# Clinical handover: the importance, problems and educational interventions to improve its practice

***The clinical handover is a complex area of advanced communication in medicine and is becoming increasingly recognized as a situation where good communication is needed to ensure patient safety. This article outlines its importance and the need to make improvements.***

## Introduction

The ability to communicate effectively and appropriately is a key skill in all fields of medical practice and its importance cannot be underestimated. In the General Medical Council (2013) guide to good practice this is forcefully emphasized. Must indicates an overriding duty:

1. You must listen to patients, take account of their views and respond honestly to questions
2. You must give patients the information they want or need to know in a way they can understand. You should meet patients' language and communication needs
3. You must be considerate to those close to the patient and be sensitive and responsive in giving them information and support
4. When on duty you must be readily accessible to patients and colleagues seeking information, advice or support.

Unfortunately, the failure of health-care professionals to communicate is a major problem. Research regularly points to issues with communication leading to complaints. According to the health service ombudsman, common problems are poor handling of complaints, failure to obtain consent and a lack of liaison between services. The ombudsman stated:

> **'If only health service staff made sure that they listened to patients and their carers, communicated clearly with them and with each other, then made a note of what had been said, the scope for later misunderstanding and dispute would be reduced enormously.' (Pincock, 2004)**

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In addition to the legal problems associated with complaints, the major problem with poor communication is that patients suffer.

Maguire and Pitceathly (2002) reviewed communication skills among doctors and found that there were many benefits to 'good communication':

1. Doctors with good communication skills identify patient problems more accurately
2. Patients adjust better psychologically and are more satisfied with their care
3. Patients are more likely to adhere to treatment and follow advice
4. Doctors have greater job satisfaction and less work stress.

The importance of communication, therefore, cannot be questioned. The General Medical Council demand that practitioners communicate effectively and good communication is vital for ensuring patient safety, reducing complaints and for the general wellbeing of patients and doctors.

Teaching communication is a huge area of medical education and has been extensively studied for many years. In 1999 Aspegren reviewed articles relating to the teaching and learning of communication skills and concluded that there is 'overwhelming proof' that communication skills in the doctor–patient relationship can be taught and learned. He also found that these skills are easily forgotten if not practiced and maintained, and recommended:

> **'All medical students should receive training in communication skills and that the training should use experiential methods.'**

This and similar work has led to the teaching of specific modules on communication skills at medical schools and the formation of the UK Council of Clinical Communication in Undergraduate Medical Education in 2005. Their aim is to improve current teaching, raise awareness and develop a consensus approach to communication training. In addition, models and methods for doctor–patient interactions have developed (Kurtz et al, 1998; Silverman et al, 2005) such as the Cambridge–Calgary interview technique. There are also many educational courses aimed at qualified doctors focusing on all aspects of advanced communication from obtaining consent to breaking bad news.

This article focuses on the clinical handover, which is a complex area of advanced communication in medicine and is being increasingly recognized as a situation where good communication is needed to ensure patient safety and where improvements can be made. It demonstrates the vital importance of handover and assesses the educational issues and interventions surrounding its practice and implementation.

## The handover process

Handover (or hand-off in some literature) is generally defined as:

> **'The transfer of professional responsibility and accountability for some or all aspects of care for a patient to another person on a temporary or permanent basis.' (Junior Doctors Committee British Medical Association, 2004)**

This transfer of responsibility takes a variety of forms but at its most obvious it is simply one doctor handing over responsibility for a patient to another doctor. This commonly occurs as one shift ends and another begins. In anaesthesia this may involve passing care of an anaesthetized patient 'on table' undergoing an operation to another doctor. In addition it may involve the handover of the next three or four patients scheduled for theatre and their medical issues and anaesthetic plans. During a typical intensive care handover

the care of up to 20 critically ill patients will be transferred to the incoming doctor. Doctor to doctor handover is just one example – there are usually multiple other handovers occurring throughout the intensive care system alone, such as nurse to nurse, nurse to doctor, medical team to allied professionals and also handovers within large multidisciplinary teams. These examples show how much complex information may have to be conveyed without compromising patient safety and while maintaining clinical continuity of care. In this situation it becomes obvious how vital accurate communication is and also how potentially dangerous the handover process is.

