

National GI Endoscopy Quality Improvement Programme

6th National Data Report
1 JANUARY – 31 DECEMBER 2020



CONJOINT BOARD OF ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND



Building a
Better Health
Service | Seirbhís Sláinte
Níos Fearr
á Forbairt
National Quality Improvement Team



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GLOSSARY OF TERMS

NEQI Programme	National GI Endoscopy Quality Improvement Programme.
NQAIS-Endoscopy	National Quality Assurance and Improvement System for Endoscopy.
Endoscopy Reporting System (ERS)	A local electronic reporting system where endoscopy units enter clinical details regarding procedures performed.
Key Quality Data	Refers to the information that is to be captured for the NEQI programme. These data are captured to facilitate future audit and quality improvements.
Key Quality Indicator (KQI)	Refers to a metric for which there is a sufficient evidence base to recommend a standard e.g. caecal intubation rate.
Key Quality Target	Refers to a minimum or achievable value associated with KQIs.
Recommendation	Refers to a proposed course of action that should be implemented in each endoscopy unit to support quality improvement activities.
Minimum Target	This refers to the minimum acceptable value for a KQI.
Achievable Target	This refers to an additional aspirational value that should be aimed for if the minimum target is being met.
Procedure	For the purpose of this report, refers to a colonoscopy, oesophagogastrroduodenoscopy or a flexible sigmoidoscopy.
Colonoscopy (Col)	A procedure that allows the endoscopist to look directly at the lining of the large bowel or colon.
Oesophagogastrroduodenoscopy (OGD)	A procedure during which a small flexible endoscope is introduced through the mouth and advanced through the pharynx, oesophagus, stomach, and duodenum.
Flexible Sigmoidoscopy (FSig)	A procedure used to evaluate the lower part of the large intestine.
Quality Improvement Guidelines	Guidelines for the implementation of a Quality Improvement Programme in GI Endoscopy as developed by the NEQI Programme.
Clinical Lead (CL)	The clinician who has overall responsibility for the QI Programme in their unit.
Local Operational Manager (LOM)	An endoscopy nurse responsible for the data uploading process and maintaining the local hospital NQAIS-Endoscopy account.

FOREWORD

The National GI Endoscopy Quality Improvement (NEQI) Programme is delighted to publish its 6th National Data Report this year. This is our second national report with hospital identifiable information and the first to contain year on year comparisons for named hospitals, marking another milestone for the NEQI Programme.



The data contained in this report covers the year from 1st of January to the 31st of December 2020. As such, the data will be reflective of the impacts of Covid and certain caveats will need to be considered when analysing the data, such as changes in numbers of procedures and the types of procedures performed. Other considerations are highlighted in the Data Analysis chapter of this report.

The COVID-19 pandemic and associated restrictions meant that 2020 was a challenging year for everyone involved in the health service due to the COVID-19 pandemic and subsequent restrictions placing major constraints on the volume of endoscopic procedures that could be provided for patients during this period. Despite these challenges, while the number of procedures performed during the year fell significantly, a high level of quality for those procedures was maintained.

Chapter 4 in this report is dedicated to highlighting the impact of the pandemic on the provision of endoscopic services. There was a 21% drop in the number of procedures performed overall, with the majority of this decrease apparent in the months surrounding April 2020. For example, there was an 87% reduction in the number of procedures performed in April 2020 compared to April 2019.

To understand the effect that this reduction has had on diagnoses, the NEQI Programme participated in a collaborative report to investigate the impact of the COVID-19 pandemic on cancer services in Ireland. This work was led by the Faculty of Pathology (RCPI), with the National Histopathology and Radiology Quality Improvement Programmes, the National Cancer Control Programme (NCCP) and Prof Mark Lawler, Associate Pro-Vice Chancellor and Professor of Digital Health, Queens University Belfast; Scientific Director DATA-CAN (Health Data Research, UK). The NEQI findings and submission to this report can be viewed in Chapter 4.

Many challenges lie ahead for endoscopic services as we emerge from the pandemic and begin to address the backlog of patients waiting to be assessed.

Despite the challenges presented by these circumstances, it should be noted that the data in this report indicate that the quality of the procedures performed during 2020 did not significantly reduce from the already high standards set in previous years.

We hope this report will highlight the importance of utilising NQAIS-Endoscopy data over the coming months in addressing the issues facing endoscopy units. The NEQI Programme firmly believes that these data will be an essential tool in helping to restore endoscopic services.

The programme would like to take this opportunity to express its sincere thanks to the Local Operational Managers (LOM) and the Clinical Leads (CL) who have led the NEQI Programme in each hospital by continuing to collect and submit data during this period. We also wish to thank the HSE National Quality Improvement Team who provide funding for this programme, the Specialty QI Programme Steering Committee and to the Specialty QI Programme Management Team, RCPI for their continuous support.

**Dr Jan Leyden,
NEQI Working Group Chair**

NEQI PROGRAMME ENDORSEMENTS

Congratulations to all involved in Irish endoscopy on the sixth national report from the quality improvement programme. The quality of the data allows you to assure patients of the high standards of the service and opportunities to benchmark and improve your service in a manner which is completely transparent, not only at unit but also at an individual level. I particularly commend the emphasis on improvement projects.

**Prof Conor O'Keane,
Chair, Specialty Quality Improvement
Steering Committee,
Consultant Histopathologist,
Mater Misericordiae University Hospital, Dublin**



I am delighted to welcome the publication of the 6th National Data Report from the National GI Endoscopy Quality Improvement Program. Ireland should be justifiably proud to be one of the first countries in the world (if not the first) to have a national endoscopy database of key performance indicators so that units can benchmark themselves in a drive to improve quality. Patients can feel confident that they will receive a good standard of endoscopy whatever institution they attend.

**Tony Tham
Past President, Irish Society of Gastroenterology
President, Ulster Society of Gastroenterology**

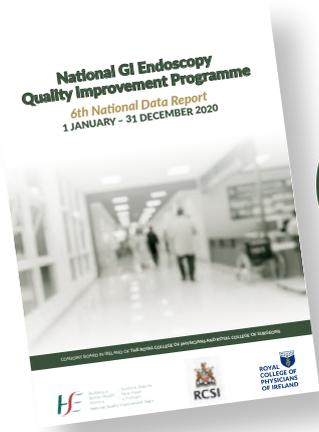
KEY RECOMMENDATIONS

1	<p>The ratio of oesophagogastroduodenoscopies (OGDs) performed to colonoscopies performed remains high. Hospitals should examine triage mechanisms to reduce the number of OGDs. This could include urea breath, stool testing and serology for H pylori.</p> <p><i>See Chapter 3</i></p>
2	<p>Hospitals should continue to triage patients who may be appropriate for sigmoidoscopy rather than colonoscopy.</p> <p><i>See Chapter 3</i></p>
3	<p>The NEQI Working Group recommends that endoscopists continue to avail of performance enhancement opportunities, such as the suite of courses offered by the National Endoscopy Training Committee.</p> <p><i>See Chapter 5</i></p>
4	<p>Adenoma detection rates (ADR) should be reviewed in parallel with polyp detection rates (PDR) in each hospital through local reviews by the hospital's Endoscopy Users Group.</p> <p><i>See Chapter 5</i></p>
5	<p>Comfort score should be provided by an endoscopy nurse at the time of the procedure and agreed with the endoscopist before submission to the Endoscopy Reporting System (ERS).</p> <p><i>See Chapter 5</i></p>
6	<p>Any bowel preparation scores below the minimum target of greater than or equal to 90% of colonoscopies with a bowel preparation score of excellent or adequate should be used to highlight the importance of a pre-assessment nurse and good clinical triage for each unit.</p> <p><i>See Chapter 5</i></p>
7	<p>Hospitals should ensure that their Endoscopy Reporting System (ERS) is up to date and that the ERS requires mandatory recording of QI data. Software vendors should be engaged to ensure this functionality is present.</p> <p><i>See Chapter 6</i></p>
8	<p>The NEQI Working Group recommend that endoscopists explore the use of techniques, such as regular position change and water emersion, that can significantly reduce, or potentially eliminate, sedation usage.</p> <p><i>See Chapter 7</i></p>

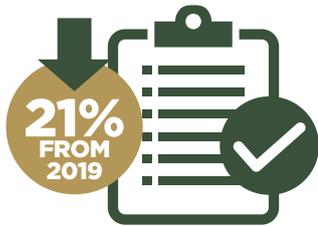
KEY FINDINGS

- 1** The total number of procedures recorded in NQAIS-Endoscopy from 1 January 2020 to 31 December 2020 was 176,828. This is 48,243 (21.4%), less than the number of procedures recorded for 2019.
- 2** A comparison between April 2020 and April 2020 reveals an 87% reduction in the total number of procedures (colonoscopies, flexible sigmoidoscopies and gastroscopies) recorded in NQAIS-Endoscopy.
- 3** The national caecal intubation rate for 2020 was 93.7%, compared to 93.8% in 2019.
- 4** All hospitals are meeting the minimum target of greater than or equal to 20% of colonoscopies with one or more polyps detected.
- 5** The comfort score target of greater than or equal to 90% of colonoscopies performed with a comfort score of a 1, 2 or 3 was met by 86% of endoscopists in 2020, similar to findings in 2019.
- 6** In 2020, 49% of hospitals (22 out of 45) recorded meeting the minimum target for bowel preparation. This is compared to 39% of hospitals (17 out of 44) that met the NEQI Programme target for bowel preparation in 2019.
- 7** In 2020, 80% of endoscopists had a duodenal second part intubation rate of greater than or equal to 95%. This is 4% less than the percentage of endoscopists who met the target for this KQI in 2019.
- 8** In 2020, 73% of colonoscopies performed on patients aged 70 years and older received the median target dose of less than or equal to 3mg of midazolam. This is an increase of 5% when compared to the 68% of colonoscopies receiving the median target dose in 2019.

REPORT HIGHLIGHTS

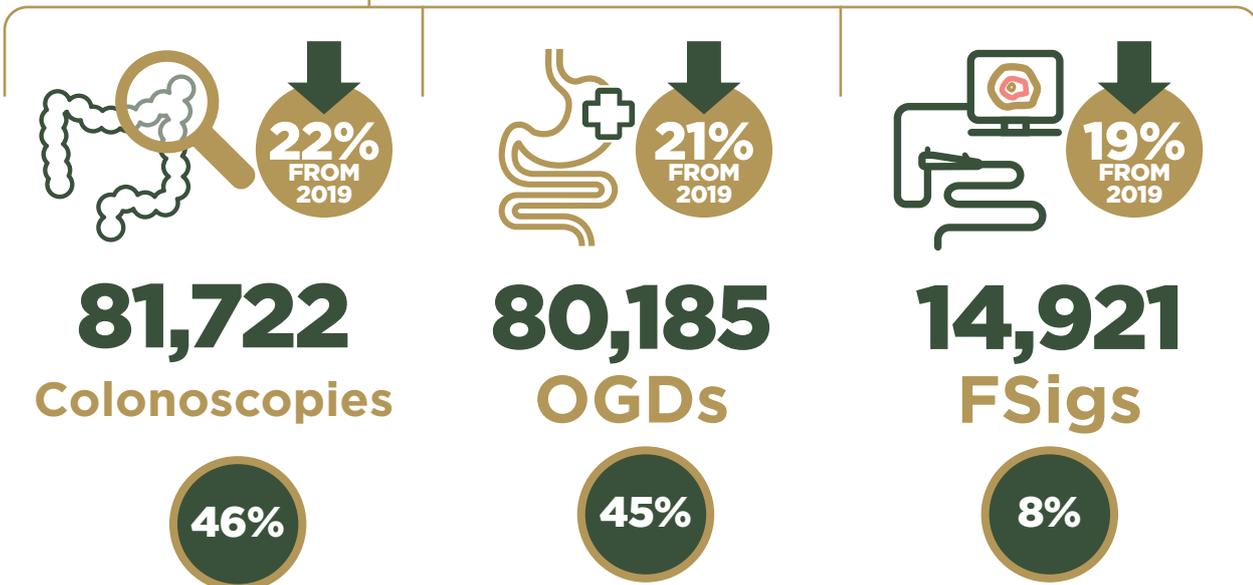


6th National Data Report



176,828

Procedures recorded in
NQAIS-Endoscopy during 2020



CHAPTER 1

INTRODUCTION TO THE PROGRAMME

1

In October 2011, the Conjoint Board of the Royal College of Physicians of Ireland (RCPI) and the Royal College of Surgeons in Ireland (RCSI) launched the National GI Endoscopy Quality Improvement (NEQI) Programme in collaboration with the National Cancer Control Programme (NCCP). The programme has been funded by the HSE National Quality and Patient Team since 2014, and is managed by the Specialty Quality Improvement Programme Management Team, RCPI.

Purpose of this report

This report facilitates informed decision making on the future steps necessary in support of ongoing quality improvement processes within Irish endoscopic services. The NEQI Working Group encourages endoscopists to discuss their local performance against the targets, recommendations and national averages in this report with colleagues, local hospital management and quality and patient safety teams. Where findings suggest that there may be an area in need of improvement, findings should be discussed locally using local hospital QI data. Where patient safety related concerns exist, they should be managed locally and escalated as appropriate in line with the relevant HSE policies. This is the second National Data Report by the NEQI Programme to utilise a January to December reporting year. Data for previous years have been re-analysed in order to allow year on year comparisons across the same time periods.

What this report cannot do

This report cannot and should not be used to produce league tables or to compare hospitals, as no two hospitals will have the same patient profile. Different hospitals specialise in treating patients with different and sometimes much more complex needs, invalidating direct comparisons between hospitals.

Outlier Management

The NEQI Programme does not engage with individual sites who may be identified as outliers in this report. Locally, participants are requested to report and manage the QI data within their unit and to ensure the necessary actions to improve quality are initiated and referred to the appropriate person / team.

TABLE 1: Definitions of NEQI Programme Roles

QI Clinical Lead (CL)	The QI Clinical Lead (CL) is a consultant endoscopist who has overall responsibility for the NEQI Programme in their hospital. They review, sign off, and disseminate data which have been uploaded to NQAIS-Endoscopy from the local ERS
Local Operational Manager (LOM)	The LOM is most frequently an endoscopy nurse who works in collaboration with the QI CL to ensure that data is uploaded in accordance with the quarterly data upload schedule. They create the extract from the ERS, upload it to NQAIS-Endoscopy, clean the data and create Key Quality Data Reports to be signed off by the QI CL.

Additional Context

The points below should be kept in mind when reading this report:

- This report should not be used to directly compare hospital performance.
- All targets are on a per endoscopist basis. The analysis contained within this report reflects this wherever possible. For many KQIs, national performance and statistics based on all cases performed within hospitals are also presented.
- All endoscopist based KQIs are calculated on an Endoscopist 1 (E1) and Endoscopist 2 (E2) basis. This means that an endoscopist's statistics will reflect all cases where the endoscopist was listed as an E1 or an E2 in their local ERS.

Definitions of Endoscopist 1 and Endoscopist 2 can be found on page 33. The analysis in this report does not include statistics where the endoscopist has only been recorded as E2 with no E1 procedures.

Targets and Recommendations

TABLE 2: Summary of Key Quality Indicators and Associated Targets and Recommendations

Key Quality Indicator	Key Quality Target	Additional Information
COLONOSCOPY		
Caecal intubation rate (CIR)	Minimum: $\geq 90\%$ Achievable: $\geq 95\%$	CIR is calculated based on all colonoscopies performed as Endoscopist 1 or Endoscopist 2.
Comfort Score	$\geq 90\%$	90% of colonoscopies should have a comfort score of between 1 and 3 on the Gloucester Scale.
Polyp detection	$\geq 20\%$	N/A
Bowel Preparation	Minimum: $\geq 90\%$ Achievable: $\geq 95\%$	N/A
OESOPHAGOGASTRODUODENOSCOPIES (UPPER GI)		
Duodenal 2nd part intubation (Duo 2)	$\geq 95\%$	N/A
Retroflexion	$\geq 95\%$	N/A
SEDATION		
Midazolam	Patients Aged below 70 years: Median dose is ≤ 5 mg per endoscopist Patients Aged above 70 years Median dose is ≤ 3 mg per endoscopist	This KQI applies to both colonoscopies and OGDs.

Hospital Identification

The 2020 data is presented where possible in charts and tables. For example, hospitals have been named directly in bar charts while, for ease of reading, scatterplots use a hospital identifier (ID) to minimise the volume of information presented. The corresponding hospital names can be found in the table on page 21. **The numerical identifiers used in this report are allocated alphabetically and may change year on year and therefore cannot be used for comparative purposes.**

The NEQI Programme has set out further KQIs which are not covered in this report and can be found in the GI Endoscopy Quality Improvement Guidelines. The KQIs not covered in this report include those that are not easily measured or those where the data in NQAIS-Endoscopy may not be currently reliable.

National Data Report Approval

This report has been drafted by the Working Group of the National GI Endoscopy QI (NEQI) Programme and the Specialty Quality Improvement (SQI) Programme Management Team and was then approved by the Specialty Quality Improvement (SQI) Programme Steering Committee and the Conjoint Board of RCPI and RCSI.

NEQI Working Group approval date: 11 November 2021

SQI Steering Committee approval date: 23 November 2021

CHAPTER 2

DATA ANALYSIS

2

National QI data relating to the following Key Quality Indicators were analysed in the preparation of this report:

- **COLONOSCOPY**
 - Caecal intubation rate
 - Polyp detection rate
 - Comfort score
 - Bowel preparation
- **UPPER GI ENDOSCOPY**
 - Duodenal second part intubation
 - Retroflexion
- **SEDATION**
 - Colonoscopy
 - Upper GI endoscopy

Targets have been set for colonoscopy, upper GI endoscopy and sedation KQIs. Where targets are absent, due to lack of sufficient evidence with which to base a standard upon, a recommendation is made. These targets and recommendations were developed by the Working Group, approved by the Steering Committee of the Specialty Quality Improvement Programmes and are subject to review.

Data are analysed to establish trends where possible across the various quality areas for all 10 participating private and 35 public hospitals that have submitted data for the full 2020 year.

For some key quality areas, there is sufficient data to analyse the performance over multiple years on a quarterly basis. These data have been provided where possible.

2.1 Data Source

The data source for this report is Health Intelligence Ireland – NQAIS-Endoscopy.

2.1.1 The National Quality Assurance and Improvement System for Endoscopy (NQAIS- Endoscopy)

NQAIS-Endoscopy functions as a central repository for quality improvement data from participating hospital's Endoscopy Reporting Systems (ERS). The data relating to the KQIs are extracted from NQAIS and are used to produce the annual national data report on national metrics in endoscopy. Units can use the report to identify best practice and any variations, to review, improve and sustain the quality of their work in the context of national norms and targets set by the NEQI Programme Working Group as well as international best practice.

