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Essential requirements of a CT colonography service

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ABSTRACT

There are many potential challenges to developing a high quality, efficient CT colonography service. Some are clear and predictable, for example creating CT capacity and securing financial resources, but some are less obvious, such as harnessing local support or changing referral practice amongst clinical colleagues. Notwithstanding, such barriers will need to be overcome to deliver a well-resourced, successful CT colonography programme. This article utilises the authors' experience of developing their own CT colonography service from scratch (now examining >1200 patients per annum) and relevant published articles on 'Standards' of practice and training to recommend how others might provide CT colonography in their own patient communities. We offer a practical guide and will emphasise the need for a multi-disciplinary approach with locally agreed protocols and service objectives.

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1. Introduction

CT colonography is a potentially highly effective technique for investigating patients with symptoms and can be used as an adjunct to other test options in a colorectal cancer-screening programme. When performed well and interpreted by experienced, competent radiologists, CT colonography provides a safe, accurate and acceptable method for examining the colon [1–4]. However, these requisites may be challenging to achieve and require considerable effort and support over a long time period by all members of the team. It is therefore reasonable first to consider whether your team are planning to introduce CT colonography into an appropriate clinical environment and if you have sufficient enthusiasm and resources to successfully develop a service.

2. Should you develop a service in the first place?

2.1. National guidance

Several countries across the World have established guidance on the role of CT colonography both for investigating patients with symptoms and for examining asymptomatic individuals as part of a national screening programme [4–6]. Such guidance will help teams target the right patient population initially and the optimal diagnostic pathways and protocols required for this population. For example, in the UK in 2005, the national body guiding doctors on use of new technologies [6] recommended the use of CT colonography as an alternative test for investigating symptomatic patients or those at high risk of developing colorectal cancer, whereas only a relatively minor role in the Bowel Cancer Screening Programme has been advocated [7]. Consequently, it would seem appropriate for UK teams implementing a new CT colonography service to initially develop their service for investigation of symptomatic patients, where it has an accepted role and where financial reimbursement is achievable. In contrast, in the USA, following guidance supporting CT colonography in colorectal cancer screening programs [5], several states now recommend reimbursement of CT colonography as a primary screening test option. In participating states, it may therefore be appropriate for teams to develop a 'screening only' CT colonography service. Recommendations and guidance on CT colonography practice and reimbursement will evolve over time and therefore target populations and their associated pathways can also be adapted accordingly.

2.2. Is there a need for a new CT colonography service in your area?

The demand for CT colonography in a particular region will be determined by a number of local factors including; general demand for colonic investigation [population age, sex, ethnicity and socio-economic demographics], colonoscopy provision (and waiting lists), attitudes of local gastroenterologists and colorectal surgeons, established referral pathways from general practitioners, number of trained radiologists with sufficient experience, CT scanner capacity, and radiology departmental priorities.

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There may already be established CT colonography services [at different stages of evolution] in your region. In this scenario, we recommend a visit to these centres to learn from their experience and determine whether your plans will be complementary (or competitive). If complementary, you may be able to share protocols, expertise and provide support to each other for difficult cases (or even providing back up when capacity exceeds demand). We are aware of several 'lone' radiologists who have rapidly developed a CT colonography service but soon find themselves incapable of meeting demand (or return from leave to find a lengthy caseload, with no trained colleagues to help report the backlog).

3. Implications for your hospital and your patients

A new CT colonography service will bring new opportunities. Patients are offered a credible alternative to optical colonoscopy, which provide more diverse and efficient diagnostic pathways for prevention and early treatment of colorectal cancer. Members of the CT department who develop an interest in CT colonography will have the opportunity to extend clinical roles by undergoing specialized training and via active participation in the multidisciplinary CT colonography team. Examples of extended role for radiographers include: performing and preliminary reading CT colonography under indirect supervision by a radiologist; managing the service; coordinating the rota; assessing the quality of the new service via audit; and research. All team members can benefit from training and research opportunities, which the new service provides. In several countries, radiology trainees involved in the CT colonography service will more easily fulfil new requirements of their core training curricula. Finally, the rapidly evolving focus on quality assurance will benefit the team's approach to other aspects of their radiological work.

