



National Progress Report on Endoscopy Services

Commissioned by the
Health Service Executive through the
National Cancer Screening Service

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National
Cancer
Screening
Service

Introduction

The National Cancer Screening Service (NCSS) is responsible for the development and implementation of Ireland's first national population-based colorectal cancer screening programme. Although screening programme colonoscopies will be a small percentage of an endoscopy unit's workload, the NCSS is aware of the potential impact on symptomatic services arising from a population screening programme. In that context the NCSS was determined that three key principles should underpin the delivery of this national programme.

1. The screening programme, which targets asymptomatic individuals, must not compromise endoscopy services for symptomatic patients.
2. Screening and symptomatic services should strive to achieve the same minimum levels of access, quality and safety.
3. The quality assurance infrastructure that has typified population screening programmes should have an enhancing effect on the quality of endoscopy procedures performed for symptomatic patients.

With these principles in mind, independent baseline assessment and review visits to 31 hospital endoscopy units were commissioned by the Health Service Executive (HSE), through the NCSS. Each of the 31 units had expressed an interest in providing screening colonoscopy services as part of the National Colorectal Cancer Screening Programme. The visits were conducted by the NCSS in partnership with the representative professional bodies (the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland) and the Joint Advisory Group on Gastroenterology (JAG) in the UK.

The 'National Progress Report on Endoscopy Services' is the culmination of the baseline assessment visits, and provides a detailed description of current endoscopy service provision in Ireland. The report outlines the challenges and service improvement issues that must and are being addressed nationally to ensure that the provision of endoscopy in Ireland is a consistent and standardised model of care.

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There are many areas of good practice but there are nonetheless variations across services and many areas in need of further development and improvement. This is to be expected when undertaking such a large quality and service improvement initiative.

The significant commitment and initiative shown by the hospitals that participated in the assessment and review process is acknowledged by the NCSS. The progress that has been observed since the initial assessment visits has been remarkable. The primary focus must now be on supporting all 31 endoscopy units to achieve independent JAG accreditation and to continue to ensure the delivery of a standardised, quality assured endoscopy service in all hospitals. The NCSS looks forward to continuing to play its part, alongside the HSE Directorate of Quality and Clinical Care, in supporting all units to achieve the primary goal of accreditation of all endoscopy services in Ireland. This process will ensure that improvements are introduced at all endoscopy units, not just those initially selected to provide a screening programme colonoscopy.



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National Progress Report of Endoscopy Services

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Endorsed by

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Joint Advisory Group
on GI Endoscopy



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Background

The Health Service Executive (HSE) through the National Cancer Screening Service (NCSS) commissioned Quality Solutions for Healthcare on behalf of the Joint Advisory Group on Gastrointestinal Endoscopy (JAG), United Kingdom (UK), to undertake a series of baseline assessment and review visits to 31 endoscopy units in the Republic of Ireland. The thirty-one publicly funded endoscopy units were those that expressed an interest in providing the colonoscopy service as part of the National Colorectal Cancer Screening Programme in Ireland.

The baseline assessment methodology applied was based upon the original UK JAG multi-professional, assessment process that aimed to improve endoscopy services in England by identifying deficiencies and underperformance and accelerating the adoption of change to ensure best practice. The baseline assessments and reviews in Ireland were conducted in consultation with the Royal College of Physicians of Ireland, the Royal College of Surgeons in Ireland and the Irish Society of Gastroenterology. The primary objective was to systematically and objectively review the entire endoscopy service from a national perspective, identify areas of underperformance, instigate change and lay the foundations for a system of continuous quality improvement.

The authors

Dr Roland Valori and Ms Debbie Johnston have between them over 40 years' experience in senior clinical, managerial and national project roles. They have developed national and international reputations in their field and have worked in partnership since 2003 as core members of the English National Endoscopy Team. They have an excellent track record of delivering large, complex programmes at a national level.

Together, Dr Valori and Ms Johnston led the transformation of the endoscopy service in England and much of the methodology they developed during this process has been adopted internationally. The quality assessment tool, the Global Rating Scale (GRS), and the accreditation process for endoscopy services in the United Kingdom are two notable developments. The work of the National Endoscopy Team has been acknowledged with national and regional awards. Dr Valori was awarded The NHS Change Leader of the Year at The NHS Leadership Awards 2009.

Their areas of specialisation include quality improvement methodology, IT tools development, accreditation, change management, training and education, programme management and leadership development.

Dr Valori and Ms Johnston offer their services in these areas through their consultancy company, Quality Solutions for Healthcare. It is through this enterprise that they are currently acting as Development Consultants to the Royal College of Physicians of London and the JAG in the areas of quality improvement, accreditation and quality assurance of training and IT support.

Limitations to methodology

There are limitations to what was predominantly a qualitative assessment. The baseline visits were a 'snapshot' review of each service. Furthermore, some services were unable to provide all the information required on the day for the visit team to make a definitive assessment. For example, few units had robust clinical audit data or complete information about patients waiting for a procedure. It was not within the remit of the baseline visit process to validate self-reported waiting time data with published waiting time data.

However, notwithstanding the limitations the authors are confident that the key findings presented in the next section is a fair and reasonable description of the service and will assist in service improvement and priority setting for the endoscopy service from a national perspective.

Executive summary

This report presents the key findings of a series of baseline assessment and review visits of thirty-one gastrointestinal endoscopy units in public hospitals in the Republic of Ireland (Appendix A) on behalf of the Health Service Executive.

The majority of public sector endoscopy in Ireland is performed in the units visited, including the majority of more complicated procedures such as EUS and ERCP. Additionally, all of the endoscopy training within Ireland occurs in these units. The findings presented within this report are based on evidence submissions, observations made by the assessment teams during face-to-face visits and on round-table discussions with the units during baseline and review visits.

There are currently a number of challenges facing endoscopy services in Ireland and there is wide variation in how services are structured and delivered. The baseline assessment visits identified many areas of good practice, but there are significant variations across services and many areas in need of development and improvement.

The baseline assessments identified several key reasons for variation in endoscopy service delivery:

- A lack of understanding of endoscopy services at senior management level
- Poorly defined leadership at clinical team level
- Limited understanding of service improvement methodology at clinical team level
- Low emphasis on service improvement
- The absence of an overarching quality assurance framework
- Limited methods of networking and sharing of best practice
- Poor support for the nursing workforce, particularly in training
- Poor knowledge of capacity planning for endoscopy service delivery

This report is intended to provide an overview of how endoscopy in Ireland is performing, and to provide a blueprint for future improvement and development.

Key findings

Leadership and management -baseline assessment

Responsibilities for the operational development of endoscopy were often spread among several managers within one hospital. As a result the structure of meetings to support the service was weak, and there were often no agreed terms of reference and unclear reporting accountability.

An endoscopy user group meeting would be regarded as a key forum for the discussion of governance, operational management and the development of a service. Forty per cent of endoscopy units in Ireland did not have an established endoscopy user group meeting. Of the remaining 60 per cent of units with an endoscopy user group, the majority had not defined the user group's function and purpose.

Twenty per cent of endoscopy units did not have a designated endoscopy clinical lead consultant in post. Seventy-four per cent of endoscopy units had appointed a new clinical lead prior to the baseline assessments. Sixteen per cent of endoscopy units stated that they were planning to introduce the role of clinical lead but were in the process of developing the role specification and appointment process.

Leadership and management - progress review (Dec 2010)

A significant improvement was observed in the overall leadership and management of endoscopy units. All but one unit now has an agreed endoscopy lead in place. Dedicated leadership remains under discussion in the one remaining unit. Endoscopy user group forums are now established with clear terms of reference. All have excellent representation from the multi-disciplinary team. The individual baseline assessment reports and action plans for improvement provided to all units have become the immediate focus of all users' groups' activities.

Activity, capacity and demand – baseline assessment

Eighty per cent of endoscopy activity is accounted for by procedures performed on public patients. The service is under significant pressure, with increasing demand and growing routine waits. While the overall capacity in the service is not fully utilised, it is clear that some HSE regions may need to increase capacity if waits are to be improved. In some services it is not possible to achieve more activity because of environment or workforce constraints. In others, utilisation could be improved by closer monitoring of capacity and activity, and by identifying bottlenecks in patient pathways.

While 76 per cent of consultants vet their own new referrals, a process for the vetting of new referrals has not been agreed in 56 per cent of units. Inevitably there is wide variation in how vetting takes place. Forty-six per cent of units stated that they practised some form of pooling. This was more commonly seen in urgent cases, specifically for urgent referrals for colonoscopy, but was not common practice for other referrals.

Activity, capacity and demand – progress review (Dec 2010)

All (100 per cent) endoscopy units reviewed had either a new operational policy in place to support the service or were in the process of being approved. Much work is underway to improve referral and pooling practices. Increased levels of pooling were reported by services reviewed for all urgent, inpatient and some routine cases.

Waiting times – baseline assessment

The quality of the data presented to the assessment teams was variable. Based on the information presented there are longer delays for procedures in some HSE regions. Two hospitals were not able to supply data for endoscopy procedures other than colonoscopy at the time of the visit. Sixty-six per cent of units were unable to demonstrate a complete understanding of the principles of effective waiting list management [1].

Waiting times – progress review (Dec 2010)

Seventy-five per cent of endoscopy units reviewed demonstrated a markedly improved understanding of effective waiting list management for endoscopy. This was evidenced by new operational and waiting list policies. While variation remains in some sites assessed, and while more effort will be required to improve practices in endoscopy, the progress in such a short period of time has been impressive.

Out-of-hours – baseline assessment

Ninety-three per cent of hospitals did not have a formally agreed out-of-hours rota for emergency cases. Out-of-hours services are conducted predominantly in theatres as emergency cases by on-call surgeons. Only two hospitals ran a formal out-of-hours rota that was supported by experienced endoscopy nurses.

Out-of-hours – progress review (Dec 2010)

Ninety per cent of hospitals now have a formally documented out-of-hours rota for emergency cases. Out-of-hours services continue to be provided predominantly in theatres as emergency cases by on-call surgeons.

Infrastructure and equipment – baseline assessment

Forty per cent of endoscopy units had inadequate endoscopy admission and recovery facilities with insufficient preparation rooms, private discussion areas and recovery areas for the patient workload. Recovery space was identified as a common bottleneck that adversely affected activity and capacity. In the minority of units patient admission, preparation and recovery is all undertaken in the recovery area.

Ninety-three per cent of endoscopy units did not have a replacement programme for endoscopy equipment. Older endoscopes are less versatile and less reliable than modern equipment. A higher proportion of older equipment increases maintenance costs and reduces efficiency as evidenced within The Report of an Independent Review of Endoscope Decontamination in Northern Ireland [2].

Seventy per cent of units did not have an IT endoscopy reporting system (ERS) for recording and reporting results. An ERS is an essential requirement for a modern endoscopy service because it:

- Ensures that all the key information about the procedure is captured
- Provides a structured report that is immediately available
- Provides easily accessible records of previous procedures
- Provides reports of performance that are essential for quality improvement
- The lack of IT support is a significant challenge for the majority of services in Ireland.

Infrastructure and equipment – progress review (Dec 2010)

Significant efforts were observed to be underway to improve endoscopy unit facilities. Inevitably it will take a longer period of time for minor capital works to be complete. The majority of services have confirmed plans in place to make changes to improve the patient's experience. Some hospitals will need to identify and prioritise the financial investment required. The authors understand that endoscopy reporting systems (ERS) are being rolled out to all services in a staggered fashion by means of a national procurement.

Decontamination – baseline assessment

Eighty per cent of endoscopy units were not fully compliant with the standards described in the HSE Code of Practice for Decontamination of Reusable Medical Devices e.g. the decontamination area was old making compliance with modern environmental standards difficult, lack of personal protective equipment, and transport of endoscopes. However, this is not a totally surprising finding: in 2006, when the JAG accreditation process was introduced in the United Kingdom, over half of services had similar challenges with decontamination. Less than 30 per cent of units in Ireland had dedicated endoscopy technicians supporting decontamination of endoscopy equipment. Where there was specific technical support for decontamination, it contributed hugely to the efficiency of the service.

Decontamination – progress review (Dec 2010)

There has been a marked improvement in this area. All services reviewed had adopted decontamination practices consistent with the HSE Code of Practice for Decontamination of Reusable Medical Devices. However some facilities continue to be challenged in terms of suboptimal size and location of the decontamination unit. These facilities will require investment by the hospital to fully comply with the environmental aspects of decontamination that would be found in the best endoscopy units. An increase in dedicated endoscopy technicians supporting decontamination of endoscopy equipment was observed and this development should, ideally, continue.

Assuring clinical quality and safety – baseline assessment

Quality assurance requires clear standards (performance indicators), a process for measuring the standards and a method of enforcing the standards. Endoscopy reporting systems are considered the best method of capturing performance indicators but 70 per cent of units did not have a modern endoscopy reporting system. Seventy-three per cent of units did not conduct regular audit and 90 per cent of units reported little or no audit support that would allow the collation, analysis, interpretation and reporting of performance data on a systematic basis. This lack of infrastructure is a considerable challenge if a national bowel cancer screening programme is to be introduced.

In addition 33 per cent of units did not have clear and agreed documented clinical safety guidelines for sedation, diabetes or antibiotic prophylaxis and 60 per cent of units did not have a formal endoscopy governance structure.

Assuring clinical quality and safety – progress review (Dec 2010)

Eighty-seven per cent of units have clear and agreed documented clinical safety guidelines for sedation, diabetes or antibiotic prophylaxis. Ninety-seven per cent of units now have a formal endoscopy governance structure in place.

Small improvements were observed in developing systems to support clinical audit. The lack of IT and audit support infrastructure remains a considerable challenge for the majority of services. Endoscopy reporting systems will assist improvements in this element of the service.

The patient's experience – baseline assessment

All units had patient information but, with the exception of two units, the information was out of date and did not highlight the risks associated with the procedure in question. Eighty-three per cent of endoscopy units lacked what would be regarded as adequate facilities for private discussions. Eighty-three per cent of units did not obtain formal consent in private or did so when the patient was in the procedure room. The confirmation of consent is best obtained outside the procedure room and only after the patient has had time to absorb the necessary information to give informed consent.

The patient's experience – progress review (Dec 2010)

Ninety-four per cent of units had updated all patient information. A significant improvement was reported in providing more flexible facilities for private discussion. Fifty-eight per cent of units reported significant improvements in consent practices supported by new policies.

