

**Sample
Chapter**

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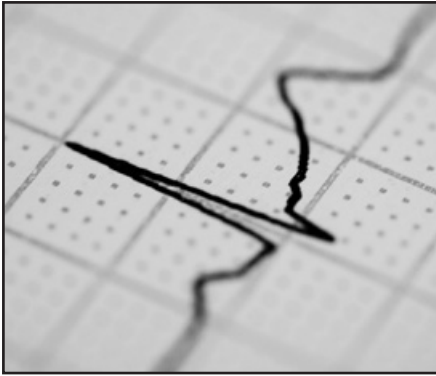
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CHAPTER 12

The heart team in acute cardiac care

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Summary

The complexity of acute cardiac care today makes it necessary that patients are looked after by more than one health care professional. Complex tasks require complex systems. Teamwork is essential for minimizing adverse events caused by miscommunication and misunderstanding about roles and responsibilities, and it can have an immediate and positive impact on the patient. The increasing complexity and specialization of care of the cardiac patient in the acute setting make it necessary to coordinate teams of doctors for each specialty area. Multidisciplinary decision making optimizes care and is mandatory in light of evolving options and improvement of quality of care and will lead to more efficiency.

Why teamwork is an essential element of patient safety in cardiac care

Medical practice has traditionally put the individual physician in the centre of the organization, rather than the patient. Medical training programmes have emphasized technical proficiency and produced well-educated, highly skilled, self-sufficient, individually responsible care providers. The physician was exclusively responsible for patient care and would only consult with other physicians, if deemed necessary. Knowledge of physicians authorized the power to the most senior person, rather than that of team. The importance of teamwork, however, is increasing not only due to increasing comorbidities of patients and increasing complexity and specialization of care, but also due to the restriction of working hours. In these circumstances, even the brightest, most diligent, and punctilious clinician will make errors frequently. The corporate knowledge of multiple people brainstorming for solutions is more likely to resolve difficulties and reduce errors than one person thinking alone. Most mistakes in health care are attributed to the lack of organization and dysfunctional, or non-existent, teamwork and leadership [1].

The benefits of a systemic approach have been proven in aviation, an industry in which mistakes can result in unacceptable loss and which has been at the forefront of risk reduction through teamwork training. Error rates have steadily decreased and now are several orders of magnitude below the rates in health care. Of course, patients are not airplanes, and therefore you cannot learn from them by copying what they do, but we can learn from these successes and translate these principles into the medical environment. Reframe the experience so that it fits the situation whether it is in cardiac surgery or in cardiology. The parallels between the aviation industry and emergency cardiac care are remarkable.

Both require rapid, accurate decision making under conditions of uncertainty. Both require groups of professionals from different disciplines to work together for effective operation.

Team composition

An effective heart team should be composed of people with complementary skills who work well together. For different patients and distinctive scenarios, the composition of the team will vary. Cardiologists, both interventional and non-interventional, cardiac surgeons, and anaesthesiologists will, in most instances, form the basis of the heart team. However, other specialists, nursing staff, allied health providers, and the patient's primary care team may also be part of the heart team.

The heart team is considered important, and guidelines for coronary revascularization of the European Society of Cardiology (ESC) and the European Association for Cardiothoracic Surgery [2] and the 2012 ACC 2012 *Appropriate use criteria for coronary revascularization* [3] both list the heart team as a class I indication for treatment. Unfortunately, there is no direct evidence from studies to show the benefits of the heart team, and therefore it is based on expert opinion (class C evidence) [4]

Role of the patient in the team

Although patients are not commonly thought of as being part of the team, they are the most important members of a clinical team. More recently, clinical decision making has been regarded as a collaborative process involving shared, parallel decision making with patients and teams of health professionals. Evidence-based criteria for diagnostic and/or therapeutic procedures have been stressed upon, but a lack of specificity in accurate risk prediction for an individual patient, as well as different patient expectations and estimated life expectancy or expected quality of life improvement, make recommendations for the individual patient extremely difficult. Patients and their families need to be educated about different risk–benefit ratios with several treatment options so that their expectations can be met as fully as possible. Although patients should be actively involved in their care, the mental or physical capability for participation can be difficult in the acute setting.

Another aspect of involving patients during their care is that patients can provide important safety information. Short interviews with patients can identify process failures and can report many serious events that cannot be found in medical records. It is much more appropriate to view patients as partners with an active role, depending on the nature and complexity of the treatment.

Characteristics of an effective heart team

The heart team can only be effective when the team members share a common goal, have specific roles, and perform interdependent tasks [5]. Everyone is aware of their role and wants to deliver the

best care for the patient. The team should be composed of people with complementary skills who work well together. A heart team is a wonderful example of how complementary skills can enhance the team's success in patient care. It is essential that members of the team trust and respect each other. Channels of communication must be open to inform the different team members. A lack of communication leads to arguments, misinterpretations, and a lack of interest in team concerns.

