

# National GI Endoscopy Quality Improvement Programme



## 2nd National Data Report 2016-2017



CONJOINT BOARD IN IRELAND  
of the  
*Royal College of Physicians and Royal College of Surgeons*

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## Hospitals Contributing to 2016-2017 Dataset

Bantry General Hospital	Beacon Hospital	Beaumont Hospital
Blackrock Clinic	Bon Secours Hospital Dublin	Bon Secours Hospital Galway
Bon Secours Hospital Tralee	Cavan General Hospital	Connolly Hospital Blanchardstown
Cork University Hospital	Galway Clinic	Letterkenny University Hospital
Louth County Hospital	Mallow General Hospital	Mater Misericordiae University Hospital
Mater Private Hospital, Dublin	Mercy University Hospital	Midlands Regional Hospital, Tullamore
Mid-Western Regional Hospital, Ennis	Mid-Western Regional Hospital, Nenagh	Our Lady of Lourdes Hospital, Drogheda
Roscommon University Hospital	Sligo University Hospital	South Infirmary Victoria Hospital
South Tipperary General Hospital	St. James's Hospital Dublin	St. John's Hospital, Limerick
St. Luke's General Hospital, Kilkenny	St. Michael's Hospital, Dun Laoghaire	St. Vincent's University Hospital, Dublin
Tallaght Hospital Dublin	University Hospital Galway	University Hospital Kerry
University Hospital Limerick	University Hospital Waterford	Wexford General Hospital

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## Foreword

The Conjoint Board of the Royal College of Physicians of Ireland (RCPI) and the Royal College of Surgeons in Ireland (RCSI) launched the National Quality Improvement Programme in GI Endoscopy (EQI Programme) in October 2011 in collaboration with the National Cancer Control Programme. As of 2014, this programme has been undertaken with funding support from the HSE Quality Improvement Division.

The core tenet of the programme is provide non-judgmental and encouraging support to participants' endoscopy units in collecting and uploading their data and conducting QI activities.

In 2017 the Endoscopy Quality Improvement Programme released an updated set of Guidelines which brought together the targets and recommendations of both the symptomatic and screening services. The use of "minimum" and "achievable" targets in this report reflect this amalgamation of guidelines.

This is the second annual report on the national anonymised aggregate data contained within the reporting tool, NQAIS-Endoscopy, from 1st of July 2016 to 7th of July 2017. It gives a picture of the state of quality in endoscopy in Ireland for the full training year and should be used to influence decisions regarding the future of the endoscopy service.

National Data Reports created by the EQI Programme should be used to inform health policies surrounding the endoscopy service in Ireland and help identify variation in practices within each hospital. Where statistics suggest that there may

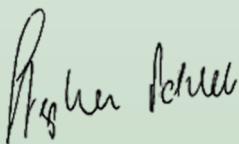


be an area in need of improvement in a hospital, findings should be confirmed locally using local hospital data.

While this report shows that there are areas for improvement, the cycle of national analysis is only in its second year and, as such, we cannot be certain if these deficiencies are a result of performance or data collection issues. Until the data matures over the coming years, local confirmation of significant findings remains essential.

In the coming year, the Working Group will continue to promote the importance and usefulness of both local and national data reporting. As the data set matures, we can expect the accuracy of statistics presented in these reports to continue to increase. The QI Programme will endeavour to provide support in standardising data collection and data reporting processes in hospitals across the country.

The EQI Programme Working Group would like to acknowledge the clinical leads and local operational managers within each hospital for leading their continued work of data collection, collation and quality improvement initiatives in their hospitals.



Prof Steve Patchett

Chair of the EQI Programme Working Group



CONJOINT BOARD IN IRELAND  
of the  
*Royal College of Physicians*  
and  
*Royal College of Surgeons*

36  
Hospitals

627  
Endoscopists

186,  
906  
Procedures

## Introduction to Analysis

The information presented in this report is based on data pertaining to Quality Improvement activities performed by GI Endoscopy Departments across Ireland. This data has been uploaded to NQAIS-Endoscopy from Endoscopy Reporting Systems (ERS) in 36 hospital's nationwide.

## Data Collection

As is standard practice, staff from GI Endoscopy units record data regarding clinical details for each procedure performed on an ERS. This data was recorded in each of the 36 Hospitals participating in the National GI Endoscopy QI Programme for the 2016/2017 year. These hospitals include all public hospitals that had an ERS at the time, and 7 private hospitals, and provide the entire data population for the 2016/2017 report. This period follows the academic year (01 July 2016 to 07 July 2017), ensuring that the data collected coincides with annual training cycle. The programme believes it is most useful and coherent to provide statistics on a single cohort of Endoscopists as much as possible. Anonymised data was then uploaded from each ERS to the central data repository, National Quality Assurance Information System for Endoscopy (NQAIS - Endoscopy), for annual reporting and analysis by trained staff quarterly.

Data for this report was collected, for oesophagogastroduodenoscopies (OGD) and both screening and symptomatic colonoscopy (COL) procedures, across Key Quality Indicators (KQIs) set out in the Endoscopy QI Guidelines.

No patient identifiable information is collected within NQAIS-Endoscopy. Hospital identifiable data in the national dataset is anonymised. When reading the report, the same hospital identifier has been used throughout (e.g. Hospital 1 refers to the same hospital throughout) and corresponds to the same Hospital ID used in the first National Data Report.



## Data Analysis

An extract of anonymised aggregate national data was created from NQAIS-Endoscopy once 100% of hospitals had uploaded their full year's data. The anonymous national data extracted from NQAIS was then analysed by the GI Endoscopy QI Programme's Technical Analyst, in conjunction with the National GI Endoscopy Quality Improvement Working Group.

This data was compared against Targets for KQIs as set out in the National GI Endoscopy QI Guidelines, available at: <https://www.rcpi.ie/quality-improvement-programmes/gastrointestinal-endoscopy>.

All targets are on a per Endoscopist basis. The analysis contained within this report reflects this wherever possible. For many KQIs, statistics based upon all cases performed within hospitals are also presented. National performance is also provided for the majority of KQIs.

