional hierarchical barriers between nurses and physicians, because the focus is less on individual achievement and more on common effort and goals. Research in intensive care found that the degree to which individuals reported to understand patient care goals depends on perceived communication and openness among team members<sup>22,23</sup>. Although the importance of shared goals is reported in several studies about teamwork and collaboration is associated with improved outcome, it is an underestimated aspect of daily ICU care<sup>22,23</sup>. From that point of view, improving ICU performance by targeting interdisciplinary communication seems to require a shift of paradigm. It is relevant to evaluate the quality of IDRs on a regular basis with a quantitative instrument in order to guide and establish this process.

Regarding staff satisfaction, medical specialists appear often to be more satisfied with communication than nurses<sup>24</sup>. Although the ICU nurses' knowledge and skills have made great strides in recent years, this had apparently little or no effect on cooperation and sharing ideas about goals and care in individual patients. Consequently, ICU nurses feel that their

knowledge and skills as underappreciated<sup>25,26</sup>.

Regarding patient and family satisfaction, the different ways in which the leading intensivists lead the IDRs can generate confusion among the junior physicians and ICU nurses regarding the patient care plan. As a consequence, they may communicate different or unjustified information to patients and family members unnecessarily contributing to a state of confusion or anxiety. We feel that strong leading skills by intensivists and cross-checking mutual agreement of important aspects of patient care (during IDRs), before communication with family or patients takes place, will improve patient and family satisfaction.

Finally, a problem inherent to videotaping IDRs is the awareness of being videotaped, and this may affect the discourse in IDR that is being evaluated. Participants need to be strictly informed about the purpose of this rating and that their videotaped IDRs are not used for illustration of any behaviour. Although the leading intensivists declared to forgetting that they were being videotaped after just one patient presentation, we are not sure whether this can be generalised for the individual junior physician or ICU nurse.

### Conclusion

Assessment of the quality of performed IDRs gives insight into the main ICU processes such as the continuity of care, information transfer, teaching obligations and whether or not the communication and planning within the team was effective. This review discusses the observation and intervention applications of performance improvements for IDRs. Depending on the characteristics of the ICU, such as staffing level and open versus closed unit type, work rounds being IDRs in crowded hallways, or teaching obligations, the ICU staff has some options when choosing which instrument(s) to apply.

### Abbreviations list

ICU, intensive care unit; IDR, interdisciplinary round.

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