The medical director of the National Patient Safety Agency stated:

**'Handover of care is one of the most perilous procedures in medicine and when carried out improperly can be a major contributory factor to subsequent harm and error.' (Junior Doctors Committee British Medical Association, 2004)**

These fears over patient safety are sadly borne out by real incidents. In 2000 the Department of Health issued a wide-ranging report on adverse incidents within the NHS, 'An Organisation with a Memory'. It cited a case involving the death of patient in which no direct face to face hand-over had occurred between the doctors involved. Since this report coroners have continued to criticize failures in handover leading to patient deaths.

It is not only death that results from failure in handover. It is suggested that poor handover communication and systemic errors lead to inefficiencies, repetitions, delayed decisions, repeated investigations, incorrect diagnoses, incorrect treatment and poor communication (Royal College of Physicians, 2011). The Royal College of Physicians was so concerned that they organized a survey of junior doctors (Royal College of Physicians, 2011) which showed that only 33% thought handover was done well and worryingly 27% stated that care passed between teams three or more times within a 24-hour period. This clearly increases the opportunity for harm to occur.

Patients have always been handed over from one doctor to another or one team to another but the issue has received far more attention as a result of the changing working patterns of junior doctors. The implementation of the European Working Time Directive has resulted in full shift patterns becoming standard. This means doctors may rarely 'know' the patients they are responsible for and will be increasingly expected to 'cross-cover' patients from other teams, all of which lead to an increasing number of handovers and a growing recognition of the problems this may cause.

The General Medical Council (2013) also recognizes the importance of continuity and coordination of care:

1. You must contribute to the safe transfer of patients between health-care providers
2. You must share all relevant information with colleagues involved in your patients' care including when you handover care when you go off duty.

As the process of handover has needed to change and evolve into a robust system to prevent patient harm, it would seem obvious that education and training regarding this advanced communication scenario has been extensively used and assessed. However, the Royal College of Physicians (2011) survey found that only 18% of doctors had received handover training in their hospital.

## Systems approach to handover improvement

The importance of handover to both doctors and patients is clear, as is the need to improve this complex area of communication. However, this is not an easy task. The Junior Doctors Committee of the British Medical Association in their report on handover state:

**'Improving handover will require major changes to the culture and organisation of doctors of all grades and disciplines, an understanding of the concept of both system and continuity and should be supported by education and training.' (Junior Doctors Committee British Medical Association, 2004)**

A systems approach to improving communication at handover has gained support in the literature and the development of standardized procedures has been shown to reduce failures (World Health Organization Collaborating Centre for Patient Safety Solutions, 2007). As a result there have been a number of attempts to produce handover protocols and introduce computer-based systems in the UK (McGee-Lennon et al, 2007). Verbal aids to help juniors with communication have also been created. JUMP (Jobs outstanding, Unseen patients, Medical contacts, Patients to be aware of) (McCann et al, 2007) and ANTICipate (Vidyarthi et al, 2006) (Administrative data, New information, Tasks, Illness, Contingency planning) are two examples. However, both are quite specific to certain types of handover such as ward-based patients. As a result both are little known and not widely used, although their existence does at least show that there is a desire for improvement.

The most commonly used handover communication 'tool' is SBAR (Haig et al, 2006) (Situation, Background, Assessment, Recommendation). The system is simple, can be used by all health-care professionals, requires minimal training and is appropriate for face to face, written and telephone handover.

### Situation

1. Identify yourself and your role
2. Identify the patient
3. Describe your concern.

### Background

1. Patient reason for admission
2. Explain significant medical history
3. Patient diagnosis, procedures, medication, lab results etc.