The nursing workforce – baseline assessment

Ninety-seven per cent of units consider themselves to have sufficient nurse staffing to deliver a safe experience for patients. Nursing knowledge and practical skills need to be improved, however, through updated training and the introduction of endoscopy-specific competencies. Fifty-seven per cent of units were not up to date with individual performance and competency assessments. As endoscopy has evolved so the skills required of the workforce have changed. Reviewing skill mix and introducing more technical support roles, such as decontamination operatives, into the service could improve standards and efficiency.

The nursing workforce – progress review (Dec 2010)

Sixty-five per cent of endoscopy units reviewed, demonstrated improvements in the development of all staff through locally developed competency training and development programmes.

Training endoscopists – baseline assessment

None of the units had a designated training lead. Ninety-three per cent of units reported that they adjusted lists, where possible, to meet the needs of trainees. However, it was clear that the majority of training is delivered on busy service lists. The claim by some units that lists are adjusted to accommodate training would need to be verified and formally documented. There is room for considerable improvement in the training environment and the training of medical and surgical trainees.

Training endoscopists – progress review (Dec 2010)

No real change was noted in this area. The authors understand that the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland will announce a joint initiative in January 2011 to address the issues of quality, safety and training in endoscopy.

Conclusion

The findings from the baseline assessment visits were not altogether unexpected or surprising. Identifying deficiencies and underperformance are inevitable when beginning any quality and service improvement initiative. The authors must acknowledge that the extent of improvement observed across the service in Ireland nationally over the last six months has been remarkable and all concerned should be congratulated for the motivation and application they have demonstrated to improve the service. The collaborative multidisciplinary approach led by the NCSS has been a key driver to this success. Nonetheless the authors would caution that the progress observed to date needs to continue, particularly in the area of clinical quality and audit. Application of the endoscopy Global Rating Scale (GRS-Ireland) and implementation of JAG accreditation will accelerate and correct many of the shortcomings of the service.

Introduction

Gastrointestinal endoscopy is a relatively new diagnostic speciality that has evolved considerably over the past twenty years. It involves the inspection of the gastrointestinal tract with flexible telescopes. It is now possible to examine the entire gut from mouth to anus using different types of instruments.

Endoscopy is the gold standard technique for diagnosing luminal gut disease. The majority of diagnostic endoscopy is performed on patients suspected of having cancer of the gastrointestinal tract from the upper oesophagus to the lower rectum. Endoscopy also plays a major role, however, in diagnosing benign disorders such as oesophagitis and peptic ulcers, in the assessment of benign pancreatic biliary disease and in the continuous monitoring of disorders such as inflammatory bowel disease.

Increasingly endoscopy involves some form of therapy: removing pre-cancerous polyps, controlling life-threatening haemorrhage, placing feeding tubes and inserting stents to overcome obstructions. There is strong evidence that screening endoscopy, used as a follow up investigation after a positive primary screening test or as a primary screening tool, can have a considerable effect on bowel cancer outcomes, reducing mortality by 18 per cent and reducing the incidence of cancer by up to 50 per cent in the screened segment of colon [4,5].

Endoscopy is invasive and can cause harm, especially during therapeutic procedures. Rates of complications for various procedures, particularly colonoscopy, have been published [6,7,8]. It is likely that these reports underestimate the total harm suffered because practitioners are less likely to publish poor performance and some adverse events are apparent only days and sometimes weeks after the procedure, making them difficult to capture [9].

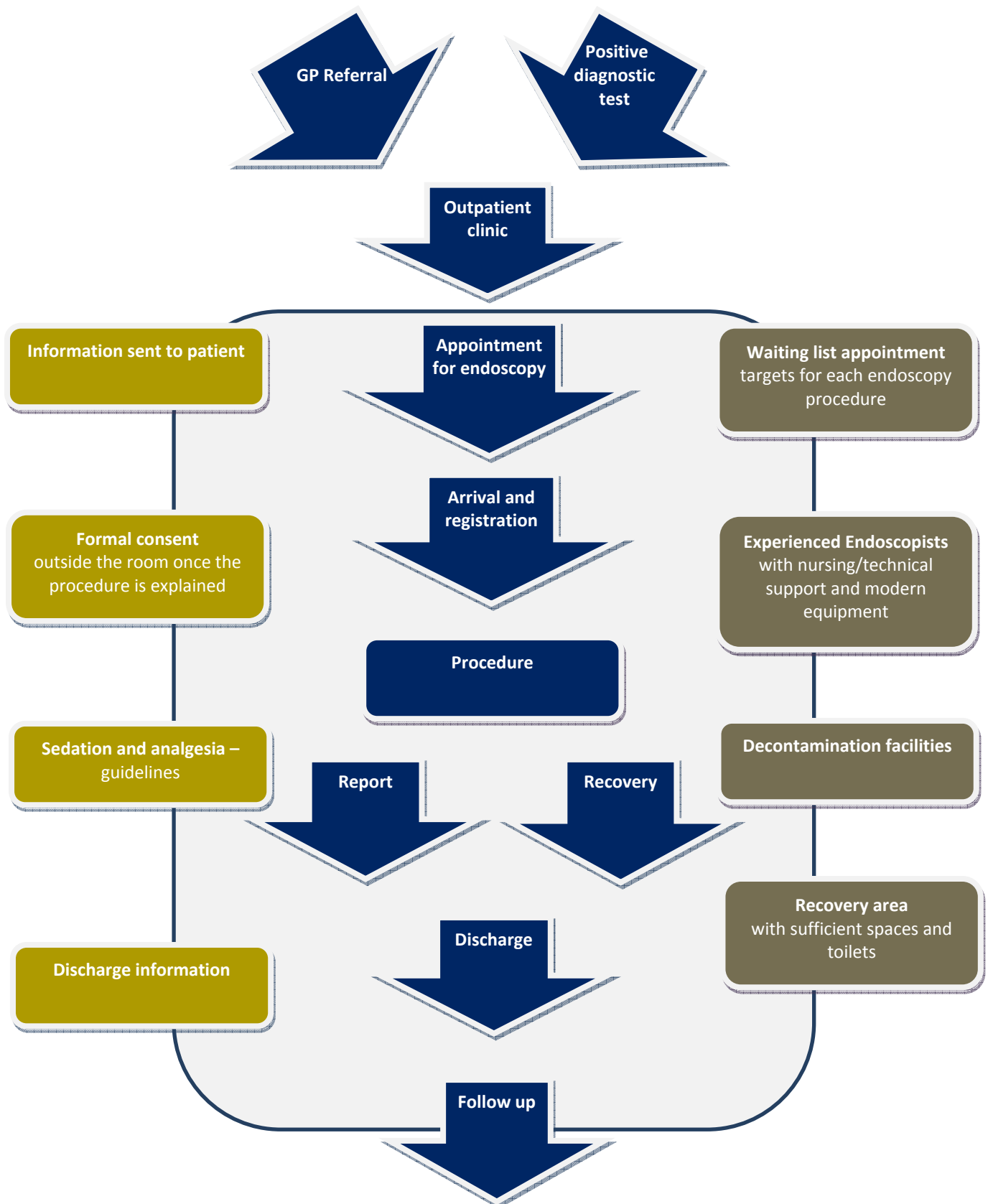
Patients worry about endoscopic procedures more than many other tests because the procedure is often done for suspected cancer, because they know it can be uncomfortable and because it can be embarrassing.

Endoscopy, like all diagnostic tests, has an impact on the efficiency of a health economy as well as health outcomes. Timely diagnostic tests can shorten patient pathways, especially in the inpatient setting where patients often occupy a hospital bed while waiting for a procedure. Shorter patient pathways involving endoscopy enable earlier detection of diseases such as cancer, inflammatory bowel disease and peptic ulcers. These diseases are often easier to manage if detected early. Delayed procedures and results will affect the efficiency of care within and outside hospitals.

In summary, although endoscopy has a positive impact on health outcomes and can be enormously reassuring to patients, it can also cause patients harm and distress and, if not delivered efficiently, can reduce the efficiency of the wider health economy.

The endoscopy service is a complex clinical pathway of care [Figure 1] with multiple elements impacting on the efficiency and quality of the service. It is essential that all elements are critically examined when reviewing a particular endoscopy unit.

Figure 1: The Endoscopy Pathway



Demand for endoscopy

There has been a steady year on year rise in the levels of activity in endoscopy in all modern healthcare systems in the last decade. As a result, most countries struggle to control waiting times. In some countries, such as America, Australia, Japan and Germany, there are sectors of the community (usually but not exclusively the adequately insured) that do not wait. However, long waits are generally the rule rather than the exception. England is the only country where waits have been eradicated and kept under control for more than two years (since April 2008). However, because of the continued rise in demand (from a relatively low activity base) there remains a high risk that the current control of waits will be lost.

In England, government targets such as the Cancer 62 day and 18 weeks referral to treatment targets [10,11] were a major incentive for improving waits. In Ireland there are targets for urgent colonoscopy waiting times [12] but none for other endoscopic procedures. The natural consequence of this is that hospitals will support services to achieve rapid access for urgent colonoscopies but not for other endoscopic procedures.

International benchmarks for endoscopy activity

It is not easy to determine the appropriate amount of endoscopy. There is only a small amount of published data on activity on an international scale, the majority of which relates primarily to colonoscopy. There is reliable data on colonoscopy activity in Australia [13] and recently the English Department of Health published a report of hospital episodes of endoscopy which gives a clear picture of current activity and recent trends [14]. In England the total number of endoscopic procedures has risen by 22 per cent in the last three years, an annual increase of 6 to 8 per cent per year. The increase in colonoscopy has been much higher, with a 38 per cent increase in the three years to 2009-10 [14].

The rate of colonoscopy in Australia varies four-fold between the insured and uninsured population [13]. Rates of endoscopy are usually expressed as rates for a defined baseline population (usually 1,000 or 10,000) per year. The rate of colonoscopy in England (7.2/1,000/year in 2009-10) is approximately 70 per cent of that in the uninsured Australian population (10.4/1,000/year) and of the public sector in Ireland (10/1,000/year) (Table 1, 2 and 3) [15].

Flexible sigmoidoscopy (FS) is a much more frequently used test in England and some of the difference in rates between the countries could be accounted for by high rates of flexible sigmoidoscopy in England. The rate of colonoscopy plus flexible sigmoidoscopy in England is 11.8/1,000/year [14].

Historically England has underutilised colonoscopy and it is predicted that a steady state will be achieved at double the current rate with age extension and the maturity of the bowel cancer screening programme, the continued replacement of barium enema with colonoscopy and with raised awareness of the benefits of colonoscopy. Interestingly, the rates of colonoscopy in England in the Primary Care Trusts (purchasing consortia) vary significantly across regions (4.9-10.3/1,000/year) and largely reflect the variation in the ratio of gastroenterologists per head of population [16]. The rate of colonoscopy in the insured population in Australia is probably excessive – even the Australians recognise that there is a problem with “over servicing”.

During 2008 there were 58,848 discharges in HSE operated or funded hospitals in Ireland where at least one colonoscopy was undertaken [Table 2]. Twenty-nine per cent (16,989) of colonoscopy discharges were undertaken on private patients and 71 per cent (41,859) were undertaken on public patients. This reflects a colonoscopy discharge rate of approximately 10/1,000 population among public patients.

Approximately 43,000 privately funded colonoscopies were performed in Ireland in 2008 [17]. On the basis that 16,989 (39.5 per cent) were performed in publicly funded hospitals [15] an additional 26,011 colonoscopies can therefore be assumed to have taken place in private hospitals. This

reflects a colonoscopy discharge rate of approximately 10.2/1,000 population among private patients. Public and private sector combined, there were almost 85,000 colonoscopies performed in Ireland in 2008. This reflects a colonoscopy discharge rate of approximately 20.2/1,000 population. This is a high level of colonoscopy activity.

Table 1: International statistics on endoscopy

Country	Sector	Year	Total	Population (Million)	Rate/ 1,000/ Year
England	Public	2009-10	368,000	50	7.4
Ireland	Public	2008	41,859	4.2	10.0
	Private		43,000		10.2
	Total		84,859		20.2
Australia	Public	2008	118,111	11	10.7
	Private		402,203		36.6
	Total		520,314		47.3

Table 2: Number of colonoscopy discharges in HSE funded and operated hospitals, by age and sex and age specific discharge rates, 2008 (n= 4,239,848. Source: Census 2006)

Female			Male		Total	
Age	No. colonoscopy discharges	Age specific discharge rate per 1000	No. colonoscopy discharges	Age specific discharge rate per 1000	No. colonoscopy discharges	Age specific discharge rate per 1000
0-4	21	0	26	0	47	0
5-9	22	0	28	0	50	0
10-14	56	0	84	1	140	1
15-19	436	3	303	2	739	3
20-24	1019	6	617	4	1636	5
25-29	1535	8	1033	5	2568	7
30-34	1538	9	1332	8	2870	8
35-39	1774	11	1760	11	3534	11
40-44	2391	16	2084	14	4475	15
45-49	2771	20	2277	17	4988	18
50-54	3062	25	2625	21	5687	23
55-59	3168	28	2874	25	6042	27
60-64	3218	36	3093	34	6301	35
65-69	2801	39	2747	39	5548	39
70-74	2615	42	2827	50	5442	46
75-79	2304	44	2312	58	4616	50
80-84	1476	37	1304	53	2780	43
85+	800	24	585	39	1285	29
Total	30,947	15	27,901	13	58,848	14

Table 3: Age standardised scoping rates on both public and private patients in HSE operated and funded hospitals, by county, 2008

County	No discharges	Discharge pop rate/1000	Indirectly standardised rate	HAL
Monaghan	1534	27	192	H
Cavan	1621	25	177	H
Louth	2428	22	163	H
Tipperary South	1804	22	147	H
Longford	651	19	129	H
Westmeath	1467	18	137	H
Meath	2987	18	148	H
Tipperary North	1175	18	121	H
Roscommon	1008	17	109	H
Carlow	853	17	125	H
Leitrim	468	16	103	A
Sligo	975	16	106	A
Mayo	1951	16	101	A
Laois	1022	15	113	H
Kilkenny	1211	14	98	A
Waterford	1446	13	93	L
Wicklow	1667	13	97	A
Dublin South	8579	13	96	L
Limerick	2416	13	95	L
Dublin North	6856	13	97	L
Wexford	1607	12	86	L
Kildare	2242	12	101	A
Clare	1307	12	82	L
Offaly	835	12	86	L
Galway	2514	11	79	L
Cork	5196	11	77	L
Donegal	1537	10	73	L
Kerry	1432	10	66	L
Total	58,789	14	N/A	N/A

Note 1: Indirectly standardised rates adjust for age of population, taking Ireland as the reference population. An ASR of 100 equals the rate that would be expected if the population profile of that county was the same as the Irish population.

