REVIEW

Endoscopy provision: meeting the challenges

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Received 28 October 2016

Accepted 11 December 2016

ABSTRACT

Background Endoscopy activity has been increasing in the UK for many years. However, the increasing demand is currently disproportionate to delivered capacity. This, in combination with mandatory efficiency savings, presents an ongoing challenge in the effective continued delivery of diagnostic endoscopy services.

Recent developments New initiatives in the field of endoscopy that may impact on resource include: faecal immunochemical test, straight to test referral systems, nurse endoscopists, home enemas and split dose bowel preparation.

Future potential System review and improvement is paramount to ensure the diagnostic pathway is of a high clinical quality, efficient, patient focused and sustainable.

THE CURRENT STATE OF AFFAIRS

Over the past 40 years, technical improvements in gastrointestinal endoscopy have led to more accurate imaging, quicker diagnosis and better outcomes for patients. However, a combination of population health status and demography, national policy (the introduction of bowel cancer screening and bowel scope) and changes in clinical practice (such as National Institute for Health and Care Excellence (NICE)) lowering their recommended thresholds for the referral of patient with symptoms suggestive of cancer in the 2-week wait pathways) have led to a progressive increase in the burden of endoscopy activity. The increase in demand for endoscopy is disproportionate to current capacity. This presents a major challenge to service delivery as endoscopy remains a gold standard diagnostic test for many cancers. Consequently, as demand rises, patients can wait more than the 6 weeks for this diagnostic test and there is a risk total waiting lists will rise.

In addition, the National Health Service (NHS) as a whole is expected to make 2% efficiency savings each year¹ for the rest of the decade. In this time of austerity, there is increased need to consolidate services and ensure system improvements are made and then sustained. Improved service delivery plans need to include provision for efficient surveillance and follow-up endoscopy and need to ensure patients have a positive experience of the service.

TARGETED APPROACHES TO INCREASING ENDOSCOPY CAPACITY

Resources (staff and facilities)

Endoscopists, endoscopy rooms, equipment and consumables are commodities that need to be used as efficiently as possible.

There are several potential options to help manage the workload of endoscopists within a department, these include outsourcing (sending patients' offsite to an external endoscopy provider for their investigation) and insourcing (paying external endoscopy clinicians to deliver the investigation on your site). These systems are a useful option when suitably trained endoscopists are available but are costly and may cause difficulties if reports and histology are processed off site. Training more nurse endoscopists may be a more cost-effective approach to managing work load^{2,3} and is currently the object of a national pilot to deliver 200 non-medical endoscopists by 2018. Anxieties over perceived issues with recently trained endoscopists being 'poached' by neighbouring trusts is also being met by planned changes in employment contracts.

Procedure rooms, beds and patient toilets within an endoscopy suite are limited and are often in short supply

To cite: Seward E, Lumley S. *Frontline Gastroenterology* 2017;**8**:90–93.

during busy lists. One way to increase this resource is obviously to purchase further facilities, but as with additional endoscopists, more rooms are costly. More efficient use of the rooms provided, is a much cheaper and more sustainable way of managing capacity. Systems review can reveal where space can be used more effectively.⁴ Recording start and finish times on rooms is one example of a way to facilitate data collection and increase visibility to the whole team of the problems and areas to focus improvement. Making late starts culturally unacceptable within a unit can go a long way to clawing back missing capacity.

Patient beds and toilets are often busy with patients undergoing bowel preparation prior to procedures. Innovations such as home enemas for flexible sigmoidoscopy can reduce 'patient bed-hours' in department, and allow more sigmoidoscopies to be booked onto any one list and has been shown to be acceptable to patients and more efficacious than a hospital-administered enema.⁵

System improvement

Endoscopy diagnostic pathways are variable UK-wide with room for improvement.⁶ Two initiatives have the potential to increase departments' ability to manage referrals: quantitative faecal immunochemical test (FIT) for symptomatic patients and straight to test (STT) referral systems.

FIT is an extremely sensitive immunoassay for the presence of faecal haemoglobin and has a very high negative predictive value. There is, therefore, considerable excitement over using FIT in primary care as a means of screening out patients who would otherwise be referred up on the colorectal 2-week wait pathway, particularly the 'low risk but not no risk' group. Recent data⁷ suggest that over 40% colorectal referrals could be screened out in this fashion, increasing endoscopy capacity by reducing demand. However, there is a concern that FIT could also increase referrals due to its high analytic sensitivity, particularly if it is used in younger patients where cancer is less of a concern. Future guidelines on the use of FIT will need to ensure that it is used in a clinically appropriate fashion. Discussions around the potential to use FIT in this setting for symptomatic patients are underway.

Clinician-led triage prior to colonoscopy is currently, usually conducted in the context of a face-to-face outpatient clinic appointment. The result of consultations in the vast majority of suspected cancer cases is to request a definitive diagnostic test, usually a colonoscopy or CT pneumocolon. This two-stage process is time-consuming on the part of the patient, may add very little in terms of the patient experience and is arguably wasteful on the part of the hospital, which could better use the outpatient doctor elsewhere, such as in theatres. A STT service involves a hospital-based triage service for general practitioner (GP) referrals in place of the outpatient slot. The

triaging is usually in the form of a phone call from a health professional (usually a specialist nurse) taking a thorough medical and social history from the patient to address NPSA colonoscopy concerns⁸ and books them the most appropriate investigation following a preset protocol. Blood tests and additional investigations can also be arranged. Telephone triage not only shortens the time between referral and test (improving patient experience) but also provides an opportunity for bowel preparation to be effectively explained over the phone, this has been shown to reduce the DNA rate and improve the quality of bowel preparation. A further major strength of the STT service is that it will consistently apply the same locally agreed algorithm to every patient, reducing variation seen between clinicians. It is key that primary care is involved in the development of pathways to provide a service that meets their needs and that data collection is built into these systems to inform further practice. There are many anecdotal examples of very successful STT pathways in the UK, and STT has featured in the national Accelerate, Coordinate, Evaluate programme run in partnership with cancer research UK.⁹

