

ORIGINAL ARTICLE

Suggested improvements of the general cardiology ward round – An opinion paper

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ABSTRACT

General cardiology ward rounds have become more complicated owing to higher production demands combined with continued efforts to improve patient safety. The traditional ward round is now outdated and needs changing to better suit the current environment. After describing the traditional ward round and some alternative rounding systems tested in Sweden, we suggest some simple measures to improve efficiency, patient-centeredness, and patient safety. This article is addressed mainly to health care leaders and physicians in a position to make changes to rounding structures and hospital organization. We hope that this analysis will prompt a debate that will lead to eventual improvements in health care and work satisfaction.

Key Words: Ward round, Patient-centered care, Efficiency, Communication, Time allocation, Checklist, Work distribution

1. INTRODUCTION

There has been a gradual decrease in the number of hospital beds in Sweden^[1,2] and a resultant requirement for more efficient patient care, including a shorter duration of in-hospital care. This must be achieved without compromising patient safety.^[3] Higher workloads have contributed to difficulties in recruiting and retaining nurses in Swedish public health care.^[4] To break this ongoing vicious circle, measures are needed to improve working conditions, especially for nurses.

In this opinion paper, we focus on the traditional ward round, contrast it with alternative rounding models tested in Sweden, and comment on the potential strengths and shortcomings of these alternatives. Finally we suggest a novel holistic approach to rounding in general cardiology wards that includes

a time allocation model and checklists. This approach is guided by our own experiences and previous research findings^[5,6] (including lessons from aircraft management^[7]) and is intended to improve patient-centeredness (see Table 1) and patient safety, and release more time for nurses. Focusing on cardiac care rounding, our main objective is to start a debate that will hopefully lead to improvements and further research in the field.

Table 1. Main components of patient-centeredness

Components of patient-centeredness
<ul style="list-style-type: none"> • Autonomy • Comfort • Confidentiality • Informed decision making

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1.1 Importance of patient-centeredness

Patient-centered care (see Table 1) emphasizes informed decision making in order to influence treatment choice and improve outcomes and quality of care.^[8]

However, patients do not always receive sufficient information from physicians to enable them to make informed decisions. For example, according to one study, only 3% of patients with stable angina received sufficient information to make an informed decision about undergoing coronary angiography and possible subsequent percutaneous coronary intervention.^[9]

Therefore, one important aim in planning a new system of ward rounding must be increased patient-centeredness (see Table 1).^[10] The system should facilitate patient involvement in decisions about treatment and care, improve communication with patients about upcoming treatments and preliminary discharge dates,^[11] and promote confidentiality.

1.2 Measures to improve patient safety

Any plans for new ward rounding systems should seek to increase patient safety. Patient safety does not depend solely on good medical knowledge. Crew Resource Management, a model originating from the aircraft industry, advocates the

use of different systems to reduce errors using standardization and checklists.^[12] Checklists can also reduce complications and facilitate early discharge of patients.^[13]

Both written and oral communication of important patient information should follow an established model of communication, such as the Situation, Background, Assessment, and Recommendation (SBAR) model (see Table 2).^[14] The SBAR ensures structured communication and can improve outcomes and nurse–physician communication.^[14] Research in anesthesiology shows that this model can lead to improvements in the safety climate and can decrease incident reports owing to communication errors.^[15] The SBAR has been used to improve communication with colleagues, patients, and patients’ next of kin.^[16]

1.3 Existing rounding models

A traditional Swedish round usually lasts a couple of hours and involves a discussion between nurses and physicians.^[17] Decisions are mostly based on the information available in medical records. After the round, patients are told about the care decisions. There are several alternative rounding models,^[18–26] which aim to increase efficiency and/or patient-centeredness.