Note 2: H=higher than expected; A=rate as expected; L=lower rate than expected.

Note 3: 59 discharges were on people who did not reside in the Republic of Ireland.

Map of Ireland showing the distribution of COVID-19 cases by region. The map is color-coded: yellow for low case counts, orange for medium, and grey for high. Numbers are placed within each region to indicate the number of cases.

Region	Color	Number of Cases
Northwest	Yellow	975
North	Orange	1537
North-East	Orange	1534
West	Yellow	1951
West-Central	Orange	1008
Central	Orange	651
Central-East	Orange	1467
East	Orange	2987
Southwest	Grey	2514
South	Grey	1307
South-Central	Orange	1175
South-East	Orange	1022
East-Central	Yellow	2242
East-South	Yellow	1667
South-Central	Orange	1804
South-East	Orange	853
Southwest	Grey	1432
South-Central	Grey	2416
South-Central	Yellow	1211
South-Central	Grey	1446
South-Central	Grey	1607
South-Central	Grey	5196
South-Central	Grey	6856
South-Central	Grey	8579
South-Central	Grey	1467
South-Central	Grey	1621
South-Central	Grey	2428
South-Central	Grey	468
South-Central	Grey	835
South-Central	Grey	1022
South-Central	Grey	1175
South-Central	Grey	1211
South-Central	Grey	1446
South-Central	Grey	1607
South-Central	Grey	1804
South-Central	Grey	2416
South-Central	Grey	2514
South-Central	Grey	2987
South-Central	Grey	468
South-Central	Grey	651
South-Central	Grey	835
South-Central	Grey	853
South-Central	Grey	1022
South-Central	Grey	1175
South-Central	Grey	1211
South-Central	Grey	1446
South-Central	Grey	1607
South-Central	Grey	1804
South-Central	Grey	2416
South-Central	Grey	2514
South-Central	Grey	2987
South-Central	Grey	468
South-Central	Grey	651
South-Central	Grey	835
South-Central	Grey	853
South-Central	Grey	1022
South-Central	Grey	1175
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South-Central	Grey	2514
South-Central	Grey	2987
South-Central	Grey	468
South-Central	Grey	651
South-Central	Grey	835

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Providing appropriate endoscopy

From a commissioner's perspective the key to managing demand for endoscopy is to be clear about the indications for the procedure, to publish guidelines and to have in place processes to monitor adherence to the guidelines. Inappropriate endoscopy arises as a consequence of inadequate referral guidelines and no vetting (checking appropriateness against agreed guidelines) of referrals: some who do not need endoscopic procedures get one and those that need one either do not get a procedure or they have to wait too long.

This is wasteful of resources and has the potential to harm patients who do not need the procedure. There are two clear examples of the impact of inappropriate endoscopy from England. The first is the 2004 NCEPOD report [9], which highlighted that a large proportion of endoscopies performed within 30 days of death were inappropriate and some procedures were considered 'futile'. Secondly, on a positive note, there are now numerous reports of the impact of clinical validation of colonoscopy surveillance lists against published guidelines. These demonstrate that large numbers of patients were inappropriately scheduled for a repeat procedure and can be taken off waiting lists or have their interval extended. More than 90 per cent of the service in England routinely validates patients on planned colonoscopy waiting lists. Routine validation of surveillance waits was one key reason why England was able to reduce its waiting lists so quickly and to maintain them for a sustained period.

The impact of population screening on symptomatic endoscopy services in England

In England the introduction of screening has had a major impact on the symptomatic service. It was recognised in 2004 that the introduction of screening into a service, with more than 250,000 patients waiting for an appointment, could destabilise the entire service and cause harm to patients presenting with symptoms. It was also recognised that the screening programme provided the opportunity to improve the quality of endoscopic services by applying the quality framework for population screening to the entire endoscopy service. There is no doubt that the screening programme (including a requirement to have waits under control before screening can commence) has had a massive effect on the quality of endoscopy within England. In contrast screening was introduced in Scotland and Wales without the same requirements and waits in these countries for symptomatic patients are, in many places, out of control. Both countries are struggling to achieve the same quality standards for their services.

In recognition of the potential for screening to both harm and benefit the symptomatic service the EU guidelines on the quality assurance of colorectal cancer screening programmes [18] contain three key guiding principles:

1. The introduction of screening must not compromise endoscopy services for symptomatic patients
2. Screening and symptomatic (diagnostic) services should achieve the same minimum levels of quality and safety
3. Wherever possible the quality assurance required for screening should have an enhancing effect on the quality of endoscopy performed for symptomatic patients and for other reasons.

Quality assurance of endoscopy

Effective quality assurance requires clear standards and processes to assess and enforce those standards. Ideally, standards should be a measure of the impact on the patient but such outcomes are often difficult to capture and may be delayed by many years (such as mortality outcomes for colorectal cancer). Surrogate measures or outputs are often used in place of outcomes. These are generally referred to as key performance indicators (KPIs), such as completion rates, adenoma detection rates and complication rates. For some aspects of care it is also necessary to measure adherence to processes or inputs. Some standards will have an evidence base for a numerical target and these are referred to as quality indicators. Those that do not have an evidence base for a target, or do not lend themselves to a target because of their 'categoric' nature, are referred to as auditable outcomes: a measure that is desirable to monitor but for which a target standard cannot as yet be set.

There is extensive literature on the benefit and harm of endoscopy which it is not possible to cover in this report. Readers are referred to the NCEPOD report of gastrointestinal endoscopy from 2004 to appreciate the potential for endoscopy to harm patients, particularly towards the end of their lives [9]. Colonoscopy is undoubtedly now the most important endoscopic procedure in terms of volume and impact on patients. The literature illustrates very clearly the impact that high quality and poor quality colonoscopy has on patients. There is now a good evidence-base demonstrating that miss rates for colorectal cancer can vary from 1 per cent to 10 per cent between individual colonoscopists [19,20,21]. The complications of polypectomy are well described, with the risk of post-polypectomy bleeding ranging from 0.3 per cent to 6.1 per cent and that of post-polypectomy perforation from 0.08 per cent to 0.69 per cent [6,7,8]. Incomplete excision of polyps is also common [22].

It is now widely agreed that to achieve good patient outcomes colonoscopists need to slow down, particularly when withdrawing the colonoscope, in order not to miss important lesions. Endoscopists need to be more careful when removing lesions to minimise the risk to patients and to ensure that pathological material is not left behind.

Training endoscopists

A recent report commissioned by the New Zealand Ministry of Health indicates that training of endoscopists and the quality assurance of that training is highly variable across the world and that no system is perfect [23].

It was recognised in the late nineties that training provision in England for endoscopists was highly variable and that many individuals could become independent endoscopists with virtually little or no training. There were no formal assessment processes at this time, even for those who had received specialist training. As a result, the Cancer Action Team in the UK Department of Health invested heavily in improving training and, in particular, in developing robust competency frameworks and methods of assessment. More recently the JAG has created a comprehensive quality assurance infrastructure for training that is based on an e-portfolio for trainees and trainers [24] that is currently being rolled out across the UK.

Patient-centred care

From the patient perspective, having an endoscopic procedure is very worrying because so often it is performed on patients suspected of having cancer and because the procedure itself is invasive. Furthermore, endoscopic procedures are often embarrassing and this embarrassment is compounded by patients having to wait partially-clothed in mixed-sex facilities in cramped conditions where it is difficult to have private conversations. The situation is further compounded if patients are provided with inadequate information.

The European guidelines on colorectal cancer screening recognise the importance of creating a good patient experience to ensure that patients recommend to their friends, relatives and colleagues that they should take part in screening [18]. Without this engagement screening will be limited and its impact adversely affected.

“People undergoing endoscopy, whether for primary screening, for assessment of abnormalities detected in screening, for assessment of symptoms, or for surveillance, should have as good an experience as possible, permitting them to encourage screening, assessment and surveillance of appropriate quality to their friends, family and colleagues.” [18]

Similarly patients entering a service with a good reputation for patient-centred care will be less anxious and less likely to default on appointments.

Patient-centred standards

A patient-centred high-performing endoscopy service requires clarity of standards and an effective process to monitor and enforce those standards. To meet this challenge the English National Endoscopy Team, working with the JAG, created the endoscopy GRS. The GRS sets out standards and creates a framework in which the endoscopy service can assess itself against those standards.

The GRS is a tool for quality improvement as well as for quality assessment. It is now the basis against which endoscopy units are measured for JAG Certification in the UK. The GRS is underpinned by four domains, each with a number of items containing measures. Table 4 highlights the four domains and its core items. The GRS is regarded as the most significant achievement of the National Endoscopy Team in England. It is a simple to use web-based quality improvement tool that has inspired and motivated endoscopy teams and provided them with a clear service improvement path. It is supported by an up to date Knowledge Management System (KMS) that links the measure to a resource or solution enabling the service to accelerate change.

In addition the JAG created a peer-review accreditation process to ensure that GRS self-assessments were made honestly and fairly, and also to assess those areas that could not be assessed within the GRS framework, such as decontamination and the physical infrastructure.

In recognition of the critical importance of effective training and assessment and of the essential role of the nursing and administration workforce, two further domains of the GRS were created for endoscopist training and the assessment of the nursing, clerical and technical workforce within the department: the training and workforce domains.

Table 4: Endoscopy Global Rating Scale - domains and items

Patient-centred	
Clinical quality 1. Consent and patient information 2. Safety 3. Comfort 4. Quality of the procedure 5. Appropriateness of the procedure 6. Communicating results to the referrer	Quality of the patient experience 7. Equality 8. Timeliness 9. Booking and choice 10. Privacy and dignity 11. Aftercare 12. Ability to provide feedback
Workforce centred	
Workforce 13. Skill mix review and recruitment 14. Induction and orientation 15. Assessment and appraisal 16. Staff are cared for 17. Staff are listened to	Training 18. Environment and training opportunity 19. Endoscopy trainers 20. Assessment and appraisal 21. Equipment and educational materials
Further information is available on the GRS website: www.grs.nhs.uk .	

Each item is underpinned by a number of measures, the item has four levels of achievement, D, C, B and A, where D is a very basic service and A is exemplary. To achieve each successive level the service has to complete and provide evidence of completion of various processes and standards. These measures form the basis of the GRS. In England the GRS is self-scored online twice a year and forms the basis of JAG Certification when evidence in support of self-scoring is assessed.

The standards of the GRS were created by members of the service. The key performance indicators that underpin it were, as far as possible, based on published evidence. The GRS has been adopted in England, Wales, Scotland and Northern Ireland and is also being piloted in Canada, the Netherlands, Australia and New Zealand. In Canada there was concern about the provenance of the standards and as a result of this a consensus conference was organised in June 2010 at which the GRS standards were subjected to an evidence-based review and subsequently a consensus voting process. A report of this consensus meeting will be published.

In Australia a quality working group was created in 2006 to review standards for a high quality colonoscopy service and the quality working group published a standards document in 2010 which refers to many aspects of the GRS [13].

The European Union commissioned a group to create a standards framework for the quality assurance of colorectal cancer screening. This guideline addresses the whole screening pathway [18]. Within it there are two key chapters for endoscopy which cover delivery of the service and surveillance of high risk groups. While these guidelines focus very much on colorectal cancer screening they are in fact a template for a modern endoscopy service. The guidance is based on the principle of using the opportunity of population screening to enhance the symptomatic service.

The recommendations from the endoscopy chapters of the EU guidance have been cross-referenced, where possible, to the recommendations of this report. The GRS, together with a peer review accreditation process, will enable Ireland to assess the extent to which it achieves the recommendations made not only in the EU guidelines but also the standards set out in the Australian quality working group guidance [13], recommendations from the American Society of

Gastrointestinal Endoscopy [25] and the quality assurance guidelines of OMED (World Organisation of Endoscopy) [26].

Infection control

The control of hospital-acquired and other transmissible infection such as hepatitis and human immunodeficiency virus infections has become critical for hospital and community-based endoscopy services. There are European guidelines on decontamination of endoscopes [27] and *HSE Code of Practice for Decontamination of Reusable Invasive Medical Devices* [3]. Clearly it is important for any modern endoscopy service to comply with legislation and national guidelines on decontamination in order to reassure patients that the risk of acquiring an infection as a result of an endoscopic procedure is minimised.

Methodology

The methodology used for the baseline assessments was based on that used in the United Kingdom where, in the previous five years, a variety of assessments have been carried out including:

- Pre-JAG accreditation assessments
- Formal JAG accreditation visits
- Visits to review action plans resulting from JAG accreditation visits
- Intensive support assessments for the most challenged units

Previous experience provided the assessment teams with a range of approaches to suit individual context to ensure that there was a thorough baseline assessment across all sites. The assessments are based on the endoscopy GRS and the supporting processes of the peer review JAG accreditation process.

The baseline assessment methodology aimed to:

- Describe the service
- Provide each hospital with a clear picture of how its endoscopy unit is performing
- Identify good practices
- Identify the challenges
- Provide a plan for quality and service improvement
- Gather feedback on the GRS to ensure its relevance to the endoscopy service in Ireland

At a meeting held in the NCSS on 1 February 2010 the Royal College of Physicians of Ireland, the Royal College of Surgeons in Ireland and the Irish Society of Gastroenterology agreed with the process and methodology to be applied.

A protocol for the assessments was prepared which included guidance on the assessment of the endoscopy service. This was sent to the clinicians, endoscopy nurses and management prior to the visit. The participation rate was 100 per cent. The process included a pre-visit questionnaire which gathered data on the service.

Pre-visit questionnaire

A bespoke pre-visit questionnaire was developed to gather core service information. The questionnaire was originally designed for use in the UK setting and was modified to suit the Irish environment. It enquired into both the quantitative and qualitative aspects of the endoscopy service. The questionnaire was sent to the endoscopy team leaders in each centre for completion. The response rate was 100 per cent.

Each unit in Ireland was required to complete the pilot version of the endoscopy GRS online prior to the assessment visit.

Site visits

Thirty-one site visits took place between April and September 2010 (Appendix A). The assessment team consisted of three trained and experienced JAG assessors (Appendix B): a doctor, nurse and manager. All visits were led by Debbie Johnston, who has extensive experience of assessing endoscopy services, having visited more than 300 units in the past five years in her role as National Programme Manager for the National Endoscopy Programme and for the JAG. More than 30 of these visits were for intensive support of units struggling to achieve national standards.

