REVIEW

Understanding and improving multidisciplinary team working in geriatric medicine

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Abstract

Geriatric medicine is a speciality that has historically relied on team working to best serve patients. The nature of frailty in older people means that people present with numerous co-morbidities, which in turn require a team-based approach to be managed, including allied health professionals, social work and nursing alongside medicine. The 'engine room' of the speciality has thus for many years been the multidisciplinary team (MDT) meeting—something other specialities have discovered only recently. Yet, rather paradoxically, the speciality has been slow compared to others (e.g. trauma, surgery, cancer) to reflect more formally on how team working can be enhanced, trained and supported in geriatric teams. This paper is a reflective review, grounded on our respective expertise in geriatric medicine and improvement science, on practice and its changing patterns within geriatric medicine, and the role of MDTs within it (Part 1). It offers a perspective from behavioural safety science, which has been studying team-working in healthcare for the last 20 years (Part 2) and concludes with practical suggestions, based on evidence, on how to integrate evidence and best practice into modern geriatric medicine-to address current and future challenges (Part 3).

Keywords

high performing teams, comprehensive geriatric assessment, multidisciplinary teams, non-technical skills, patient safety, older people

Key points

- Effective multidisciplinary teams (MDTs) and coordinated team meetings are core to successful comprehensive geriatric assessment.
- Creating and enhancing high performing teams should be a priority in healthcare for older people.
- Training together as MDTs can improve team performance and outcomes for patients.
- Training in the speciality should prioritise non-technical skills (NTS) (leadership, communication, team-working, etc).
- NTS and team-working should be regularly evaluated throughout clinical practice.

Background

The gold standard of care for older people with frailty is comprehensive geriatric assessment (CGA) [1]. It has evolved over decades and across continents. The nature of frailty in older people means that people present with simultaneous problems across multiple domains [2]. That necessitates a multilateral approach and therefore a team who can address these separate domains simultaneously.

Geriatric Medicine is not a technical specialty. It has no operating theatre, scope list, or procedures. The 'engine room' of the specialty therefore is the multidisciplinary team (MDT) it relies on for assessment and the meetings that facilitate coordinated care planning.

The aim of this paper is to offer a reflective review on MDTs and MDT meetings within geriatric medicine aiming to combine the clinical perspective with that of psychology

and improvement science. The paper synthesises evidence from clinical geriatric research; and behavioural safety science—the authors' respective areas of expertise. The synthesis is done in a reflective manner: we have jointly reflected on the implications of the latter for the former; and thought through existing clinical care and policy models in domains where MDT working is well-established and formalised, e.g. in cancer care. We have further situated our synthesis within current and predicted future patient population and associated clinical need expansion globally; as well as workplace (e.g. shiftworking patterns) and financial pressures.

Part 1: Multidisciplinary teams within geriatric medicine

In the past and perhaps typically but not uniquely in a British context, the MDT meeting might have been a once weekly sit down meeting on a geriatric ward with a consultant (attending) physician, senior nurse, physiotherapist and occupational therapist. These days, the MDT meeting is likely to take many forms depending on settings. Some are more suited to acute contexts, such as the acute admitting Geriatric wards. These are typically shorter and more focussed and usually delivered standing up—huddled around a ward white board. Other settings such as community hospitals or community meetings may involve larger teams meeting weekly to discuss more complex cases, perhaps including general practitioners, social workers and community rehabilitation teams.

Despite their differences in style and context, core elements of the geriatric MDT meeting are shared across teams (Box 1 [3]). These will classically include an assimilation of information across key domains such as medical, psychiatric and cognitive, social and functional [1, 4]. They will include staff who understand their roles in the team meeting who will take responsibility for aspects of assessment or treatment [4]. Generally, there will be a goal established for a patient that might vary from simple treatment aims, such as mobilising independently, to complex discharge planning arrangements or longer-term functional outcomes. There should be agreed plans for short-term management to achieve these goals (such as dressing practice or cognitive assessments).