Table 2. SBAR model

Abbreviation	Meaning	Description
S	Situation	A brief description of the problem
B	Background	Relevant information related to the situation
A	Assessment	Findings and thoughts
R	Recommendation	Recommended action

In “need-governed rounding” (“behovsstyrd rond” in Swedish),^[18–20] patient needs guide care and are continuously reassessed. The physician regularly ranks the patients’ needs and visits the most critically ill patients first.^[18] Newly arrived or deteriorating patients are rounded in the morning, other patients are rounded throughout the day, and patients who have received prolonged hospital care or who are ready for discharge are visited less frequently.^[18]

In the “bedside rounds” used in an intensive care unit in Stockholm, the patient is directly rounded in the patient room.^[21] Physicians and other health care professionals stand together at the patient’s bedside, conducting examinations and updating themselves about the patient’s condition; this produces a context of continuous care.^[21]

In Kungälv,^[23–25] the “second round” (“andra ronden” in Swedish) model is used. Patients are fetched one at a time into a room in which the whole patient team is sitting. In this

type of rounding, the whole care team hears what is said and participates in the patient’s whole care process.^[23]

Sometimes the contribution of allied health workers (e.g., dietitians, physiotherapists, and social workers) is paramount to patient care. A multidisciplinary team round is an opportunity to jointly plan and evaluate the patient’s treatment and transfer of care.^[26] The multidisciplinary round is patient-centered and based on the needs of the patient and their carers.^[26]

At the cardiac care unit in Jönköping,^[27] “simple” patients are discharged before the actual round. In Varberg, a complementary pre-round is conducted at a white board after the clinic’s regular morning meeting (at around 9.00 a.m.). All admitted patients in the ward are discussed briefly at the pre-round. Physicians subsequently visit all patients and then attend a sit-down round with the nurse.

1.4 Comparisons between different rounding systems

Traditional ward rounding, in which nurses and physicians meet in a room^[17] and then go round to meet the patients and inform them about care decisions, do not promote patient-centeredness.

Need-governed rounding always leads to prioritization of the sickest patients; however, there is a risk that patients will be discharged early, be down-prioritized, or have to remain in the ward longer than necessary.

The sole use of bedside rounds in the patient rooms prevents physicians and other health care professionals from discussing the patient's condition and treatment calmly and in privacy, without the patient present. In complex cases, several specialists may need to be involved and they may need time to consider and produce a balanced treatment plan.

To increase confidentiality and patient co-determination, some hospitals have created "patient-centered rounds".^[23–25]

The "second round" model, in which patients are individually fetched into a room to discuss their care with the health team, increases patient-centeredness, but has the following potential weaknesses:

- (1) The whole ward workforce is occupied, often in a narrow room, for sometimes 2–3 hours.
- (2) This model is not suitable for patients with mobility problems or patients with reduced cognition or consciousness.
- (3) The admittance of emergency patients in the morning may disrupt planned sessions.
- (4) It is difficult for team members to express different opinions in front of the patient before consensus has been reached.
- (5) If patients see physicians reading through medical guidelines to refresh their memory, they might develop doubts about the physicians' knowledge.
- (6) If a series of patients are seen in the same room, this may spread infections and breach confidentiality.
- (7) The allocated rounding time might be insufficient to inform the patient about possible treatment options, allow them to consider each alternative, and enable them to make a decision about treatment.
- (8) Physicians may lose control over a ward if there are several emergencies and a high patient turnover.
- (9) Patients might be promised a discharge date or a treatment plan that must be changed if new examination results arrive later in the day. In an emergency ward, many patients may have to be fetched to the room more than once daily. This suggests that it is sometimes better to wait and talk to patients when all important

investigations are finished or have been summarized.

- (10) The increased time demands and involvement of the whole workforce in this model means that staffing may have to be increased to maintain acceptable levels of patient safety.
- (11) Should nurses, who are experts on nursing care, be forced to listen to medical discussions that keep them from their ordinary tasks?
- (12) How do patients feel about being observed by the whole workforce? Many patients prefer to have time alone with their responsible nurse or physician.

A comparison of findings from the Swedish national patient questionnaires from 2010 and 2012 showed no important differences in patient experiences of care before and after the implementation of this model.^[23] The Department of Internal Medicine in Eksjö has implemented a similar organizational change, and staff have reported that this method of rounding takes more time.^[28]

Multidisciplinary ward rounds seem to be most beneficial for complex patients that need multiple interventions from different health care professionals, like trauma,^[29] stroke,^[30] or cancer^[31] patients. However, multidisciplinary ward rounds may be more time consuming for patients with an isolated problem or symptom, such as chest pain.

A rounding model like the Jönköping one, in which "simple" patients are discharged before the ordinary ward round, consumes important preparatory time before the ordinary ward round starts and prevents residents from gaining a complete overview of the ward. The arrhythmia ward in Lund, Sweden, conducts many repetitive ablation procedures and uses a similar model. This involves early discharge of patients who have undergone standard procedures and appears to work quite well for this type of patient. Table 3 compares different rounding models.