Unless otherwise stated, analysis is based upon the performance of Endoscopists where they have been assigned Endoscopist 1 in their ERS (CI Rate statistics are calculated using a combination of Endoscopist 1 and Endoscopist 2). The anonymised information illustrated in this report is reflective of the data submitted to NQAIS-Endoscopy.

## Approval Process

This report has been drafted by the Working Group of the GI Endoscopy QI Programme and then approved by the Specialty Quality Improvement Programme Steering Committee and the Conjoint Board of RCPI and RCSI.

86416  
Colonoscopies

85579  
OGDs

14911  
FSIGs

## Summary Points

**1** Details of 186,906 Colonoscopies, OGDs, and FSIGs performed in the 2016/2017 training year were captured by NQAIS.

**2** 29 Public and 7 Private hospitals submitted data for every month of the 2016/2017 year.

**3** There remains a large proportion of Endoscopists performing low numbers of procedures.

**4** National Caecal Intubation rate remains steady and above target at 92.6%.

**5** 85% of Colonoscopies are performed with no or minimal discomfort. This represents a 2% increase on last year.

**6** 14 out of 36 hospitals have recorded meeting the Bowel Preparation target.

**7** 2nd part intubation rate has continued to improve to 95.5%, reflecting a continued increase in data quality.

**8** The same amount of sedative is being administered in colonoscopies regardless of the age of the patient.



# Volume of Endoscopic Procedures

## Volume of Procedures

Evidence suggests that there is a strong correlation between the number of procedures performed by an Endoscopist and their ability to meet KPI targets. As such it is recommended that Endoscopists should perform higher numbers of procedures in order to keep their skills at a high level.

It is important to note that:

- Low numbers are likely to be (but not always) associated with poor performance.
- Low numbers mean the sample size for key performance indicators (KPIs) is low and the confidence intervals around the observed performance will be wide.

Technically excellent Endoscopists will find it easier to maintain adequate skills with low numbers. An average or poor performer will not be able to maintain adequate performance with low numbers.

Key Quality Data:

- Number of OGD procedures performed by each Endoscopist
- Number of Flexible Sigmoidoscopy procedures performed by each Endoscopist
- Number of Colonoscopy procedures performed by each Endoscopist

Key Recommendation:

- Endoscopists should endeavour to keep their number of procedures high in order to keep their skills at proficient levels.
- The annual number of procedures performed by each Endoscopist should be reviewed collectively in the endoscopy unit with the designated clinical lead for the service

Table 1

Total 2016-2017 Number of Cases in NQAIS-Endoscopy	
OGD	85579
Colonoscopy	86416
Flexible Sigmoidoscopy	14911
Total	186906

Table 2

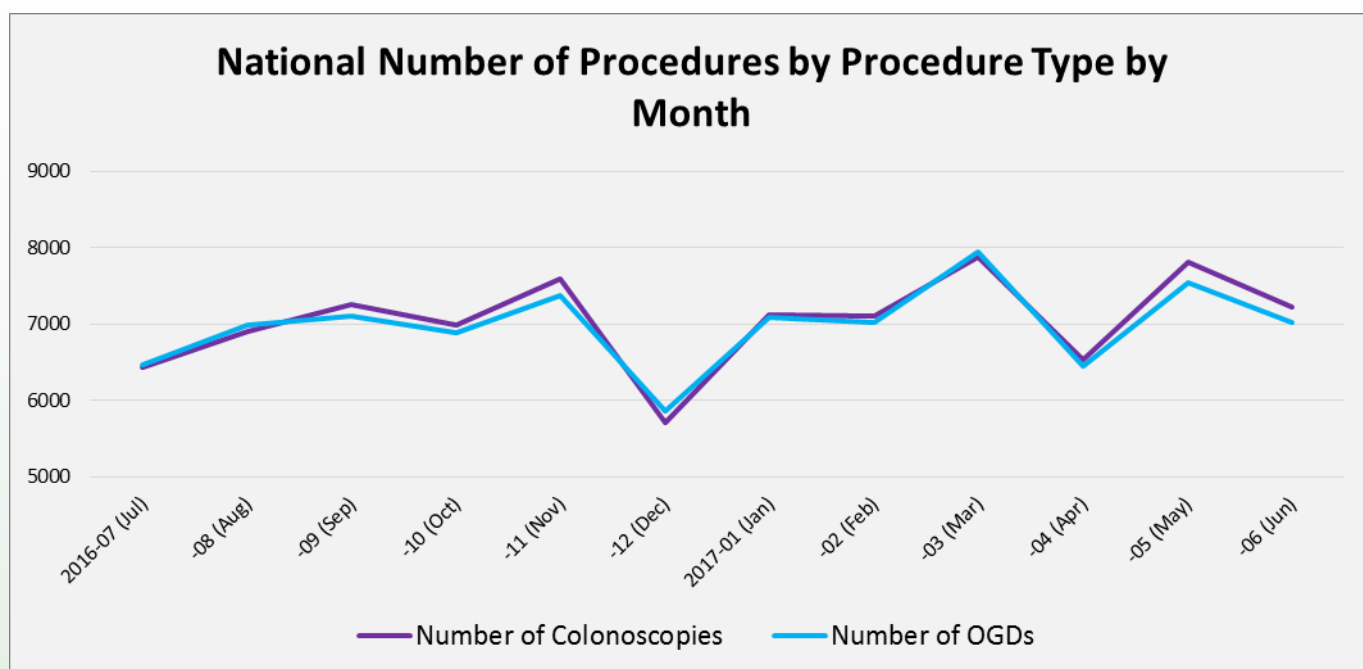
Colonoscopy 2016-2017						
Number of Cases	<10	11-50	51-100	101-150	>150	Total
Number of Endoscopists	108	120	68	55	248	599

