REVIEW

Effective teamworking in gastroenterology

Adam Haycock, Manmeet K Matharoo, Siwan Thomas-Gibson

Wolfson Unit for Endoscopy,
St Mark's Hospital, Harrow, UK

Correspondence to
Dr A Haycock, Wolfson Unit
for Endoscopy, St Mark's
Hospital, Watford Road, Harrow,
Middlesex HA1 3UJ, UK;
adam.haycock@mac.com

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Abstract

The majority of healthcare provision within the NHS is delivered by teams, but most attempts at improving team functioning are limited to promoting working relationships within the team. This contrasts with other high risk industries, where formalised team training is recognised to be of paramount importance in reducing error. Some medical specialities have adapted such training methodologies with the aim of improving productivity and clinical outcomes. There are many teams within gastroenterology that could benefit from such attention. Formal analysis of team objectives and identification of essential task sequences can allow redesign of team organisation and enable structured training to strengthen team cohesion, enhance critical team skills and improve clinical outcomes. The challenge is to change teams of experts into expert teams.

Introduction

Healthcare within the National Health Service is primarily delivered by teams rather than individuals. These teams may be well established and functional or ad hoc and erratic. Gastroenterologists engage in a wide variety of teams, including those on the ward, in endoscopy, in cancer multidisciplinary team meetings as well as management teams. While the notion of teamwork in healthcare is familiar, the actual concept is vague and generally confined to promoting working relationships among coworkers.¹ This contrasts starkly with other high risk industries where teams are well established, and the formalised training of teams is recognised to be of paramount importance in reducing error.^{2,3} Given that it is well documented that a large proportion of medical error is due to communication failure,⁴ a critical insight into team function seems essential. Additionally, reviews of industry conclude that teams which function fluently have better productivity and produce superior

'outputs'.⁵ With evidence based driven practice and the aspiration to improve quality of care, we should undoubtedly be seeking to evaluate the functioning of healthcare teams within gastroenterology.

Teams

Teams, like individuals, may enhance or threaten patient safety. The consultant is often identified as the responsible care provider, but frequently the complex team interactions that are required to deliver complex yet safe healthcare interventions are overlooked. A team can be defined as 'a group of individuals with a shared, common goal who, while they each have defined individual tasks, achieve their goal by working interdependently and cooperatively'.⁶ There are many teams within gastroenterology with specific clinical goals: examples include the inflammatory bowel disease multidisciplinary team, alcoholic liver disease management as well as gastrointestinal cancer care services. Some of these teams can be physically more disparate and do not usually function as a team in the patient's presence. Nevertheless, their aim to achieve a specific clinical goal remains as important and probably requires even better communication and organisational skills among team members. Healthcare teams face many challenges: changing membership and shift work, ineffective or poorly defined leadership, challenging hierarchy and ineffectual interprofessional communication, to name but a few. In this review, we aim to discuss human factors, medical error and non-technical skills and their relevance to teamwork within gastroenterology.

Human factors and medical error

Medical error remains the eighth most common cause of death for hospital inpatients, contributing to 1 in every 300 deaths per year in the UK. The majority of

these errors are, like in the aviation industry, not due to failure of technical skill but due to other 'human factor' errors, such as breakdown in communication, poor decision making, and fatigue or stress.⁷⁻⁹ Many of these human factors can also be categorised as non-technical skills, which are defined as 'skills crucial for maintaining safety that are not directly related to technical expertise'. In combination with knowledge and technical skill, they provide the foundations for safe and competent performance in daily practice.¹⁰ The cost of medical error is enormous, not just to the patient but also to society in general. A recent study in the USA conservatively estimated the cost of medical error in 2008 to include more than 2500 deaths and 10 million lost days at work, with a total cost to the US economy of \$19.5 billion.¹¹ Experts have estimated that nearly 25% of medical errors are possibly preventable and 6% probably or definitely preventable by optimal care.¹²

There are a number of common themes within the current medical non-technical skills taxonomies¹³⁻¹⁷ that relate to teamworking: the ability to effectively exchange information, ensuring a shared level of understanding, supporting others, promotion of team building, acknowledging others' contributions and conflict handling. However, surveys have demonstrated that there can be differing perceptions of the degree of teamwork among team members,¹⁸ and that these factors can play a decisive role in attaining high quality service.¹⁹ High functioning teams are capable of contributing to excellent long term safety outcomes and avoidance of error. The aviation industry has a legacy of safety culture and there are analogies that can be extrapolated to healthcare.³ Much of this involves coordinated management of isolated complex incidents or procedures that occur under specific situations and pressures. Overarching themes include simulation training, error reporting systems as well as the standardised method of 'cross checking'. The success of the WHO surgical safety checklist in improving operative outcomes and avoiding errors²⁰ is a good illustration of this translation.