2.2 Data and Information Lifecycle

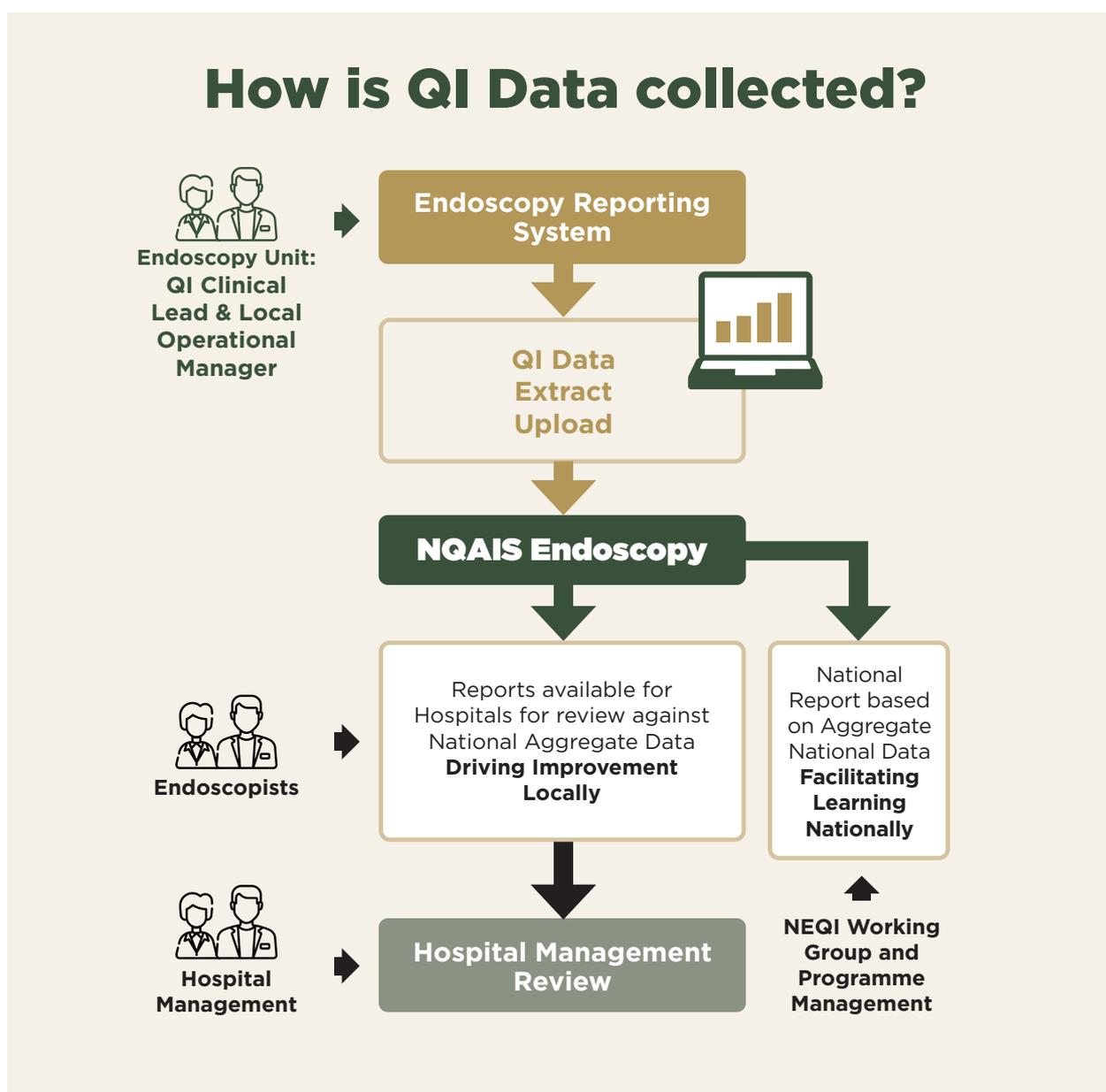
Data are initially captured locally in the local ERS and are then uploaded or submitted from the ERS manually on a quarterly basis to NQAIS-Endoscopy incorporating the previous 4 months in each upload.

Endoscopists and endoscopy nursing staff record clinical details for each procedure performed in their endoscopy unit in an ERS. Anonymous data are then uploaded from each ERS to

the central data repository, NQAIS-Endoscopy, via a CSV extract, for reporting and analysis purposes by participants.

Once data have been uploaded, a local operational manager checks the data quality and maps any data which may not be recognised by NQAIS to standardised national codes. Once data have been cleaned, a report is created which represents the unit's data in relation to Key Quality Indicators (KQIs) and national averages. This report is then reviewed and "signed off" by the clinical lead. This "sign off" process transfers the local data into the national repository and commits them to the national data set.

Once the data reside in the national repository, endoscopists can run reports on the data and compare their statistics to national averages and targets as set out by the NEQI Programme in the GI Endoscopy Quality Improvement Guidelines. Clinical leads, as well as individual endoscopists, are encouraged to run these reports at minimum on a quarterly basis.



The Specialty Quality Improvement (SQI) programme management extract the 12-month dataset for analysis from NQAIS-Endoscopy in March of the following year, at which time all data must be uploaded for inclusion in the national data report.

2.3 Date/Timeline

The data contained in this report were collected between 1st January 2020 and 31st December 2020.

2.4 Scope of Report

2.4.1 In Scope:

Inpatient and outpatient cases are captured in the dataset, however, we are unable to differentiate between these cases at this time due to limitations in the current systems.

Although the children's hospitals do not currently participate in the NEQI Programme, a small number of paediatric procedures are captured in the dataset along with the adult procedures, however no distinction regarding these cases is made in the report at this time.

Data are collected from both public and private sites and can be differentiated based on the hospital name provided.

2.4.2 Out of Scope:

Data from GI endoscopic procedures performed in intensive care units (ICU) or in theatre are not captured in this dataset.

A number of hospitals are referral centres for oesophageal and gastric disorders, where reaching the landmarks required for KQIs in this report is not the intention of procedure. Endoscopy Reporting Systems are currently unable to differentiate between these procedures and as such the NQAIS-Endoscopy data will not include this data.

2.5 Data Coverage

2.5.1 Participating Hospitals

In 2020, 45 public and private endoscopy units contributed their data to the national dataset analysed in this report. Hospital identifiable information is presented in this report.

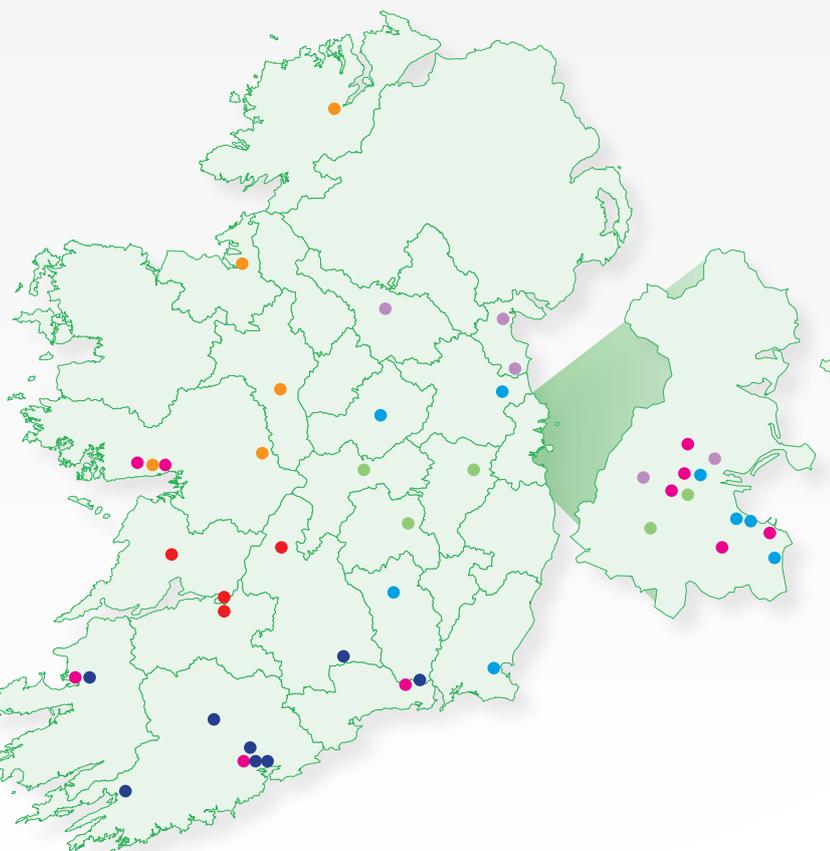
HOSPITALS CONTRIBUTING DATA TO NQAIS-ENDOSCOPY FOR 2020

Dublin-Midlands Hospital Group
Midland Regional Hospital Portlaoise
Midland Regional Hospital Tullamore
Naas General Hospital
St James's Hospital
Tallaght University Hospital

Private Hospitals
Beacon Hospital, Dublin
Blackrock Clinic, Dublin
Bon Secours Hospital Cork
Bon Secours Hospital Dublin
Bon Secours Hospital Galway
Bon Secours Hospital Tralee
Galway Clinic
Hermitage Clinic, Dublin
Mater Private Hospital, Dublin
UPMC Whitfield Hospital, Waterford

Ireland East Hospital Group
Mater Misericordiae University Hospital
Regional Hospital Mullingar
Our Lady's Hospital Navan
St Columcille's Hospital, Loughlinstown
St Luke's Hospital, Kilkenny
St Michael's Hospital, Dun Laoghaire
St Vincent's University Hospital
Wexford General Hospital

South/South West Hospitals Group
Bantry General Hospital
Cork University Hospital
Mallow General Hospital
Mercy University Hospital, Cork
South Infirmity Victoria University Hospital
South Tipperary General Hospital
University Hospital Kerry
University Hospital Waterford



RCSI Hospitals Group
Beaumont Hospital, Dublin
Cavan General Hospital
Connolly Hospital, Blanchardstown
Louth County Hospital
Our Lady of Lourdes Hospital, Drogheda

Saolta University Healthcare Group
Letterkenny University Hospital
Portiuncula University Hospital
Roscommon University Hospital
Sligo University Hospital
University Hospital Galway

UL Hospitals Group
Ennis Hospital
Nenagh Hospital
University Hospital Limerick
St John's Hospital, Limerick

2.6 Data Quality

It is important that those collecting and using the QI data can have confidence in the quality of the data. The data collected must be reliable, accurate, relevant and timely to facilitate decision making and associated quality improvements to provide safer higher quality care for patients.

The Health Information and Quality Authority (HIQA) recommends the use of a data quality framework, which will enable the programme to assess the current data quality and necessary improvements using the following four tools 1) data quality strategy 2) data quality assessment 3) reporting on data quality and 4) a data quality improvement cycle.¹

2.6.1 Data Quality Statement

The programme acknowledges the challenges that exist in relation to the quality of the data submitted and collected.

The Working Group encourages sites to engage with this report and the updated NEQI Guidelines to ensure they are familiar with the KQIs, targets and recommendations.

The NEQI Programme Manager maintains a data dictionary for the data collected in NQAIS-Endoscopy.

2.6.2 Data Quality Assessment

Data are considered under the following five dimensions of quality; accuracy and reliability, timeliness and punctuality, coherence and comparability, accessibility and clarity and relevance.¹

ACCURACY AND RELIABILITY:

The QI data collected for the NEQI Programme relate to nine key quality indicators (KQI), designed to measure quality at both a local and national level in endoscopic units in participating public and private hospitals. The accuracy of the data uploaded to NQAIS-Endoscopy is fundamentally dependant on the correct input of data to each hospital's ERS for these KQIs. Trends are analysed on annual and monthly bases for each KQI in the national data report dating back to 2016 when the first dataset was created. Additional data visualisation provides comparisons over the previous four years based on the volume of procedures and procedure type.

The data coverage is outlined on page 18, with 35 public endoscopy units and 10 private hospitals represented, representing significant data coverage.

Duplicate cases are removed from the dataset as part of the data validation process by the programme management.

The recent review and update of the programmes QI Guideline document provides detailed information on the QI data that should be collected and associated targets and recommendations.

COMPLETENESS:

The programme reports data completeness levels of 99.98%.

This was calculated by the number of procedure codes used in KQI calculation missing from NQAIS-Endoscopy during 2020: 99.98% (37 / 176828)

Additionally, 99.35% of cases had a complete Endoscopist IDs. The percentage of cases with invalid Endoscopist ID was 99.33% (1119 / 176828). This is relevant for endoscopist based statistics.

The completeness of the data is regarded as sufficiently high so as not to impact the fitness for use of the dataset.

¹ Health Information and Quality Authority (2018) "Guidance on a data quality framework for health and social care" <https://www.hiqa.ie/sites/default/files/2018-10/Guidance-for-a-data-quality-framework.pdf>

TIMELINESS AND PUNCTUALITY:

Data relating to the same suite of KQIs should be uploaded quarterly to NQAIS-Endoscopy for a retrospective three-month period. Endoscopy units are requested to have completed their final data uploads to NQAIS by the end of March each year for inclusion in the annual national data report. The programme upload schedule can be viewed on the RCPI website. In addition, the Lapsed Participation Process can also be located on the RCPI website outlining the necessary steps where a site is no longer compliant with the upload schedule.

The annual national data report is launched within the 12 months after the reporting period.

The NEQI Working Group are updated monthly by the programme manager regarding data upload compliance nationally.

Considering that the uploads are on a three-month retrospective basis, the data presented in this report are accurate at the time the dataset is extracted from NQAIS. It is possible that some cases relating to the report timeline may be uploaded in the period between data extraction and publication of this report.

The programme acknowledges that uploads are performed manually and can be time consuming, contributing to some expected delays in the uploading of data.

All participating sites have uploaded 100% of their data extracts for 2020.

COHERENCE AND COMPARABILITY

All participating endoscopy units are contacted on a quarterly basis by the programme manager and encouraged to access their own data in NQAIS provided they have the appropriate permissions. Here they can compare their own performance over time to the national aggregate and provide a report for colleagues and hospital management.

Since 2020, hospitals are identified by name in this report. The Working Group advise against using the report to produce league tables and to exercise caution if attempting to compare hospitals to one another as no two hospitals will have the same patient profile. Different hospitals will specialise in treating patients with different and sometimes more complex care needs, making direct comparisons between hospitals ineffective. The numerical identifiers used in this report do not reflect the IDs used in any previous reports and therefore, cannot be used for comparative purposes.

As previous National Data Reports have reported on either a July to June basis, or as was the case in the 4th National Data Report, a Q3 & Q4 basis, KQI data reported on in this report may differ from those presented in older reports.

The current dataset reported on by the NEQI Programme facilitates quality improvements within GI endoscopy but cannot be linked with datasets provided by the other National QI Programmes in Histopathology and Radiology or with the HIPE database.

ACCESSIBILITY AND CLARITY

All participating endoscopy units may access their own data in NQAIS-Endoscopy. Training is provided to aid the reliability of this process.

The extraction and uploading of data are performed following agreed pathways depending on the ERS in place. Further training or any refreshing of specific elements can be requested from the programme manager.

The analysis of the data once extracted from NQAIS is performed consistently by the programme management team and presented in the national data report.

Previous reports are hosted by the RCPI website.

RELEVANCY

The purpose of the data is to aid decision making in the context of the endoscopy department. Detailed data are supplied on nine of the KQIs outlined in the QI Guidelines document and broken down by hospital and endoscopist anonymously in the national data report to aid visualisation of both areas of improvement and those requiring increased scrutiny. A recent report on the impact of COVID-19 on cancer care in Ireland found the NEQI Programme data to be one of the more real-time sources of diagnostic data in the country and assisted significantly in representing the challenges faced by hospitals in meeting the needs of patients (See Chapter 4).

There are currently six different local ERS used across the country resulting in challenges in the uniform collection of data. Any ERS used in a participating hospital should have the ability to accurately record the quality improvement data required for the NEQI Programme.

The Working Group review and assess the KQIs and the targets set on an ongoing basis in terms of relevance and based on feedback from colleagues.

2.6.3 Reporting on Data Quality

Data quality is monitored by the programme management, with reports currently made to the Working Group and SQL Steering Committee when issues arise.

2.6.4 Continuous Improvement of Data Quality

The use of superior data analysis tools will permit a more in-depth consideration of data quality into the future, however, limitations are encountered in the data captured by local systems must be factored in.

Greater discussion between all parties will indicate if the data currently available meets the needs of the endoscopy departments and on the use of reports locally which will enable the programme to generate a more detailed picture on the use of the data.

RECOMMENDATION

It is recommended that clinicians discuss how the data can be used to drive quality improvement locally and that the NQAIS-Endoscopy reports are communicated to senior hospital management and quality and patient safety teams on a quarterly basis.

2.7 Hospital ID Legend for Graphs 2020

Hospital Name	ID*
Bantry General Hospital	1
Beacon Hospital, Dublin	2
Beaumont Hospital, Dublin	3
Blackrock Clinic, Dublin	4
Bon Secours Hospital Cork	5
Bon Secours Hospital Dublin	6
Bon Secours Hospital Galway	7
Bon Secours Hospital Tralee	8
Cavan General Hospital	9
Connolly Hospital, Blanchardstown	10
Cork University Hospital	11
Ennis Hospital, Clare	12
Galway Clinic	13
Hermitage Medical Clinic	14
Letterkenny University Hospital	15
Louth County Hospital	16
Mallow General Hospital	17
Mater Misericordiae University Hospital, Dublin	18
Mater Private Hospital, Dublin	19
Mercy University Hospital, Cork	20
Midlands Regional Hospital Mullingar	21
Midlands Regional Hospital Tullamore	22
Midlands Regional Hospital, Portlaoise	23

Hospital Name	ID*
Naas General Hospital	24
Nenagh General Hospital, Tipperary	25
Our Lady of Lourdes Hospital, Drogheda	26
Our Lady's Hospital, Navan	27
Portiuncula University Hospital, Ballinasloe	28
Roscommon University Hospital	29
Sligo University Hospital	30
South Tipperary General Hospital	31
South Infirmary Victoria University Hospital, Cork	32
St Columcille's Hospital, Loughlinstown	33
St. James's Hospital, Dublin	34
St. John's Hospital, Limerick	35
St. Luke's Hospital, Kilkenny	36
St. Michael's Hospital, Dún Laoghaire	37
St. Vincent's University Hospital, Dublin	38
Tallaght University Hospital, Dublin	39
University Hospital Galway	40
University Hospital Kerry	41
University Hospital Waterford	42
University of Limerick Hospital	43
UPMC Whitfield Hospital	44
Wexford General Hospital	45

***Important Note:** The Hospital IDs assigned in this report refer to this report only. They are not reflective of any of the IDs used in previous reports. I.e. hospital 1 in this report is not necessarily the same hospital as hospital 1 in the 5th National Data Report. The IDs used in this report facilitate easier interpretation by reducing the amount of information presented in graphs. Hospitals are numbered based on alphabetical order. As such, IDs may change as new hospital join the programme.

CHAPTER 3 WORKLOAD

3

Evidence suggests that endoscopic proficiency with a reduction in the occurrence of complications, improves with the number of procedures performed. In a population-based study of outpatient colonoscopy carried out in Canada² the lowest complication rate was associated with the highest number of procedures (i.e. >200 per endoscopist per year). Notably, completion rates in these cohorts were at 72%. Level of experience rather than volume of procedures performed also appear to show correlation with the level of caecal intubation rates³. Similarly, adenoma detection rate (ADR) does not necessarily appear to correlate with overall endoscopy numbers⁴. Therefore, it is important to note the following:

1. Low numbers of procedures may be associated with poor performance.
2. Low numbers may mean the sample size for Key Quality Indicators (KQIs) will be low and the confidence intervals around the observed performance will be wide.
3. Adequate numbers of procedures are required to provide accurate estimates of performance particularly if procedures are performed infrequently e.g. the 95% confidence interval for a completion rate of 90% for 150 colonoscopy procedures per year is 85%-95%.
4. Endoscopists who are technically proficient will likely find it easier to maintain competency with lower numbers. However, it may not be possible to maintain adequate performance with low numbers, although there may be exceptions to this whereby lifelong experience reduces the requirement for high numbers. Similarly, endoscopists who routinely receive referrals for difficult procedures may have lower numbers.
5. Endoscopy numbers in isolation may not be indicative of poor performance but should be interpreted in conjunction with other KQIs.

Tables 3 and 4 below show the number of endoscopists per category of procedures performed for both colonoscopies and oesophagogastroduodenoscopy between 1 January 2020 and 31 December 2020.

TABLE 3: Number of Endoscopists per Colonoscopies Performed during 2020

Colonoscopies					
Number of colonoscopies performed	<10	11-50	51-100	101-150	>150
Number of endoscopists	97	165	132	86	205

TABLE 4: Number of Endoscopists per OGDs performed during 2020

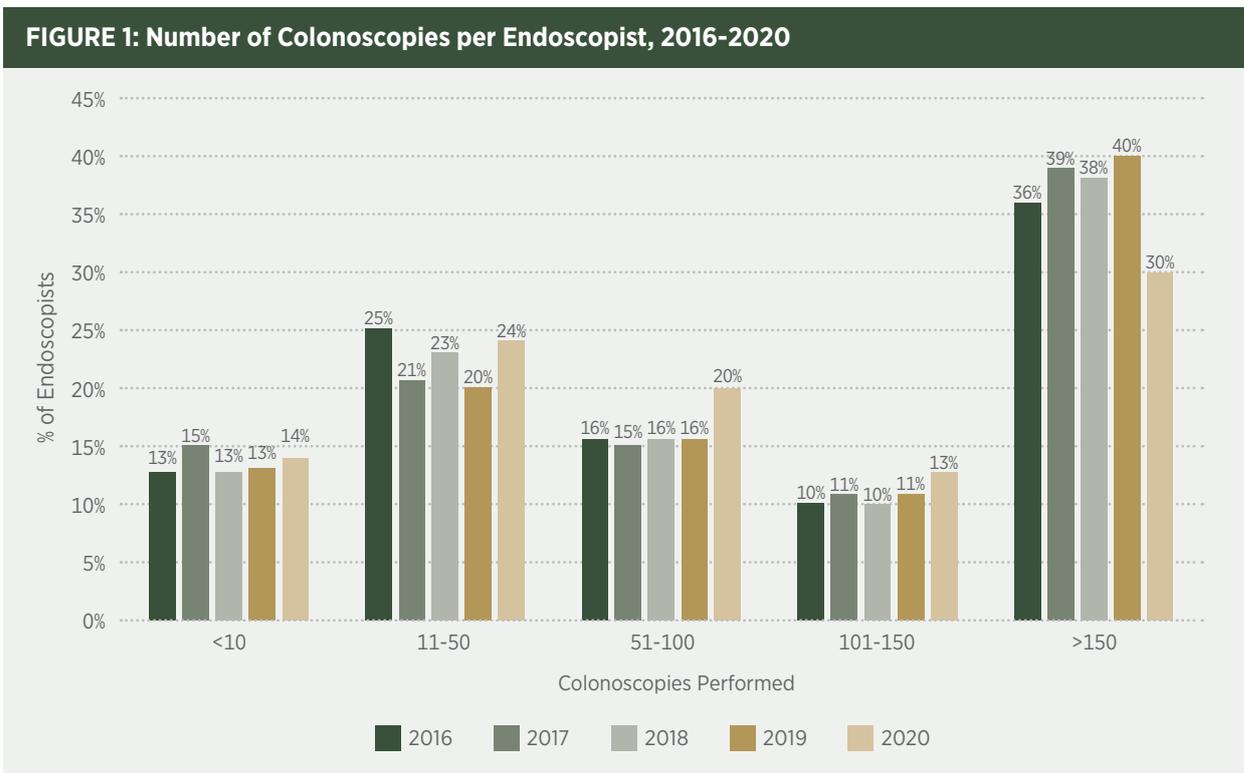
Oesophagoduodenoscopies (OGDs)					
Number of OGDs performed	<10	11-50	51-100	101-150	>150
Number of endoscopists	92	195	126	86	220

² Singh, Penfold, DeCoster, Kaita, Proulx and Taylor, (2009) "Colonoscopy and its complications across a Canadian regional health authority," *Gastrointestinal Endosc* 69, vol. 69, no. 3, pp. 665-671.