### Assessment

1. Current vital signs
2. Patient-specific assessment issues
3. Clinical impression and concerns.

### Recommendation

1. Explain what is needed
2. Make suggestions
3. Clarify expectations of what should happen next.

SBAR is the most widely used and hence the most studied systems approach tool worldwide and there is some evidence outlining its effectiveness. In the UK a group of nursing students were taught the SBAR system in a simulated handover setting. They were questioned before and after the training about their attitudes, confidence and ability to perform handover appropriately and effectively. The results pointed to an increase in confidence, better structured communi-

cation and a perceived positive impact on patient safety (Collins, 2014). A hospital in North London responded to a General Medical Council survey of their trainees that highlighted dissatisfaction with the handover process by introducing a modified SBAR tool (Perry et al, 2013). Following the implementation of SBAR and associated training they concluded that:

**'Handover occurred consistently across the trust and showed an improvement in staff satisfaction with the process.'**

In the USA SBAR communication was introduced at a hospital as part of an evidence-based approach to improving teamwork (Beckett and Kipnis, 2009). They found that it resulted in improved transfer of knowledge, evidence and clinical skills. They also noted general improvements in communication, team work and safety. The group were looking for measurable improvement in patient safety but were unable to identify any.

An Australian group modified the original SBAR to ISoBAR (Identify, Situation, Observations, Background, Agreed Plan and Read back), the aim being to 'better fit the local context' (Porteus et al, 2009). The tool is essentially the same, however, and it was rolled out with an associated e-learning package to 'standardise communication and reduce the number of handover forms in circulation'. A secondary drive was the fact that the need for handover checklists had been identified by the Australian Commission on Safety and Quality in Health Care. The study concluded that implementation led to a better sense of patient ownership among staff but again stated:

**'Whether using a handover checklist improves patient safety and reduces adverse outcomes is yet to be established.'**

The evidence presented suggests that a formalized structure of protocols aid the complex communication of handover but there are other educational interventions that have attempted to improve the process further.

## Educational interventions in handover

Despite the growing recognition of the importance of handover and the patient safety issues associated with poor communication it still seems to be an area of medicine that lacks training and education. The aforementioned findings of the Royal College of Physicians study into formal handover training are similar to those in other surveys.

In the USA studies suggest that 60–90% of resident programmes provide no handover teaching (Sinha et al, 2007). In Northern Ireland the number is lower with only 13% getting any formal training (Kennedy et al, 2009). In 2006 Horwitz et al studied transfer of patient care and surveyed over 200 residency programmes in the USA. In common with similar studies they found that 60% of the programmes 'provided no lectures or workshops on sign-out skills'. In 2013 Morris performed a descriptive study to assess the provision of handover training at UK medical schools. The results showed that although medical schools recognized the importance of handover most felt they should not be responsible for its training. The author also concluded that:

**'weaknesses in the literature regarding how to design such education has exacerbated the problem.'**

A number of studies and reviews have looked at methods of teaching handover. A Canadian group (Masterson et al, 2013) conducted a systematic review to identify and assess educational models for teaching handover skills. Initially 1746 papers were identified, of which all but 12 were excluded. The majority of these 12 studies had used simulation skills which ranged from role play to the use of simulated patients. Other studies had used observed handover practice and most included some formal lecture sessions. In terms of assessment of effectiveness, most used questionnaires of student perception. None of the studies directly investigated the impact of the education on patient mortality and morbidity. The team suggest that:

**'Simulation has been used effectively and was well received. Direct supervision by preceptors was identified as useful.'**

And:

**'Teaching handover practices improved resident confidence in their handover and residents are more comfortable with their duties when receiving adequate handover.' (Masterson et al, 2013)**

However, the overall conclusions suggest that there is limited research on educational models for handover and more study is needed.

In 2009 Klamen et al designed an education module to teach handover. The students were initially given information about handover and patient safety and were shown a video of a handover being performed. They were then put in a simulated eight-bedded patient ward for a scenario that involved verbal handover at the end of the process. The results suggest the students learned the handover well (scored 81.5% on a 10-point checklist) and commented 'very positively' on the experience. They concluded that the simulated module was:

**'...an effective and efficient environment in which to teach handover.'**

In a similar study by Farnan et al (2010), students had an observed simulated hand-off experience following an interactive workshop on effective handover strategies. The students performed an observed handover and were rated on their performance:

**'This hand-off training exercise improved student confidence and was rated highly by trained observers.'**

Gordon and Findley (2011) performed a systematic review of educational interventions. They set out to 'determine the characteristics of educational interactions employed to enhance handover amongst health professionals and establish their effectiveness.' In common with the Masterson review they found the main method used was simulation, and common features included observation, evaluation and feedback. Group lectures and online materials were also used. Only 10 studies were formally reviewed and all but one demonstrated improved attitudes or knowledge and skills and one demonstrated transfer of skills to the workplace.