Catchpole and colleagues²¹ make a comparison between team functioning in an intensive care situation and a Formula 1 pit stop. They collaborated with Formula 1 and aviation experts to see if the paediatric cardiothoracic postoperative transfer process to the intensive therapy unit could be improved. The pit stop is a safety critical environment where skilled professionals are perfectly coordinated to complete complex tasks under time pressure: four tyres are changed and the tank is refuelled in less than 7 s. How is this achieved? By clear leadership, situation awareness, task allocation, anticipation, checklists, briefing and debriefing, as well as continual review and training. By incorporating these concepts into a new streamlined handover process in the postoperative transfer to the intensive therapy unit, technical errors were reduced

and information transfer was improved with no increase in the duration of the whole process. Robust safety mechanisms need to be implemented in order to mitigate against errors. This is an important recognition, particularly in the context of changing teams, shorter shift patterns and the negative consequences of fatigue on performance.²²

Gastroenterology and endoscopy

Intuitively, teamwork and effective human factors are likely to be important in gastroenterology. In 2004, the National Confidential Enquiry into Perioperative Death (NCEPOD) report, *Scoping our Practice*,²³ investigated 1818 deaths within 30 days of a therapeutic gastrointestinal endoscopy. Of the 21 recommendations made as a result of the enquiry, only one mentions technical skill (level of experience required for the management of acute gastrointestinal bleeding). The other 20 highlight deficiencies in non-technical skills such as organisational issues, patient consent, training and education, preprocedural review and monitoring. As gastrointestinal endoscopy has relatively easily defined teams and now has robust evidence to support outcomes, it will be used here as an example to discuss team functioning within gastroenterology.

Who are the essential members of an endoscopy team? Many would say the minimum number would be an endoscopist and a nurse. While there is some truth in this being the 'core' team, it is self-evidently a simplistic view. There is clearly a much wider team that the core team are dependent on in order to perform their tasks. This includes the administrative personnel, admitting nurses, porters, washroom technicians and domestic staff. When these extended teams are taken into consideration, there are a large number of people and tasks that need to be coordinated. Generally within healthcare, teams are not designed, teamwork processes are not specified and often sequences which should be tightly aligned are left to chance.⁶ Bass *et al* state that teams are more than just a group of individuals and one cannot label a group of individuals a 'team' and expect that they will perform as a team.²⁴ Traditionally, medical teams are comprised of different disciplines with a range of experience who are 'thrown together' with the expectation that they will function effectively as a team. A number of challenges threaten the fragile nature of teams striving towards best practice. There is inherent tension in fulfilling the rising demand of clinical work in the context of the European Working Time Directive as well as financial resource constraints.

Even within the relatively small 'core team' performing an endoscopic procedure, there are a myriad of interactions, and certain behaviours are likely to improve safety while others may intensify risk. The concept and assessment of these skills is established in anaesthetics and surgery,^{25 26} and has recently been developed for endoscopy.²⁷ In order to enhance team

performance, the specific situation in which that team functions needs to be considered. For example, sedation practice remains highly variable among endoscopists,²⁸ and communication failures coupled with a lack of standard practice for drug checking, verbalisation and administration have the potential to lead to disastrous errors. The Department of Health has recently reviewed a list of ‘never events’, which are serious, preventable patient safety incidents,²⁹ including predictable errors such as wrong site surgery and patient misidentification. Recent additions to this list include excessive midazolam during conscious sedation as well as failure to monitor and respond to oxygen saturations. Provisional observations of endoscopy teams would suggest these are not rare events. As with many medical errors, these episodes often culminate from a series of smaller errors and are not due solely to the action of one individual, compatible with Reason’s ‘Swiss Cheese’ model.³⁰ A systematic analysis of the endoscopy team and ways in which interactions could be improved would be a good starting point to prevent such errors.

Team training

Research in communication failures in the intensive care unit reveal that communication ‘openness’ was associated with how well team members understood patient care goals, and was associated with a favourable clinical outcome.³¹ Hierarchical and social factors can impede effective communication and it seems plausible that effective team training may serve to minimise this. Within healthcare, the concept of team training was first developed in anaesthetics^{32,33} and has evolved in surgery.³⁴ Team training often uses simulation to provide ‘mock rehearsals’ of the procedure and can be incorporated into existing curricula within the workplace.³⁵ Real life scenarios and multidisciplinary crisis simulations³⁶ can be designed with the obvious benefit of providing the opportunity to ‘practice’ without compromising a real patient. Many aspects can be examined, from an individual’s performance within a team context to a global view of the entire team. The experience of such team simulation is generally well received by participants and has been demonstrated to improve critical team competencies.^{37,38}

Conclusion

“Coming together is a beginning, keeping together is progress, working together is success.” Henry Ford.

This article has attempted to emphasise the importance of teams within healthcare and gastroenterology and their role in achieving high quality care and minimising medical error. Evidence from other industries has demonstrated that attention to teamwork can produce exemplary results. However, it is important to spend time and effort in understanding, producing and evaluating such teams—they should not be allowed to just evolve, but should be created and moulded to achieve specific goals.

To design and evaluate teams effectively in gastroenterology, a clear vision of each teams’ objective is necessary along with specific details of the task sequences that will enable this to be met. The path for team analysis, redesign, training and assessment has already been paved and the prospects for adapting this to improve the quality of teamwork within gastroenterology is challenging yet exciting. This has the potential to strengthen team cohesion, improve critical team skills and potentially improve clinical outcomes. ‘Transforming teams of experts into expert teams’³⁵ is a challenge worth attempting.

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