³ GC Harewood, "Relationship of colonoscopy completion rates and endoscopist features, (2005) " *Dig Dis Sci* 50, vol. 50, no. 1, pp. 47-51.

⁴ Adler, Wesgscheider, Lieberman, Aminimalai, Aschenbeck, Drossel, Mayr, Mroß, Scheel, Schröder, Gerber, Stange, Roll, Gauger, Wiedemann, Altenhofen and Rosch, (2013) "Factors Determining the Quality of Screening Colonoscopy: A Prospective Study on Adenoma Detection Rates," *Gut* 62, vol. 62, no. 2, pp. 236-41.

Figure 1 highlights that as a result of the reduced number of procedures performed in 2020, there was a 10% decrease in the percentage of endoscopists performing over 150 procedures during 2020 when compared to 2019. The percentage of endoscopists performing less than 10 procedures has remained unchanged at 14%.



The total number of procedures recorded in NQAIS-Endoscopy from 1 January 2020 to 31 December 2020 was 176,828. This is 48,243 (21.4%), less than the number of procedures recorded for 2019. **Figure 2** shows the number of OGDs and colonoscopies per month during 2020.

This reduction in procedures was a direct result of restrictions put in place during the initial phase of the COVID-19 pandemic in March 2020.

The total number of procedures dropped 87% in April 2020 when compared to April 2019. This will be investigated in section 4 of this report.

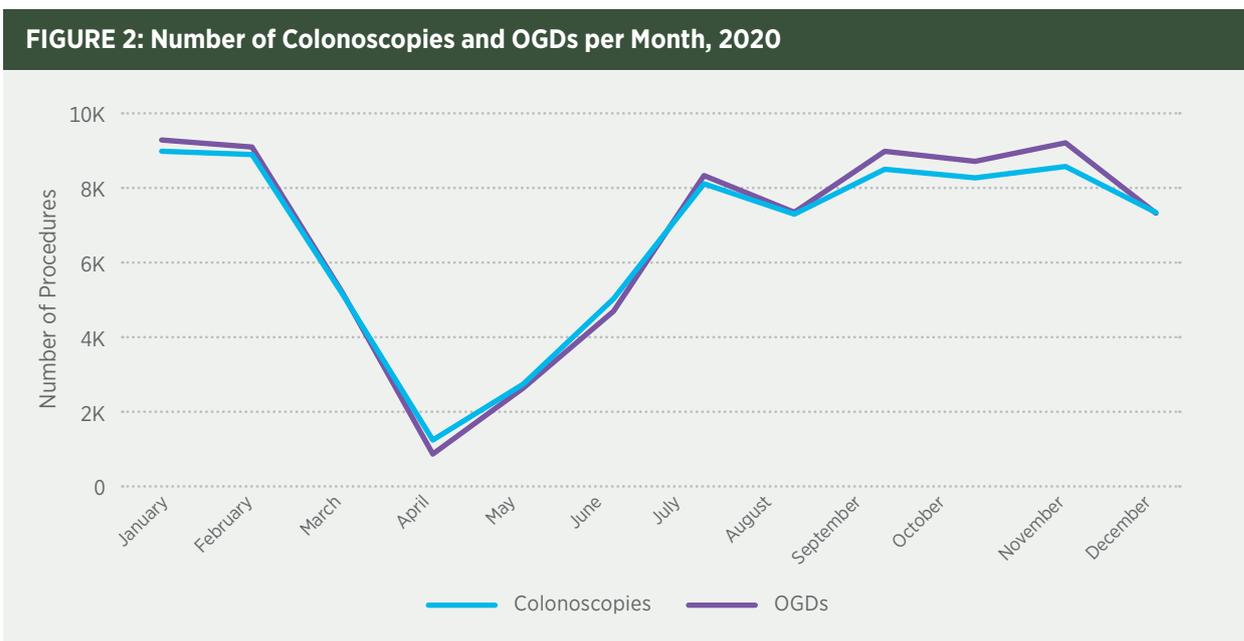


Figure 3 and **Figure 4** show the total number of procedures for each hospital during 2020 and the percentage of each procedure type respectively. These figures show the different ratios of OGDs to colonoscopies performed in each hospital nationally.

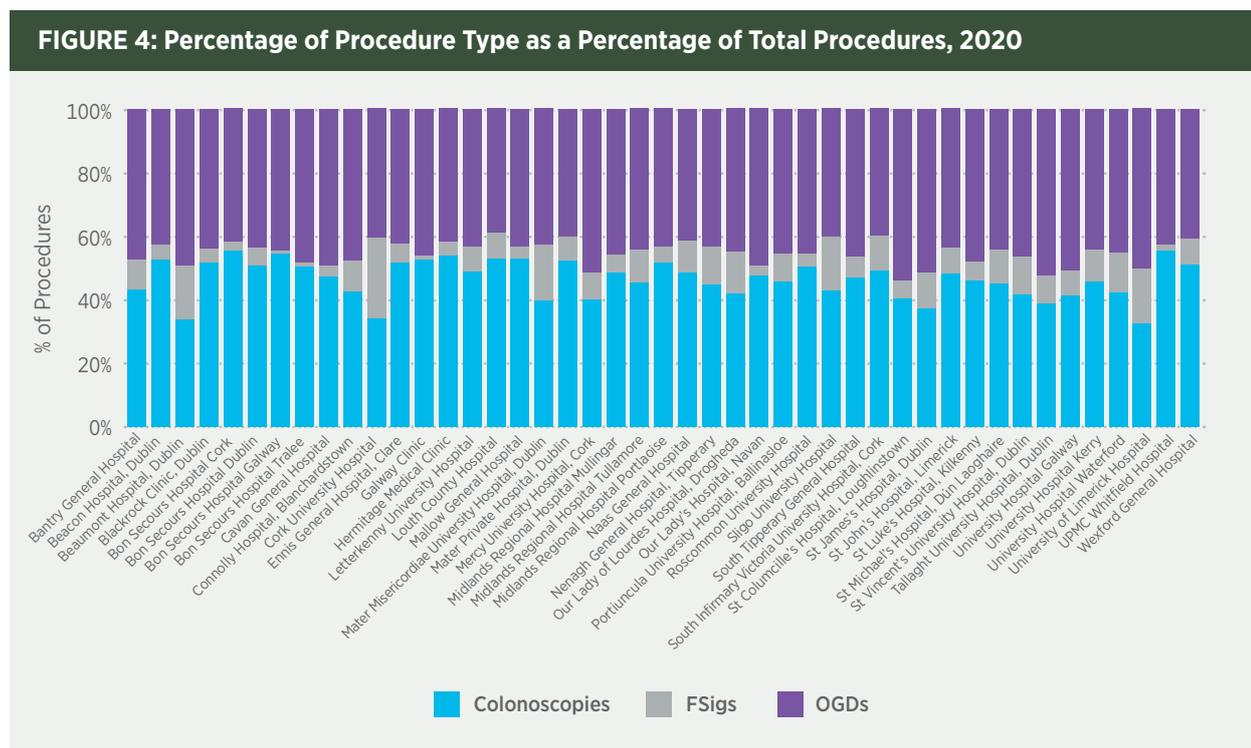
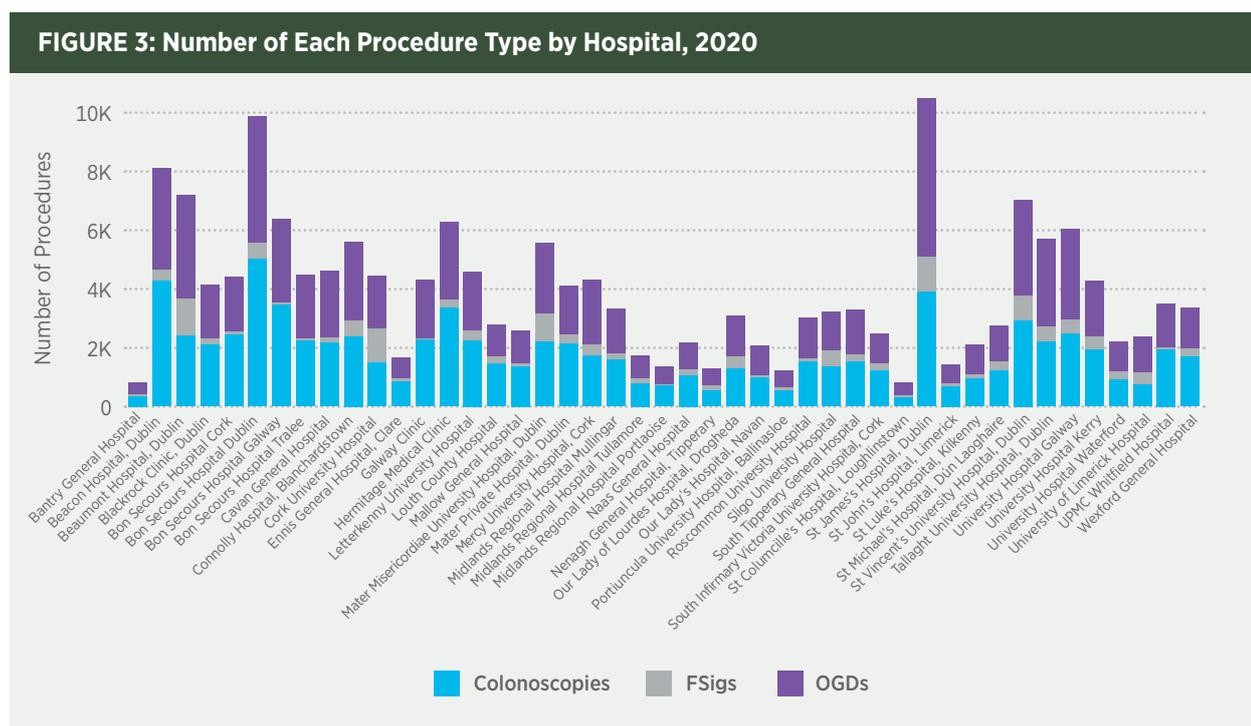


FIGURE 5: Number of Each Procedure Type Nationally, 2016 - 2020

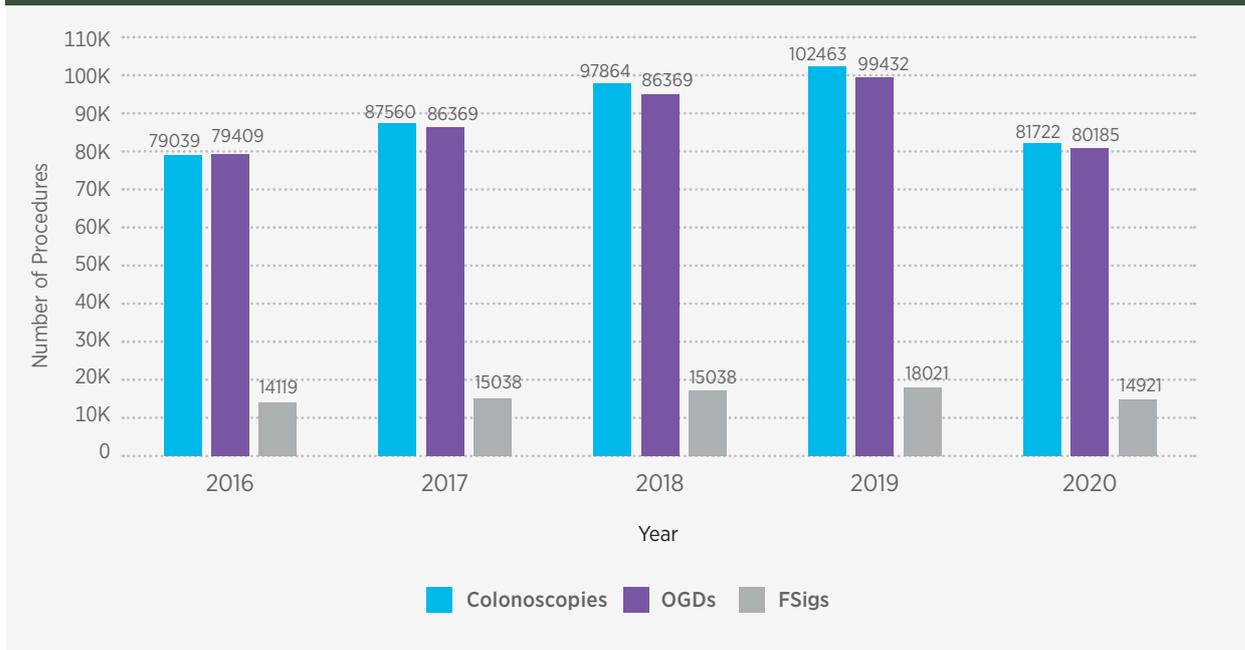


Figure 5 reveals an increase in the volume of procedures since 2016 until the decrease in 2020 due to the impact of the COVID-19 pandemic on the health service. One additional hospital contributed to the 2020 dataset.

The NEQI Working Group is aware that there continue to be many endoscopists performing a low volume of procedures. This presents an opportunity for quality improvement. The key to driving this improvement will be amendments to the ERS to allow further analysis of the data. This would include the ability to identify and analyse the data on a Trainee and non-Trainee basis. Hospitals are encouraged to consult their own data regarding endoscopists performing low numbers of procedures and ensure appropriate processes are put in place.

KEY FINDING

The impact of the COVID-19 pandemic is seen in the 87% decrease in the number of procedures performed in April 2020 when compared to April 2019.

RECOMMENDATION

The ratio of OGDs to colonoscopies remain high. Hospitals should examine triage mechanisms to reduce the number of OGDs. This could include urea breath, stool testing and serology for *H pylori*.

RECOMMENDATION

Hospitals should continue to triage patients who may be appropriate for sigmoidoscopy rather than colonoscopy.

CHAPTER 4

SPOTLIGHT: EFFECT OF 2020 RESTRICTIONS ON ENDOSCOPIC SERVICES

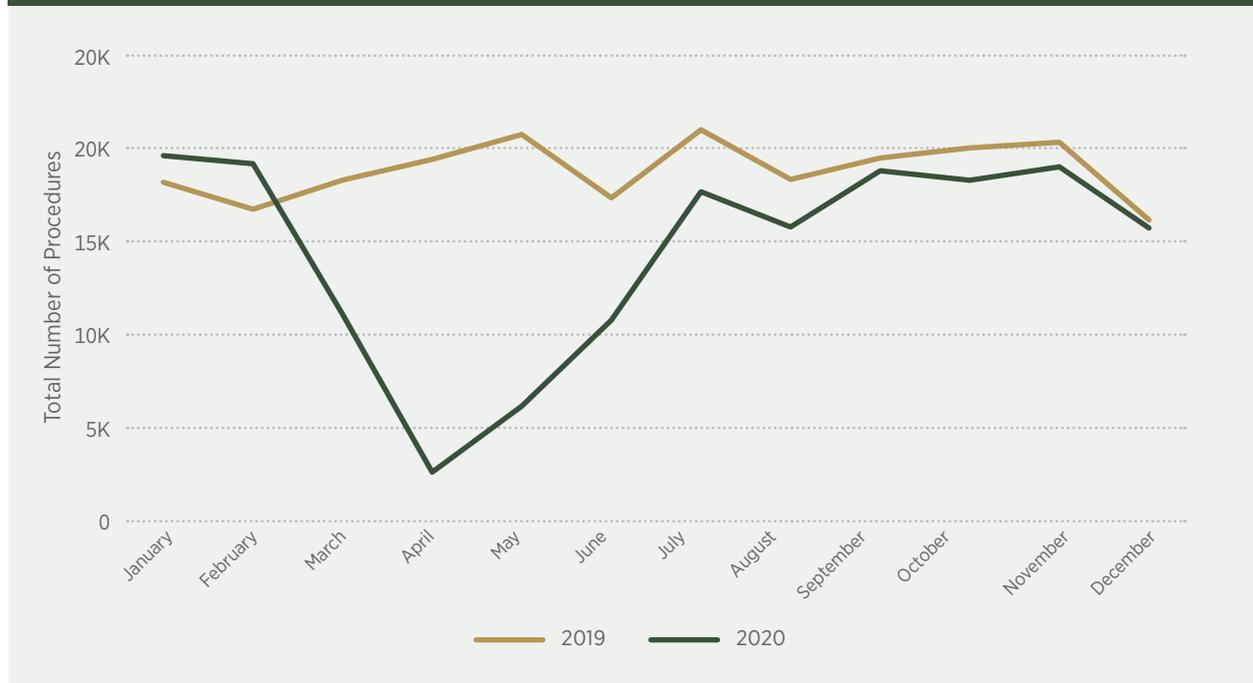
4

In 2020, healthcare services were subject to the unprecedented effects of the COVID-19 pandemic and the resultant public health restrictions.

This period saw a significant decrease in the number of endoscopy procedures performed.

There was also a marked change in the type of patient presenting for endoscopy procedures with emergency and urgent patients prioritised for available procedures. This chapter will look at the effect on the overall number of procedures performed in addition to the impacts on some KQIs on both a national and hospital level.