The endoscopy leads, unit staff and hospital management met with the assessment team on the day of the visit. The team provided an assessment of the endoscopy service in terms of:

1. Leadership and management
2. Activity
3. Unit design and layout
 - a. Equipment
 - b. Decontamination
4. Nursing
5. Training
6. Policies and documentation
7. Information and audit
8. Access and booking

The team used a standardised assessment approach, modified from that used in JAG assessments. The team identified areas of good practice as well as opportunities for improvement. Verbal feedback was provided on the day of the visit to the endoscopy staff and hospital management. A written report was given to the clinical team and hospital management with recommendations for improvements to the service. The local team was given the opportunity to correct any inaccuracies in the report before it was finalised.

During December 2010 progress against the recommendations contained within individual baseline assessment reports was reviewed.

Baseline assessment findings

Leadership and management of endoscopy units

Endoscopy services are generally led by a clinical lead supported by a nurse unit manager and a manager with a broader managerial role. Often the nurse unit manager functions as a nurse lead and as manager of the service. The performance of the service is entirely dependent on the capability of these leaders and managers and, critically, how they work as a team. Experience from the English National Endoscopy Programme indicates that when there is poor or absent leadership, services will usually suffer with long waiting times, poor quality and safety, and poor patient experience.

Twenty per cent of endoscopy units did not have one designated consultant established as leader of the endoscopy service. Seventy-four per cent of units had a new endoscopy lead in place and 6 per cent were planning to appoint one. In all of the units the clinical lead role and responsibilities need to be clarified and much better supported. In 20 per cent of the units the clinicians, nurses and managers were relatively unaware of each other's responsibilities within the leadership team. All of the endoscopy services in Ireland have very experienced nurse leads who have worked in endoscopy for a long time.

Responsibilities for the operational development of endoscopy within a hospital were often spread among a number of managers and the structure of meetings to support the service was weak. The meetings often had no terms of reference or agreed governance or accountability structure. Meetings ranged from informal ad hoc meetings to structured endoscopy user groups. Forty per cent of endoscopy units did not have an endoscopy user group but many were planning to establish one at the time of their visit. The endoscopy user group meeting would be regarded as the key multidisciplinary forum to govern, manage and develop services. Effective endoscopy services should have an endoscopy user group that is representative of all users of the service, including senior management. These meetings generate increased focus on the quality and safety of the service.

The leaders of the service (doctors, nurses and managers) need to have sufficient time to fulfil these roles effectively. They need support to achieve the GRS standards and develop the service. In doing so they will achieve improvements very rapidly and there will be considerable financial savings in future years through better efficiency and improved standards of care.

An important and critical requirement for a high quality endoscopy service is recognition and support from senior management. It would appear to the assessors that many endoscopy units in Ireland have received less attention from management than other services and would appear to lack influence in terms of overall decisions about service planning and strategic investment.

Activity and waiting times

Demand and activity

The average endoscopy unit reviewed in Ireland performs 1,500 gastroscopies and 1,000 colonoscopies per year. There was significant variation in workload, with the smallest unit reviewed performing only 1,300 procedures a year (Mid-Western Regional Hospital, Ennis) and the largest performing 14,666 (St James Hospital). It is difficult to determine how much flexible sigmoidoscopy is done: this is generally recorded as a left-sided colonoscopy and often included in colonoscopy data. This data does not truly reflect the numbers of left-sided colonoscopy being performed. Activity data is presented by HSE region in Table 5. ERCP is done mainly in larger tertiary referral centres.

A number of other 'guest' procedures (bronchoscopies and cystoscopies) take place in endoscopy units. This activity varies significantly and is dependent on the size and type of unit visited.

Table 5: Endoscopy activity data by HSE region 2009

HSE Region	Total Activity*	Colonoscopy	Gastroscopy	Left-Sided Colonoscopy	ERCP
Dublin Mid Leinster	36,581	12,025	13,964	1,030	1,064
Dublin Northeast	36,459	13,818	16,706	2,331	820
South	28,268	13,495	11,734	167	324
West	29,366	13,022	13,155	1,302	488
Total	130,674	52,360	55,559	4,880	2,695
* Numbers are based on self-reported activity in pre-visit questionnaires					

A further breakdown of the total activity data by region is provided in Table 6. The variation in activity between regions may be influenced by patients travelling for their endoscopic procedure. The assessment teams had no measure of the extent of patient movement but it must not be assumed that all regional variation can be accounted for by local differences in referral (although it is acknowledged that this is likely to be the most important influencing variable).

Table 6: Endoscopy activity reported by hospital in Ireland (2009)

Hospital	Endoscopy activity 2009	Number of endoscopy rooms currently in operation	Current endoscopy capacity per week (sessions) (typical session= 3-3.5hrs)
St James's Hospital	14,666	9	60
Adelaide and Meath Hospital Dublin (Incorporating the National Children's Hospital), Tallaght	9,360	3	32
Midland Regional Hospital, Tullamore	2,678	2	10
St Vincent's University Hospital	5,885	3	10
Midland Regional Hospital, Mullingar	3,992	2	14
HSE Dublin Mid Leinster Total	36,581	19	126
Our Lady Of Lourdes Hospital, Drogheda	4,500	1	10
Cavan General Hospital and Monaghan Hospital (combined assessment)	6,890	2	18
Connolly Hospital, Blanchardstown	3,678	2	17.5
Louth County Hospital, Dundalk	2,600	1	9
Our Lady's Hospital, Navan	3,141	1	10
Mater Misericordiae University Hospital	6,393	3	20
Beaumont Hospital	9,257	3	30
HSE Dublin Northeast Total	36,459	13	114.5
South Tipperary General Hospital	4,638	2	11
Mercy University Hospital	4,455	3	20
Waterford Regional Hospital	3,221	2	18
Wexford General Hospital and Ely Hospital (combined assessment)	4,047	2	16
Kerry General Hospital	3,772	1	10
St Luke's General Hospital, Kilkenny	3,806	2	13
Cork University Hospital	4,329	2	9
HSE South Total	28,268	14	97
Sligo General Hospital	3,533	1	10
Mid-Western Regional Hospital, Ennis	1,300	2	5
St John's Hospital, Limerick	1,336	2	6
Mid-Western Regional Hospital, Nenagh	1,986	2	10
Portiuncula Hospital	2,404	1	9
Letterkenny General Hospital	3,221	2	8
Roscommon County Hospital	1,708	1	8
Mid-Western Regional Hospital, Dooradoyle	5,111	4	12
Mayo General Hospital	2,916	2	11
Galway University Hospitals	5,851	2	11
HSE West Total	29,366	19	90

***Note** this table presents activity only. Complexity of procedure, number and availability of endoscopists, the availability of the scoping room, the equipment and recovery facilities are just some of the factors that will impact on the numbers of procedures performed.

From the assessments it was clear that there are differing policies for referral into endoscopy across all regions. Ideally, the service should be working towards a single nationally-agreed approach. All units work to nationally agreed guidelines for colonoscopy [12]; however, there is considerable room for interpretation within such guidance, especially if there is no formal vetting framework [Table 7]. Furthermore, there is significant room for improvement in the development and application of clinical referral guidelines for other procedures.

In the HSE West region only 20 per cent of endoscopy units had agreed clinical referral guidelines in place whereas in the HSE Dublin Mid Leinster region 71 per cent of services had good practice in this area. There is a need for services to work together and share guidelines and approaches to standardising and managing referrals. Professional bodies need to agree on a set of referral standards for all endoscopic procedures, not just colonoscopy. These in turn need to be communicated to GPs and others working in primary care.

With the exception of HSE South over 50 per cent of endoscopy services in other regions had a form of vetting in place but the application of vetting is highly variable. Vetting policies need to be agreed and included in local endoscopy operational policies. An example operational policy has been distributed to all endoscopy services in Ireland.

Table 7: Endoscopy referral and waiting list management practices, 2010

Exemplary practice	HSE Dublin Mid Leinster	HSE Dublin Northeast	HSE South	HSE West
Up to date local waiting list management policy	42%	60%	57%	70%
Procedure specific referral guidelines for colonoscopy	100%	100%	100%	100%
Procedure specific referral guidelines non colonoscopy	71%	60%	57%	20%
Process for vetting new referrals	57%	60%	42%	50%
Pooling of some procedures	42%	50%	42%	50%
Administrative validation	57%	60%	71%	80%
Clinical validation (surveillance lists)	71%	60%	42%	40%
Specific endoscopy waiting list meeting support structure	57%	80%	71%	80%

Administrative validation practices and clinical validation of surveillance procedures vary significantly between regions. There is an urgent need to reinforce national guidelines to manage waiting lists effectively [1]. Clinical validation of surveillance procedures requires an agreed process and clinical time. Decisions about surveillance cannot be made by junior staff or nurses without close supervision and support from senior medical staff. It should be possible from planned waiting lists to estimate the workload required to clinically validate patients.

It is strongly recommended that clinicians are supported in this work for governance reasons (it would be inappropriate to offer an invasive and potentially dangerous investigation to someone who did not need it or who was not fit to have it done) but also for reasons of efficiency. Clinical validation of surveillance colonoscopy patients will reduce demand. The cost of having effective clinical validation in place more than offsets the costs of investigating patients inappropriately.

Scheduling and capacity

All endoscopy lists assessed were consultant led and owned. Lists were booked according to individual consultants' preferences and there is very limited pooling of procedures. Pooling (sharing or pooling referrals) has the ability to reduce and equalise waits across the service. Where pooling does occur, it is generally applied to urgent colonoscopy referrals to ensure that the national 28 day waiting time is achieved [12]. Half of services said that they pooled their urgent colonoscopy referrals if required. There was very little evidence to support this and pooling for all other procedures did not exist.

In all services there were agreed scheduling rules for each of the endoscopists about the numbers of procedures by type that can be done on each list. However, the range of procedures booked and completed varies significantly from individual to individual, and from service to service. The larger services, in particular, reported a number of endoscopists who worked alternate weeks or months and completed what appeared to be very small numbers of procedures. Consultants' list numbers ranged from 3 to 9 per list for colonoscopy and 2 to 12 per list for gastroscopy.

Table 8: Endoscopy numbers performed per list

Procedure	Minimum	Maximum
Gastroscopy	2	12
Colonoscopy	3	9
Flexible Sigmoidoscopy	1	4
ERCP	1	4

All but the most competent endoscopists need to perform a reasonable number of procedures each year to maintain competence. For example, there is evidence from Canada that individuals who perform fewer than 300 colonoscopies a year have a higher rate of complications [28].

There are two issues to consider when discussing whether there should be a minimum number of procedures performed by individuals:

1. Low numbers are likely (but not always) to be associated with poor performance.
2. Low numbers provide a small sample size for performance indicators and the confidence intervals around the observed performance will be wide. In other words it is difficult to determine whether an individual is performing within acceptable standards.

Exceptionally good endoscopists will find it easier to maintain adequate skills with low numbers. An averagely good or poor performer will not be able to maintain adequate performance with low numbers and a poor performer will find it difficult to improve skills with low numbers. For colonoscopy fewer than 100 procedures per year would be considered low.

In view of this it is recommended that there be guidance on the minimum number of procedures performed by individuals, especially for those procedures that are associated with an increased risk of complications such as ERCP and colonoscopy. Once there are robust mechanisms for monitoring performance, the need to enforce minimum numbers becomes less critical. The first step in this process is to formally document and record the number and outcome of all procedures per endoscopist in each endoscopy unit.

The volume of activity that can be done on each list depends on individual expertise and speed, and on the efficiency of the service. In England it is very unusual to schedule more than six colonoscopies on a list unless it is known that the procedures will be easy (for example after colonic resection). Thus some of the practice reported in Ireland of scheduling more than six colonoscopies requires

closer scrutiny by monitoring key performance indicators to ensure that the patient is receiving a high quality and safe examination. It should be noted that fast withdrawal times are associated with missing adenomas [29] and that low adenoma detection rate is associated with a higher chance of missing cancer [21]. Tertiary referrals, such as double balloon enteroscopy, are usually more complex, take longer to complete and therefore require more list time.

Capacity

Understanding capacity needs for endoscopy and setting the right capacity for services is important if the service is to meet demand. The BSG states that two scoping rooms are required to support 3,000 endoscopy cases per annum [30]. The capacity of an endoscopy service is also determined by the availability of the scoping room, the equipment, recovery facilities and the staff, including endoscopists. In any service actual capacity is the time when all of these are available.

The utilisation of capacity is affected by many factors:

- Waiting times
- The age of the endoscopes
- The reporting process
- In-house porter services to support patient transfers
- Scoping room set up and cleaning between patients
- Recovery space
- Staff availability

Difficulties in any of these areas reduce a unit's utilisation of capacity and overall efficiency.

It is not clear how much endoscopy capacity is needed for each hospital in Ireland because capacity planning and productivity measurement is weak. Furthermore, the referral pathways are unclear and appear to be influenced by historical practice. Despite the general lack of information on productivity it was clear that some regions and hospitals are seriously overstretched and obviously struggling to meet growing demand.

The average population in the UK served by one consultant gastroenterologist is 54,644. In England the average is 54,993, varying from around 40,000 in London and the North East to double this, around 80,000, on the South Coast/South Central. In Wales there is one consultant per 61,090 population, in Northern Ireland one per 57,706 population and in Scotland one per 47,856 [16]. In Ireland there are 44 permanent consultant posts (39 filled and five approved but vacant), which equates to approximately one consultant per 95,454 members of the population [31]. These figures are presented for general comparison only and should not be over interpreted. For example working practices, endoscopy sessions and on-call commitments vary between the UK and Ireland. It is important to note that the baseline assessment visit methodology did not include a detailed manpower review.

Over 80 per cent of the assessment visits suggested that additional gastroenterologist capacity would be required to reduce waiting times. It was clear too, however that capacity is currently a more complex issue in Ireland than a lack of consultant manpower; better endoscopy unit data and a wider perspective of the problem [Figure 1] is required.

There is a very obvious need to improve understanding of demand, activity, room utilisation and other factors that affect capacity. Referral behaviour from other hospital specialties and primary care plays a significant role and needs to be better understood and managed. In the absence of a thorough understanding of the service it will be virtually impossible for any unit to reduce and sustain low waits for endoscopy procedures.