Teamwork in emergency resuscitation

In emergency circumstances, every person in the team knows his designated role ahead of time. The aim is to stabilize the patient in minutes, collect essential information, and triage the patient to definitive care. Each team member is committed to the mission and therefore to each other. Everyone trusts that the other puts in the maximum effort for the patient's best interests.

In the setting of acute cardiac care, this is a so-called 'contingency team'. These teams are formed for emergent or specific and time-limited events (e.g. cardiac arrest team, disaster response teams, rapid response teams) and are composed of team members drawn from a variety of core teams.

Teaching teamwork

The most important question for the future of health care is how we will deliver care in teams. Traditional, hierarchical, and organizational structures are increasingly being replaced with teams. Education systems in medicine have focused on teaching clinical skills to individuals. However, this does not guarantee effective team performance, and effective teamwork does not spontaneously happen when individuals work together. Physicians are trained largely to be self-sufficient and individually responsible for their actions, and training programmes to improve team skills are new concepts in medicine. Early in their career, students and residents need to understand the importance of teamwork in health care and learn how to become an effective team player. Online learning tools are available such as the TeamSTEPPS® programme which can be found at <<http://www.ahrq.gov/qual/teamstepps>>.

Organization of the heart team

Teams share certain characteristics, but each member will have a specific role, and together they interact to achieve a common goal. The heart team is a multidisciplinary care team that comes together to plan, coordinate, and take decisions about the patient's care. The care is organized around the patient and tailored to his or her health care needs and may involve the input from an interventional cardiologist, a non-interventional cardiologist, and a cardiac surgeon, but this is often extended to include specialists from other disciplines such as intensivists, anaesthesiologists, pulmonologists, etc. (see ➤ Figure 12.1).

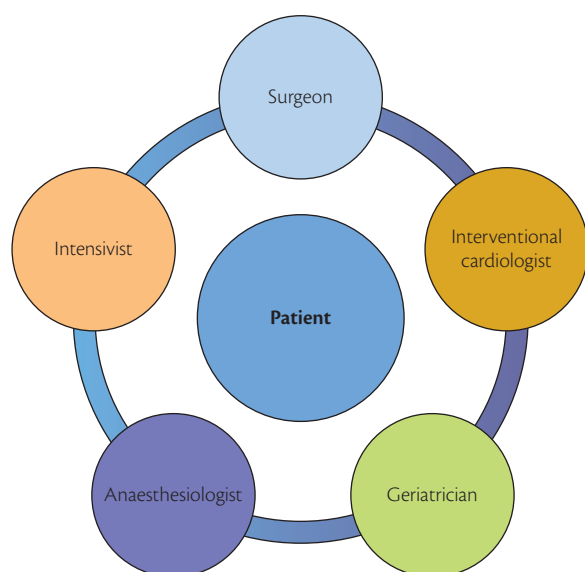


Figure 12.1 Composition of the heart team tailored to the patient's needs.

For the heart team to be effective, the members should coordinate directly and repeatedly with each other to ensure proper and timely clinical task execution. Daily meetings, or at least 3 times per week, are essential to make a team effective. Local protocols may stipulate which patients need to be discussed in the heart team. Work coordination and administration can be done by a secretary, for example, who ensures that the decisions taken at meetings are followed by action points. Administrative personnel can ensure the referring physician is informed about the heart team's decisions (see ➤ Figure 12.2).

Decision making within the heart team on the type of myocardial revascularization

Decision making in health care is often complex with multiple variables and individuals involved. Clinical decisions are

characterized by situations of uncertainty where not all the information needed is, or can be, known. The heart team should be able to review all information, involve the patient in the decision making, and reach a consensus. Therefore, myocardial revascularization should, in general, not be performed at the time of diagnostic angiography [2] (see also ➤ Chapters 47 and 48).

In acute cardiac care, there is less time for decision making which leads to more rapid responses and less analytical approaches [6]. Early risk stratification by the acute cardiac care team is essential for the selection of medical, as well as interventional, treatment strategies for patients with non-ST-segment elevation myocardial infarction (NSTEMI). This group is heterogeneous and has a highly variable prognosis. In patients at high risk and in whom the differential diagnosis of other acute clinical situations is unclear, angiography should be performed urgently to define the anatomy. It is recommended to schedule an informal 'time out' to allow surgical consultation in the catheterization laboratory; this concept could therefore accelerate the decision-making process in patients with acute coronary syndrome (ACS). Subsequently, an invasive strategy can be chosen, depending on the anatomy and other risk factors [4]. The team should weigh the benefits of early intervention with percutaneous coronary intervention (PCI) vs the benefits of a delayed coronary artery bypass grafting (CABG) several days after the patient has been stabilized.

In specific subsets of patients, the decision might be even more complex, e.g. in patients with diabetes and coronary disease, in particular, those with ST elevation, and not guided by level A (or B) evidence. Currently, CABG is favoured over PCI, and an individually tailored, collaborative approach, guided by a multidisciplinary heart team, should be employed [7].