These plans should be recorded and revisited to record progress, establish setbacks and revisit goals. Crucially, though there needs to be interaction with the patient and their family to establish a patient's wishes and to feedback progress or manage expectations.

The principles of effective MDT working cut across skills (e.g. good leadership), processes (e.g. good governance in documenting action plans) and critically values (e.g. centrality of the patient's needs and respect for colleagues). The reason for this distinction is important is that it has implications for running MDT meetings as well as the training and resources required for MDTs to operate effectively. Behavioural evidence from cancer MDTs suggests that if one of the three elements is missing, then the MDT is likely to be ineffective or dysfunctional [5–7]—and in cancer care, this evidence has been translated into policy recommendations [8].

Evidence from CGA trialists

As part of the Cochrane Review of CGA [9], trialists were contacted and asked what elements of CGA they deemed to be essential through a structured questionnaire. The questionnaire included statements drawn from the existing literature of key elements of CGA to grade.

Thirteen trialists (of the 29 included) responded and ranked an MDT meeting as important to the CGA process. Other aspects highlighted as essential included plans tailored to the patient's needs, specialty expertise and clinical leadership. Trialists were separately asked which team members and processes were present in both treatment and control arms of their RCTs. With the exception of Geriatricians, most staff including therapists and nurses were identical between treatment and control groups. MDT meetings, however, were only reported in 6 of the 13 control groups. This is suggestive that in addition to specialist knowledge and standardised assessments, having a coordinated team with clear meetings and a tailored plan for each patient is a critical difference between CGA settings and control groups in the available RCT evidence [1, 9].

It is further suggested that there is a difference between CGA wards and mobile CGA team subgroups. The observed differences in the meta-analysis may represent subgroup

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Box 1. Core principles of an MDT meeting [3]

- Establish patient centred goals.
- Cover the domains of medical problems, functional ability, cognitive or psychiatric health and social circumstances.
- Have representation from key disciplines.
- Bring opinions together openly.
- Agree an overall aim.
- Agree next steps with time frames.
- Allocate responsibility.
- Reconvene to revisit progress regularly.
- Communicate outputs from the MDT meeting.

underpowering, with fewer CGA team trials and trial participants. However, parallels exist between mobile stroke teams and stroke wards [10, 11]. It is possible this pattern reflects the fact that discrete wards can foster more coordinated team working and the integration of assessment and care plans [1, 9].

Part 2: High performing teams in healthcare

Terms such as multidisciplinary, interdisciplinary and transdisciplinary teams are often used interchangeably but are in fact conceptually different models of team-working as described in Box 2 [12]. These distinctions are not merely academic, but impact on how teams are set-up and work in practice and how they impact on patient care. In the CGA trials, often the control group included members of multiple disciplines—however, they reportedly worked independently of each other. The intervention groups however had a more integrated approach to the assessment of need, setting of goals and delivery of therapy. In clinical practice, teams may evolve into more integrated interdisciplinary and transdisciplinary working over time. Certainly, team cohesion and interconnectedness have been suggested in qualitative studies to correlate with a more effective team [13].

These distinctions offer a framework to think about team-working and team development in practice. In some contexts, teams are able to develop new levels of close working when role blurring is introduced. This concept is best exemplified by an individual that is able to take on elements of someone else's role in a setting to share the workload. For instance, an experienced nurse assessing for a walking aid in the ED, or a therapist discussing the meaning of a diagnostic test or discussing prognosis in a specialist clinic.

There are a number of descriptive models of teamwork —some are industry or speciality specific. The 'Big Five' model offers a comprehensive conceptual 'umbrella model', with reasonable empirical evidence, and offers a generalisable perspective on the constituent parts of effective team-working [14]. According to the model, effective teamworking requires five core components; team leadership, team orientation, back-up behaviour (i.e. mutual support amongst team-members), mutual performance monitoring, and adaptability. These core elements are supported by three mechanisms that allow team-members to work well together: mutual trust, shared mental models (of the tasks to be performed and each other's roles), and closed loop communication. We are not aware of a formal application of the Big Five model to geriatric medicine-to-date. The model offers good levels of face and content validity.