2. OUR SUGGESTIONS FOR DEVELOPMENT OF THE MEDICAL WARD SYSTEM

Our proposed rounding system features seven dimensions (see Table 4). These were identified from the preceding literature review and from author experiences.

2.1 Time allocation system

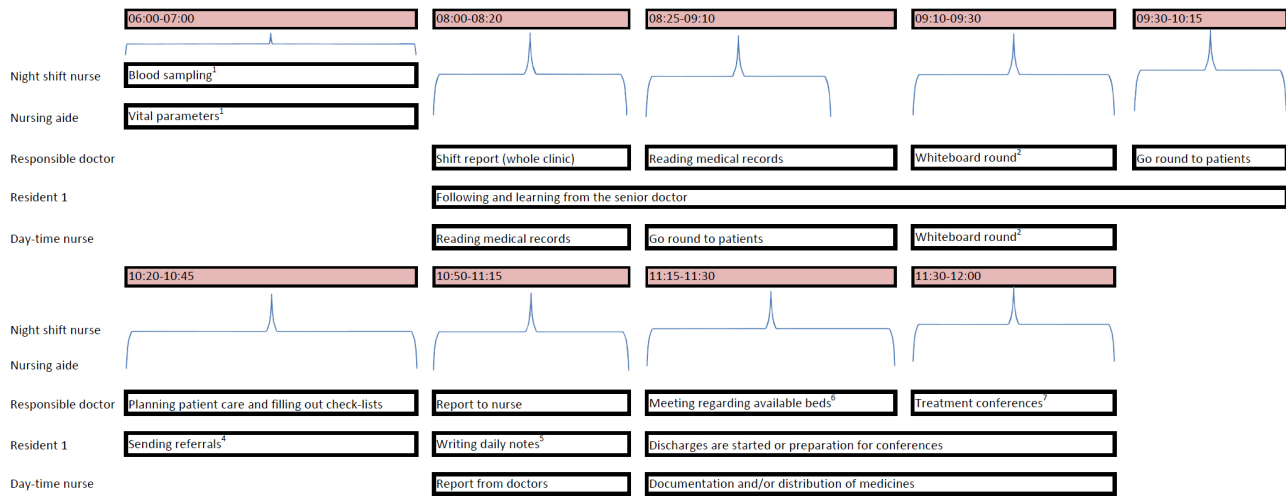
Many nurses today do not have enough time to carry out basic nursing care measures.^[32] We therefore suggest a novel time allocation system (see Figure 1), one objective of which is to release more time for nurses by not requiring them to attend extended rounds with physicians. This extra time could be used to provide patients with more nursing care.

Table 3. Comparison of different rounding systems

Rounding system	Pros	Cons	Opinions
Traditional ward round	Well-established	Less patient-centeredness	“It is easy for junior physicians to move between wards without having to learn a new system” “Flexible”
Need-governed rounding	Leads to prioritization of the sickest patients	Patients that could be discharged early are down-prioritized	“One might lose an overview of the ward”
Bedside rounds	Increases patient involvement Increases teamwork	Difficult to maintain confidentiality in rooms containing more than one patient	“Not all patients want to hear the team members discussing their work-up and treatment”
The second round	Increases confidentiality, teamwork, and patient-centeredness	Not all patients want to be surrounded by the whole workforce It is difficult for the team to express different opinions in front of the patient	“The system takes more time than traditional ward rounding”
Multidisciplinary team ward rounding	Care goals and plans become clear to everyone	Might be superfluous and time consuming for treatment of standard patients	“Not all patients need multidisciplinary involvement”
Discharge of “simple” patients before the actual ward round	Patients that are regarded as fit for discharge do not need to wait until the afternoon Hospital beds are freed in the morning for new patients	Consumes important preparatory time before the ordinary ward round, particularly for junior physicians	“Residents will often not have a full overview of the ward”
Complementary pre-rounds	Can be used for efficient work allocation among team members	Often becomes a “light” ward round, as it is not always easy to separate it from the ordinary round	“The pre-round is helpful to prioritize between tasks and get introduced to the team early in the morning”