Table 9 shows a summary of activity, number of scoping rooms and capacity by region for 2009. The HSE Dublin Mid-Leinster has some of the longest waits in the country for routine cases; however, it also has the largest number of rooms and list capacity.

Table 9: Summary of endoscopy activity by HSE region 2009

HSE Region	WTE Consultant Gastroenterologist	Endoscopy activity 2009	Number of endoscopy rooms currently in operation	Current endoscopy capacity per week (sessions) (typical session= 3-3.5hrs)
Dublin Mid Leinster	16	36,581	19	126
Dublin Northeast	10	36,459	13	114.5
South	9	28,268	14	97
West	8	29,366	19	90
Total	43	130,674	65	427.5

***Note** this table presents activity only. Complexity of procedure, number and availability of endoscopists, the availability of the scoping room, the equipment and recovery facilities are just some of the factors that will impact on the numbers of procedures performed.

A more detailed breakdown of activity by hospital is provided in Table 6.

Waiting times

Some services were unable to provide accurate and complete information about waiting times or measures of efficiency such as DNAs and back-filling of lists. It is acknowledged that there has been a huge reduction in the number of patients waiting for urgent colonoscopies. HSE national guidelines for urgent colonoscopy appear to be strongly adhered to. As discussed earlier there is, however, variation in the use of referral guidelines for all other endoscopic procedures.

It was observed on all visits that urgent colonoscopy referrals were a priority. The same priority was not applied to other referrals. Policies for booking anything other than urgent colonoscopies were less clear and the quality of data relating to these other procedures was poor. This needs further careful consideration because a lack of policies for referrals will have an adverse effect on the waiting times for other endoscopic procedures. In the absence of detailed data at individual unit level it is difficult for the authors to comment on whether or not this is currently a significant problem.

There was significant variation in managing non-urgent cases. Most hospitals operate a three queue system (urgent, soon and routine). The practice of operating a three queue system has been eradicated in the United Kingdom because it was seen as inefficient and adding to patients' waits. National waiting list guidance [1] states that patients should be managed according to clinical priority. Patients with the same clinical priority should be seen or treated strictly in chronological order in accordance with the booking date.

Waiting times reported ranged from two to seven months and occasionally longer. However the visiting teams, in the time available, were not in a position to validate reported waits with official waiting list data. Nonetheless it was the view of the assessment teams that the majority of services, in all regions, need to improve the application of the national guidelines on effective waiting list management [Table 7] [1]. Some services had little or no knowledge of these guidelines.

Booking systems for patients need to strive to be more 'patient-centred'. Seventy per cent of booking processes are not patient-centred: patients have limited opportunity to agree their appointments in advance. The service, in general, offers patients the opportunity to negotiate

changes to their appointments. Ideally full booking models should be developed. Full booking is where patients have the opportunity to agree their appointment within 24 hours of the decision to offer them an endoscopy. Implementing a full booking model will improve the DNA and cancellation rates, and improve the patient experience greatly.

The endoscopy service needs to develop a much stronger approach to measuring efficiency. Services should monitor and review the following regularly:

- List utilisation
- Start and finish times
- DNAs and cancellations
- Backfilling
- Workforce capacity

Productivity

Thirty per cent of services collect some form of efficiency data [Table 10]. However, the quality of the data is poor, particularly in relation to DNAs and cancellations. Therefore the reliability of this data has to be questioned. Overall there was little understanding of what measurement for efficiency meant and how it could be used to support the service. The endoscopy service needs to develop a standardised approach to measuring efficiency in order to objectively quantify performance and improve productivity.

Table 10: Endoscopy productivity monitoring, 2010

Basic areas assessed	%
Good ability to backfill	83%
Management of capacity and demand	40%
Productivity measurement	30%

Out-of-hours and emergency work

The majority of requests for emergency or out-of-hours endoscopy are for management of patients with acute gastrointestinal bleeding. Ideally, appropriately trained consultants should be available to supervise the management of these patients. Ninety-three per cent of hospitals did not have a formally agreed out-of-hours rota for emergency cases. Out-of-hours services are predominantly conducted in theatres as emergency cases by the on-call surgical team. Only two hospitals ran a formal out-of-hours rota that was supported by experienced endoscopy nurses.

There is little doubt that an out-of-hours endoscopy can save the life of an individual patient (for example if they have variceal bleeding) or prevent the need for an operation (treatment of actively bleeding peptic ulcer). It is recommended that the HSE works with professional bodies to determine whether hospitals should provide formal out-of-hours provision, and if so develop standards against which the service can be monitored.

Infrastructure and equipment

There was wide variation in facilities, ranging from inadequate to very good. Table 11 summarises the key findings from the baseline assessments. The types of service vary from stand-alone endoscopy facilities to integrated day-case units. Thirty per cent of endoscopy services were delivered as part of an integrated day case facility. This is acceptable; however, the models of care adopted were often 'surgical service' orientated, which is not necessary for the majority of endoscopy patients. These 'surgical service' practices were also observed in stand-alone endoscopy units. This is referred to in more detail in the patient experience section of this report, models of care.

Forty per cent of units were in need of significant refurbishment. In some cases new facilities will be required to meet the needs of a modern, efficient endoscopy patient-centred service. The majority of services had plans to either improve or rebuild facilities, but were constrained by lack of finance.

Sixty per cent of units do not have adequate waiting areas for the numbers being processed. Only 44 per cent of units can offer a private facility for the administration of enemas. This would be considered unacceptable and compromises the most basic standards of privacy and dignity. Only 13 per cent of units could offer separate facilities for male and female changing. In 17 per cent of units consent was obtained in a private room, in the remaining units consent was taken in joint admission/recovery areas within earshot of other patients. As a result many services had significant challenges meeting basic standards of privacy and dignity. Eight per cent of units had scoping rooms and supporting kit to meet the demands of the service.

Only 37 per cent of units had the facility to move patients to a final 'step down' seated area prior to discharge. Such an area supports the flow of patients through the unit, ensuring that the trolley area is kept for the recovery of patients. In the majority of services (>80 per cent) it is common practice to assign a trolley to a patient for the entire duration of their stay. This is not in keeping with modern ambulatory practices in endoscopy.

Table 11: Adequacy of endoscopy infrastructure 2010

Basic areas assessed	%
Waiting area	60%
Toilets	63%
Admission privacy	40%
Male/female changing areas	13%
Dedicated preparation room	44%
Consent privacy	17%
Scoping rooms	80%
Final step down	37%

Equipment

Ninety-three per cent of units did not have an endoscopy specific equipment replacement programme. However, endoscopy units were supported by hospital-wide capital replacement programmes in all but two hospitals where lease programmes for endoscopy schemes exist. Rolling equipment replacement schemes are important, as older endoscopes are less versatile and less reliable than modern equipment. The number of scopes more than five years old is a good indication of the quality of endoscopes in a service. The age of scopes over five years old needs further investigation and documentation in all units.

The EU guidelines on quality assurance of colorectal cancer screening [18] will recommend the use of CO2 insufflation and variable stiffness colonoscopes for colonoscopy. Magnetic imager scope tracking equipment (which demonstrates the configuration of loops) is also recommended for colonoscopy, particularly if little or no sedation is used. The availability of CO2 was not assessed during the visits but only one service stated that they had access to magnetic imager equipment.

Only 7 per cent of units assessed had a full complement of pulse oximetry monitoring equipment. There should be one monitor per recovery space. In endoscopy, oxygen is given to all sedated patients and selected unsedated patients throughout the procedure and recovery period. Pulse oximetry monitoring should be used on all sedated patients and ECG and blood pressure monitoring should be readily available for high risk patients. It is essential that continuous clinical monitoring in the recovery area is supported with appropriate equipment. The safety and monitoring of patients who have had sedation is a key requirement of an endoscopy unit [32].

Reporting systems

The core function of an electronic reporting system is to:

- Generate a comprehensive record of the procedure
- Capture images from endoscopy procedures
- Ensure that users work to common standards and definitions
- Support the production of reports of endoscopist performance for audits
- Provide accurate, structured, coded data to generate reports of activity
- Enable the amalgamation of endoscopy scheduling and endoscopy reporting
- Link to other records such as pathology

Seventy per cent of endoscopy services did not have an IT endoscopy reporting system (ERS) for recording and reporting results. A modern endoscopy service needs an ERS to facilitate and support audit. This is a significant challenge for the majority of services in Ireland. The endoscopy report and audit system is an integral part of quality assurance for all endoscopy units. Endoscopy services should monitor indicators collected by the ERS on a regular basis.

Decontamination

Whilst the assessment teams observed good practice in a number of units, many endoscopy decontamination facilities did not meet a number of the standards outlined in the HSE Code of Practice [3] [Table 12]. Whilst 98 per cent of units had a dedicated decontamination facility, 80 per cent were not fully compliant with the HSE Code of Practice [Table 12]. There were four instances where the hospital was requested to take immediate action to resolve decontamination issues. These were acted on in every instance. While this was the worst performing aspect of the service in Ireland this finding is not totally surprising; in 2006, when the JAG accreditation process was introduced in the United Kingdom, over half of services had similar challenges with decontamination.

In Ireland 98 per cent of hospitals had completed HSE decontamination audits and fully recognised that decontamination required investment and improvement. Financial constraints were reported as being the main obstacle to resolving problems. Patient safety and staff health and safety are the key concerns and the assessment teams were of the view that in some instances insufficient effort was being made collectively to resolve serious issues identified in risk assessments.

Table 12: Achieving standards in decontamination, 2010

Basic standards in decontamination assessed	%
Separation of clean/dirty	17%
One way flow for scopes	20%
Correct personal protective wear	30%
Automated endoscope reprocessing machines (AERs) compliant with ISO/FDIS 15833-4	13%
Double sinks	20%
Tracking of endoscopes and valves	30%
Appropriate transportation and storage of scopes	27%
Knowledge of current decontamination practice	27%

The greatest area of concern was the separation of clean and dirty flows. Only 17 per cent of units had facilities that fully achieved this. The majority of units worked to the best of their ability to manage the process safely within environmental constraints. Thirteen per cent of AERs were compliant [3]. The remainder did not meet the necessary machine and testing standards [3]. All were over five years old and 20 per cent were over 15 years old. While both of these areas will require significant investment to ensure compliance with national standards, a number of process improvements are possible with relatively minimal investment. For example, the transportation of scopes can be improved quickly by providing staff with the correct covered receptacles. Poor manual cleaning processes can be corrected through training.

Thirty per cent of services had dedicated endoscopy technicians to work in this section of the service. These roles were perceived to make a major contribution to the running of services. In some units, endoscopy nurse support in the endoscopy room dropped below recommended levels [28] because the nurses had to assume the role of an endoscopy technician. Technician roles should be considered more widely to improve standards and efficiency.

Assuring clinical quality

Forty per cent of units had regular governance meetings that addressed endoscopy. However, while clinical governance was a priority for many hospitals, this priority did not always filter down or translate to the frontline endoscopy service.

There is now a substantial evidence base showing highly variable performance in colonoscopy and this variation in performance is reflected in variable missed cancer rates and rates for complications [6,7,8,19]. Robust clinical audit is essential for optimising quality of colonoscopy and it is clear that services in Ireland have a long way to go to achieve internationally accepted standards of audit and quality improvement [13,18,25,26,].

The approach to gathering information on key performance indicators and acting on this information was very poor. Seventy-three per cent of units did not conduct any form of clinical audit. Ninety per cent of services reported that they had no audit support in their hospitals. Only 30 per cent of units had access to a reliable IT system to capture information. Even when IT infrastructure is in place there are problems producing reliable reports and minimal review of information. This lack of basic audit infrastructure and process makes it virtually impossible to identify and deal with poor practice. The problem with data acquisition and review is a considerable challenge to overcome if a national bowel cancer screening programme is to be introduced.

Less than 30 per cent of hospitals were measuring comfort or reviewing basic performance indicators such as caecal intubation rate on a regular basis. All services will need to co-ordinate regular clinical audit of endoscopy quality indicators, including completion to the caecum, sedation levels and flumazenil use. As a minimum there should be more detailed data to support clinical quality and safety including:

- morbidity (such as re-admission after elective endoscopy)
- mortality (especially within 30 days of an endoscopy)
- key performance indicators (e.g. the BSG quality and safety indicators or equivalent European or international standards)
- comfort scores for all types of endoscopy

Endoscopy user groups need to review and respond to audit data and key performance indicators.

In 33 per cent of services clinical safety guidelines for the following need to be either updated or developed:

- Safety and sedation
- Antibiotic prophylaxis
- Patients on anticoagulants
- Surveillance procedures

There were occasions when the assessment teams were concerned by the level of sedation used by some endoscopists (self-reported) which would not be consistent with BSG recommendations [32].

There is an almost complete lack of monitoring of key performance indicators in Ireland for both colonoscopy and other endoscopic procedures. There are, in places, information systems that gather indicators but it is extremely unusual to see review of performance, let alone actions taken in response to poor performance. It is highly likely that once good systems are in place, poor performance will be identified and services will be faced with the challenge of how to manage it.

Quality of the patient experience

Consent and patient information

All services had patient information but with the exception of two services the information was out of date and did not highlight the risks associated with the procedure. Eighty-three per cent of units do not take formal consent in private or until the patient was in the procedure room. This practice is, from the patient's perspective, potentially intimidating and coercive. It is very difficult for a patient to refuse to proceed once they have got this far.

The issue of signing consent in an endoscopy procedure room is contentious. In England a policy decision was made (after discussion with the NHS Litigation Authority) that consent should not be taken in the procedure room. As a result, and the application of this standard, consent taken in the room is now a rare occurrence in England. On the other hand patients undergoing an endoscopy in the Netherlands are not required to sign a consent form at all. It is recommended that Ireland create a code of practice applicable to the Irish context with the following principles in mind.

The confirmation of consent by signature (if required) is best obtained outside the procedure room and only after the patient has had time to absorb the necessary information to give informed consent. This requires the provision of information verbally and in writing, using language that can be easily understood by the patient. When giving consent the patient must be free from any influence from a third party or health professional.

Models of Care

Half of all units did not fully meet the needs of modern endoscopy patient-centred pathways. Models of care are either 'surgical' or 'endoscopy' driven. Consideration should be given to an ambulatory model of care. Endoscopy services in Ireland predominantly follow a surgical day case model of care. Patients are prepared as if they are having a day case general anaesthetic. This greatly affects the time patients spend in the unit and leads to inefficiencies. Most patients are sedated, which affects their recovery time and thus their length of stay in the department.