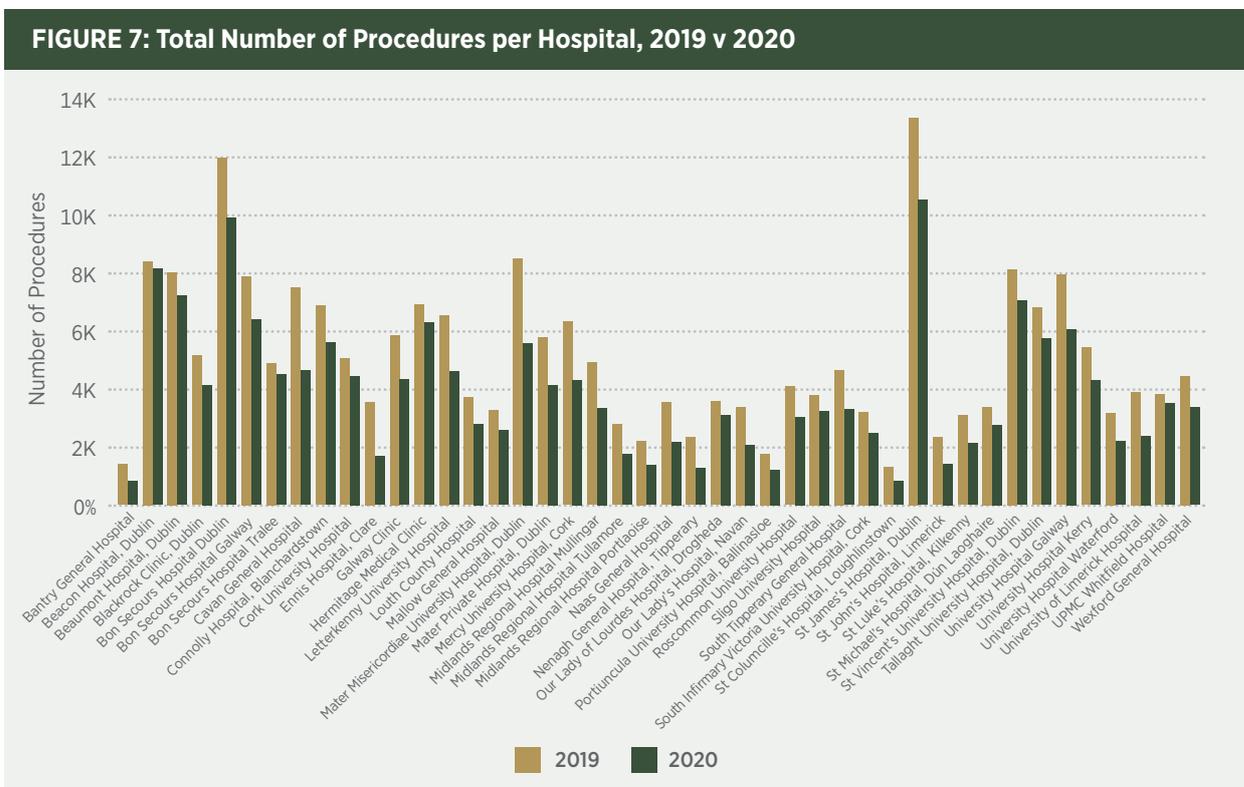
FIGURE 6: Total Number of Procedures, 2019 v 2020



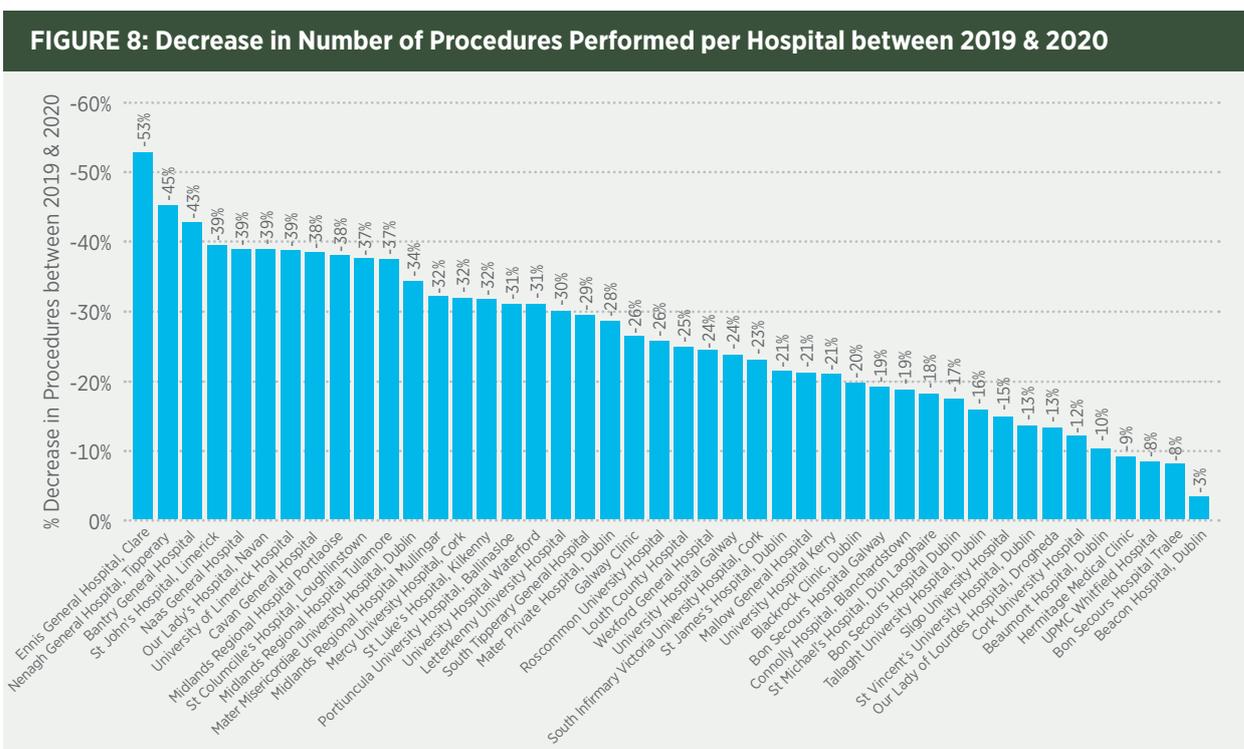
At the start of 2020, the volume of procedures carried out was higher than in 2019, however this number began to decrease from February 2020. The first set of restrictions were imposed by the Irish government in March 2020. A comparison between April 2019 and April 2020, reveals an 87% reduction in the total number of colonoscopies, flexible sigmoidoscopies and gastroscopies, recorded in NQAIS-Endoscopy (**Figure 6**).

Endoscopy procedure numbers gradually increased nationally before reaching near 2019 levels again in September 2020. When viewed on a hospital basis, it suggests that different hospitals were affected to varying degrees (**Figure 7**).

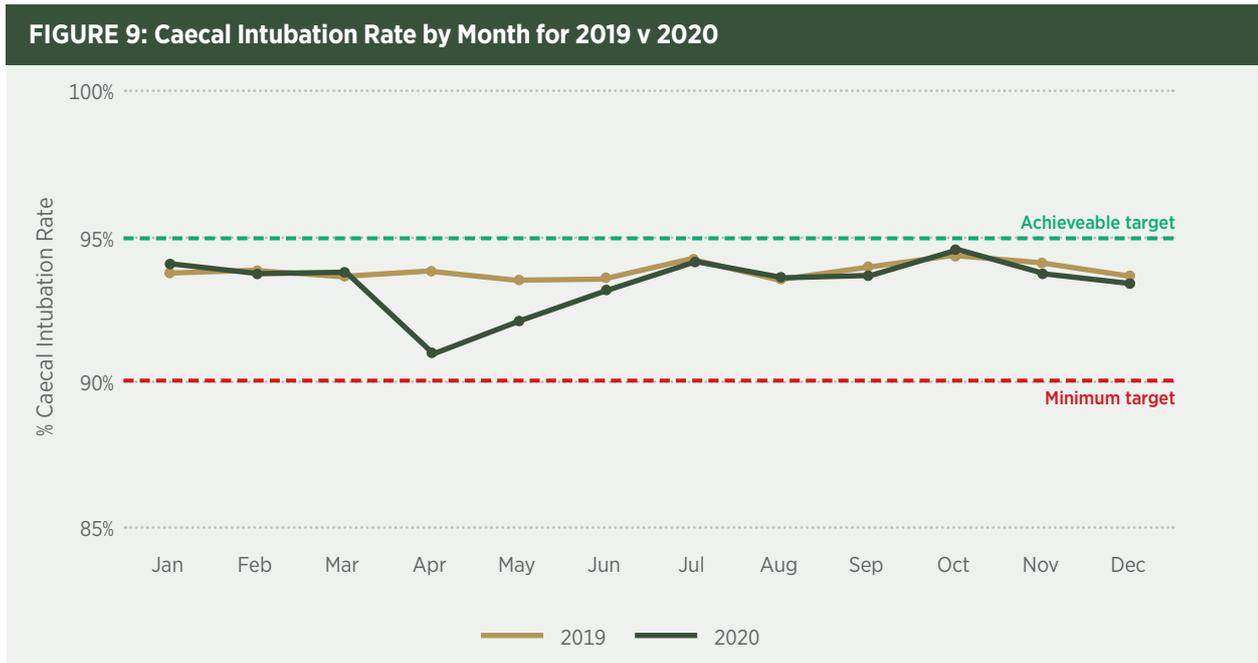
Figure 8 shows the percentage difference between the total number of procedures performed in each hospital contributing data to NQAIS-Endoscopy during 2020. All hospitals have seen a reduction in procedures ranging from -8% to -61%. One hospital, Bon Secours Hospital Cork, saw an increase in procedures, however, this was due to the hospital joining the programme and beginning data uploads to NQAIS-Endoscopy during Q2 of 2019. As a result Bon Secours Hospital Cork has been removed from the graphs as data for 2019 will not be reflective of a full year.



Please note: Bon Secours Hospital Cork have not been included in Figures 7 & 8 as data were not available for full 2019 year as the hospital joined the programme in Q2 of 2019.



In relation to the impact on caecal intubation, there is a slight decrease in the KQI scores during April and May 2020 before returning to 2019 levels in June. This is highlighted in **Figure 9**.



During the first wave of the pandemic only emergency and urgent procedures were performed, a significant number of these procedures were inpatient procedures. This resulted in a higher number of incomplete procedures being recorded due to the caecum not being intubated. This is most likely due to sub-optimal bowel prep, colonic pathology encountered, poor patient tolerance of the procedure, or caecal intubation not being required/indicated. Later in the year most endoscopy units were still functioning at reduced capacity (some at significantly reduced capacity), due to public health restrictions and staff redeployment to other COVID-19 related duties. Furthermore, many patients were reluctant to present at hospitals for procedures during this time.

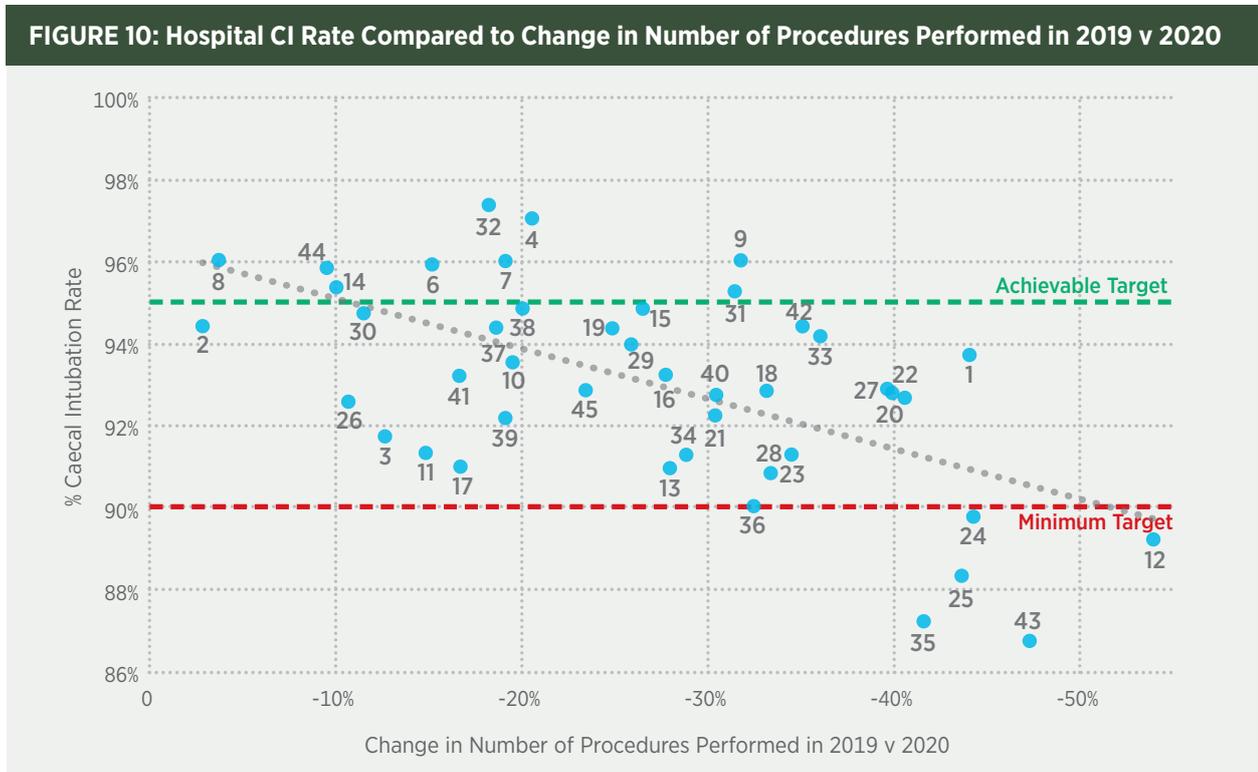
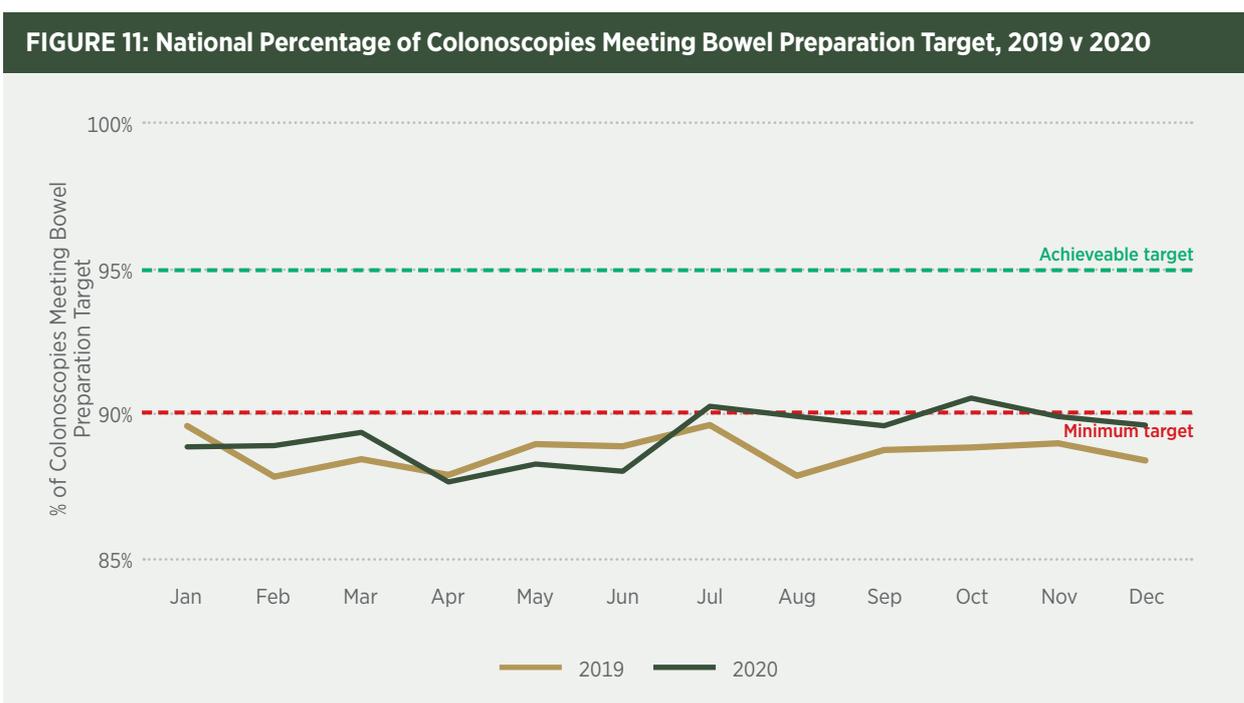


Figure 10 shows a correlation between hospitals that have seen a greater reduction in the number of procedures performed during 2020 when compared to 2019 (x-axis) and the hospital caecal intubation rate for 2020 (y-axis).

As illustrated in **Figure 10**, the larger the decrease in procedures performed in 2020, the less likely the unit is to meet the CI Rate target. For example, hospital 29 saw a 26% reduction in procedures between 2019 and 2020 (y-axis), and also had a caecal intubation rate of 94% (x-axis). This indicates that the hospitals who were most affected by restrictions were less likely to meet the minimum target for this KQI.

Conversely, looking at the national scores for bowel preparation scores (**Figure 11**) there is an improvement following the initial months of the pandemic from March to June. This is believed to reflect increased patient pre-assessment and increased nurse triaging which was initiated following the first wave of the pandemic. As a result, the scores relating to this KQI appear higher in the second half of 2020 than in 2019.

This is the first extended period for which the national bowel preparation score has met the minimum target each month in the six years of reporting national data by the NEQI Programme.



The importance of both patient pre-assessment and nurse triaging were highlighted in the NEQI Programme’s 5th National Data Report where the importance of a pre-assessment nurse and good clinical triage for each unit was recommended for hospitals not meeting the minimum target for bowel preparation.

The initial phases of the COVID-19 pandemic led to a significant reduction in procedure numbers and a change in the procedure case-mix in most endoscopy units in 2020. This in turn impacted on a number of the endoscopy KQIs, and in particular the caecal intubation rate.

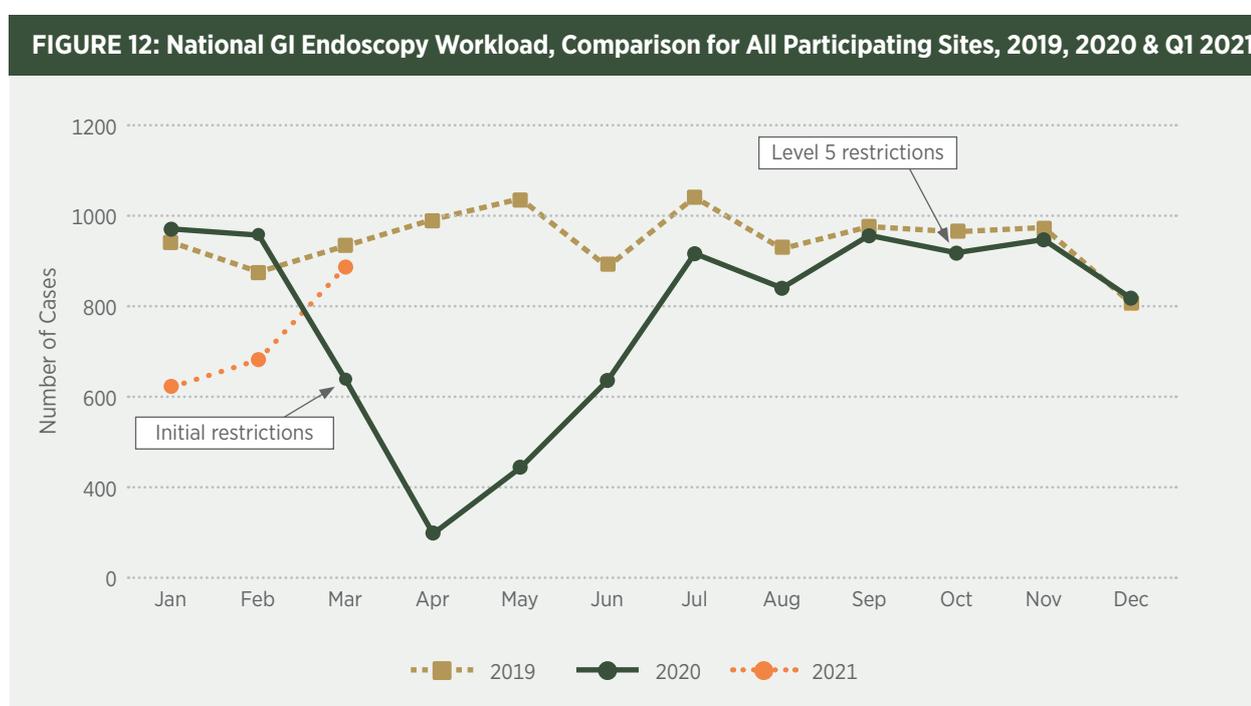
This reduction in procedure numbers has added to the already large endoscopy waiting lists for non-urgent procedures and highlights the need to protect scheduled care activity during times of crisis. Despite these circumstances, endoscopy services were able to maintain relatively high procedure numbers during the latter part of the year.

While COVID-19 has had many negative impacts on endoscopy services, the COVID-19 related focus on triage and changes in scheduling arrangements have had a positive impact on bowel preparation quality through optimising triage and increased interaction with the patient.

4.1 Impact of COVID-19 on Endoscopic Services

In 2020, the NEQI Programme participated in a collaborative report to investigate the impact of the COVID-19 pandemic on cancer services in Ireland led by the Faculty of Pathology (Royal College of Physicians of Ireland- RCPI), with the with the National Histopathology and Radiology QI Programmes, the National Cancer Control Programme (NCCP) and Prof Mark Lawler, Associate Pro-Vice Chancellor and Professor of Digital Health, Queens University Belfast; Scientific Director DATA-CAN (Health Data Research, UK). An initial report entitled “Deploying Data-Driven Intelligence to measure the impact of COVID-19 on cancer care and cancer patients”, was released in December 2020. That report highlighted the dramatic reduction in activity in March to June 2020 and emphasised the need for intensive efforts to encourage early presentation when there is a suspicion of cancer and to ensure timely access to diagnostic services to enable rapid diagnosis. This report will be launched in December 2021 with updated figures for Q3 and Q4 2020 as well as Q1 2021.