The above research helps articulate practical recommendations and approaches to ensuring high-quality teamworking. For example, high performing teams are characterised by clear leadership with shared and regularly articulated vision [15] and are likely to be enabling, supportive and inclusive. Sharing values (such as a desire to achieve a quality of experience for patients) can unify a team [15]. Teams with shared values are able, for example, to highlight practices that do not fit with their ethos (e.g. unsafe practices).

Mutual respect for each other's roles also fosters a cohesiveness to teams. If teams recognise what each member brings to the group, it encourages individuals to speak up and not be afraid of censure [16]. Creating a sense of psychological safety and an environment in which people share concerns is more likely to lead to the resolution of problems [17]. Being open to feedback can lead to opportunities to grow but requires a willingness to request and welcome feedback.

Technical and non-technical skills in healthcare

In the past two decades, healthcare has shown a keen interest in learning how to approach the training of effective teams and translating safety innovations from other high-risk industries. For instance, learning from the airline industry, healthcare recognised the role that breakdowns in communication and teamwork play in patient safety incidents. It adopted the use of incident reporting as a means to manage safety (i.e. with the aim to learn from incidents so the condition that triggered them are addressed). It has also introduced the distinction between technical and non-technical skills (NTS) [17].

The concept of NTS was introduced to differentiate them from the technical skill required to fly a plane. NTS were defined as 'the cognitive, social and personal resource skills that complement technical skills and contribute to safe and efficient task performance'. Box 3 offers a

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Box 2. Definitions of conceptual models of team-working [12].

Multidisciplinary teams: The patient is assessed individually by several professionals (such as nursing, social work, psychiatry, medical, etc). Participants may have separate but inter-related roles and maintain their own disciplinary boundaries. The process might be described as additive, not integrative.
Interdisciplinary teams: Members come together as a whole to discuss their individual assessments and develop a joint service plan for the patient. Practitioners may blur some disciplinary boundaries but still maintain a discipline-specific base (for instance, aspects of functional assessment may be shared across disciplines). Teams integrate closer to complete a shared goal.
Transdisciplinary teams: Team members share roles as well as goals. This requires specialist practitioners to share their skills (allowing others to learn and take on skills) as well as acquire new skills in other areas from other practitioners. The result is a more blended team that shares objectives and many core skill sets required to achieve the overall goal.

distillation of the key NTS that have been recognised, assessed and trained in healthcare but also in other industries.

The distinction between different skills categories is useful as it allows development of assessment methods that are specific to each one of the skills. This offers a holistic assessment of competence—both in trainees (for example, in aviation [18]) and in experienced professionals, who have to revalidate regularly in order to maintain their licence to fly. An industry of simulators and simulation technologies has developed to train and assess pilots in a controllable and safe environment in which skills can be perfected and rare crises can be rehearsed without posing risks to passengers or aircraft.

Interventional specialties in healthcare followed suit, with simulators developed for complex invasive procedures (e.g. laparoscopy [19, 20]), and skills assessments developed and validated to capture technical skills (e.g. OSATS [21]). In the last decade, similar assessment for NTS have developed for surgeons [22], anaesthetists [23], theatre nurses [24], ward teams [25] and medical students [26]—amongst other specialties. Although the evidence base is patchy, these skills have been shown to correlate positively with technical skills —which means that clinicians with better procedural and psychomotor (where applicable) skills also have better communication, leadership and personal resource skills [27].

Teaching and evaluation of NTS have been applied in older people's settings in wards and simulation centres [28]. Here, training in NTS was aimed at improving compassionate and dignified care by enhancing empathy and communication. Staff found training together across disciplines enhanced the learning experience and felt more able to raise concerns. They also felt that their interaction with patients was enhanced.

A recent study even found that including older people as part of simulations for trainees allowed them to contribute to care improvement and gave them a sense of purpose [29]. Other recent innovations include use of MDT simulation to teach medical students the principles of MDT-based care management and planning for complex older patients and improve empathic skills [30, 31].