For gastroscopy procedures it is appropriate that patients are given a choice of whether they have throat spray or conscious sedation. This choice should be made clear to all patients coming in for gastroscopy. Patients do not need to undress and change fully for these procedures; bibs can be used to protect the patient's clothing.

In many units the assessment teams were told that "in Ireland, patients expect to have sedation, be allocated their own trolley and have a lie down". Whatever the historical context or culture, it is recommended that endoscopy services review their practice and consider moving to a more ambulatory approach to modernise the service and achieve efficiencies. Implementation of these changes will eventually change the prevailing expectations among patients.

Nursing workforce

The provision of a high quality, patient-centred and safe experience for patients depends on a competent workforce. Table 13 summarises the key areas assessed against the basic workforce standards. The enthusiasm of staff working in the service in Ireland and their willingness to improve the care of patients was striking. All services had experienced nurse leads in charge of the service. All lead nurses and staff interviewed stated that there was excellent teamwork.

Ninety-seven per cent of services considered that they had sufficient nurse staffing to deliver a safe experience for patients. Endoscopy services in Ireland reported that the BSG workforce standards [30] have been adopted: however this was not evident in every service visited. The BSG workforce standards set out the minimum staffing requirements in endoscopy. Particular attention should be paid to the competency of the individuals supporting admission, the endoscopy room and recovery activities. Staffing in endoscopy should take account of the mix of patients, even if an endoscopy list is provisionally deemed as diagnostic. The staffing requirements for services with a high volume of complex therapeutic procedures needs to be carefully considered as the BSG guidelines are a guide to the minimum safe staffing requirements. One service had significant issues with staffing of the endoscopy rooms that needed the hospital to take immediate action.

Table 13: Nursing workforce standards 2010

Basic workforce standard	%
Nurse leadership	100%
Appropriate staffing	97%
Induction programme	13%
In-house training	100%
Performance review competency programme	53%
Out-of-hours endoscopy support	56%

The nursing workforce is supported predominantly with in-house training. All services provide in-house updates on:

- The nursing process applied to patients undergoing endoscopy
- Structure and function of endoscopes
- Decontamination of endoscopes and endoscopic accessories
- Use of endoscope support equipment
- Technical assistance during endoscopic procedures
- Safety and sedation
- Antibiotic prophylaxis
- Diathermy safety and technique
- Complications and their management
- Tracking and traceability of endoscopes

While the service should be commended on this, the assessment teams felt strongly that the practices being taught were out of date, particularly in two areas:

- The decontamination of endoscopes and endoscopic accessories
- The safe management and care of patients who have had sedation

Thirteen per cent of services had specific induction programmes for new staff. This is a key area in need of development.

Fifty-three per cent of units had completed performance reviews of their staff. A new national competency framework was introduced early in 2010 and there was evidence that this was beginning to have an impact on services assessed in the period from September 2010 onwards.

Fifty-six per cent of staff supported some form of on-call rota but this was formalised in only two services. It was clear that nursing staff were supporting on-call on an ad hoc basis and without any consideration to work schedules for the following day. There is considerable goodwill in the service and it is recommended that all out-of-hours support from nursing staff be formalised to retain this goodwill. It is unsustainable otherwise.

Significant efficiencies and improvements can be achieved by extending the roles of nurses and technical staff. For example, nurse-led pre-procedure assessment clinics in two hospitals demonstrated significant improvements in the preparation and management of patients. As discussed earlier, the role of the technician in supporting decontamination has had a demonstrable impact on this aspect of the service.

Training endoscopists

Currently, the Royal Colleges in Ireland are finalising a new endoscopy training curriculum and considering whether to adopt the training standards encompassed in the training domain of the GRS. Therefore the assessment teams did not have a clear framework against which to assess the provision of endoscopist training. The training environment was assessed against basic leadership, organisational and educational principles.

There is variable leadership and ownership of training in Ireland and Table 14 summarises the key areas assessed. No service had a named overall training lead to co-ordinate training; however, 93 per cent believed strongly that the training culture was good for trainees in their departments. No service had an endoscopy specific induction pack/programme for trainees, but all considered this important to work on. The pressure on the service means that there is almost no opportunity for dedicated training lists. Only one service stated that they routinely provided lists designed to meet the needs of the trainee. Ninety-three per cent of services stated that they adjusted lists, where possible, for trainees. However, the majority of training is delivered on busy service lists, which makes it unlikely that there can be much adjustment to meet trainee needs. There was no evidence presented to support the reduction in list activity and it is recommended that this discrepancy in reporting and perception needs to be more formally examined.

Table 14: Endoscopist training assessment 2010

Basic training standard	%
Training lead	0%
Training culture	93%
Induction pack	0%
Dedicated training lists	3%
Adjusted lists	93%
DOPs	3%
Formative assessment	0%
Summative assessment	0%

In some circumstances there is inadequate supervision of trainees and little integration of training between medicine and surgery (training standards should be the same in endoscopy irrespective of the speciality of the trainee). There was no evidence of use of competency frameworks (Direct Observation of Procedure Skills - DOPS) to support formative and summative assessments. Formative assessment refers to an assessment that helps the trainer identify areas in need of improvement and set learning objectives for the trainee. Summative assessment is a process that determines whether an individual has achieved a pre-determined standard. There is currently no formal sign-off process using summative assessment techniques for trainees.

In the absence of agreed standards it is difficult to assess the service. However, it was clear that in many circumstances there is room for considerable improvement in the environment of training and the training of medical and surgical trainees. The trainees are the future endoscopist workforce and effective training of endoscopists will minimise the variation in practice that is currently commonplace, thereby improving patient outcomes and reducing risk of harm. Correcting poor performance as a result of poor or inadequate training is much more difficult than getting it right from the outset. Furthermore a good training environment fosters a 'good' culture in the service, one that encourages patient-centred care and high quality endoscopy.

Baseline Assessment Visits – Progress Report December 2010

Baseline assessment visits to the 31 hospitals that expressed an interest in participating in the National Colorectal Cancer Screening Programme were completed during the period April-September 2010. On the 8th, 9th and 10th November 2010 a series of endoscopy training workshops were facilitated by the NCSS. All 31 endoscopy units participated and were represented by a Lead Clinician, Senior Endoscopy Nurse and Senior Manager. The workshops concentrated on service improvement issues, identifying and sharing best practice amongst all participants.

During December 2010, one of the authors Ms Debbie Johnston undertook a review of all 31 endoscopy units' progress against recommendations made during the initial baseline assessment visits. The progress made by the service in the key areas reviewed is presented below.

Leadership and management

Key Areas	Baseline	December 2010
Endoscopy clinical lead in place	74%	97%
Endoscopy users group in place	60%	100%

The most significant improvement seen was in the overall leadership and management of endoscopy units. All but one unit now has an agreed endoscopy lead in place. Dedicated leadership remains under discussion in the one remaining unit. Endoscopy user group forums are now established with clear terms of reference. All have excellent representation from the multi-disciplinary team. The individual baseline assessment reports and action plans for improvement provided to all units have become the immediate focus of all users' groups' activities.

Activity, capacity and demand

Key Areas	Baseline	December 2010
Agreed process for referral vetting	76%	76%
Pooling of referrals occurs	46%	74%

All (100 per cent) endoscopy units reviewed had either a new operational policy in place to support the service with one in the process of being approved. Much work is underway to improve referral and pooling practices. Increased levels of pooling were reported by services reviewed for all urgent, inpatient and some routine cases.

Waiting times

Key Areas	Baseline	December 2010
Full understanding of waiting list management	44%	75%

Seventy-five per cent of endoscopy units reviewed demonstrated a markedly improved understanding of effective waiting list management for endoscopy [1]. This was evidenced by new operational policies and waiting list policies. While variation in understanding of waiting list management remains in some sites assessed, and while more effort will be required to improve practices in endoscopy, the progress in such a short period of time has been impressive.

Out-of-hours

Key Areas	Baseline	December 2010
Formally agreed out-of-hours	74%	90%

Ninety per cent of hospitals now have a formally documented out-of-hours rota for emergency cases. Out-of-hours services continue to be provided predominantly in theatres as emergency cases by on-call surgeons.

Infrastructure and equipment

Key Areas	Baseline	December 2010
Adequate endoscopy admissions and recovery facilities	60%	60%
Endoscopy equipment replacement programme	74%	74%
IT endoscopy reporting system in place	30%	30%

The percentages do not reflect the work in progress to improve endoscopy unit facilities that was observed at review. Inevitably it will take a longer period of time for minor capital works to be complete. The majority of services have confirmed plans in place to make changes to improve the patient's experience. Some facilities will need to identify and prioritise the financial investment required. Endoscopy reporting systems (ERS) are being rolled out to all services in a staggered fashion by means of a national procurement.

Decontamination

Key Areas	Baseline	December 2010
Acceptable decontamination facilities and process	20%	61%
Dedicated endoscopy decontamination technicians	30%	38%

There has been a markedly improved performance in this area. All services reviewed had adopted decontamination practices consistent with the HSE Code of Practice for Decontamination of Re-usable Medical Devices [3]. However, some facilities are disadvantaged in terms of suboptimal size and location of the decontamination unit. These facilities will require investment by the hospital to fully comply with the environmental aspects of decontamination found in the best endoscopy units. An increase in dedicated endoscopy technicians supporting decontamination of endoscopy equipment was observed and ideally this development should continue.

Assuring clinical quality and safety

Key Areas	Baseline	December 2010
Regular endoscopy clinical audit	27%	29%
Audit support	10%	19%
Documented clinical safety guidelines	67%	87%
Formal endoscopy governance system	40%	97%

Eighty-seven per cent of units have clear and agreed documented clinical safety guidelines for sedation, diabetes or antibiotic prophylaxis. Ninety-seven per cent of units now have a formal endoscopy governance structure in place.

Small improvements were observed in developing systems to support clinical audit. The lack of IT and audit support infrastructure remains a considerable challenge for the majority of services. Endoscopy reporting systems will assist improvements in this aspect of the service.

The patient's experience

Key Areas	Baseline	December 2010
Up to date patient information	6%	94%
Facilities for private discussions	17%	71%
Consent obtained in private	17%	58%

Ninety-four per cent of units had updated all patient information. A significant improvement was reported in providing more flexible facilities for private discussion. Fifty-eight per cent of units reported significant improvements in consent practices supported by new policies.

The nursing workforce

Key Areas	Baseline	December 2010
Sufficient nurse staffing	97%	97%
Up to date training and competency assessment	43%	65%

Sixty-five per cent of endoscopy units reviewed demonstrated improvements in the development of all staff through locally developed competency training and development programmes.

Training endoscopists

Key Areas	Baseline	December 2010
Training list adjustments	93%	93%

No real change was noted in this area. The authors understand that the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland will announce a joint initiative in January 2011 to address the issues of quality, safety and training in endoscopy.

Conclusion

The findings from the baseline assessment visits were not altogether unexpected or surprising. Identifying deficiencies and underperformance are inevitable when beginning any quality and service improvement initiative. The authors would like to acknowledge that the extent of improvement across the service in Ireland nationally over the last six months has been remarkable and all concerned should be congratulated for the motivation and application they have demonstrated to improve the service. The collaborative multidisciplinary approach led by the NCSS has been a key driver to this success. Nonetheless the authors would caution that this progress needs to continue, particularly in the area of clinical quality and audit.

The Global Rating Scale (GRS)

As part of the assessment process, all endoscopy units visited were asked to complete an online version of a pilot 'Global Rating Scale – Ireland' and provide feedback. Ninety-three per cent of units completed the online self-assessment. All units believe strongly in having standards for endoscopy services that they can work towards.

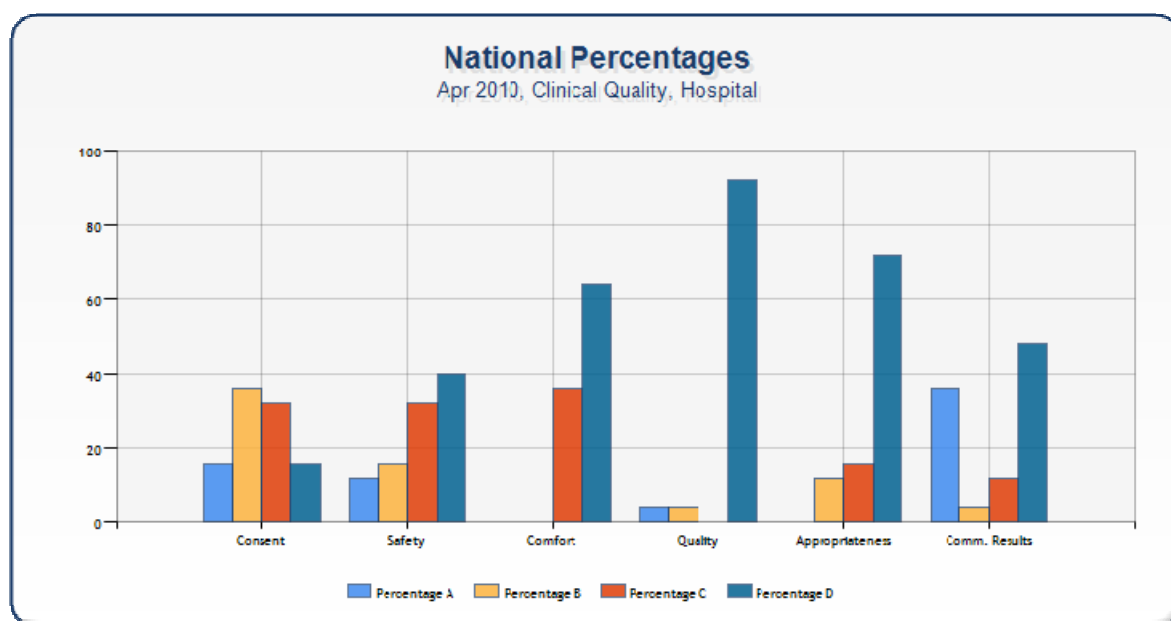
The feedback received from all of the teams was consistent. The text needs to be tailored to the healthcare setting in Ireland. Some of the measures do not apply in Ireland and will either need to be adjusted or removed. Other domains, such as the training domain, are significantly different from the current practice in Ireland. National guidance is required for this domain because application of the training domain will require a fundamental change in training practice. The nurses fully support the introduction of a workforce domain but it needs modification to suit the Irish context.

