Colonoscopy is an expensive and finite resource. For most clinical indications, it has replaced barium enema as the initial colorectal examination of choice. The use of colonoscopy has become widely accepted as the most effective method of colorectal cancer screening in patients over the age of 50 years and in younger patients at increased risk.

St Michael’s Hospital in Dun Laoghaire, Co Dublin offers a direct access colonoscopy service to GPs. There has been increasing demand for direct access endoscopy services, with a significant impact on waiting times. Inappropriate referrals were not only perceived as the reason for undue delay on waiting lists, but also meant that patients are exposed to a higher risk-benefit ratio. Hence, auditing our practice on the referral indications on direct access endoscopy emphasises patient safety, while examining the diagnostic yield of colonoscopy provides a quality assurance measure.

To improve the effectiveness and quality of the direct access service, we audited the referral indications for colonoscopy against the American Society for Gastrointestinal Endoscopy (ASGE) guidelines and measured the diagnostic yield of the service.

Method
We included all patients (n = 113) who had undergone colonoscopy via the direct access service in July 2009 in this audit. Of these, there were 89 patients who subsequently underwent colonoscopy. The remaining 24 patients had re-scheduled or cancelled their appointment. Medical charts were retrieved to obtain the referral indications from general practitioners and findings at colonoscopy.

Results
Of the 113 patients scheduled for direct access colonoscopy, 89 patients subsequently underwent colonoscopy. Of these, 87.6% (78/89) were referred appropriately for colonoscopy, based on the ASGE guidelines. Conversely, 11 were inappropriate referrals with no ASGE indication for colonoscopy, which represents 12.4% of the sample population.

The main referral indications were unexplained gastrointestinal bleeding (32.6%), screening colonoscopy (30.3%), chronic irritable bowel symptoms or abdominal pain (19.1%); and clinically significant diarrhoea (18.0%) (see Figure 1). The failure rate of colonoscopy from poor bowel preparation was 9.0% (8/89). The majority of colonoscopies were normal (68.5%), with an overall adenoma detection rate of 6.2%. In this audit, the adenoma detection rate of men aged above 50 was three out of 22 (13.6%), whereas the adenoma detection rate of women of the similar age group was zero out of 30 (0%). The most frequent colonoscopy findings were haemorrhoids (23.6%), followed by diverticular disease (11.2%), (see Figure 2).

A total of 41.6% (n=37) referrals were under the age of 50 years. For this subgroup, the commonest indication was unexplained gastrointestinal bleeding (35.1%) (see Figure 1). Of these, 76.9% (10/13) had a normal colonoscopy, while 30.0% had haemorrhoids. The only significant pathology detected was inflammatory bowel disease in one patient (see Figure 2).

We have found that 21.6% (8/37) of patients under 50 years were referred for screening colonoscopy. Of these 87.5% (7/8) had a significant family history of sporadic colorectal cancer. All had normal colonoscopy, except one who had a failed colonoscopy. Similarly, there were 27% (10/37) of patients under 50 years, who were referred for clinically significant diarrhoea. The majority (70%) of these also had a normal colonoscopy. One patient had inflammatory bowel disease, and an incidental tubular adenoma with low-grade dysplasia was detected in another.

Discussion
Our clinical audit demonstrated that, despite a high rate of appropriate referrals for direct access endoscopy (87.6%), the diagnostic yield remains low, with 68.5% of patients having completely normal colonoscopy. If one considers haemorrhoids and diverticular disease as benign
A number of studies have demonstrated that there are considerable diagnostic yield when colonoscopies are done for appropriate indications. In these studies, high-volume European centres reported between 21% and 39% of colonoscopies classified as inappropriate. It has been suggested that this can be improved to less than a 20% inappropriate rate. According to Rex et al, the best-established neoplasia-related quality indicator is the actual prevalence of adenomas detected. In the US screening colonoscopy studies have consistently identified adenomas in 25% to 40% of patients above 50 years of age. The prevalence rates of adenomas in these studies have been reported to be 25% in men and 15% in women of this age group. In our audit, we found that the adenoma detection rate of men and women, aged above 50, were below the rate reported in large screening studies. We acknowledged the small number of patients involved in this audit and therefore, a direct comparison cannot be made.

In summary, although unexplained gastrointestinal bleeding appears to be the major concern amongst general practitioners for colonoscopy, the diagnostic yield for significant pathology remains relatively low, especially in the younger population.

We would recommend that GPs referring a young patient (age < 50 years, with no diarrhoea or family history of colorectal carcinoma) with fresh per rectal bleeding to consider flexible sigmoidoscopy as the initial investigation of choice. We aim to regularly highlight to our local GPs the availability of flexible sigmoidoscopy in our direct access endoscopy service, which avoids lengthy bowel preparation, patient discomfort and sedation.

We plan to re-audit in a year to identify if clinical practice and referral rates have altered and observe increasing use of flexible sigmoidoscopy.

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References