In most cases of an acute myocardial revascularization, PCI is the treatment of choice. However, when the coronary artery disease (CAD) is too complex for PCI, CABG in the acute setting can be considered. In these cases, consultation of the heart team is essential.

Risk models

Risk-benefit analysis is particularly important when several treatment options are available. Myocardial revascularization,

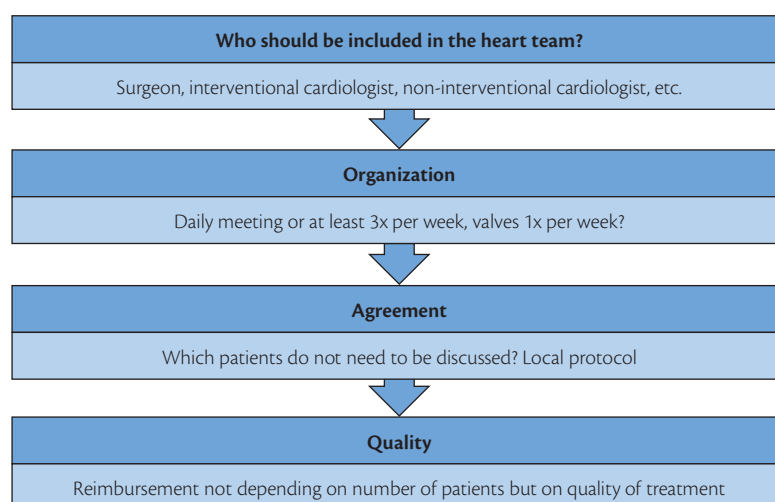


Figure 12.2 Organization of an effective heart team.

by either PCI or coronary arterial bypass surgery, is appropriate when the expected benefits, in terms of survival or health outcomes (symptoms, functional status, and/or quality of life), exceed the expected negative aspects of the procedure. In patients with multivessel disease, CABG is associated with a lower major adverse cardiac and cerebrovascular event (MACCE) rate, compared to PCI, mainly driven by a lower repeat revascularization rate, and, in subsets of patients, it is even associated with lower mortality. On the other hand, surgery is related to post-operative cognitive impairment and a higher stroke rate, longer hospitalization, and post-operative pain. The trade-off that physicians and patients face in choosing between the benefits of CABG vs those of PCI (or medical treatment) requires complex risk-benefit modelling. Clinical and anatomical risk scores that are used for decision making have notable inter- and intra-observer variability and are more accurate when calculated by a team, rather than by an individual [4]. The contemporary risk models for cardiac surgery, such as the STS-PROM and EuroScore II, with all their limitations [8], do take into account the emergency of the

procedure. However, the recently published SYNTAX II score [9], that aims to help in deciding which patients should undergo CABG or PCI, is derived from a population of stable CAD patients and is therefore not applicable in the acute coronary care setting.

Although data from trials demonstrating a direct patient benefit to the heart team approach are lacking, the arguments that teamwork is essential in complex modern health care are compelling. Risk models in acute cardiac care setting are definitely an area for improvement that could help to distinguish which patients benefit from the heart team's decision making.

Conclusion

Teaching clinicians to behave as true teammates will improve attitudes and enhance the performance of a department. Teamwork training is an important tool in the prevention of medical errors and to optimize decision making.

Personal perspective

With increasing life expectancy care and comorbidities of patients, health care is progressively more complex. The response is a range of disciplines that work together to deliver wide-ranging care that addresses as many of the patient's needs as possible. This multidisciplinary care can be delivered by a range of professionals functioning as a team. As a patient's condition changes over time, the composition of the team may change to reflect the changing clinical and psychosocial needs of the

patient. A 'heart team'—consisting of a core minimum of an interventional cardiologist and a cardiac surgeon—produces the best outcomes. In the case of complex patients in need of treatment at an intensive care, pre-, or post-procedural level, the heart team needs to include an intensivist. Health care policy makers need to acknowledge that teamwork optimizes outcome and makes care more effective. A reimbursement system, based on the delivery of quality of care, instead of numbers, should allow for the compensation of working in a multidisciplinary team.

Further reading

Head SJ, Kaul S, Mack MJ, *et al.* The rationale for Heart Team decision-making for patients with stable, complex coronary artery disease. *Eur Heart J* 2013;34:2510–18.

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The ESC Textbook of

Intensive and Acute Cardiovascular Care

The ESC Textbook of Intensive and Acute Cardiovascular Care Second Edition is the official textbook of the Acute Cardiovascular Care Association (ACCA) of the ESC. This new updated edition of the textbook continues to comprehensively approach all the different issues relating to intensive and acute cardiovascular care. The textbook is addressed to all those involved in intensive and acute cardiac care, not only cardiologists but also critical care specialists, emergency physicians, and health care professionals. The chapters cover the various acute cardiovascular diseases that need high quality intensive treatment, as well as organizational issues, cooperation among professionals, and interaction with other specialties in medicine.

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