Figure 12 was submitted by the NEQI Programme for inclusion in this report. It shows the total number of procedures in NQAIS-Endoscopy for 2019, 2020 and Q1 2021. The figures were correct at time of extraction from NQAIS-Endoscopy, however, they will not necessarily match figures presented elsewhere in this report due to varying inclusion criteria and timelines. Data for Q1 2021 represents less than 80% of the units for that period but highlights the overall trend for Q1.



Between February 2020 and April 2020, there was a decrease of 87% (16,360) in the number of procedures performed. This highlights the difference in the number of procedures performed between the last month before restrictions were in place, February 2020, and the number of procedures performed during the month most impacted by restrictions, April 2020. This mirrors trends in the GI Endoscopic Biopsy data reported from NQAIS-Histopathology.

TABLE 5: National GI Endoscopy Workload, Comparison for All Participating Sites, 2019, 2020 & Q1 2021

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	18457	16841	18333	19708	20829	17121	20914	18103	19308	19034	19260	15156	223064
2020	19178	18829	10876	2469	6087	10861	17826	15932	18819	17863	18591	15382	172713
2021	10527	12010	17099	-	-	-	-	-	-	-	-	-	39636

**Please note: Data is in relation to Figure 12 only and will not necessarily reflect the data presented elsewhere in this report.*

CHAPTER 5 COLONOSCOPY

5

Colonoscopy is an investigation for the assessment of the large bowel allowing diagnosis, biopsy and therapy to be undertaken. Colonoscopy detects and prevents colorectal cancer and is important in the diagnosing and treatment of non-neoplastic conditions. Colonoscopy can lead to rare but serious complications and poor quality colonoscopy is associated with increased rates of interval cancers.

There are four quality areas associated with colonoscopy, caecal intubation rate, comfort score, polyp detection and bowel preparation. The associated targets are outlined in the table below.

TABLE 6: Summary of Colonoscopy Key Quality Indicators and Associated Targets

Key Quality Indicator	Key Quality Target	Additional Information
COLONOSCOPY		
Caecal intubation rate (CIR)	Minimum: ≥ 90% Achievable: ≥ 95%	CIR is calculated based on all colonoscopies performed as Endoscopist 1 or Endoscopist 2
Comfort score	≥ 90%	90% of colonoscopies should have a comfort score of between 1 and 3 on the Gloucester Scale
Polyp detection	≥ 20%	N/A
Bowel preparation	Minimum: ≥ 90% Achievable: ≥ 95%	N/A

5.1 Caecal Intubation Rate

Caecal intubation rate (CIR) is one of the key quality indicators for colonoscopy. CIRs are affected by several factors including age, sex, low BMI, bowel cleansing, sedation, diverticular disease and general health status. It is expected that every unit has a policy stating that endoscopists and endoscopy nurses in the procedure room should agree that the relevant landmark has been reached before recording caecal intubation in the ERS.

Key Quality Indicator:

- Number of colonoscopies where the terminal ileum / caecum / anastomosis has been reached, expressed as a % of total colonoscopies performed per endoscopist

Key Quality Target:

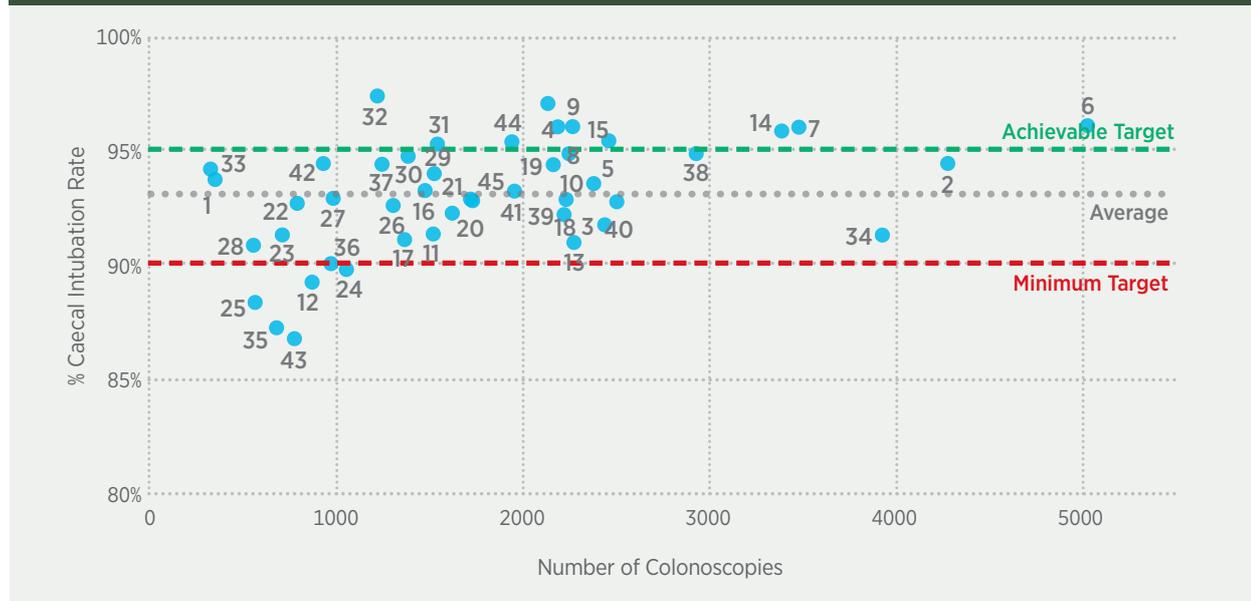
- **Minimum Target:** 90% of colonoscopy cases should reach the terminal ileum/caecum or anastomosis (adjusted only for obstructing lesions)
- **Achievable Target:** 95% of colonoscopy cases should reach the terminal ileum/caecum or anastomosis (adjusted only for obstructing lesions)

During 2020, the number of colonoscopies performed in hospitals throughout the country were reduced as a result of the COVID-19 pandemic. This reduction in colonoscopies could also have impacted the KQIs for certain periods. Additionally, it is expected that a disproportionate number of inpatients will undergo this procedure in 2020 when compared to previous years as inpatient services were not operating at capacity. NQAIS does not currently collect data relating to inpatient and outpatient status.

The national caecal intubation rate for 2020 was 93.7%, which is only a minor decrease from 93.8% in 2019

In 2020, 91% of hospitals (41 out of 45) met the minimum target for CIR, this is a change from 98% of hospitals (43 out of 44) in 2019.

FIGURE 13: Percentage Caecal Intubation Rate per Hospital, 2020



A NOTE FROM UL HOSPITALS GROUP

“UL Hospital Group (ULHG) believes that the decrease in Caecal Intubation Rate observed during the pandemic in 2020 is related to the cessation of outpatient colonoscopy completely in favour of inpatient only colonoscopy. This patient group are frequently elderly patients with comorbidities and present with poorer bowel preparation which leads to lower Caecal Intubation Rates. ULHG also relies disproportionately on inpatient colonoscopy compared to other groups and we believe this has had a negative effect on the colonoscopy Key Quality Indicators from ULHG prior to the unusual circumstances of the past two years. This issue is closely related to the issue of long outpatient waiting lists.”

In 2020, 70% of endoscopists met the CIR minimum target of more than or equal to 90% of colonoscopies with the caecum intubated, 2% less than in 2019. The achievable target of more than or equal to 95% of colonoscopies with the caecum intubated was met by 36% of endoscopists (Figure 14).

Caecal intubation is calculated based on procedures performed as Endoscopist 1 or Endoscopist 2. Definitions of Endoscopist 1 and Endoscopist 2 can be found below.

Definitions

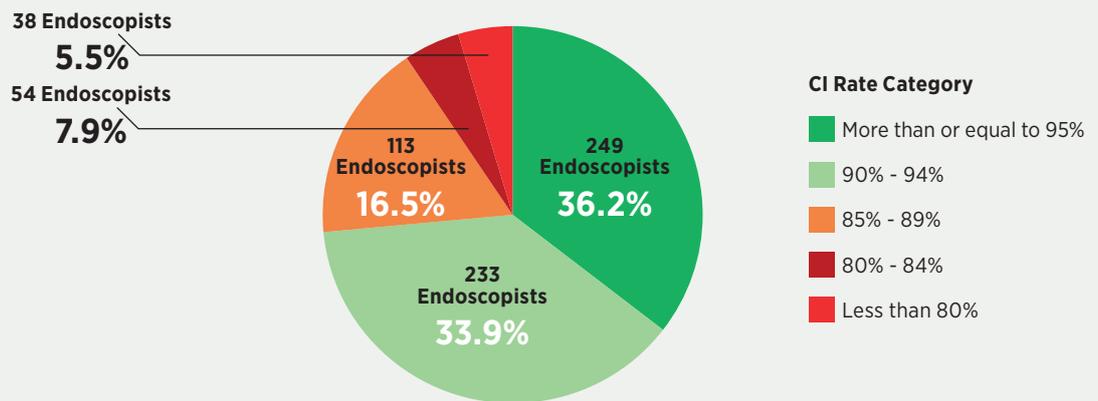
Endoscopist 1 (E1):

The clinician who performs the majority of the procedure.

Endoscopist 2 (E2):

A clinician present in the procedure room during the procedure and who also provides some support to the primary Endoscopist (verbal or physical).

FIGURE 14: Percentage and Number of Endoscopists by Caecal Intubation Rate Category, 2020

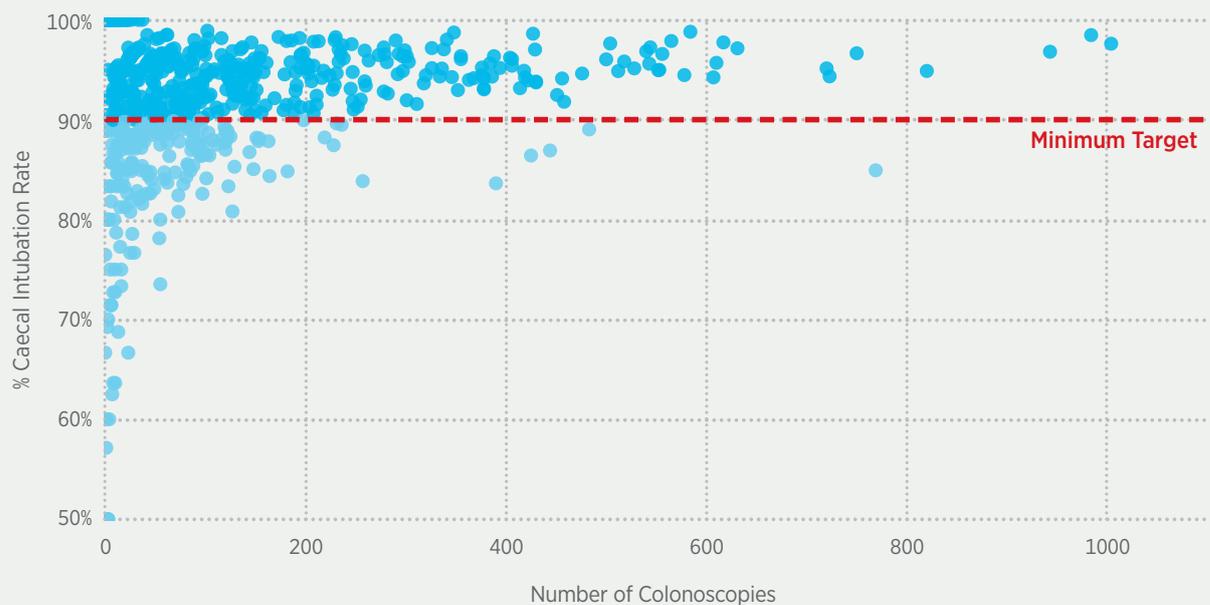


It has come to the attention of the NEQI Programme that left colonoscopies have in some instances been recorded as colonoscopies rather than flexible sigmoidoscopies. This can interfere with how NQAIS-Endoscopy reports caecal intubation rates. Hospitals are encouraged to review their coding practices to ensure accurate KQIs are produced for the unit.

Figure 15 shows the CIR of each endoscopist (y-axis) by the volume of colonoscopies they performed in 2020 (x-axis).

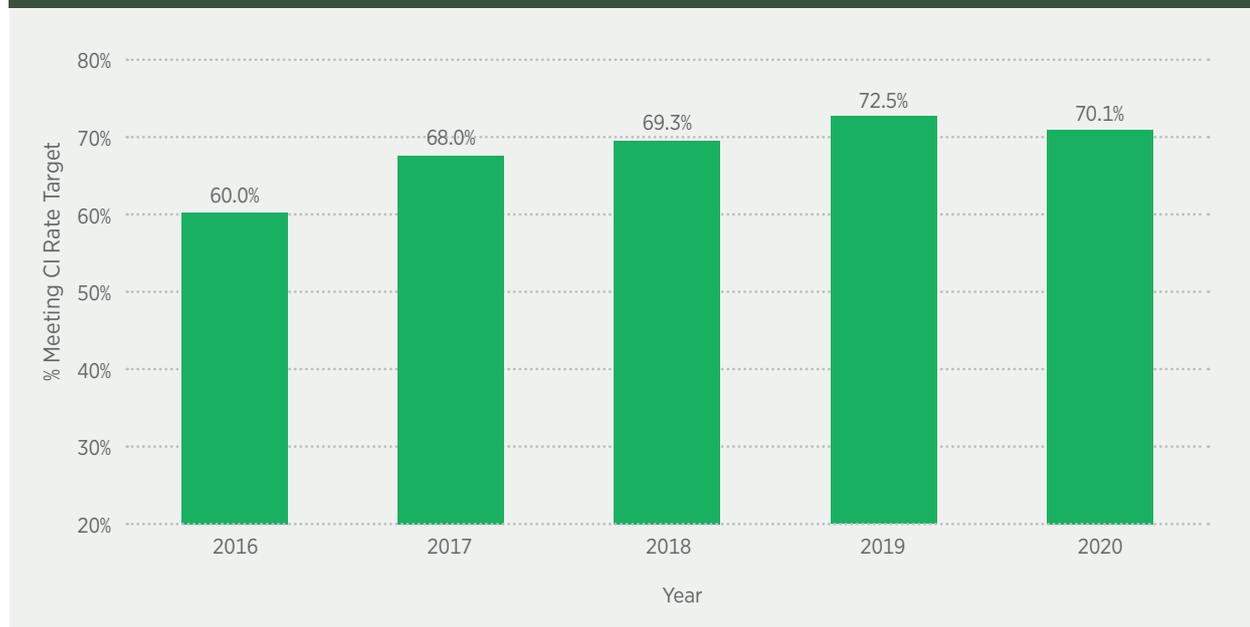
The trend suggests that there is a correlation between the number of procedures performed by an endoscopist and the likelihood of meeting the minimum target for CIR.

FIGURE 15: Endoscopists by Case Volume and Caecal Intubation Rate, 2020



Year on year there has been an increase in the percentage of endoscopists meeting the minimum CIR target from 60% in 2016 to 70% in 2020. This represents a 2% decrease in the endoscopists meeting the CIR target when compared to 2019.

FIGURE 16: Percentage of Endoscopists Meeting CI Rate Target, 2016 - 2020



The NEQI Working Group believe that this reduction can be attributed in part to the change in case mix during the pandemic. This KQI should be viewed in combination with the other KQIs in this report in order to achieve a more accurate picture on the overall quality of procedures performed.

Although the percentage of endoscopists meeting the CIR target has generally improved since 2016 (**Figure 16**), the NEQI Working Group would like to highlight that nearly 30% of practicing endoscopists are still not meeting the CI Rate target.

In 2018, the National Endoscopy Training Committee was established by the HSE Acute Operations Endoscopy Programme. The role of the committee is to make recommendations on GI endoscopy education and training in Ireland and develop training courses for physicians, surgeons, nurse endoscopists and endoscopy nurses. As well as developing The Competency Model for Skills Training in Gastrointestinal Endoscopy in Ireland, the National Endoscopy Training Committee also develops and delivers Skills Training for Endoscopic Procedures (STEPS) courses. These are courses suitable for Trainee doctors, consultants and nurse endoscopists. The courses currently running:

- Colonoscopy Excellence for Consultants
- Train the Colonoscopy Trainer
- Basic Endoscopy Skills
- Hands on Colonoscopy Skills
- Endoscopic Management of Upper GI bleeding (practical skills)

Further information about the HSE Acute Operations Endoscopy Programme can be found at <https://www.hse.ie/eng/about/who/acute-hospitals-division/clinical-programmes/endoscopy-programme/>

KEY FINDING

The national caecal intubation rate for 2020 was 93.7%, compared to 93.8% in 2019.

RECOMMENDATION

The NEQI Working Group recommends that endoscopists continue to avail of performance enhancement opportunities, such as the suite of courses offered by the National Endoscopy Training Committee.

5.2 Polyp Detection

Internationally accepted guidelines on colonoscopy performance indicators recommend monitoring direct or proxy markers for detection of suspicious lesions including polyps and adenomas. Due to the inability to link endoscopy and histology reporting systems at this time, the NEQI Programme measures polyp detection rates (PDR) rather than measuring direct adenoma detection rates (ADR). International standards suggest that polyps can be expected in at least 20% of cases.

Key Quality Indicator:

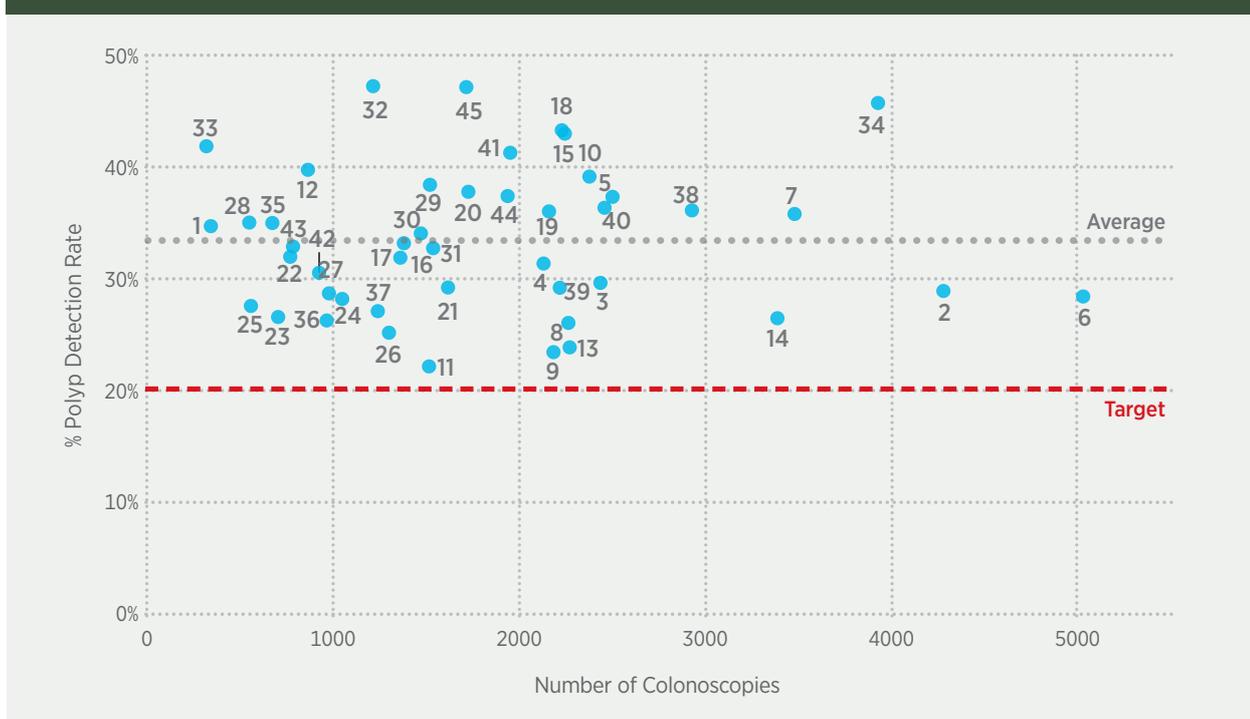
- Number of colonoscopies with polyps detected expressed as a percentage of total colonoscopies per endoscopist

Key Quality Target:

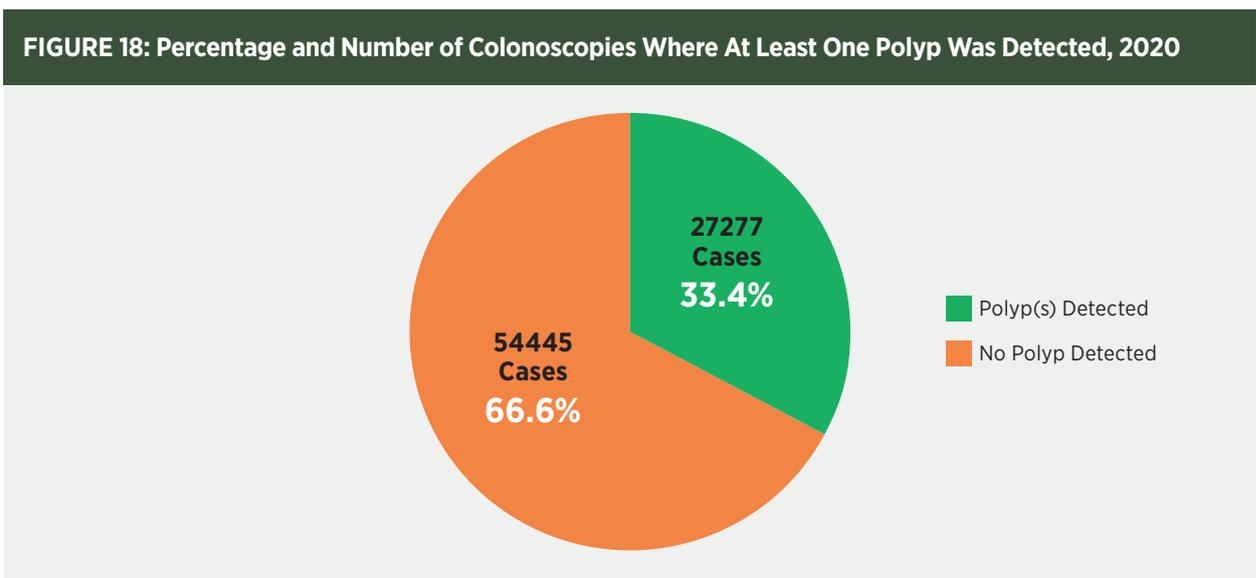
- $\geq 20\%$ of all colonoscopies should have at least one polyp detected

All hospitals are meeting the minimum target of greater than or equal to 20% of colonoscopies with one or more polyps detected (**Figure 17**). This is unchanged from last year's report

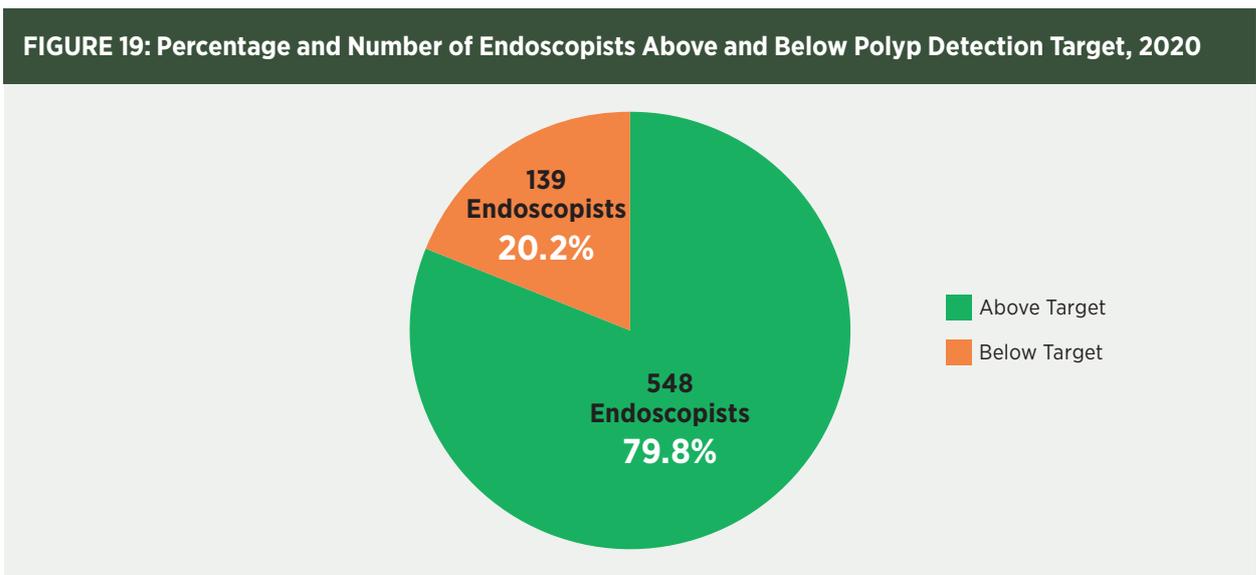
FIGURE 17: Percentage Polyp Detection Rate per Hospital, 2020



The national PDR is 33% (**Figure 18**). This has also remained unchanged from last year's report where the national polyp detection rate was also 33%.



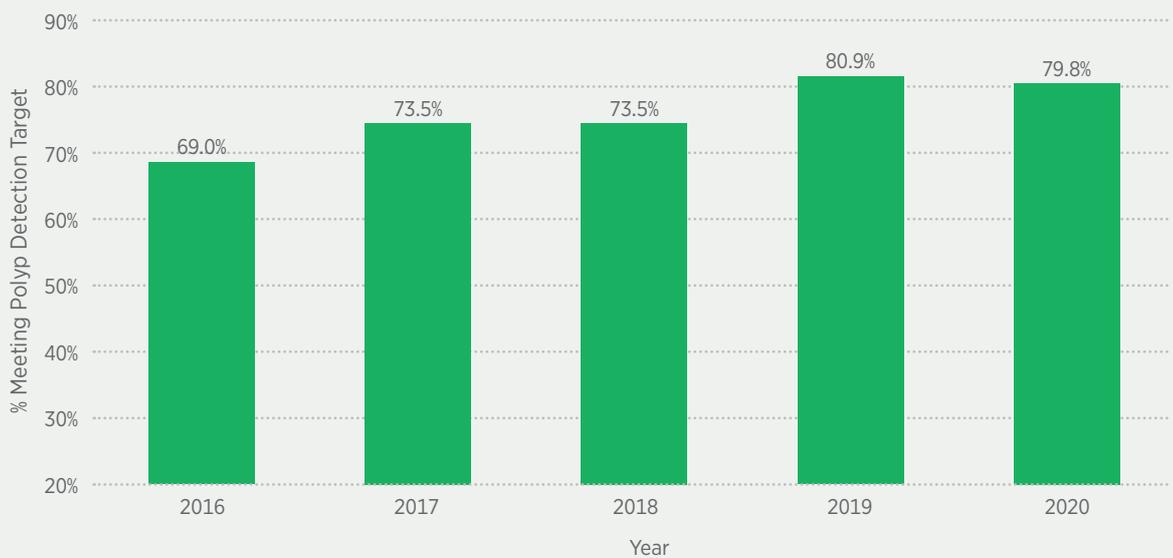
In 2020, 80% of endoscopists met the target for PDR (**Figure 19**). This rate is down 1% in comparison to 2019, however, it has increased over over 10% since national data reporting began in 2016 (**Figure 20**).



It is important to remember that the NEQI Programme advises the use of polyp detection as a proxy indicator of quality with the current systems inability to record national adenoma detection rates.

This will not be possible until hospital systems for endoscopy and histology are integrated. Studies suggest that polyp detection is a good proxy marker in the current circumstances. The NEQI Working Group encourages hospitals to review their local adenoma detection rate figures against polyp detection statistics from NQAIS-Endoscopy to confirm the correlation.

FIGURE 20: Percentage of Endoscopists Meeting Polyp Detection Target, 2016 - 2020



KEY FINDING

All hospitals are meeting the minimum target of greater than or equal to 20% of colonoscopies with one or more polyps detected.

RECOMMENDATION

Adenoma detection rates should be reviewed in parallel with polyp detection rates in each hospital through local reviews by the hospital's Endoscopy Users Group.

5.3 Comfort Score

Patient comfort during a colonoscopy is central to the NEQI programme objective of enhancing the provision of quality care to patients. The programme proposes using the modified Gloucester Scale as shown below in order to measure comfort score.

Gloucester Scale

- 1 - No discomfort** - resting comfortably throughout
- 2 - Minimal** - one or two episodes of mild discomfort, well tolerated
- 3 - Mild** - more than two episodes of discomfort, adequately tolerated
- 4 - Moderate** - significant discomfort, experienced several times during the procedure
- 5 - Severe** - extreme discomfort, experience frequently during the procedure

The Key Quality Indicator for comfort score was amended in January 2020. The current KQI for comfort score is the number of colonoscopies with a comfort score of 1, 2, or 3 as a percentage of the total number of colonoscopies performed. This was updated from the previous KQI for comfort score which was calculated by the number of colonoscopies with a comfort score of a 1 or 2 as a percentage of all colonoscopies performed.

Key Quality Indicator:

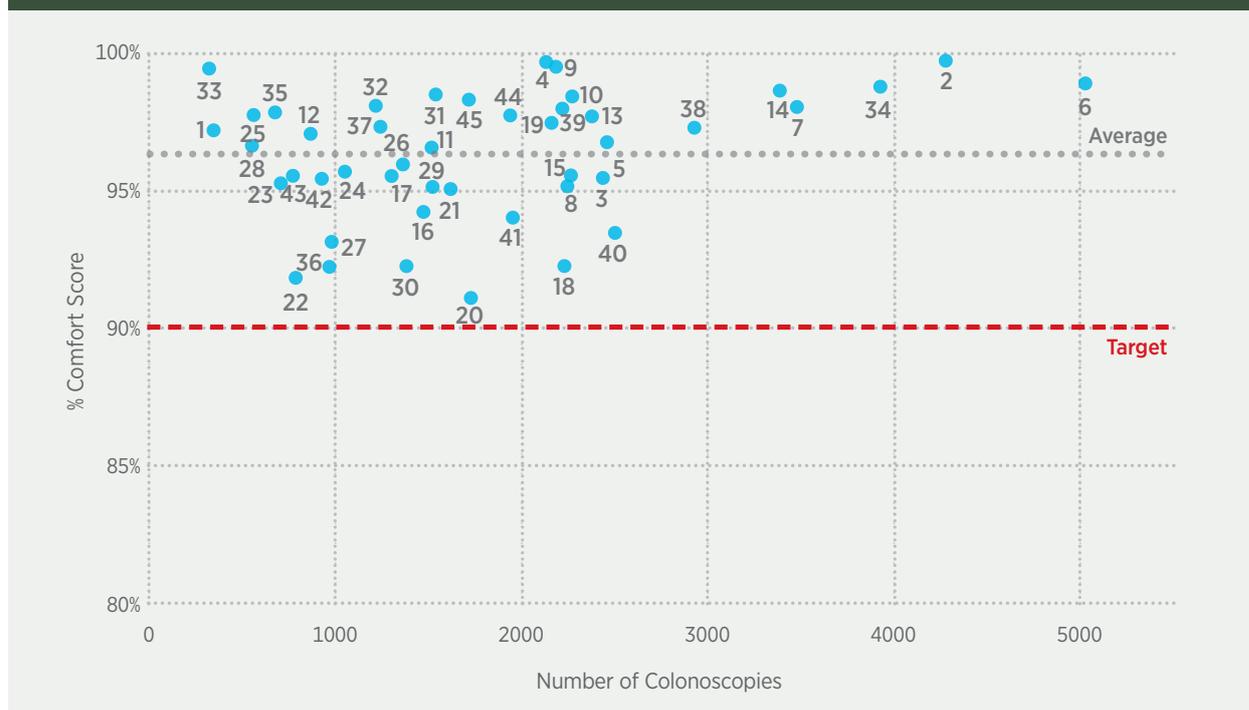
- Percentage of colonoscopies performed with a comfort score of a 1, 2 or 3 per endoscopist

Key Quality Target:

- $\geq 90\%$ of colonoscopies performed should have a comfort score of a 1, 2 or 3

As in 2019, all participating hospitals met the minimum target for comfort score in 2020 (**Figure 21**).

FIGURE 21: Percentage Comfort Score per Hospital, 2020



The national comfort score for 2020 was 97%, this has increased 1% from 96% in 2019.

FIGURE 22: Percentage and Number of Cases by Comfort Score Achieved, 2020

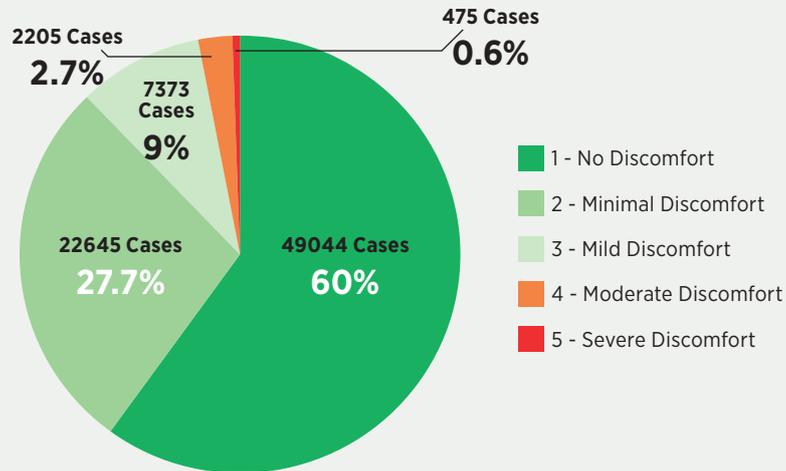
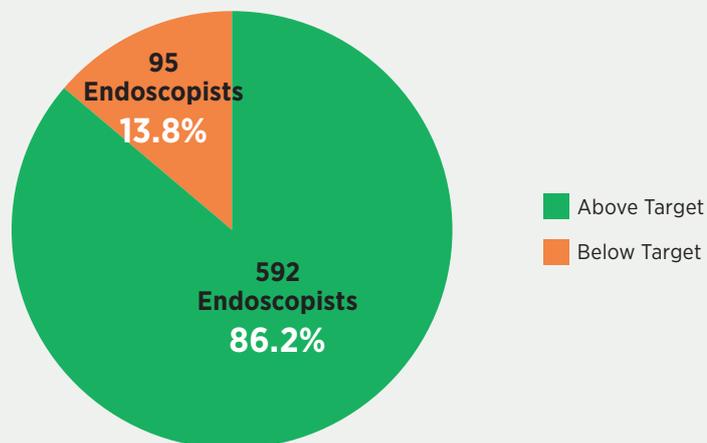


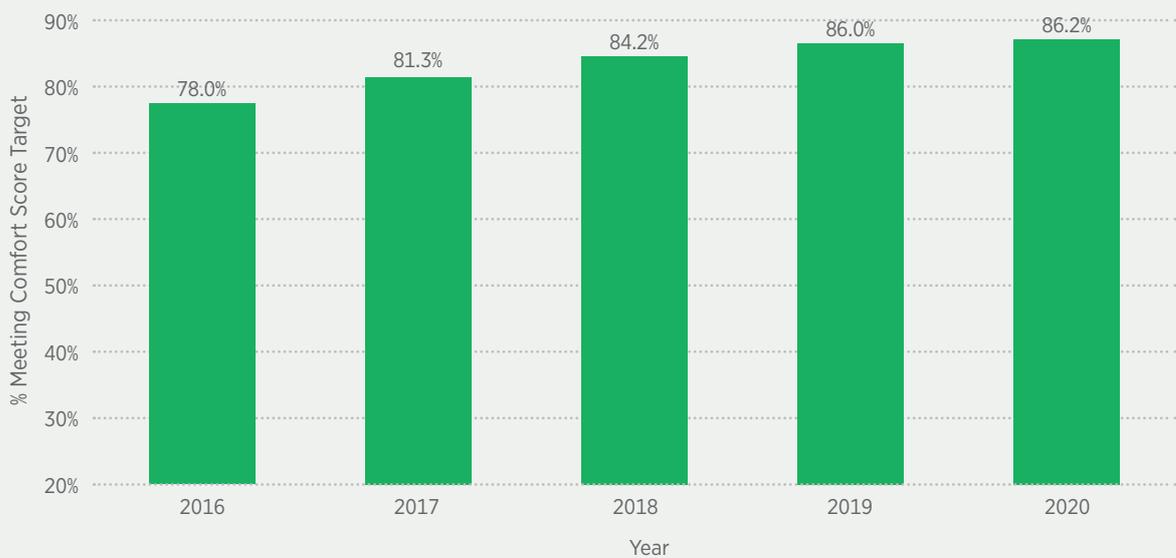
Figure 23 shows that 86% of endoscopists met the comfort score target in 2020. The same percentage met the target for this indicator in 2019 (**Figure 24**).

FIGURE 23: Percentage and Number of Endoscopists Above and Below Comfort Score Target, 2020



It is important to remember that the comfort score, as measured by the Modified Gloucester Scale, is a subjective measurement which is dependent on the information collected in the ERS of each hospital. As such, the comfort score should be provided by an endoscopy nurse at the time of the procedure and agreed with the endoscopist before submission to the ERS.

FIGURE 24: Percentage of Endoscopists Meeting Comfort Score Target , 2016 - 2020



KEY FINDING

The comfort score target of $\geq 90\%$ of colonoscopies performed with a comfort score of a 1, 2 or 3 was met by 86% of endoscopists in 2020, similar to findings in 2019.

RECOMMENDATION

Comfort score should be provided by an endoscopy nurse at the time of the procedure and agreed with the endoscopist before submission to the Endoscopy Reporting System.

5.4 Bowel Preparation

Effective bowel preparation is critical to ensure a detailed visual examination of the bowel. To date, no single bowel preparation for colonoscopy has emerged as consistently superior over another. Good bowel preparation supports improved polyp detection and caecal intubation. Poor bowel preparation is associated with failure to reach the caecum and hinders the detection of lesions.

Key Quality Indicator:

- Total number of colonoscopies with adequate and excellent scores, as defined below, expressed as a % of all colonoscopies performed

Key Quality Target:

- Minimum: Bowel preparation described as excellent or adequate in $\geq 90\%$ of colonoscopies
- Achievable: Bowel preparation described as excellent or adequate in $\geq 95\%$ of colonoscopies

Bowel Preparation Definitions

Excellent: no or minimal solid stool and only clear fluid requiring suction

Adequate: collections of semi-solid debris that are cleared with washing/suction

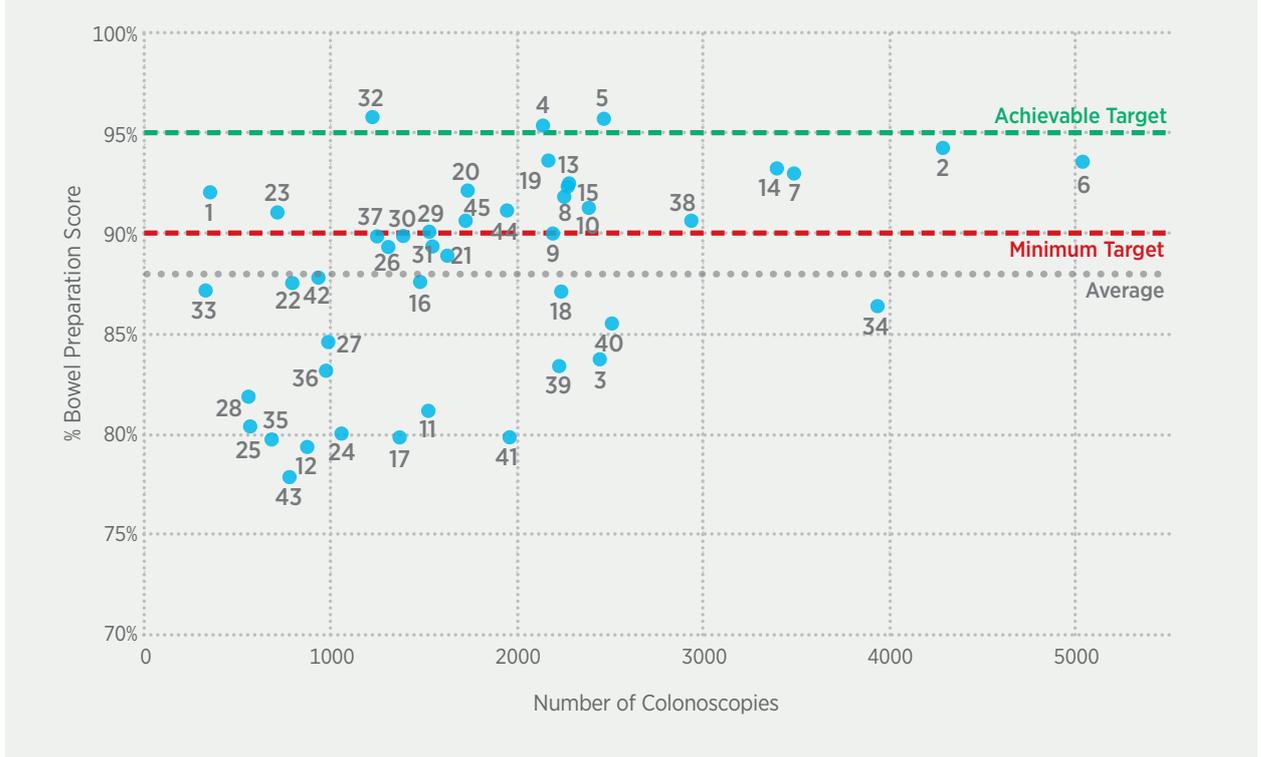
Poor: solid or semi-solid debris that cannot be cleared

In 2020, 49% of hospitals (22 out of 45) recorded meeting the minimum target for bowel preparation (**Figure 25**). This is compared to 39% 49% of hospitals (17 out of 44) that met the NEQI Programme target for bowel preparation in 2019.