Table 3

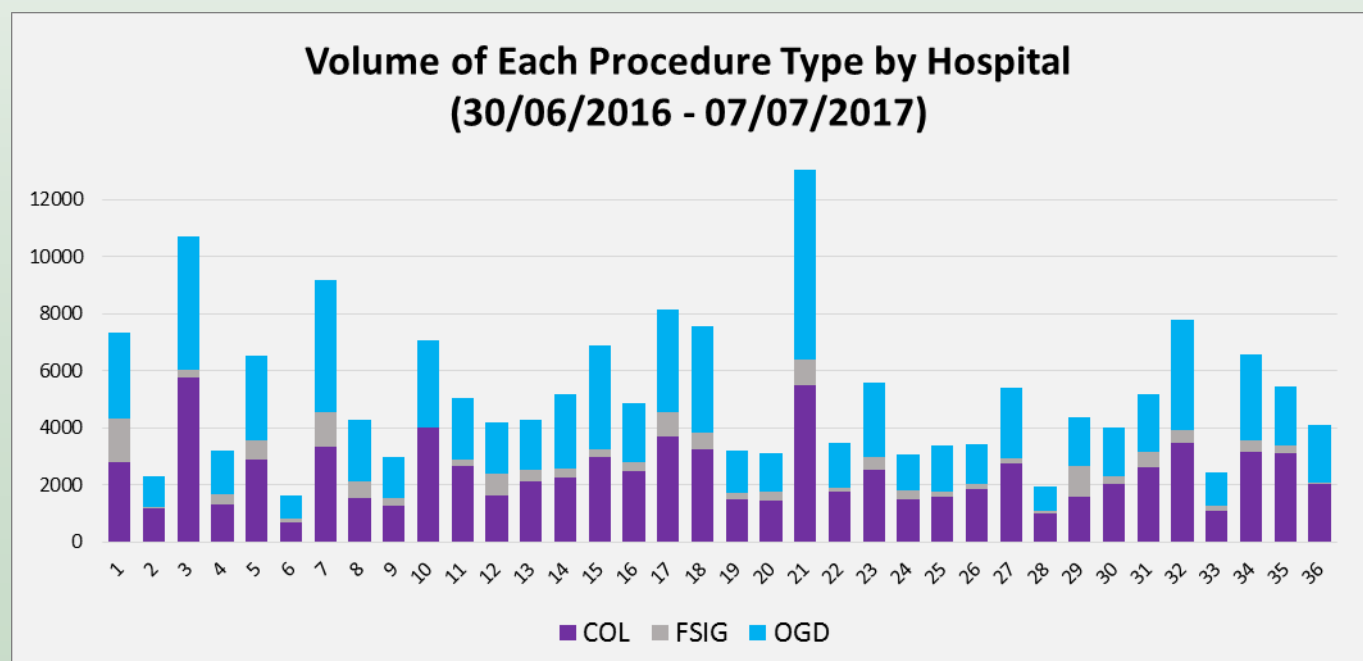
Oesophagogastrroduodenoscopy (OGD) 2016-2017						
Number of Cases	<10	11-50	51-100	101-150	>150	Total
Number of Endoscopists	109	146	85	60	200	600



## Volume of Procedures

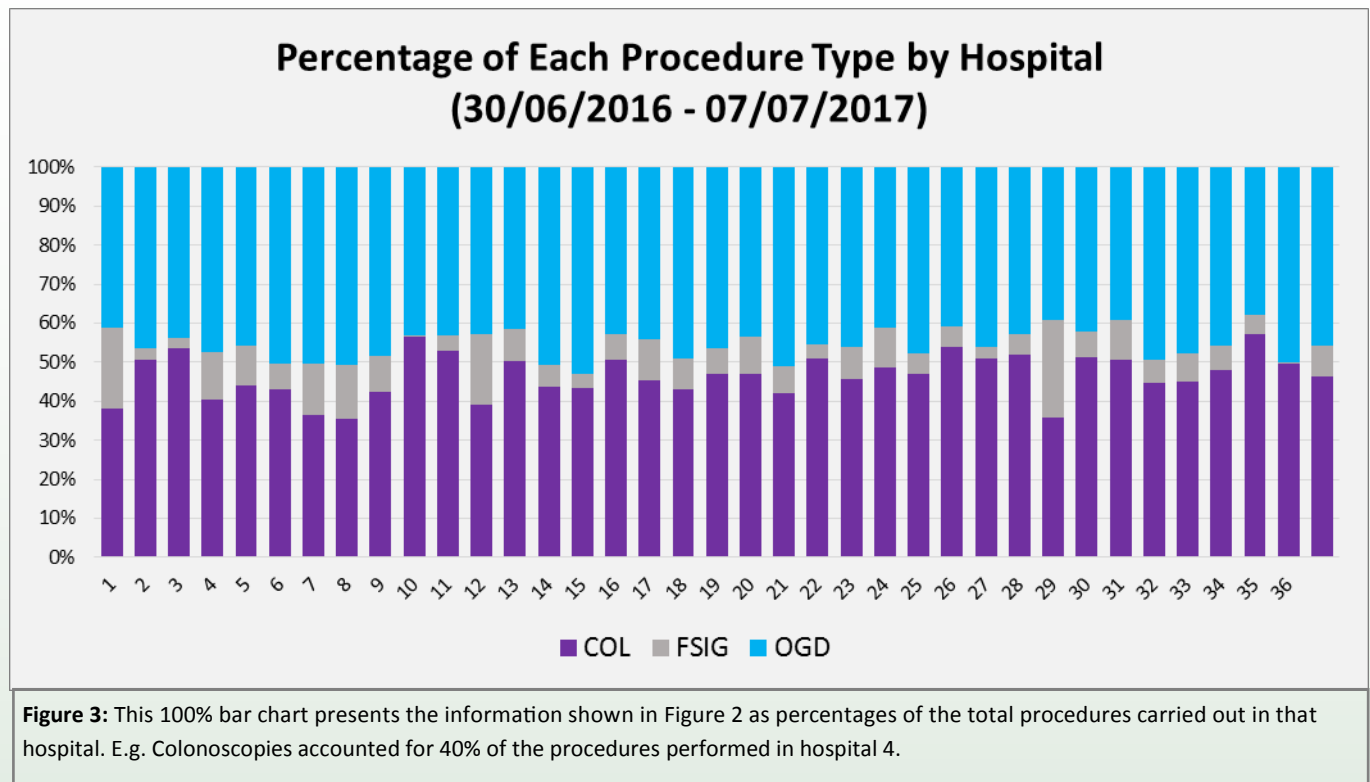


**Figure 1:** This graph illustrates the number of Endoscopic procedures performed nationwide per month between July 2016 and the end of June 2017. July 2017 is not included in the graph above as the data collected included only 1 week of numbers (until July 7th).