Data analysis

The national results achieved in the pilot GRS conducted in April 2010 are illustrated in Figures 3 to 6 in the next section of this report. Each table represents the percentage of endoscopy sites attaining the different levels of the GRS, Level D being the minimum standard and level A the highest standard.

In the future an accreditation process will require all endoscopy sites to attain an agreed minimum level standard for all items in all domains. In the United Kingdom this is level B for all standards. The baseline results for Ireland are comparable with UK, Canada and the Netherlands when they completed the GRS for the first time. The low levels reported are not an indication of a poor service – they indicate that the service is not able to demonstrate that it provides a good service. These are new standards for Ireland and a significant improvement in scores should be expected when the first formal GRS census in Ireland is conducted in 2011. Overall, the results reflect the observations of the assessment teams during the visits.

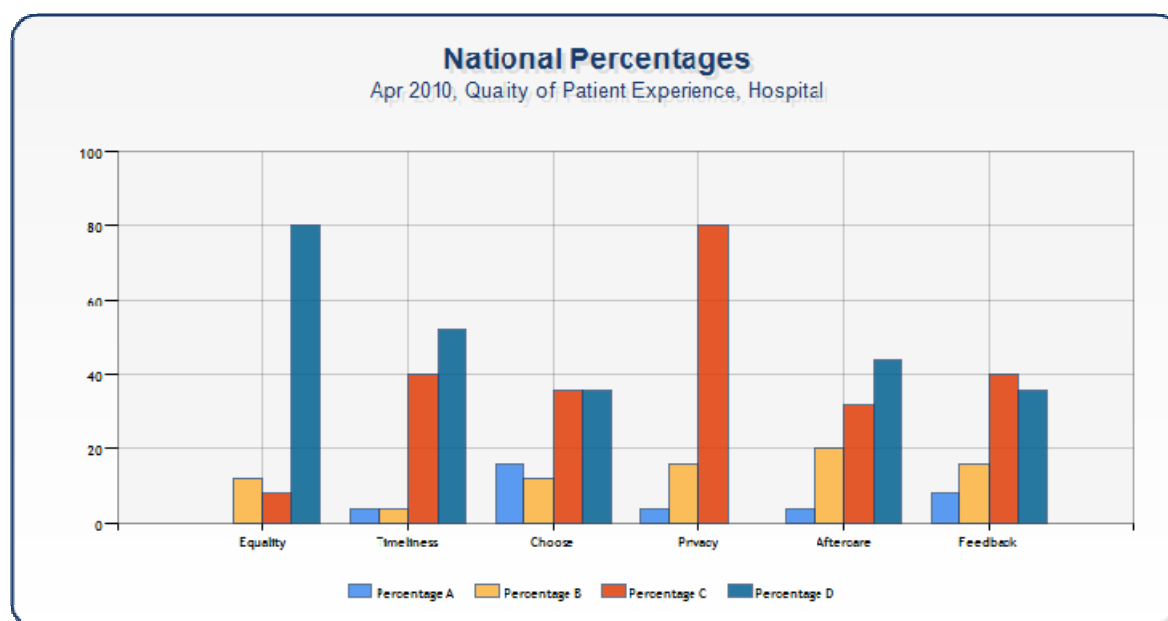
Figure 3: Clinical quality domain results



Level	A	B	C	D
Consent	16%	36%	32%	16%
Safety	12%	16%	32%	40%
Comfort	0%	0%	36%	64%
Quality	4%	4%	0%	92%
Appropriateness	0%	12%	16%	72%
Communicating results	36%	4%	12%	48%

The results of the clinical quality domain show that the service has attained a higher percentage of the A and B standards in 'consent', 'safety' and 'communicating results' items. The 'comfort', 'quality' and 'appropriateness' items rated much lower. Comfort measurement has not been routinely recorded or acted upon in endoscopy services in Ireland to date, but this practice is changing. The 'quality' item is the weakest one and illustrates the lack of a systematic approach to audit. This is an area of weakness in the service as indicated earlier in this report. The 'appropriateness' item needs to be adjusted to reflect the needs of the Irish service; therefore the results are not a true reflection of this aspect of the service.

Figure 4: Quality of the patient experience domain results

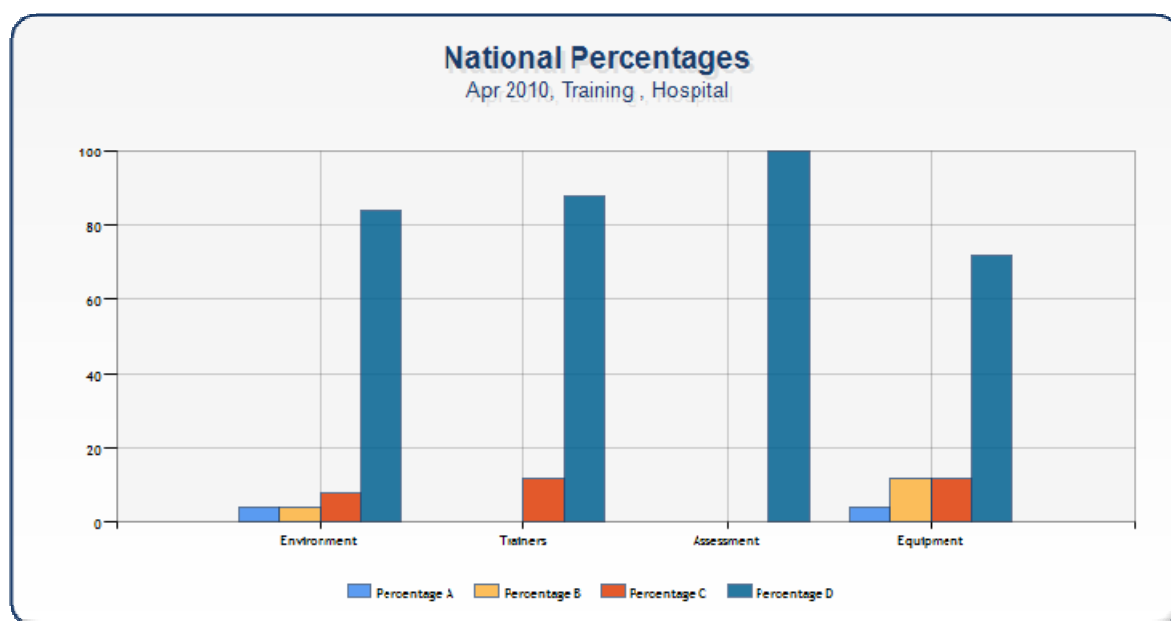


Level	A	B	C	D
Equality	0%	12%	8%	80%
Timeliness	4%	4%	40%	52%
Choose & Book	16%	12%	36%	36%
Privacy	4%	16%	80%	0%
Aftercare	4%	20%	32%	44%
Feedback	8%	16%	40%	36%

The results of the quality of the patient experience domain show that the service has attained a higher percentage of the A and B standards in 'choose and book', 'aftercare', 'feedback' and 'privacy' items. While the service self rated at high levels for these items it was clear that there was some misinterpretation of the standards (e.g. the percentage attained in the privacy and dignity item does not correlate with the issues identified by the baseline visits). The 'timeliness' standards of the GRS - Ireland need to reflect the waiting times targets in Ireland.

The 'equality and diversity' item needs to be adjusted to reflect the needs of the Irish service; therefore the results are not a true reflection of this aspect of the service.

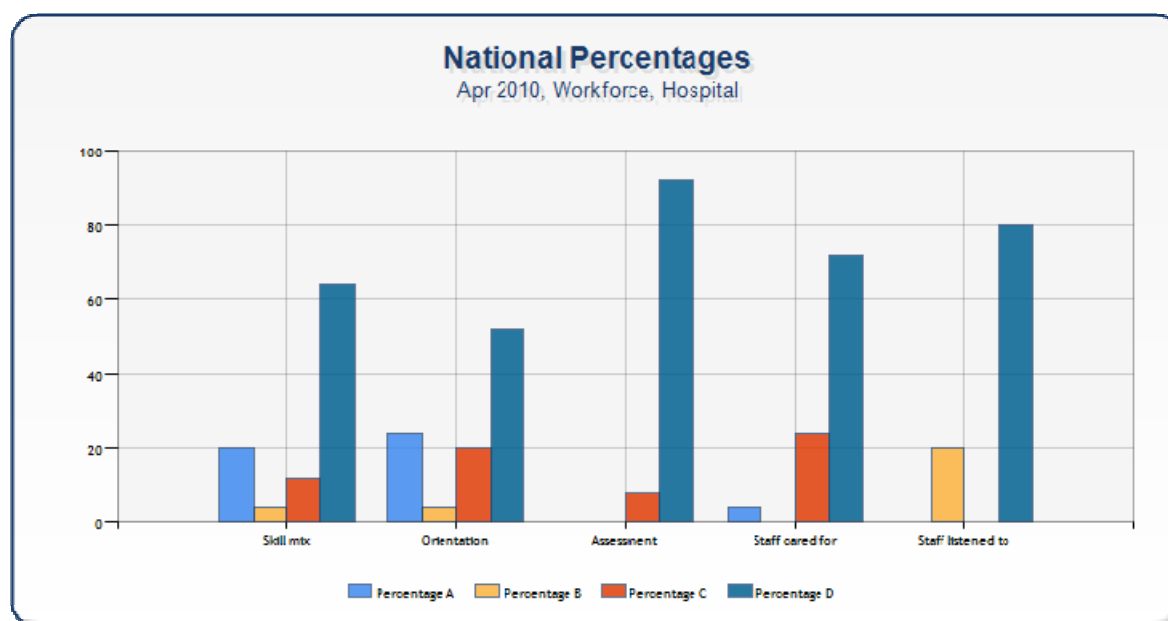
Figure 5: Training domain results



Level	A	B	C	D
Environment	4%	4%	8%	84%
Trainers	0%	0%	12%	88%
Assessment	0%	0%	0%	100%
Equipment	4%	12%	12%	72%

The training domain standards are significantly different from current practice in Ireland; therefore the results are not an accurate reflection of the current state of training. National guidance is awaited from the Royal Colleges in Ireland on this domain.

Figure 6: Workforce domain results



Level	A	B	C	D
Skill mix	20%	4%	12%	64%
Orientation	24%	4%	20%	52%
Assessment	0%	0%	8%	92%
Staff cared for	4%	0%	24%	72%
Staff listened to	0%	20%	0%	80%

The workforce domain standards are different from the practices being adopted and applied in nursing in Ireland, and therefore the results attained are not an accurate reflection of current practice.

Implications for a national colorectal cancer screening programme

Each hospital's current state of readiness and potential to participate in a national screening programme has been examined in terms of:

- Likelihood of achieving the standards required for JAG accreditation within a 12 to 18 month timeframe of January 2011
- Readiness to incorporate screening colonoscopies into their current service

An evaluation has been developed to create a more objective assessment [Table 15] [Table 16]. The measure has two elements (X and Y). X looks at the service's state of readiness with regard to achieving JAG accreditation and is rated from 1 to 4. Y looks at the likely financial investment required and is rated from A to D. This measure is more relevant to individual hospitals as an estimate of the financial investment required. It is important to note three key points:

1. The baseline assessments are merely an indicator and a 'snapshot' in time.
2. Endoscopy services can improve quickly when motivated to do so.
3. The comments on financial estimates can only be interpreted as indicative costs, as a detailed financial analysis of each service was not part of the baseline analysis visit.

Table 15: State of readiness - timescales

Rating Level X	Likelihood of achieving the standards required for JAG accreditation
1	Ready >3-6 months None or minor improvements to be achieved.
2	Ready >6-12 months Minor to medium improvements to be achieved.
3	Ready >12-18 months Medium to large improvements to be achieved.
4	Ready >18 months Large improvement to be achieved. (May require intensive support)

Table 16: State of readiness – financial investment

Rating Level Y	Estimate of level of financial investment
A	Low financial investment < €10,000 For example, clinical monitors but not endoscopes.
B	Medium financial investment < €100,000 For example, endoscopy reporting systems, scopes, minor refurbishments.
C	Large financial investment >€100,000 <€500,000 For example, decontamination machines, minor building alterations (such as partitions, patient changing, privacy) or workforce development.
D	Very large financial investment >€1,000,000 For example, decontamination and/or infrastructure changes or rebuilds requiring large capital investment.

Table 17 presents a timescale and financial investment estimate score for all 31 hospitals following the baseline assessment visits conducted in the period April to September 2010.

Table 18 presents a timescale and financial investment estimate score for all 31 hospitals following their progress reviews conducted in December 2010.

The authors would like to emphasise the following:

- The tables are not a judgment or a ranking/league table of the quality of endoscopy services provided by each hospital. Each of the hospitals listed is capable of providing a quality assured endoscopy service.
- The tables identify those hospitals that are probably best placed to take on a screening colonoscopy workload in addition to their symptomatic (diagnostic) workload.
- The tables do not take account of factors such as population distribution, geography and other operational factors that will influence the decision of the NCSS to select their 'candidate' screening colonoscopy units.

Table 17: Endoscopy services - readiness to take on additional screening workload (Sept 2010)

HSE Region	No	Hospital	Timescale rating	Investment rating
Dublin Mid Leinster	1	St James's Hospital	1	A
	2	Adelaide and Meath Hospital Dublin (Incorporating the National Children's Hospital), Tallaght	2	A
	3	Midland Regional Hospital, Tullamore	2	A
	4	St Vincent's University Hospital	2	C
	5	Midland Regional Hospital, Mullingar	4	A
Dublin Northeast	6	Connolly Hospital, Blanchardstown	2	A
	7	Louth County Hospital, Dundalk	2	A
	8/9	Cavan General Hospital and Monaghan Hospital**	2	C
	10	Our Lady's Hospital, Navan	2	D
	11	Mater Misericordiae University Hospital	3	D*
	12	Beaumont Hospital	4	D*
	13	Our Lady Of Lourdes Hospital, Drogheda	4	D
South	14	South Tipperary General Hospital	2	A
	15	Mercy University Hospital	2	C*
	16/17	Wexford General Hospital and Ely Hospital**	2	C
	18	Kerry General Hospital	2	D*
	19	Waterford Regional Hospital	3	C
	20	St Luke's General Hospital, Kilkenny	3	D
	21	Cork University Hospital	4	D
West	22	Sligo General Hospital	2	A
	23	Mid-Western Regional Hospital, Nenagh	2	A
	24	St John's Hospital, Limerick	2	C*
	25	Mid-Western Regional Hospital, Ennis	3	B*
	26	Portiuncula Hospital	3	C
	27	Letterkenny General Hospital	3	D
	28	Roscommon County Hospital	3	D
	29	Mid-Western Regional Hospital, Dooradoyle	3	D
	30	Mayo General Hospital	4	A
	31	Galway University Hospitals	4	D

* These hospitals had identified capital monies to support improvements at the time of the baseline assessment visits but the plans were not signed off nor had work commenced. The risk is higher and therefore the grading lower as a result. The rating is likely to improve as plans progress.