4. Setting up your team: the members and their role

The CT colonography team is central to a programme's success and members need to be highly motivated, competent and willing to embrace new roles. There is currently a paucity of information defining roles and responsibilities for members of the CT colonography team. As a result, the following represents the authors' own recommendations based on their experience.

4.1. Director

The Director is ultimately responsible for the entire programme and its clinical success. The Director should be an experienced radiologist and a good communicator, with an enlightened attitude to the need for a quality assurance framework. Their background experience should include sufficient knowledge and skills of CT colonography and colorectal cancer to undertake a high quality examination, interpret scan findings accurately and make appropriate patient management recommendations. The Director will usually be a radiologist with declared subspecialty interest in gastrointestinal radiology and suitable training experience (including two days or more hands-on CT colonography workshop and where available, a dedicated 'Train the Trainers' course). They will personally interpret a significant number of scans per year (for example >100) [7] to enable meaningful audit of their results, which can then be compared with agreed local or national standards.

The Director will ensure the safety of patients and prioritise patient experience and outcomes as key objectives for the service. To this end, the Director should develop a clear team structure where members are aware of their role, objectives, competencies and opportunities for training and role extension.

Leading the team can be very rewarding but challenges occur and some radiologists find themselves propping up a service almost single-handedly, for example, covering other radiologists (and radiographers) during leave and being a universal point of contact for referrers, patients, carers and administrators alike. To combat this, the authors recommend the Director bring together a steering group, prior to service delivery, which allocates resource and responsibility across the team and engages with stakeholders to predict problems and develop strategies to deal with them before they occur (please see below).

Obtaining resources and gaining support from stakeholders will frequently require a strong business case and the Director should ideally be the principal author of this.

The Director will delegate tasks appropriately within the team to share the responsibility for workload and success and to keep members actively engaged in the service. Good delegation can motivate staff but this requires excellent communication skills to ensure tasks are undertaken accurately and on time. Examples include delegating radiographers to write patient protocols by researching the topic using web based resources (alongside experience gleaned from other established services); or training new team members. Being a good communicator will also benefit interactions with external stakeholders, as the Director is frequently the principal advocate of the service.

Finally, the Director of service should embrace national quality assurance initiatives, which demonstrate service as safe and high quality; and also refine techniques according to evidence-based research. This requires active engagement with, and support for, the wider CT colonography community. This may comprise attendance at regional or national meetings, involvement in societies such as ESGAR (European Society of Gastrointestinal and Abdominal Radiology) or its national representative groups and should result in practical changes to daily practice. An example of this may be a monthly update of locally agreed key performance indicators (see below) derived from national standards [8] emailed to team members by the programme co-ordinator.

4.2. CT colonography programme co-ordinator

The CT colonography programme co-ordinator is the 'lynchpin' of the team, involved in all aspects of the service and ensuring that patient pathways run smoothly [9]. Usually (but not exclusively) a senior radiographer with declared interest in colorectal cancer, this person will be focused on quality, efficiency and patient experience in day-to-day practice and must also be an excellent communicator.

In our institution, a patient's first encounter with the service is frequently via a phone call (mobile and static line number) with the programme co-ordinator who will give reassurance and advice about bowel preparation, diet and the logistics of examination. This interaction is key to improving patient experience (alleviating anxiety and allaying fears) and helping to ensure compliance with bowel preparation regimens. The co-ordinator will be the patient's closest ally throughout the pathway, assisting communication between patient and medical team. To do so, the co-ordinator must be knowledgeable about bowel cancer and very experienced with patients. Our co-ordinator also supervises patient consent (for examination and retrospective audit of their data, which requires both tact and efficiency.

The programme co-ordinator will often interface with clinical referrers (hospital consultants and family practitioners). The quality of this interface will influence popularity of the CT colonography service and therefore the co-ordinator will directly influence number of referrals and subsequent quality and efficiency of patient management. For example, our co-ordinator communicates directly with patient and endoscopists when planning 'same day' endoscopy for biopsy of detected cancers. The co-ordinator

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