Team training in healthcare

Training in NTS and team-working is possible both for individuals and perhaps more importantly for teams. Many

Box 3. Key non-technical skills in healthcare [17]

SOCIAL skills	COGNITIVE skills	PERSONAL RESOURCE skills
Communication	Situational awareness	Stress management
Leadership	Decision-making	Workload management
Teamwork	Mental readiness	Fatigue management

years ago, it was suggested that simulation-based training prior to trainees practicing on patients is an 'ethical imperative' [32]. To-date, the imperative is yet to materialise. The availability of team training curricula, modules, facilities and faculty is rather haphazard—a situation not peculiar to the UK. A challenge for modern healthcare is that the provision and evidencing of systematic training in team skills should be a requirement of training and appraisal, not an optional scenario [33]. For a multidisciplinary specialty, such as geriatric medicine the acquisition and maintenance of such skills should be integral to specialty professional development and should apply to both trainees and consultants. Reflection should enable geriatric MDT members to identify the optimal team-working model for them (see Box 2); and develop their team to achieve the model.

To assume that an MDT will simply 'work' once it has been formed goes against the face of the evidence, both from outside the healthcare industry [34] but also within healthcare. Current healthcare training is ordinarily conducted in professional and specialty groups. It should not be surprising then that doctors and nurses who train in this individualistic manner cannot 'automatically' perform well as a team when brought together. Even in a specialist setting, the assembly of a team of experts does not necessarily make an 'expert team'. Training as a team enhances team performance and clinical outcomes. The largest and most conclusive study to date was a large cohort study on perioperative care. Evaluating surgical team training across 108 Veterans Affairs Hospitals in the USA, staff reported improved aspects of team process including improved communication (42%) and improved teamwork (65%). More significantly, they saw an overall 18% reduction in postoperative mortality in the intervention sites compared with 7% respective in the control hospitals. Using propensity score matching to adjust for case-mix, the mortality difference was as high as a 50%. There was also a clear dose–response relationship between the level of training and mortality outcome with a reduction of one death per 2000 cases every quarter of additional training [35].

In this study, the training was of high intensity, including use of team skills and checklists. Whole teams attended training and subsequent coaching together. Training delivered to disciplines together can be associated with improvements in aspects of team process such as adherence to guidelines as well as in patient related outcomes [36], but importantly may be better than uni-disciplinary education when looking at aspects of personal efficacy in leadership and team-working [37].

MDTs will often have professionals with a range of experience and seniority. They may also change with the turnover of junior members of the team. Changes in junior doctors' working patterns, a situation not unique to the UK but also present in Europe (e.g. through the European Working Time Directive) and the USA residents' working hours, amongst other factors create a more transitional workforce often working in shifts. At the same time, this provides an opportunity for more multidisciplinary roles to

emerge and complement the team. Working in these contexts with practitioners across different disciplines to achieve a positive outcome for a patient requires presence of good team skills and processes. MDTs meetings offer an opportunity to explore cases for learning points, and feedback from adverse events or even offer informal emotional support.

Part 3: Integrating evidence into practice

Geriatric medicine is the single biggest bed holding speciality in the UK and in many countries. Even where this is not the case, it remains a high resource specialty. Care for older hospital patients continues to rely heavily on good teamworking, effective team leadership and smooth team communication to achieve coordinated care. Reviewing the training curricula for Geriatric Medicine from the UK, European Union, Ireland and the USA, whilst all endorse a knowledge of multidisciplinary working, only the US curriculum specifically encourages team training and evaluation [38–41]. It seems ironic then that the specialty that for so long has relied on its team based working to deliver high-quality patient care does not universally have a framework for joint training and evaluation in team-working. We view this as a challenge that the profession should rise to—such that both individual trainees are encouraged to develop their NTS; but also geriatric care teams start to train together.

In Box 4, we have outlined strategies based on available evidence across healthcare specialities that geriatric medicine could consider adopting for both training but also care delivery.