System improvement must cover the whole diagnostic pathway. The Atlas of Variation demonstrates significant discrepancies in practice across the UK.¹⁰ Review of where the variation is within a department is a useful starting point. Effective data collection and surveillance audits can be used to develop a pragmatic efficiency strategy. Quality improvement bodies such as the Joint Advisory Group (JAG) on gastrointestinal endoscopy through the global rating scale provide frameworks and suggestions for systems improvement within endoscopy services. Included is a requirement for efficiency audits and action plans for improving and sustaining services. JAG also endorses the 'productive endoscopy unit' toolkit to help support departments to reduce wasted resources in their endoscopy unit. Other review tools such as process mapping (figure 1) and value stream mapping¹¹ allow rapid identification of the problems and barriers to service improvement.

The NHS Improvement Rapid Review of Endoscopy Services⁶ highlighted that good operational management is imperative to run an efficient endoscopy service. This should also include good data collection. Involvement of clinicians is important to understand the demand and help optimise capacity.

Reducing waste in the system

Inadequate bowel prep and absenteeism (DNAs) at endoscopy lists are a waste of precious resource and steps must be taken to reduce these.

Numbers of patients not attending investigation appointments can be reduced with nurse preassessment, either as part of STT or a stand-alone service. Reminding patients either by telephone or by text of

Figure 1 With permission of National Health Service improving quality (NHS IQ) now the NHS Sustainable Improvement Team.

their appointments also has been demonstrated to work.

There is now a large amount of data supporting the use of split bowel preparation¹² (taking laxative the day before and the day of the colonoscopy) and units with any issues over inadequate bowel preparation would be well advised to consider a switch to a polyethylene glycol solution given as a split dose.

THE FUTURE POTENTIAL—WHAT A 'PERFECT' SERVICE COULD LOOK LIKE

We can use the ideas suggested above to envisage the potential perfect patient pathway of the future:

The pathway starts with a patient presenting to primary care with concerning colorectal symptoms. The GP then sends an electronic referral to a single point of triage in secondary care along with a full patient history, extracted electronically from the primary care record. If the GP thinks the patient has a 'suspicion of colorectal cancer', the GP would also ask for the patient to do a same day FIT test. That is, if the patient meets either NICE 2-week wait criteria or current NICE guidelines for faecal occult blood test (FOBT) in primary care. The results of the FIT tests are then on a database available to both primary and secondary care.

Within 3 days, the patient would get a call from a specialist nurse who has access to: the referral form, with attached patient history and the patient's FIT result. A history can be taken from the patient over

the phone to fill any gaps in history of their symptoms and functional status. A locally agreed evidence-based algorithm can then be followed, to decide whether the patient requires further investigation and if they do, which investigation is most appropriate. The nurse can then discuss the options with the patient and come to a shared decision about which test the nurse will arrange. At this point, the nurse is also able to counsel on how to take the split dose bowel preparation and to explain the procedure. After this interaction, an electronic prescription for bowel prep can be sent to the patient's local pharmacy. Patients requiring colonoscopy will be booked onto a list within 2 weeks of their presentation to GP.

On arrival on the day of colonoscopy, the admitting nurse cannulates and obtains written consent for procedure from the patient. This allows the endoscopist (who may also be a nurse) to focus solely on the delivery of the endoscopy. Progress through the unit is optimised—the team are aware of the patient's case through the prelist team brief, nursing hand-offs are minimised, and as the actual procedure is performed with entonox alone, the patient is discharged on a rapid, un-sedated pathway. By not using benzodiazepines or opiates the patient's recovery is significantly shortened and they can be safely discharged promptly.

In the event of a cancer on colonoscopy, patients will be informed while still in the endoscopy unit and a further outpatient appointment booked within 2 weeks to discuss biopsy results and further

treatment. In the interim, patients will have urgent staging investigations and will be discussed at colorectal multi-disciplinary team (MDT). Joined up IT interfaces will allow real-time communication of results to primary care, and a patient portal will allow the patient to access results in a timely fashion. Data regarding the patient journey through endoscopy will be inputted into an electronic quality improvement system. This would include demographics, waiting time, procedure and results. The analytics data from this system would be reviewed periodically and used to drive further system improvement.

This vision of the perfect future system (which, actually, is deliverable now in the UK) outlines quick diagnosis and investigation. It requires minimal hospital attendance and allows potential for those with a negative FIT to be reassured and potentially avoid a colonoscopy. The pathway is cost-effective, maximises resources and will hopefully lead to better patient outcomes and satisfaction.

CONCLUSION

The discrepancy between the capacity to provide diagnostic endoscopy and the increasing demand for this service has led to difficult times for those planning and delivering this service. Over the next 10 years, this will require a multifactorial solution. Recruitment and retention of endoscopy staff is paramount, but there needs to be more focus on system review, improvement and sustainability. This should be led by data-driven action plans and appropriate use of novel initiatives. STT referral pathways, FIT and nurse endoscopists are just a few of tools that may help streamline systems and free up capacity.

Competing interests None.

Provenance and peer review Commissioned; externally peer reviewed.

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