** Combined visit, the majority of staff in these two locations work across both sites.

Table 18: Endoscopy services - readiness to take on additional screening workload (Dec 2010)

HSE Region	No	Hospital	Timescale rating	Investment rating
Dublin Mid Leinster	1	St James's Hospital	1	A
	2	Adelaide and Meath Hospital Dublin (Incorporating the National Children's Hospital), Tallaght	2	A
	3	Midland Regional Hospital, Tullamore	2	A
	4	St Vincent's University Hospital	2	C
	5	Midland Regional Hospital, Mullingar	3	B
Dublin Northeast	6	Louth County Hospital, Dundalk	1	A
	7	Connolly Hospital, Blanchardstown	2	B
	8/9	Cavan General Hospital and Monaghan Hospital	2	C
	10	Mater Misericordiae University Hospital	2	D
	11	Our Lady's Hospital, Navan	2	D
	12	Beaumont Hospital	3	B
	13	Our Lady Of Lourdes Hospital, Drogheda	3	C
South	14	South Tipperary General Hospital	2	A
	15/16	Wexford General Hospital and Ely Hospital	2	B
	117	Mercy University Hospital	2	C
	18	Kerry General Hospital	2	D
	19	Waterford Regional Hospital	3	C
	20	Cork University Hospital	3	D
	21	St Luke's General Hospital, Kilkenny	3	D
West	22	Sligo General Hospital	2	A
	23	St John's Hospital, Limerick	2	B
	24	Mid-Western Regional Hospital, Nenagh	2	A
	25	Mid-Western Regional Hospital, Ennis	2	B
	26	Mayo General Hospital	3	A
	27	Letterkenny General Hospital	3	D
	28	Roscommon County Hospital	3	D
	29	Galway University Hospitals	3	D
	30	Portiuncula Hospital	4	C
	31	Mid-Western Regional Hospital, Dooradoyle	4	D

Key recommendations

Easily achievable



Achievable with some effort



Very difficult to achieve





1. Leadership and management



1.1	All services should appoint an endoscopy clinical lead and a nurse manager in charge of day-to-day operational management for each unit. Leadership team roles must be clearly defined.			
1.2	All services should have a clearly defined meetings and governance structure that meets the needs of the service, and includes an endoscopy user group with clear terms of reference.			
1.3	Where possible a single manager should be responsible for planning and overseeing endoscopy, and supporting the clinical and nurse leads.			
1.4	Individuals should be given sufficient time and support to achieve the standards and develop the service.			

2. Activity and waiting times





2.1	Clinical referral guidelines for all procedures need to be clearly defined, agreed and implemented.			
2.1	Vetting practices for clinicians need to be clearly defined, documented, agreed and implemented.			
2.2	Validation practices (clinical and administrative) need to be clearly defined, agreed and implemented.			
2.3	Pooling of endoscopy procedures should be encouraged. This is particularly important where there are disparities in waiting times between clinicians.			
2.4	Scheduling practices for colonoscopy require closer scrutiny and should be linked to the monitoring of key performance indicators.			
2.5	Services need to strengthen the understanding and application of the national waiting list management guidelines to achieve effective waiting list management.			
2.6	A clear understanding of the endoscopy capacity required needs to be developed (by hospital and region). This requires a more detailed investigation to ensure that capacity is being fully utilised.			
2.7	Waiting time data collection and monitoring for all procedures needs to be improved.			

2.8	The endoscopy service needs to develop a standardised and stronger approach to measuring productivity in order to quantify performance and improve efficiency. To achieve this, services should monitor and review the following regularly: <ul style="list-style-type: none"> • List utilisation • Start and finish times • DNAs and cancellations • Backfilling of lists • Workforce capacity 			
2.9	Patient-centred booking systems need to be developed where the patient has better choice of appointments (full booking model).			




3. Out-of-hours

3.1	It is recommended that the HSE works with professional bodies to determine whether hospitals should provide formal out-of-hours provision and, if so, to develop standards against which the service can be monitored.			
3.2	Out-of-hours risks should be clearly identified and placed on the hospital at risk register.			




4. Infrastructure and equipment

4.1	Hospitals are strongly advised to assess the options and develop plans to refurbish current facilities or to create new facilities so that they meet the needs of patients undergoing endoscopy. In particular attention should be paid to basic privacy and dignity needs.			
4.2	All hospitals should have a capital replacement programme for endoscopy equipment. Scopes older than five years should be phased out of use.			
4.3	All hospitals should have an endoscopy reporting system (ERS) to record procedures and report results. Use of such reporting systems (once in place) should be mandatory for all endoscopists. This ERS must be able to provide clear and credible reports on individual and unit performance that can be used for clinical audit and for management of the unit.			
4.4	All units should have appropriate clinical monitoring equipment to enable full monitoring of all patients who have had sedation.			




5. Decontamination

5.1	All hospitals should ensure that they are fully compliant with the HSE decontamination code of practice.			
5.2	All decontamination risks should be clearly identified and placed on the hospital at risk register.			
5.3	Staff working in decontamination should have the required skills and knowledge to perform their roles.			





6. Assuring clinical quality

6.1	All services will need to co-ordinate regular clinical audit of endoscopy quality indicators, including completion to the caecum, sedation levels, adenoma detection rates and flumazenil use. As a minimum there should be more detailed data to support clinical quality and safety including: <ul style="list-style-type: none"> • morbidity (such as re-admission after elective endoscopy) • mortality (especially within 30 days of an endoscopy) • key performance indicators (e.g. the BSG quality and safety indicators or equivalent European or international standards) • Comfort scores for all types of endoscopy. 			
6.2	Endoscopy user groups need to review and respond to audits of key performance indicators.			
6.3	National guidelines for the following need to be either updated or developed: <ul style="list-style-type: none"> • Safety and sedation • Antibiotic prophylaxis • Patients on anticoagulants • Surveillance groups 			




7. Quality of the patient experience

7.1	All patient information needs to be updated, and to include risks associated with the procedure.			
7.2	A code of practice for consent needs to be defined and applied.			
7.2	Ambulatory care models need to be encouraged to modernise endoscopy patient pathways and improve efficiency.			



8. Nursing workforce

8.1	Endoscopy specific competency based training and induction programmes need to be developed.			
8.2	Performance review and competency based assessment of staff needs to be fully implemented to ensure that staff are competent and to help identify training needs.			
8.3	Extending roles of nurses and technical staff needs to be fully explored to improve efficiency and to provide a wider base from which to recruit staff.			
8.4	Out-of-hours support from nurses needs to be formalised and included in out-of-hours policies.			

9. Training endoscopists

9.1	National guidelines for trainees working in endoscopy need to be clearly defined and incorporated into a review of the GRS Training Domain.			
9.2	More rigorous monitoring of training lists designed to meet the needs of the trainee.			
9.3	Criteria for independent practice should be agreed and all trainee endoscopists should be assessed against these criteria before practising independently.			

10. The Global Rating Scale

10.1	The GRS should be adapted and adopted fully by all endoscopy services in Ireland.			
10.2	The development of a comprehensive knowledge resource should be created and the sharing of best practice should be actively encouraged.			

Appendix A: Hospitals visited

Ref	Date Visited	Hospital Name
1	13 April 2010	Letterkenny General Hospital
2	12 May 2010	Cork University Hospital
3	12 May 2010	Mercy University Hospital
4	13 May 2010	Waterford General
5	25 May 2010	Galway University Hospitals
6	26 May 2010	Midland Regional Hospital, Tullamore
7	26 May 2010	Midland Regional Hospital, Mullingar
8	31 May 2010	Adelaide and Meath Hospital Dublin (Incorporating the National Children's Hospital), Tallaght
9	31 May 2010	Mater Misericordiae University Hospital
10	1 June 2010	Connolly Hospital, Blanchardstown
11	1 June 2010	Beaumont Hospital
12	17 June 2010	Mid-Western Regional Hospital, Dooradoyle
13	17 June 2010	Mid-Western Regional Hospital, Nenagh
14	18 June 2010	St John's Hospital, Limerick
15	18 June 2010	Mid-Western Regional Hospital, Ennis
16	24 June 2010	St James's Hospital
17	24 June 2010	St Vincent's University Hospital
18	23 August 2010	Kerry General Hospital
19	1 September 2010	Wexford General Hospital
20	1 September 2010	Ely Hospital
21	2 September 2010	South Tipperary General Hospital
22	3 September 2010	St Luke's General Hospital, Kilkenny
23	13 September 2010	Sligo General Hospital
24	14 September 2010	Mayo General Hospital
25	15 September 2010	Roscommon County Hospital
26	16 September 2010	Portiuncula Hospital
27	27 September 2010	Cavan General Hospital
28	28 September 2010	Monaghan Hospital
29	29 September 2010	Louth County Hospital, Dundalk
30	29 September 2010	Our Lady of Lourdes Hospital, Drogheda
31	30 September 2010	Our Lady's Hospital, Navan

Appendix B: Assessors

Name	Role
Ms Debbie Johnston	JAG Consultant Management/Quality Improvement Consultant JAG Assessor
Dr William Dickey	Consultant Gastroenterologist Training Lead, Northern Ireland JAG Assessor
Mr Kourosh Khosraviani	Consultant Surgeon Regional Clinical Lead for Endoscopy, Northern Ireland JAG Assessor
Dr Mark Donnelly	Consultant Gastroenterologist JAG Assessor
Dr John O'Donohue	Consultant Gastroenterologist Chair, JAG QA Units Working Group JAG Assessor
Dr John Silcock	Consultant Gastroenterologist JAG Assessor
Dr Colin Rodgers	Consultant Gastroenterologist JAG Assessor
Mr Paul Kavanagh	Regional Endoscopy Nurse Lead, Northern Ireland JAG Assessor
Mrs Rachael Fellows	Nurse Endoscopist JAG Assessor
Mr Ian Fretwell	Nurse Consultant National BCS Nurse Lead, England JAG Assessor
Dr Helen Griffiths	Nurse Consultant National BCS Nurse Lead, England JAG Assessor

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Glossary of terms and abbreviations

Following are health and medical definitions of terms and abbreviations that appear in this report.

Administrative validation	A process to assess the appropriateness of a patient remaining on a waiting list.
Auditable outcome	A recommended outcome measured for which there is no defined standard.
Booking	A process of enabling the patient to choose and pre-book the date of their appointment or admission.
Booking guidance	A set of information related to a specific service, including rules, procedures performed or conditions treated.
BSG	British Society for Gastroenterology.
Clinical governance	A framework through which hospitals are accountable for continually improving the quality of their services and safeguarding high standards of care.
Clinical validation	Clinical validation is a process where the appropriateness of procedure (usually a planned procedure) is assessed against most up to date guidelines and the current clinical state of the patient.
Colonoscopy	The endoscopic examination of the large colon and rectum.
DNA	Did not attend: when a patient fails to turn up for an appointment or admission, and does not inform the department that they are unable to attend.
Diagnostic procedure	A procedure undertaken to aid diagnosis.
Direct booking	When a patient is able to negotiate and agree an appointment directly with service.
DOPS	Direct observation of procedural skills.
Endoscope	A rigid or flexible lighted optical instrument used to get a deep look inside the body and examine organs such as the throat or oesophagus.
Endoscopy	A broad term used to describe examining the inside of the body using an endoscope.
ERCP	Endoscopic retrograde cholangio-pancreatography: procedure that uses an endoscope to examine and X-ray the pancreatic duct, hepatic duct, common bile duct, duodenal papilla and gallbladder.
ERS	Endoscopy reporting system.
Establishment	The agreed level of staffing within a healthcare service.

EUS	Endoscopic ultrasound: procedure that combines endoscopy and ultrasound to obtain images and information about the digestive tract and the surrounding tissue and organs.
Formative assessment	An assessment which helps the trainer identify areas for further improvement and to set learning objectives.
Full booking	When a patient is given the opportunity to agree a date on, or within one working day of, the referral or decision to admit.
Gastroenterologist	A physician who specialises in the diagnosis and treatment of disorders of the gastrointestinal tract, including the oesophagus, stomach, small intestine, large intestine, pancreas, liver, gallbladder and biliary system.
Gastrointestinal	An adjective referring collectively to the stomach and small and large intestines.
Gastrosocopy	Also known as OGD or upper endoscopy: procedure that examines the oesophagus, stomach, and duodenum (the first portion of small bowel) using an endoscope.
GRS	Global Rating Scale: a web-based self-assessment and service improvement tool.
Partial booking	The patient is notified at referral of the potential wait, and is then contacted at approximately six weeks before the date they will be seen, asking them to call the hospital to agree a date and time.
PAS	Patient administration system: computerised administrative system that assists with planning, tracking and recording the patient's attendance throughout their visit to the hospital.
PDP	Personal development plan.
Polyp	A new growth arising in the endothelium of the colon or rectum that can develop into cancer.
Productivity	Productivity of an endoscopy service refers to the relationship of service inputs to service outputs. Inputs include costs of plant, equipment, IT, consumables etc. Outputs are the clinical benefits of the procedures.
Flexible sigmoidoscopy	Endoscopic examination of the left colon, ideally to the splenic flexure.
Summative Assessment	An assessment which judges an individual against pre-determined standards. In the context of endoscopy a summative assessment is used to determine whether a trainee can practice independently.
Surveillance procedure	A procedure performed in individuals deemed to be at high risk of further problems; for example high risk of pre-cancer or cancer, or further gastrointestinal bleeding.

Therapeutic procedure	A procedure involving a therapeutic intervention such as banding of varices or excision of a polyp.
Vetting	Vetting is a process of checking whether a referral meets the recommended guidelines for that procedure.
Virtual colonoscopy	Uses 2-D and 3-D imagery to construct a virtual image of the interior of the colon from computed tomography (CT) or nuclear magnetic resonance (MR) scans.

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National Cancer Screening Service

The National Cancer Screening Service is part of the Health Service Executive National Cancer Control Programme. It encompasses BreastCheck – The National Breast Screening Programme and CervicalCheck – The National Cervical Screening Programme.

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