This annual increase of 10% is the first major change in this KQI since national reporting began in 2016.

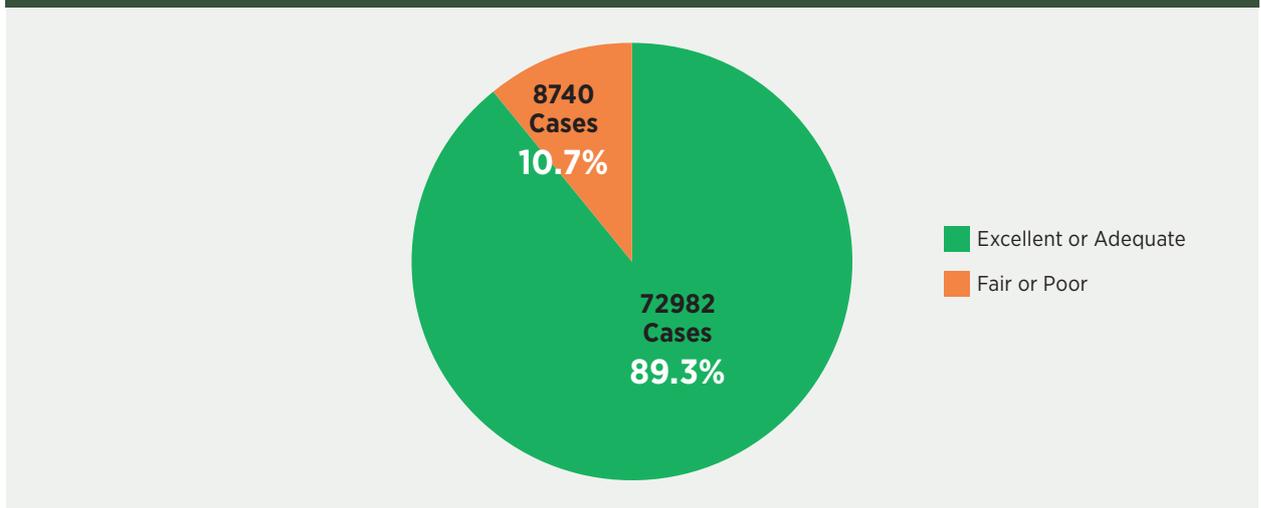
This is likely due to the increase in pre-assessment and triaging which occurred as a result of the pandemic restrictions. These two measures have been recommended in the past by the NEQI Programme as possible measures for addressing low bowel preparation scores.

FIGURE 25: Percentage Bowel Preparation Score per Hospital, 2020



At 89%, the national bowel preparation score (**Figure 26**) in 2020 remains unchanged when compared to the data for 2019. However, for the first time, the national bowel preparation rate met the minimum target for an extended period during Q3 and Q4 of 2020. The potential positive impact of measures introduced during the pandemic on this KQI is discussed in chapter 4.

FIGURE 26: Percentage and Number of Colonoscopies by Bowel Preparation Score, 2020



It is the opinion of the NEQI Working Group that efforts made during the pandemic could be used to continually improve bowel preparation rates. Patients could also be provided with detailed written instructions and split dose bowel preparation could be administered when possible. The NEQI Working Group also recommend in patient colonoscopy could be deferred to an outpatient procedure when possible.

KEY FINDING

In 2020, 49% of hospitals (22 out of 45) recorded meeting the minimum target for bowel preparation. This is compared to 39% of hospitals (17 out of 44) that met the NEQI Programme target for bowel preparation in 2019.

RECOMMENDATION

Any bowel preparation scores below the minimum target of $\geq 90\%$ of colonoscopies with a bowel preparation score of excellent or adequate should be used to highlight the importance of a pre-assessment nurse and good clinical triage for each unit.

CHAPTER 6

OESOPHAGOGASTRO-DUODENOSCOPY (OGD)

6

An upper GI endoscopy or oesophagogastroduodenoscopy (OGD) is a procedure used to diagnose and treat problems in the upper GI (gastrointestinal) tract. The upper GI tract includes the oesophagus, stomach, and the duodenum.

TABLE 7: Summary of Upper GI Endoscopy KQIs and Associated Targets

Key Quality Indicator	Key Quality Target
OESOPHAGOGASTRODUODENOSCOPIES (UPPER GI)	
Duodenal 2nd Part Intubation (Duo 2)	≥ 95%
Retroflexion	≥ 95%

A number of hospitals carry out procedures for oesophageal and gastric disorders, where reaching the landmarks required for certain KQIs in this report is not the intention of the procedure. Endoscopy Reporting Systems are currently unable to differentiate between those procedures and as such the NQAIS-Endoscopy include data from all procedures. This further highlights the importance of not directly comparing hospitals in this report.

6.1 Duodenal Second Part (Duo 2) Intubation

Duodenal second part intubation is an important part of the completeness of an upper GI endoscopy procedure. In order to perform an upper GI endoscopic procedure, the endoscope should be passed through the pylorus to examine the first and second parts of the duodenum.

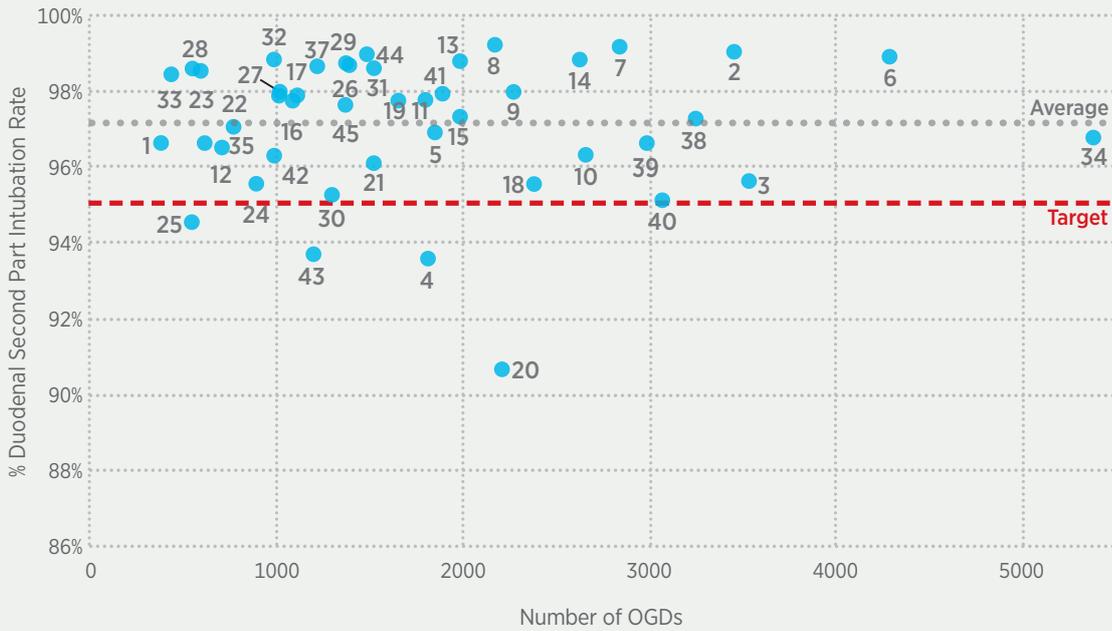
Key Quality Indicator:

- Number of cases in which duodenal second part intubation was achieved, expressed as a % of total OGD cases per endoscopist

Key Quality Target:

- Intubation of duodenum second part in ≥ 95% of cases

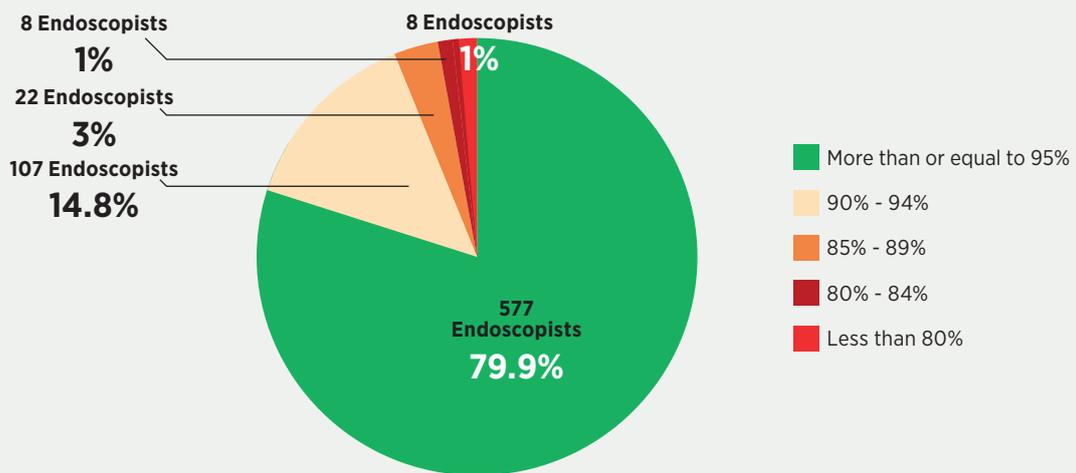
FIGURE 27: Percentage Duodenal Second Part Intubation Rate per Hospital, 2020



The percentage of hospitals meeting the target of more than or equal to 95% OGDs with duodenum second part intubation recorded has reduced from 98% (43 out of 44 hospitals) in 2019 to 91% (41 out of 45 hospitals) in 2020 (**Figure 27**).

The change in cohorts of patients receiving this procedure during 2020 may be a contributing factor to the reduced rates of completion for this KQI.

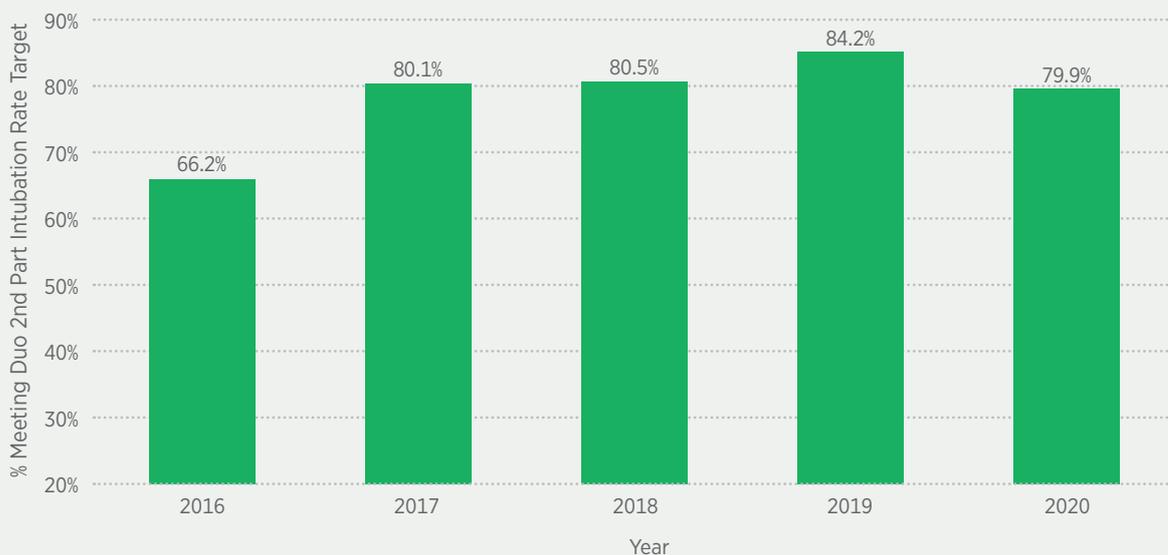
FIGURE 28: Percentage and Number of Endoscopists by Duodenal Second Part Intubation Rate Achieved, 2020



The national duodenal second part intubation rate in 2020 was 97%. This remains unchanged when compared with 2019.

In 2020, 80% of endoscopists had a duodenal second part intubation rate of greater than or equal to 95% (**Figure 28**). This is 4% less than the percentage of endoscopists who met the target for this KQI in 2019 (**Figure 29**).

FIGURE 29: Percentage of Endoscopists Meeting Duodenal Second Part Intubation Target, 2016 - 2020



KEY FINDING

In 2020, 80% of endoscopists had a duodenal second part intubation rate of greater than or equal to 95%. This was 4% less than the percentage of endoscopists who met the target for this KQI in 2019.

RECOMMENDATION

Hospitals should ensure that their Endoscopy Reporting System (ERS) is up to date and that the ERS requires mandatory recording of QI data. Software vendors should be engaged to ensure this functionality is present.

6.2 Retroflexion

Retroflexion, also known as the J manoeuvre, allows for a full view and inspection of the cardia and fundus of the stomach during an OGD. It is an important indicator of the quality and completeness of an upper GI endoscopic procedure.

Key Quality Indicator:

- Number of cases in which retroflexion was performed expressed as a percentage of all OGD cases per endoscopist

Key Quality Target:

- Retroflexion (J manoeuvre) in stomach to visualise fundus in $\geq 95\%$ of cases

Figure 30 illustrates that the number of units meeting the target of greater than or equal to 95% of OGDs with retroflexion recorded has reduced from 98% (43 out of 44 hospitals) in 2019 to 93% (42 out of 45 hospitals) in 2020.

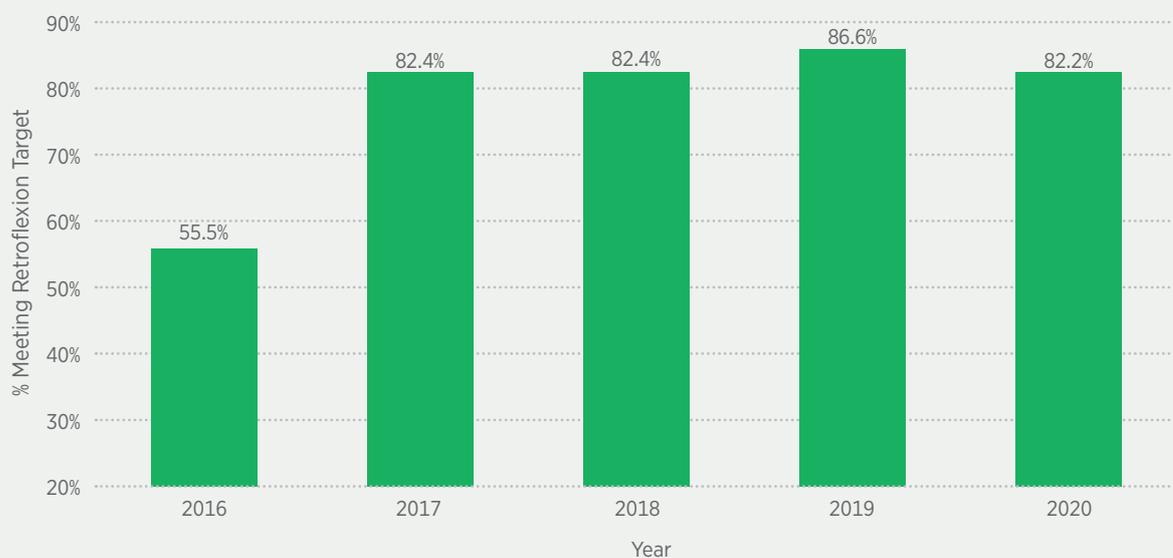
FIGURE 30: Percentage Retroflexion Rate per Hospital, 2020



Like duodenal second part intubation, it is believed that the change in case mix may be a contributing factor to this reduction. As documented for the previous KQI for upper GI endoscopy there is at least one hospital experiencing difficulties recording accurate data for this KQI due to their ERS not requiring this field as mandatory.

The percentage of endoscopists meeting the target for this KQI has dropped by 4% when compared to the same period in 2019 (**Figure 31**).

FIGURE 31: Percentage of Endoscopists Meeting Retroflexion Target, 2016 - 2020



CHAPTER 7

SEDATION

7

The discomfort experienced by patients during an endoscopy procedure can be minimised by careful patient preparation and sedation. Sedation improves the patient's tolerance of an endoscopy procedure; however, excessive sedation is considered a leading contributor to cardio-respiratory deaths following endoscopy in high-risk patients. This is particularly relevant for older patients (those greater than or equal to 70 years of age) where the median level of sedation should be approximately half the dose of that administered to patients under the age of 70 years.

Pain control requires the administration of specific analgesic agents, most commonly fentanyl or pethidine.

TABLE 8: Summary of Sedation KQIs

SEDATION	TARGET	ADDITIONAL INFORMATION
Midazolam	<p>Patients Aged below 70 years: Median dose is ≤ 5mg administered per endoscopist</p> <p>Patients Aged above 70 years Median dose is ≤ 3mg administered per endoscopist</p>	This KQI applies to both colonoscopies and OGDs.

Please note: This year's national data report does not include a breakdown of fentanyl usage. The NEQI Programme has decided to cease reporting on this data until data recording practises have been standardised. Currently, different ERS allow varying degrees of free text when entering the relevant data. The NEQI Working Group recommends that all units ensure that the correct data entry format is being used for this sedation.

In cases where a patient undergoes multiple endoscopy procedures in one patient visit, the following recording practices should be employed:

1. Procedure A's record should have the type and quantity of sedation that was administered at the time of the Procedure A.
2. Procedure B's record should have the type of sedation administered for Procedure A AND the type and quantity of sedation that was administered for Procedure B.

7.1 Midazolam Use in Patients Over 70 - Colonoscopy

As the most common type of sedative used in colonoscopies, midazolam usage is the main focus of the sedation portion of this report.

When analysing the sedation data, it is important to remember that sedation targets are set on a median basis and not an average as per other KQIs. The NEQI Programme utilises the median value for these KQIs as the average for these statistics is easily skewed by extreme and unusual cases and can be more effected by case mix than other KQIs.

Given that sedation presents increased risk for older patients, the analysis in this report focuses on patients aged 70 years and over.

In 2020, 73% of colonoscopies performed on patients aged 70 years and older received the median target dose of less than or equal to 3mg of midazolam (**Figure 32**). This is an increase of 5% when compared to the 68% of colonoscopies receiving the median target dose in 2019.