**Figure 2:** The above bar chart shows the number of procedures performed by each hospital that submitted data to NQAIS-Endoscopy in the 2016-2017 year across three procedure types: Colonoscopy (purple), Flexible Sigmoidoscopy (grey), and OGD (blue).

## Volume of Procedures



The data within NQAIS-Endoscopy reflects clinical details from all colonoscopies, OGDs and flexible sigmoidoscopies from 36 public and private hospitals for the 2016/2017 training year.

In a similar trend to that shown in last years report, approximately the same number of OGDs and colonoscopies were performed. This represents an opportunity to improve the triaging of OGD patients in particular in an environment in which waiting lists are lengthy. Many hospitals perform very few flexible sigmoidoscopies, which again likely impacts on colonoscopy waiting lists.

Approximately the same volume of OGDs and colonoscopies are performed annually in Ireland.

## Volume of Procedures—2015/2016 Data Set in 2017

The figures given thus far reflect all data collected in NQAIS-Endoscopy over the 2016/2017 year. As the Quality Improvement programme continues to roll out, additional Endoscopy departments contribute to this data set.

It may therefore be useful to look at the difference in number of procedures for the 34 hospitals that comprised last years data set a year later, excluding the new hospitals.

Using the same hospitals and dates as the 2015/2016 report, and excluding any departments added to NQAIS-Endoscopy since the 1st National Data Report, we see an increase in procedures performed of 5% to 7% across Colonoscopy, OGD and FSIG.

Part of this increase is due to the fact that not all hospitals in the 2015/2016 data set had submitted a full years data. It is estimated that this data could account for approximately 5000, or 53%, of the 9463 increase in procedures shown below.

Excluding these additional procedures, we can estimate that the hospitals that comprised last years data set performed approximately 4500 additional procedures in 2016/2017. This represents a 2.85% increase in the number of procedures performed by the 2015/2016 cohort.

Table 4

	<b>2015/2016 Number of Cases</b>	<b>2016/2017 Number of Cases</b>	<b>Change</b>	<b>% Change</b>
<b>OGD</b>	72901	76665	+ 3764	<b>+ 5%</b>
<b>COL</b>	71737	76542	+ 4805	<b>+ 6.7%</b>
<b>FSIG</b>	12866	13760	+ 894	<b>+ 7%</b>
<b>Total</b>	157504	166967	+ 9463	<b>+ 6%</b>

# Colonoscopy Key Quality Areas

## Colonoscopy — Caecal Intubation Rate

Caecal intubation rate (CIR) is one of the main key quality indicators of colonoscopy.

Photographic evidence of caecal intubation should always be obtained. It is strongly recommended that hospitals regularly audit that photographs are obtained. They should also audit the images for quality and that they indicate that the anatomical point recorded was indeed reached.

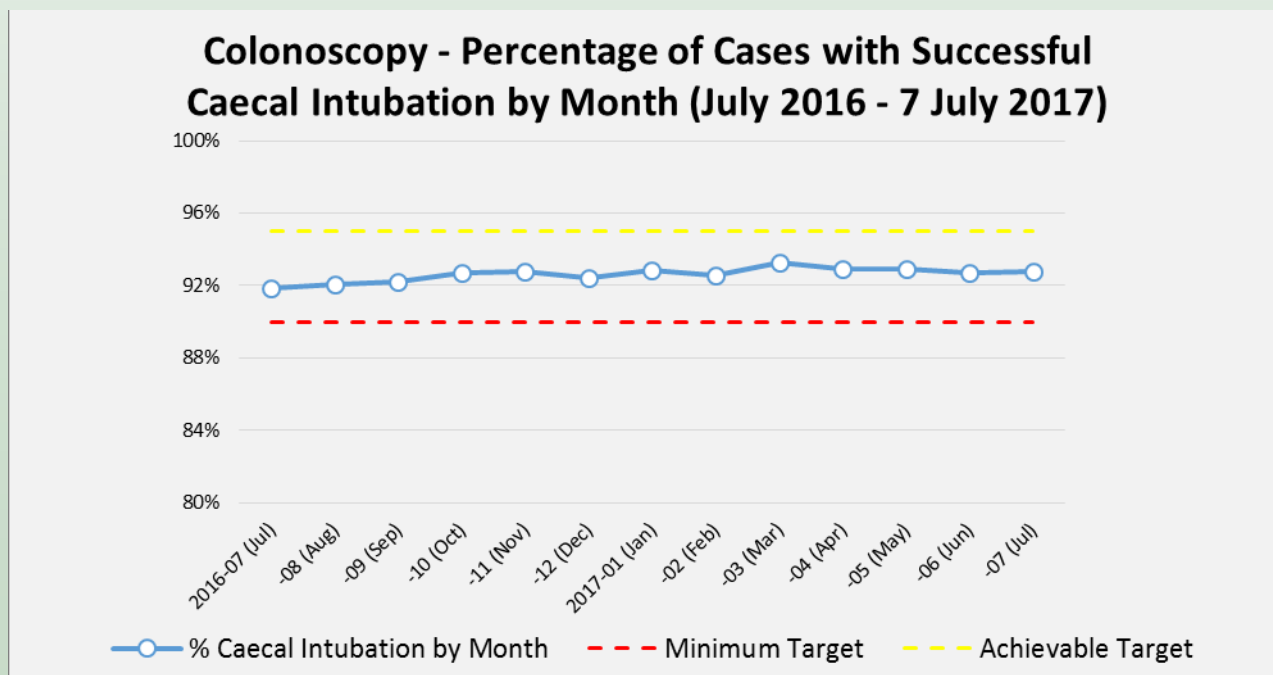
### Key Quality Data:

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

### Key Quality Target:

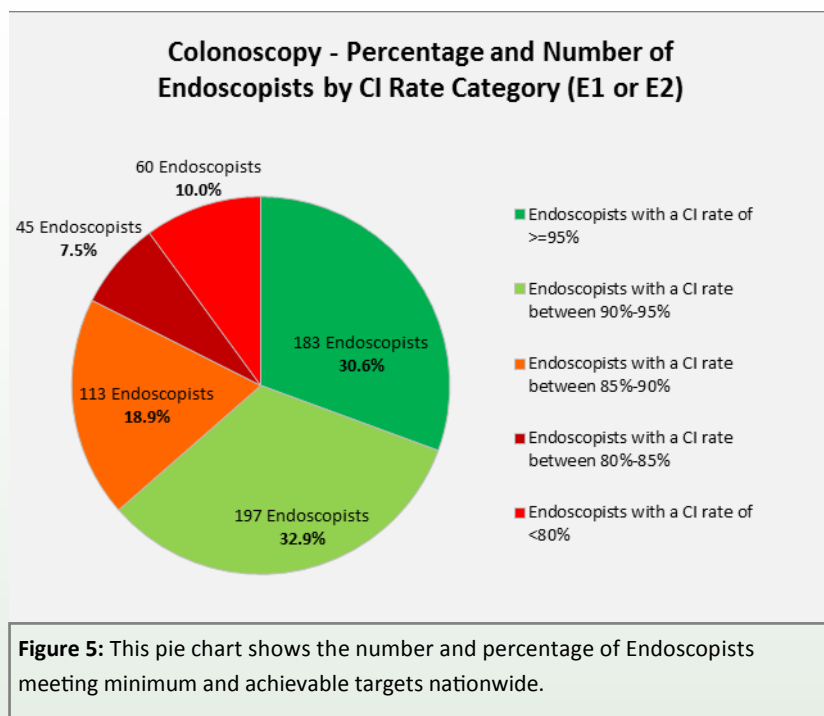
- Minimum Target: 90% of colonoscopy cases should reach the terminal ileum/caecum or anastomosis (adjusted only for obstructing lesions)
- Achievable Target: 95% of colonoscopy cases should reach the terminal ileum/caecum or anastomosis (adjusted only for obstructing lesions)
- Clear photographic evidence of the terminal ileum/caecum/anastomosis must be obtained

An Endoscopist's Caecal Intubation rate is calculated based on the number of times caecum was intubated as Endoscopist 1 or Endoscopist 2 as a percentage of the total amount of colonoscopies performed as Endoscopist 1 or Endoscopist 2. Definitions for Endoscopist 1 and Endoscopist 2 can be found on page 13.



**Figure 4:** The chart above shows the national average Caecal Intubation rate for each month between July 2016 and July 2017 in relation to the minimum target (90%) and the achievable target (95%).

## Colonoscopy — Caecal Intubation Rate



### Definitions

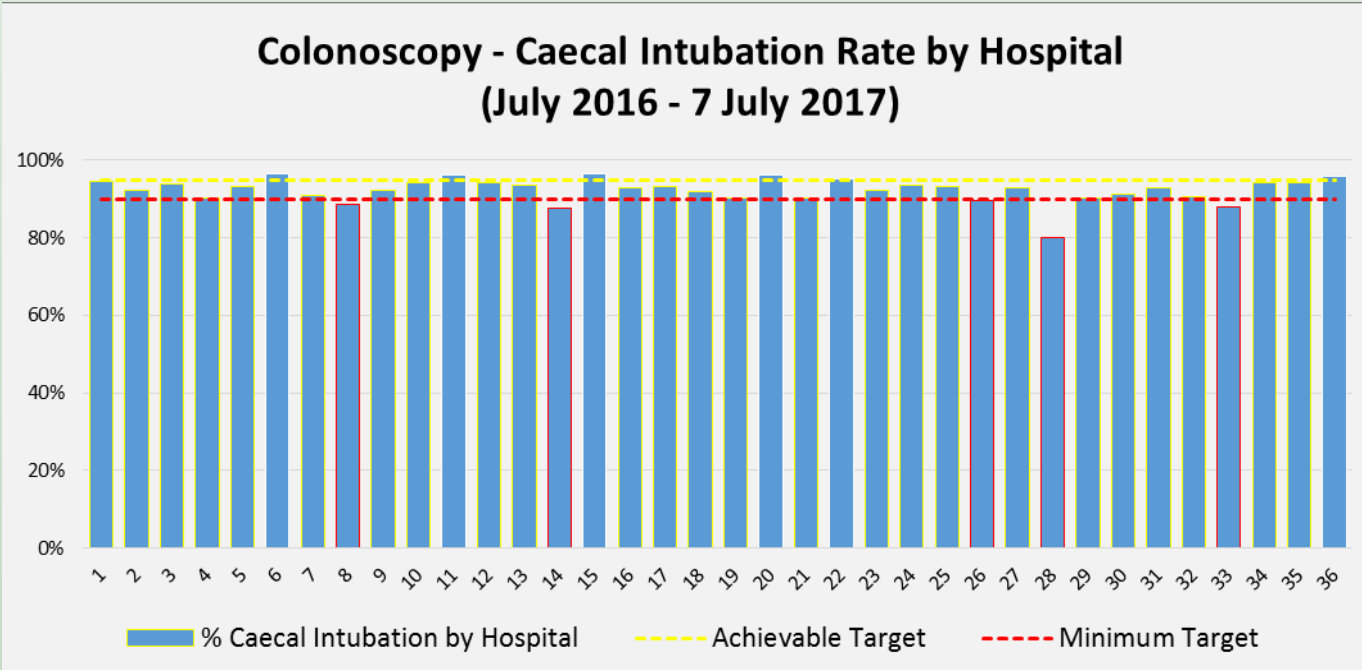
#### Endoscopist 1 (E1):

The clinician who performs the majority of the procedure.