Furthermore, from the perspective of acute care quality, it would also be logical that evaluation of team working in acute settings should feature in quality of care inspections or improvement plans. The processes of care, both technical and non-technical, and how these are promoted and supported (e.g. through regular training provision for which staff have allocated time) should be a focus of quality review and benchmarking.

The provision of high-quality care in acute hospital settings increasingly requires us to address variation in healthcare outcomes. To achieve that reduction in variation and deliver consistent high-quality experience, we need to explore methods of standardising high frequency elements of care to reduce harm. In surgical and anaesthetic settings, this is supported by using safety checklists. It may be that structured ward rounds and multidisciplinary meetings will need to have a more standardised approach to reduce the risks of a poor outcome.

Finally, the current and projected population trends (patients presenting with frailty and co-morbid conditions [51]) mean that the specialty needs to diversify to meet new demands throughout the hospital setting. This will inevitably mean drawing in new roles and new practitioners such as nurse and therapy consultants to be able to meet the demands. The specialty thus needs to develop a cadre of future consultants who are able to work with a broader MDT perhaps with more transdisciplinary working to support care delivery to a multimorbid patient cohort. One such example involves geriatric input into cancer MDTs [52, 53], where significant value is added to patient care, as these patients do not just need cancer care but a more holistic approach. Another example involves geriatric input into complex and frail surgical patients. The Proactive care for Older People undergoing Surgery model offers a system of referral to the geriatric team and optimisation of these patients before and after surgical interventions [54–56]. Studies, including RCTs, over the last decade have shown a significant

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Box 4. Strategies to enhance MDT working in modern geriatric medicine

Skills	Offer systematic, curriculum driven team training.
	Reach out to regional simulation centres to use facilities for team training.
	Engage patients into the training design and delivery (e.g. as standardised patients, who offer feedback to trainees on their experience, empathic skills and similar).
	Articulate formally the skills required for effective MDT care; produce examples of what 'good' and 'poor' looks like and use those to train trainees and consultants.
	Use an established leadership framework (there are many) to identify effective leaders for MDTs; the most senior doctor in the room may not be the one with the best chairing skills.
Processes	Ensure that decision-making is recorded and actioned.
	Allocate a suitable space to the team as required.
	Implement consistent, clear communication aids, whether short notes on a white board, written notes or electronic case records.
	Plan the time spent in MDT meetings into consultants' job plans including team building and training.
	Consider applying a simple checklist especially when patient volume is high, to streamline the MDT meeting and make it time-efficient.
Values	Foster and support patient-centredness—for example via inviting patients to audit or training days.
	Make a commitment to ask patients what matters to them; then implement care plans that reflect this.
	Share the team's values both formally (e.g. rehearse them at training days) and informally (e.g. through word of mouth).
	Recruit senior respected clinical leaders as champions of respectful, inclusive and holistic MDT working—to set the tone to more junior colleagues and trainees.
	Analyse and reflect on near misses and adverse incidents; use protected time to do so (e.g. through weekly or monthly M&M).

Note: Core evidence supporting the proposed strategies can be found here for the skills, [8, 14, 15, 17, 28, 29, 34, 42] processes, [8, 43, 44] and values [14, 45–50] mentioned in the box.

reduction in length of stay for such patients undergoing orthopaedic, urological and vascular surgery [57].

The reflective synthesis that we have offered here offers a novel perspective—to the best of our knowledge this is the first time that the clinical and behavioural evidence bases have been brought together. The strength of this synthesis is the breadth of evidence that we have covered, coupled with the respective expertise of the authors. These, however, are also its limitations: we did not attempt a systematic review of evidence—indeed one would not have been feasible across so many different literatures; and the evidence base within geriatric medicine requires further development. The perspective offered here rests on our interpretation of the evidence and personal experience of delivering and improving MDT-driven care. Subsequent research should put our recommendations to empirical evaluation.

Geriatric medicine will be in ever increasing demand. The speciality needs to fully embrace approaches to improve MDT working, such that we work optimally with colleagues and serve our patients.

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