Table 4. Our suggested medical ward rounding system

Dimension	Advantages for physicians	Advantages for nurses	Advantages for patients
Time allocation system	Fresh lab data and National Early Warning Score parameters ^[25] for all patients early in the morning, which is important for treatment planning	Frees up time	Increases patient safety and hopefully allows more time with nurses
Checklists for blood sampling and vital parameters for standard patients on the cardiac ward	Frees up time	Frees up time and probably increases work satisfaction	Increases patient safety and probably shortens length of stay
Complicated patients discussed in conference form	Increases quality of care		Increases patient safety and probably shortens length of stay
Communication in the hospital	Increases work satisfaction	Increases work satisfaction	Increases patient safety
Measures to increase patient-centeredness			Increases patient safety and satisfaction with care
Measures to increase work satisfaction for nurses		Increases work satisfaction	
Optimization of the architecture of the ward	Increases work satisfaction and reduces stress	Increases work satisfaction and reduces stress	



1. Should be available when doctors start reading about the patients at 08:25. According to standard checklists², if doctor has not requested otherwise.
 2. Nurse updates white board with "key points" regarding planned investigations or treatment
 3. At least for chest pain, dyspnea, confirmed acute coronary syndrome, heart failure and atrial fibrillation (see example in this article)
 4. Standard referrals, can be written by nurses (cardiac ultrasound and pulmonary x-ray)
 5. According to SBAR with "key points"
 6. With head of ward and hospital bed coordinator, where current situation and planned admissions and discharges are discussed
 7. For discussion of cases involving more than one specialty, like acute coronary syndrome and concomitant gastrointestinal bleed.

Figure 1. Time allocation model

The time allocation model also ensures that physicians receive fresh laboratory data and National Early Warning Score parameters^[33] for all patients on the ward as early as possible, so that this data can inform their reading of patient medical records. The model offers a clear structure for morning work, but does not regulate afternoon work. The latter work could be more flexible and focus on the following tasks:

- (1) Talks with relatives
- (2) Cardiac conferences
- (3) Emergency admissions, discharges, and other unexpected situations
- (4) Bedside education for younger colleagues
- (5) Signing of electronic patient charts

However, we suggest that need-governed rounding should be used for sicker patients arriving at the ward in the afternoon, to avoid delaying specialist assessment to the following day, and that critically ill patients are handled with complementary bedside rounds.

Our care model is a development and synthesis of existing rounding models. Compared with the traditional care organization and rounding system in Sweden, our proposed system has several potential advantages:

- (1) Nurses' time is not taken up with daily meetings in the physician's office (which can sometimes last for more than 2 hours) during the morning round.
- (2) The responsible physician does not make any crucial care decisions before having met the patient and created his/her own updated "image" of the patient's condition, or without having heard the patient's own

wishes. This is important, as the physician's assessment is not solely based on vital parameters and laboratory results. The model therefore leads to increased patient-centeredness.

2.2 Checklists for blood sampling and vital parameters for standard patients on the cardiac ward

We suggest that symptom- and/or diagnosis-specific checklists are used for the following common patient groups:

- (1) Unspecified chest pain (Figure 2 shows an example)
- (2) Acute coronary syndrome
- (3) Unspecified dyspnea
- (4) Heart failure
- (5) Atrial fibrillation

A general checklist has already been developed to ensure that all aspects of care on a team's general internal medicine ward round have been adequately addressed.^[34]

2.3 Complicated patients discussed in conference form

For patients who deviate from the "standard flow", team conferences should be arranged as necessary, in which other specialists are invited to contribute their expert knowledge. For example, such conferences may be relevant for patients with myocardial infarction and concomitant gastrointestinal bleed or pronounced renal dysfunction.

2.4 Communication in the hospital

Important communications, in both oral and written daily note form, should follow an established and evidence-based communication model, such as the SBAR.^[14-16]