#### Endoscopist 2 (E2):

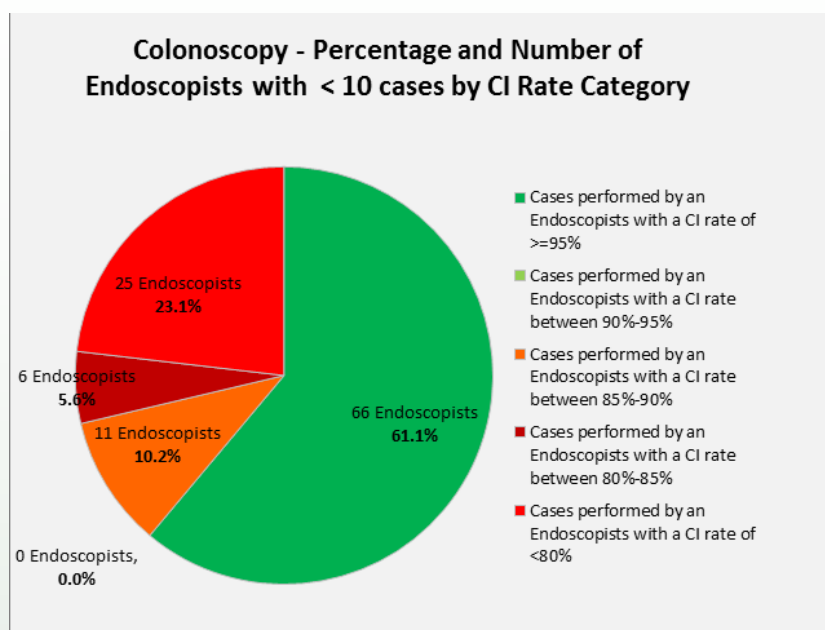
A clinician present in the procedure room during the course of the procedure and who also provides some support to the primary Endoscopist (verbal or physical).

64% of Endoscopists performing colonoscopies had achieved the minimum target CI Rate of  $\geq 90\%$ , this is in comparison to 59% in 2015/2016

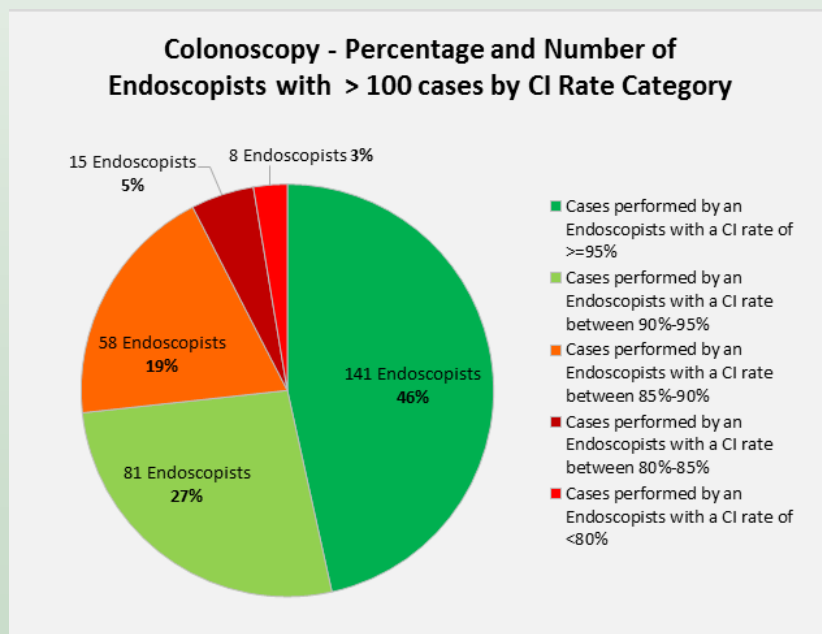


**Figure 6:** Illustrates the Caecal Intubation (CI) Rate for all colonoscopy cases performed in each participating hospital in relation to the minimum and achievable targets