Gordon and Findley (2011) concluded that there is:

**'A paucity of research describing educational interventions to improve handover and assessment of their effectiveness. The quality of published studies is generally poor.'**

They also failed to find any study which demonstrated that the interventions improved patient safety. In the discussion,

they mention how teamwork and simulation interventions such as 'crew resource management' training are used in other industries to improve safety and suggest that similar techniques could be used in handover training (Gordon and Findley, 2011).

Catchpole et al (2007) set out to improve the safety of handover of patients from surgery to intensive care using Formula 1 pit stop methods. In collaboration with the Ferrari Formula 1 racing team and experts from the aviation industry the group developed a new handover protocol and process. Following its implementation the number of technical errors was reduced, the number of handover omissions was reduced and the duration of handover was reduced. The authors concluded:

**'Expertise from other industries can be extrapolated to improve patient safety and in particular areas of medicine involving the handover of patients or information.' (Catchpole et al, 2007).**

Since this time, medicine has started to look more closely at how complex information is passed between teams in other industries. Indeed the use of protocols such as the World Health Organization checklist in operating theatres is heavily influenced by the aviation industry.

## Handover as an educational event

Effective training in handover techniques is vital to improving the communication process but the handover itself should be viewed as an important educational event in its own right. The Junior Doctors Committee of the British Medical Association (2004) suggest that:

**'...better handover will be of daily benefit to practice and helps the development and broadening of communication skills. A well led handover session provides a useful setting for clinical education.'**

In the same document the postgraduate dean for medical education at Manchester University states that senior medical staff:

**'...will need to learn how to use formal handover ... to stimulate learning and encourage self-reflection at the same time as ensuring transfer of essential information.' (Hayden, 2004).**

The Royal Society of Medicine's guide to training (Hargreaves, 1997) states that:

**'On the job training needs to be planned rather than opportunistic, fusional rather than intrusive, cyclical rather than fragmented, an investment rather than a duty.'**

Klaber and Macdougall (2009) suggest that the nature of handover fits this model well and should be a vehicle for quality education. Handover is often performed more than twice in a day, involves senior input, is often multidisciplinary and involves the discussion of clinical issues and management plans.

Klaber and Macdougall (2009) state that 'handover is at the interface between service provision and education'. There are obviously challenges in making handover a key educational event but, as Klaber and Macdougall (2009) conclude, it could provide:

**'a forum for teaching and learning, mentoring, role-modelling, professionalism, assessment and giving feedback.'**

## Conclusions

The process of handover is a key area of advanced communication in medicine. It is vital to ensure the best possible processes are in place as handover becomes more widespread in order to maintain patient safety in a potentially dangerous event.

There is a growing trend towards having formalized protocols in place to aid handover and there is some evidence of their benefit. SBAR is the most widely used but others are being developed. Many are verbal but there is a move toward technology and computer-based systems and this area is likely to expand. The increasingly multidisciplinary nature of medicine will also provide challenges to the handover process that will have to be overcome. In terms of educational interventions there remains a limited evidence base as to their impact and a paucity of well-conducted studies. In addition no studies have shown interventions with a demonstrable impact on patient safety. Finally, the handover itself should be viewed as a great educational opportunity in its own right and further work should be aimed at maximizing its usefulness.

Handover is not a static issue, it is an increasingly important area of medicine and its impact on patient safety cannot be underestimated. Medicine should focus more attention on perfecting the process, using lessons from other industries and ensuring it is both a robust safe system and one where education can flourish. BJHM

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## KEY POINTS

- The ability to communicate effectively and appropriately is a key skill in all fields of medical practice and its importance cannot be underestimated.
- Handover of care is one of the most perilous procedures in medicine and when carried out improperly can be a major contributory factor to subsequent harm and error.
- The process of handover must change and evolve into a robust system to prevent patient harm.
- The SBAR system is a simple systematic approach that can be used by all health-care professionals, requires minimal training and is appropriate for face to face, written and telephone handover.
- There is limited research on educational models for handover and more study is needed in this important area, although simulation training seems appropriate.
- Better handover will be of daily benefit to practice and helps the development and broadening of communication skills. A well-led handover session can provide a useful setting for clinical education.

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