FIGURE 32: Colonoscopies by Midazolam Dose Category for Patients Aged 70 and Older, 2020

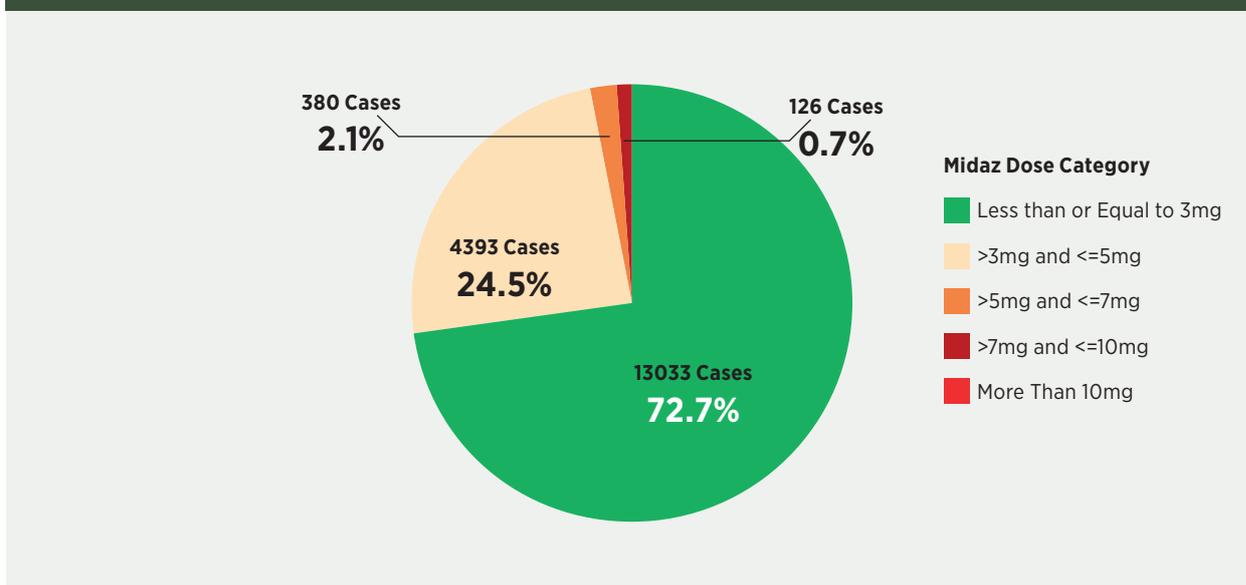


FIGURE 33: Midazolam Doses in Patients Aged 70 Years and Older – Percentage of Colonoscopies per Hospital, 2020

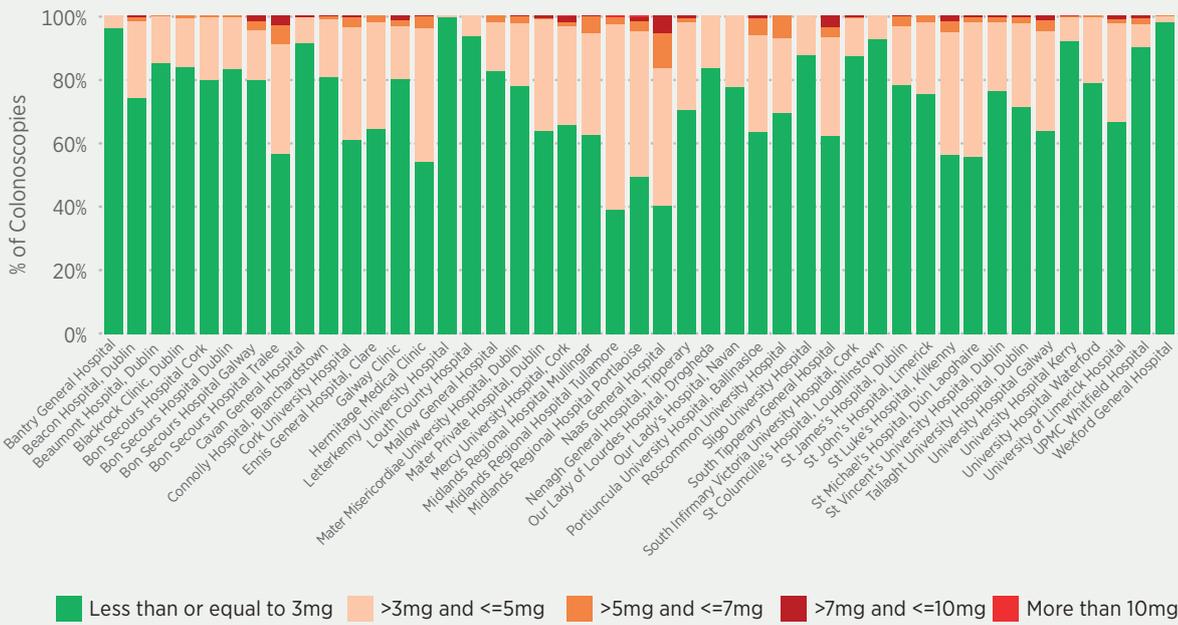


Figure 33 shows each hospital's midazolam use by midazolam dose as a percentage of colonoscopies where midazolam was used. In this graph, the green bars represent the percentage of colonoscopies where patients aged 70 years and older received less than or equal to 3mg of midazolam. This is further explored in **Figure 34** which plots the percentage of colonoscopies for patients aged 70 and older meeting the midazolam target by the number of colonoscopies performed using midazolam for this patient group for each hospital.

FIGURE 34: Percentage of Colonoscopies for Patients Aged 70 and Older where Sedation Target is Met per Hospital, 2020

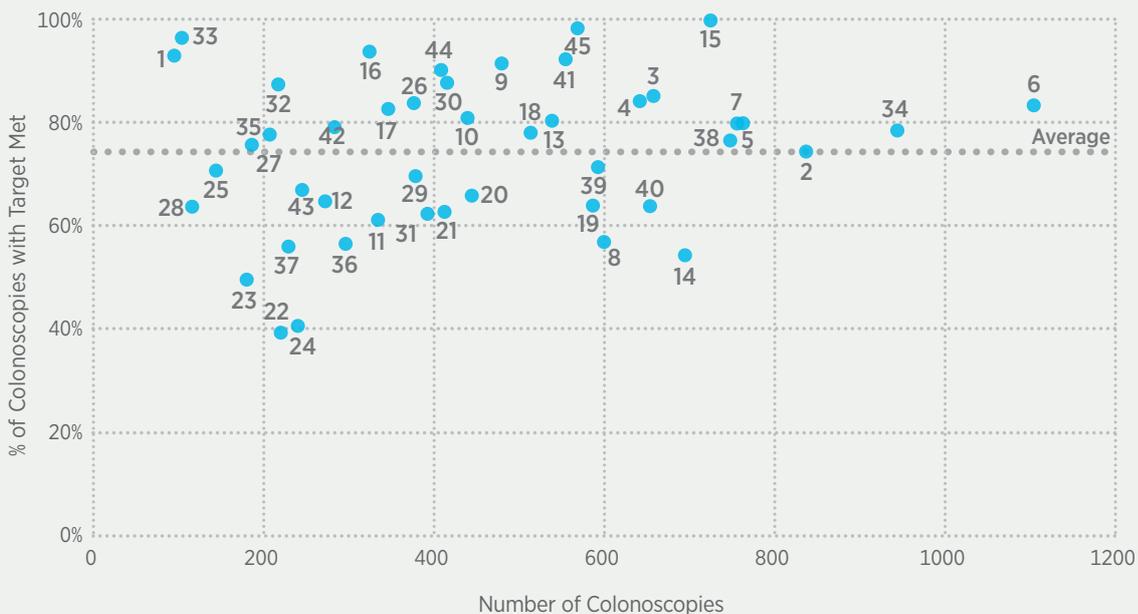
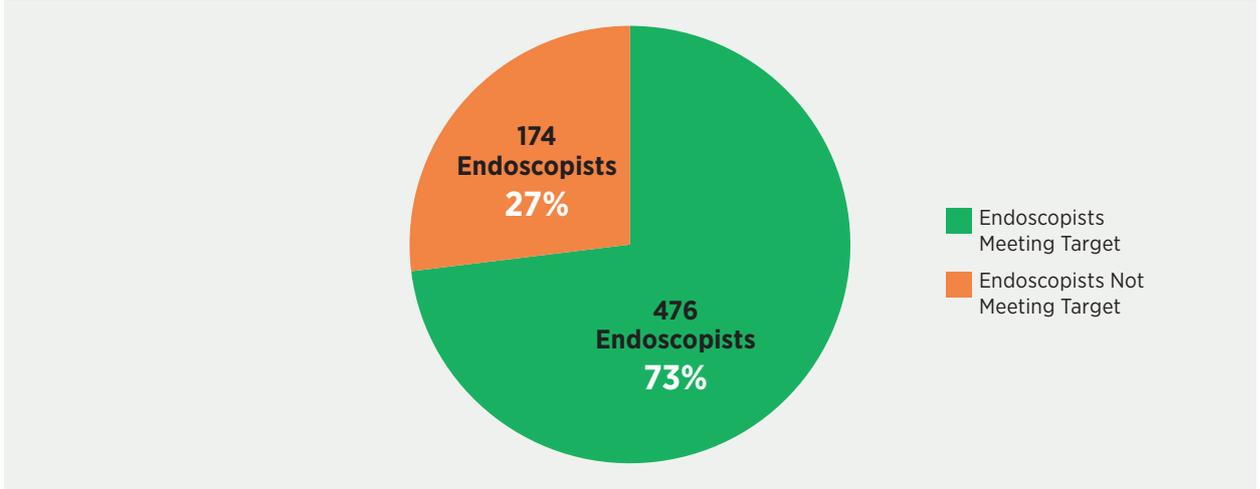


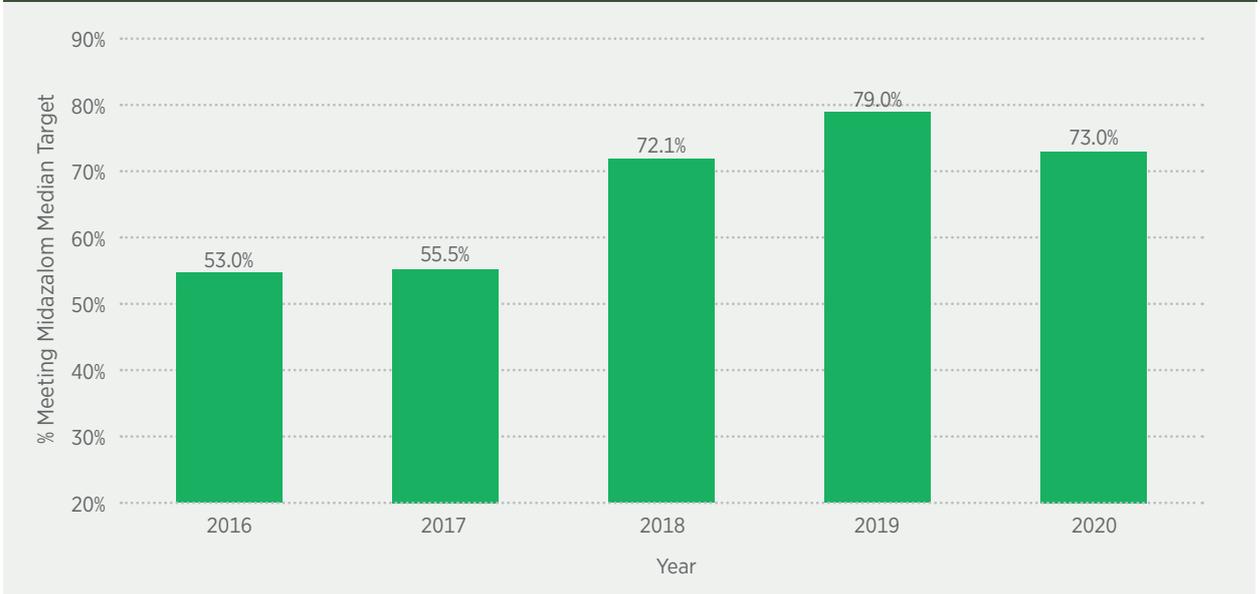
FIGURE 35: The Numbers and Percentages of Endoscopists Meeting the Median Target Dose of Less Than or Equal to 3mg of Midazolam for Colonoscopies for Patients Aged 70 Years and Older, 2020



Please note: The statistics for Figure 35 and Figure 37 are calculated using procedures as Endoscopist 1 only. All other statistics in this report are calculated using procedures performed as Endoscopist 1 or Endoscopist 2.

During 2020, 73% of endoscopists reported a median midazolam dose for patients aged 70 and older that met the target set out in the NEQI Guidelines (**Figure 35**). This is a decrease of 6% when compared to the same period in 2019 (**Figure 36**).

FIGURE 36: Percentage of Endoscopists Meeting Midazolam Target Dose for Colonoscopies for Patients Aged 70 Years and Older, 2016 - 2020



KEY FINDING

In 2020, 73% of colonoscopies performed on patients aged 70 years and older received the median target dose of less than or equal to 3mg of midazolam. This is an increase of 5% when compared to 68% of colonoscopies receiving the median target dose in 2019.

RECOMMENDATION

The NEQI Working Group recommend that endoscopists explore using techniques, such as regular position change and water emersion, that can significantly reduce or potentially eliminate, sedation usage.

7.2 Midazolam Use in Patients Over 70 - OGDs

This report also looks at the midazolam doses administered to patients aged 70 years and over for upper GI endoscopy procedures.

In 2020, 86% of endoscopists reported a median midazolam dose that was equal to or less than 3mg for patients aged 70 years and older (**Figure 37**). This remains unchanged when compared to 2019 (**Figure 38**).

FIGURE 37: The Numbers and Percentages of Endoscopists Meeting the Median Target Dose of Less than or Equal to 3mg of Midazolam for OGDs for Patients Aged 70 and Older, 2020

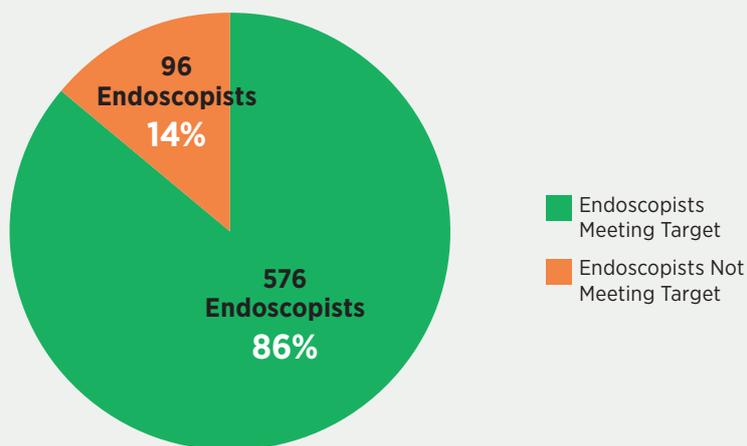
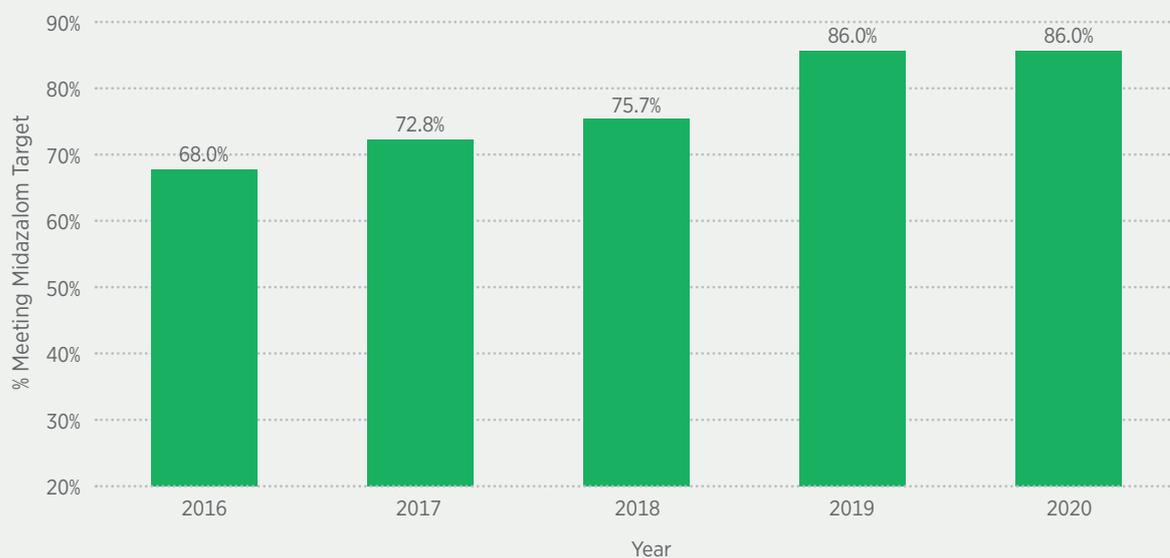


FIGURE 38: Percentage of Endoscopists Meeting Midazolam Median Target Dose for OGDs for Patients Aged 70 Years and Older, 2016 – 2020



CHAPTER 8 YEAR ON YEAR

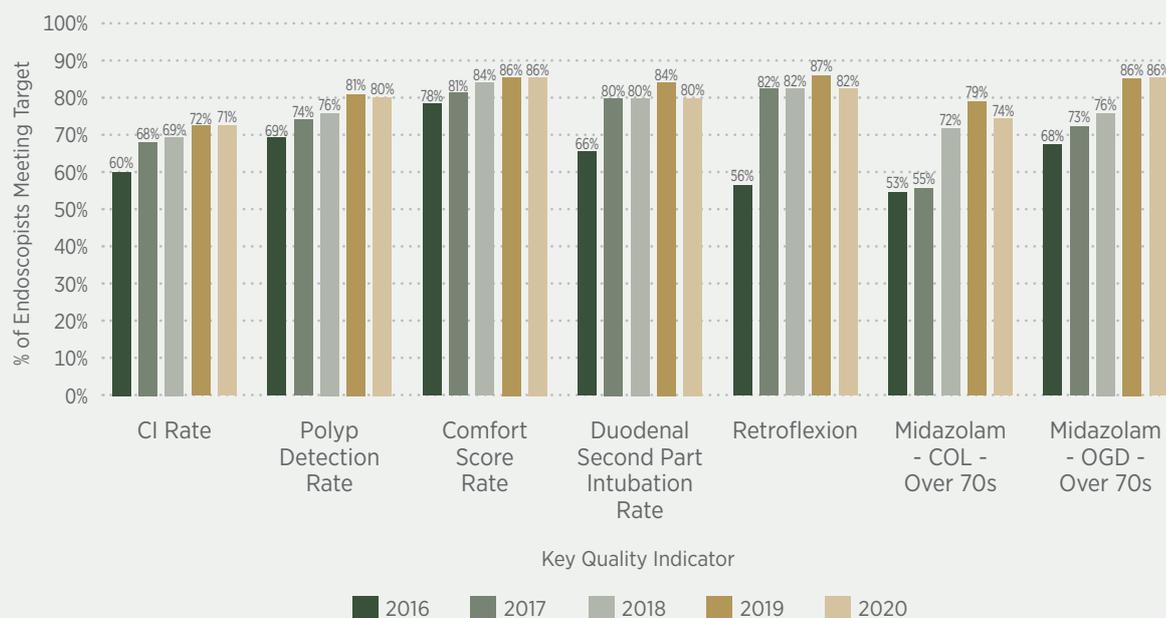
8

One of the key measures for the NEQI Programme is the percentage of endoscopists meeting targets for each Key Quality Indicator (KQI). This section looks at the KQIs covered in this report across January to December for each year since 2016.

From 2016 until 2019, the percentage of endoscopists meeting targets increased across all KQIs. In 2020, the percentage of endoscopists meeting target either remained unchanged from 2019 or saw a minor reduction in all of the eight main KQIs included in this report (**Figure 39**).

The NEQI Working Group believes that the change in the case mix in addition to the reduction in the number of procedures performed during the COVID-19 pandemic restrictions of 2020 will have significantly impacted endoscopists ability to reach KQI targets.

FIGURE 39: Percentage of Endoscopists Meeting Targets Nationally per Key Quality Indicator, 2016 – 2020



CHAPTER 9

CONCLUSION

9

The unprecedented events of 2020 have presented a set of difficult challenges for the health services in Ireland. The direct effect of the pandemic on the number and quality of endoscopic procedures in 2020 has been analysed in this report. However, the full impact of these effects will continue to unfold in the years to come.

The importance of data sources such as NQAIS-Endoscopy have been highlighted by the response to the events of this year. The ability to utilise reliable and timely data has enabled the NEQI Programme to accurately measure the impact on endoscopic workload for this period.

The NEQI Programme is proud to contribute to the collaborative report on “Deploying Data-Driven Intelligence to measure the impact of COVID-19 on cancer care and cancer patients” in 2020, utilising the endoscopy data along with our colleagues from other specialities and jurisdictions to review the impact of the pandemic on diagnostic services. This collaboration served to further emphasise the unique potential of the NQAIS data.

This work has only been possible thanks to the hard work carried out by the local operational managers and clinical leads who have helped maintain data uploads throughout this difficult time.

The data shows that, despite the major reduction of procedures performed during the year, the quality of the procedures has been maintained at a high level. There are however, areas that remain in need of quality improvements.

The NEQI Working Group are keen to highlight that the NQAIS-Endoscopy data can now be used in conjunction with the National Training Framework (see Chapter 5) to avail of performance enhancement opportunities.

The creation of this report marks the second NEQI National Data Report with hospital identifiable information, confirming the programme’s commitment to transparent reporting in healthcare. Although hospitals are identifiable year on year it remains important that direct comparisons are not made between hospitals. The effect of the pandemic on the 2020 data when compared to the 2019 data serve to highlight just how different two similar datasets can be.

During May 2021, the health service was presented with a new challenge in the ransomware cyber-attack on HSE servers. The effects of this attack are still being discovered and are likely to have a significant impact on NQAIS data for 2021. This is a major challenge that the programme will address in the coming year.

Although these challenges must be overcome in the year ahead, the NEQI Programme aims to continue to develop the IT infrastructure and pursue upgrades to our reporting systems to support the continued drive for quality improvement in endoscopy.

We would like to sincerely thank all the QI Clinical Leads and Local Operation Managers for their efforts, commitment, and continued support throughout the year. We hope to move forward into the next reporting period with a reinforced focus on the importance of quality improvement in endoscopy services in Ireland.



Building a
Better Health
Service

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