## Colonoscopy — Caecal Intubation Rate

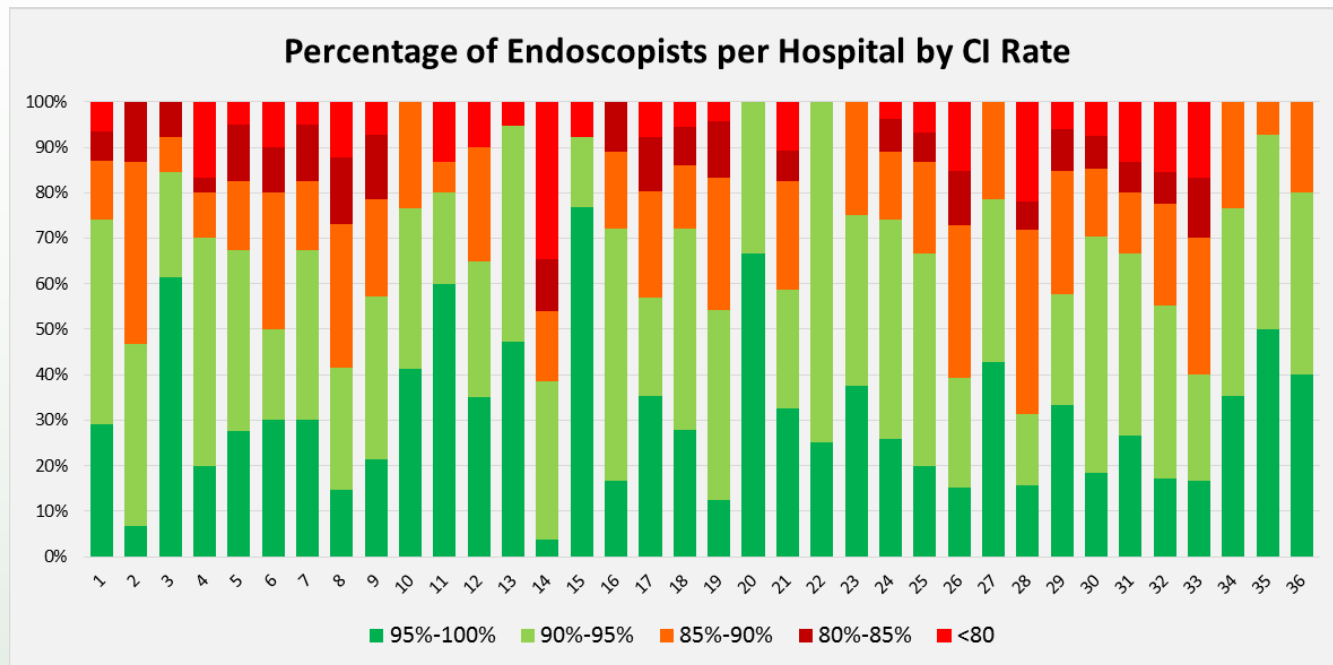


**Figure 7:** This pie chart shows the number and percentage of Endoscopists who have performed less than 10 procedures according to the data uploaded to NQAIS-Endoscopy for the 2016-2017 training year. These Endoscopists are grouped by CI Rate Category.

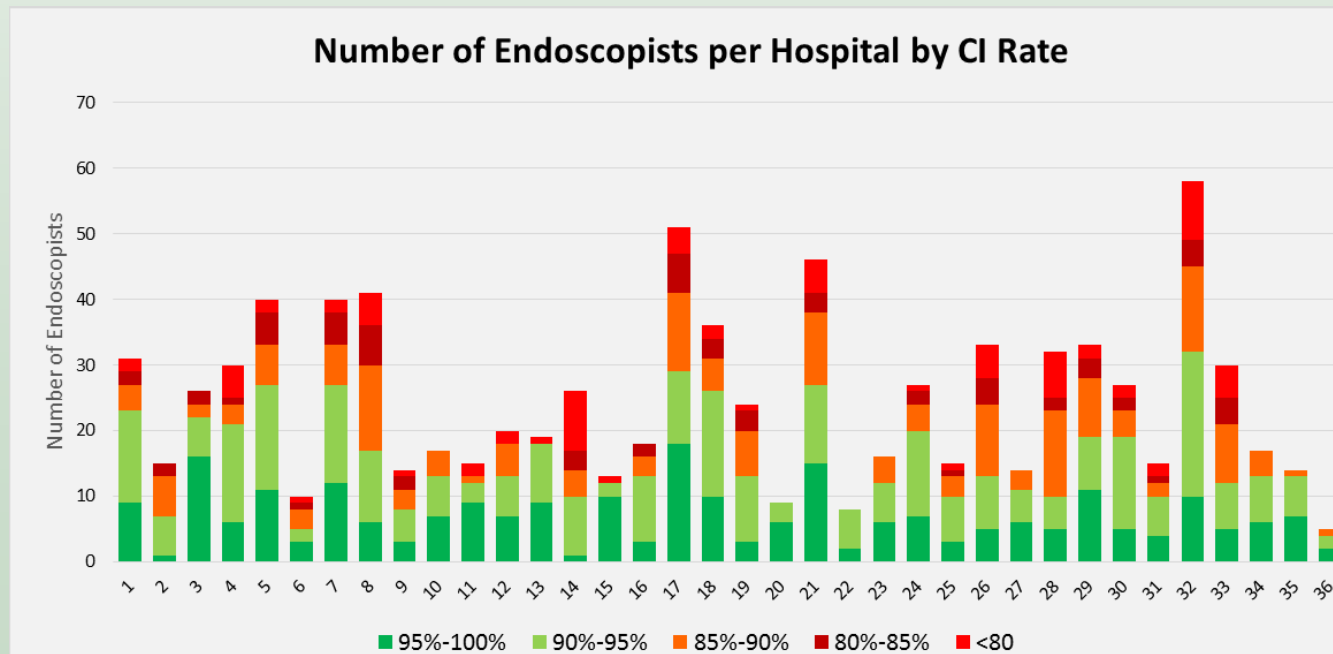


**Figure 8:** This pie chart shows the number and percentage of Endoscopists who have performed more than 100 procedures according to the data uploaded to NQAIS-Endoscopy for the 2016-2017 training year. These Endoscopists are grouped by CI Rate Category.