Day 2 until discharge is filled in by the doctor at the ward round

Date of admission							
Id-number							
Name							
Allergies							
	Admission day	Day 2	Day 3	Day 4	Day 5	Day 6 until discharge	Discharge day ³
Blood sampling							
Troponin T ²	Yes						
NTproBNP	Ask doctor						
Electrolytes (Sodium, Potassium, Creatinine, Albumin)	Yes						
CRP	Yes						
Leucocytes	Yes						
Thrombocytes	Yes						
Lipids	Ask doctor						
Glucose	Yes						
HbA1c	Ask doctor						
Other blood sampling	Ask doctor						
Controls							
NEWS-frequency	X4 (if not more often according to medical record)						
Goals							
Saturation	Ask doctor						
Weight	Yes						
Fluid balance up-coming 24 hours	Ask doctor						
Urinary production	Ask doctor						
Fluid in	Ask doctor						
Potassium	Ask doctor						
ECG							
Admission-ECG	Yes						
Resting-ECG at recurring chest pain	Yes						
Telemetry alarms documented by nurse	Yes						
Clinical status							
Leg edema	Above foot sole						
Pulmonary auscultation	Daily						
CPR-decision and maximal level of care							
No CPR	Ask doctor						
Only defibrillation of defibrillable rhythms	Ask doctor						
Patient informed about CPR decision	Ask doctor						
ICU-care	Ask doctor						
Measures to increase patient centeredness							
Patient informed about who is responsible doctor?	Yes						
Patient informed about planned care and upcoming investigations?	Yes						
Investigations							
Cardiac ultrasound?	Ask doctor						
Ergometer?	Ask doctor						
Myocardial scintigraphy?	Ask doctor						
Coronary CT?	Ask doctor						
Pulmonary x-ray?	Ask doctor						
Before discharge							
Patient informed about planned discharge date?	When decided						
Contact with primary care / municipality before discharge?	When appropriate						
Dose dispensation updated?	When appropriate						

1. Not PAH-workup, already diagnosed pneumothorax or pneumonia
 2. Normally 3 troponin T measurements
 Inform doctor if change>20% between lowest and highest value or value>40 ng/L
 3. Discharge blood sampling

CPR: Cardiopulmonary resuscitation
 CRP: C-reactive protein
 CT: Computed tomography
 ECG: Electrocardiography
 ICU: Intensive care unit
 NEWS: National Early Warning Score
 NTproBNP: N-terminal pro-B-type natriuretic peptide
 PAH: Pulmonary arterial hypertension

Figure 2. Checklist for patients with unspecified chest pain¹

2.5 Simple measures to increase patient-centeredness

If possible, patients should be asked about their attitude to the care and treatment offered;^[35] however, not all patients

wish to participate in shared decision making.^[36]

Patients should also be asked to prepare questions for the medical round and be informed that they are allowed to par-

ticipate in decisions about their care and treatment. To enable patients to contribute meaningfully to decision making, they should receive short letters (which could be standardized) containing simplified written information about their disease.

Nurses should also inform patients which physician is responsible for their care and ask patients more directly what they want and expect from their hospital stay. However, it is wrong to assume that all patients want or can be involved in their care. When appropriate, relatives should be invited to visit the hospital to talk to the responsible physician or nurse.

2.6 Measures to increase work satisfaction for nurses

Increased work satisfaction can probably be achieved through a better, clearer work distribution, using standardization of care for common patient groups such as unspecified chest pain. It is likely that many nurses experience confusion when different physicians handle the same condition in disparate ways. Standardization of care for common reasons for admission decreases the need for communication within the team, thus saving time and reducing the likelihood of loss of information.

Nurses on wards that treat patients with cardiac disease should have basic knowledge about the care of confirmed^[37] or suspected myocardial infarction^[38] and heart failure,^[39] although this is not always the case owing to high degrees of staff turnover. Nurses should also be able to evaluate ambulance electrocardiograms (ECGs) and ward ECGs to determine if an ECG shows ventricular rhythm or ischemia. On

suspicion of ECG pathology, a physician should be contacted for further assessment. This arrangement filters out the large number of normal ECGs, which take time from physicians' other tasks. Furthermore, the ability to conduct a basic interpretation of rhythm and heart frequency on telemetry alarms, and document it in the medical record, is useful. A special license procedure could be implemented for these skills using web-based teaching and a subsequent examination.

2.7 The architecture of the ward

Physicians' offices should be located close to the nurses' offices to promote continuous dialogue throughout the day and avoid the need to telephone or search for colleagues.

3. CONCLUSIONS

In summary, our suggested ward system is likely to increase work satisfaction, efficiency, and patient safety. The model could also increase patient-centeredness and provide valuable time to talk to relatives and engage in education, something that many physicians today do not have enough time for.^[40] Many of the ideas discussed here could be applied to other types of wards, particularly wards with a high proportion of standard patients admitted for short observation periods.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

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