## Colonoscopy — Caecal Intubation Rate

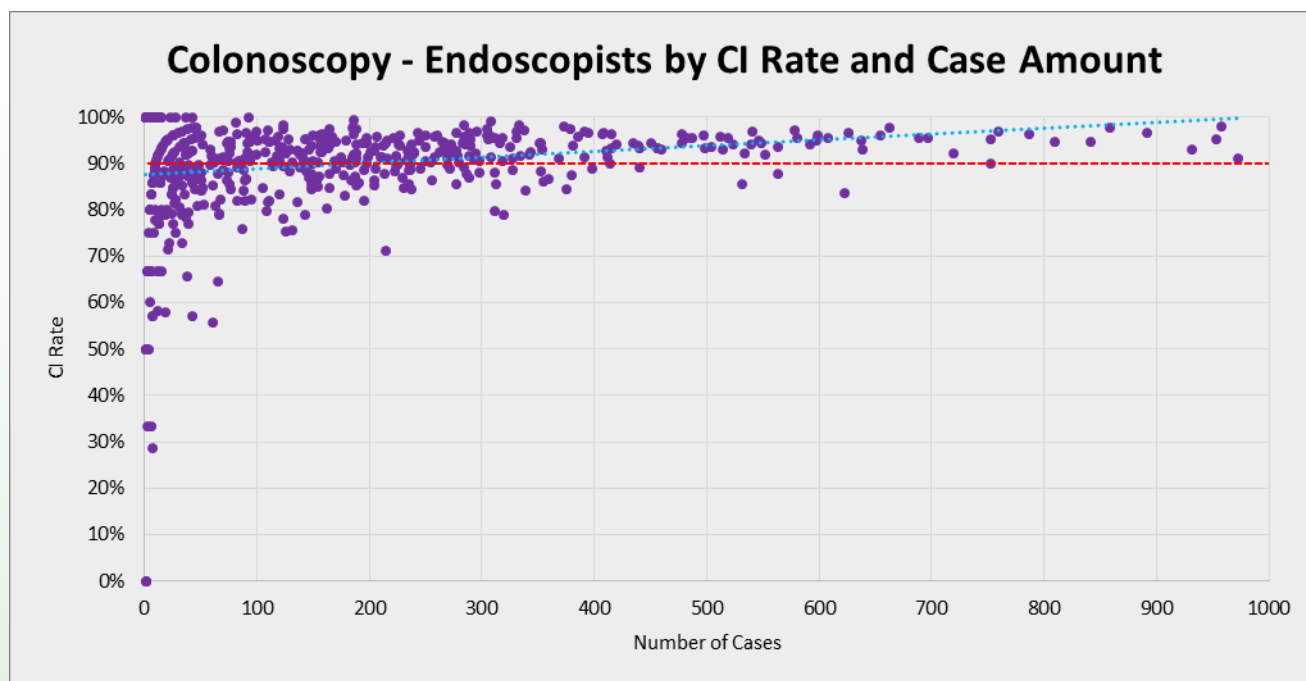


**Figure 9:** This 100% bar chart shows the percentage of Endoscopists, who have performed a colonoscopy in 2016/2017, in each hospital by their CI Rate Category. The CI Rate Category is determined by the Endoscopists national CI Rate across all hospitals they have worked in and is not confined to procedures performed in each hospital. E.g. 20% of Endoscopists in Hospital 4 had a national CI Rate between 95% and 100%.



**Figure 10:** This stacked bar chart illustrates the number of Endoscopists in each hospital by their national CI Rate category. This chart is based on the same data shown in Figure 9, but reports the number of Endoscopists per hospital rather than percentage.

## Colonoscopy — Caecal Intubation Rate



**Figure 10:** This scatter plot shows the number of Endoscopists on the horizontal axis and the Caecal Intubation Rate on the Y axis. Each purple dot represents an Endoscopist. The blue line is the trend line which suggests that CI Rate increases with number of procedures performed.

Nationally, over 92.6% of colonoscopy cases reach the terminal ileum, caecum or anastomosis.

Endoscopists who perform greater volumes of colonoscopies are more likely to meet the target. 77% of all colonoscopy procedures are performed by Endoscopists who has met the target.

**92.6%**  
2016/2017  
**National Caecal  
Intubation  
Rate**

## Colonoscopy—Caecal Intubation Rate

Nationally, we meet the target CI Rate with 92.6% of all colonoscopies are recorded as being “complete” and reaching the caecum, anastomosis or terminal ileum. This rate remains fairly constant throughout the year.

In comparison to the information presented in the 1st National Data Report, we see a small increase of 0.6% in the national Caecal Intubation Rate for the 2016/2017 year. The steady nature of the data reported for CI Rate suggests a matured data set for this KPI, with only a minor variations overall.

Nationally, 64% of Endoscopists met the CI Rate target, this is an increase of 5% on the 2015/2016 National Data Report.

The second National Data Report reaffirms a trend presented in the first report and supported by international evidence. This trend suggests that Endoscopists find it easier to maintain high skill levels if they perform higher numbers of procedures.

23% of Endoscopists that performed less than 10 colonoscopies recorded a CI Rate of <80%. This is compared to just 3% of Endoscopists who performed more than 100 procedures.

### **Further Improvements:**

By ensuring the accurate designation of Endoscopist 1 and Endoscopist 2 in Endoscopy Reporting Systems we can ensure that Endoscopists CI Rates continue to reflect the practice in each department. Endoscopist 2 should only be assigned if the supervising Endoscopist is present in the procedure room during the colonoscopy.

## Colonoscopy— Comfort Scores

Comfort is a key recommendation and central to any patient centered QI programme in GI Endoscopy. It is proposed to measure a comfort score for each procedure using the modified Gloucester Scale as shown on page 19.

Comfort Score rate is calculated by expressing the number of colonoscopies performed with a Comfort Score of 1 or 2 as a percentage of the total number of colonoscopies performed by an Endoscopist (Endoscopist 1 only) or Hospital. Comfort Score should be provided by a third party and agreed with the Endoscopist before submission.

### Key Quality Data:

Median comfort level score per Endoscopist

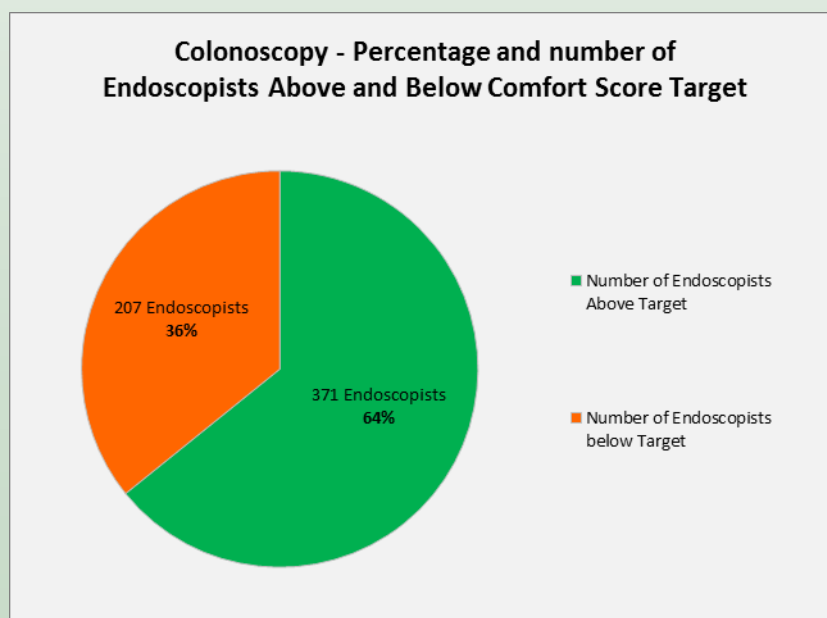
### Key Recommendation:

Use the modified Gloucester scale

Comfort scores should be assessed by a third party who will usually be an endoscopy nurse and agreed with the Endoscopist before recording

### Key Quality Target:

80% of colonoscopy cases should have a comfort score of a 1 or 2

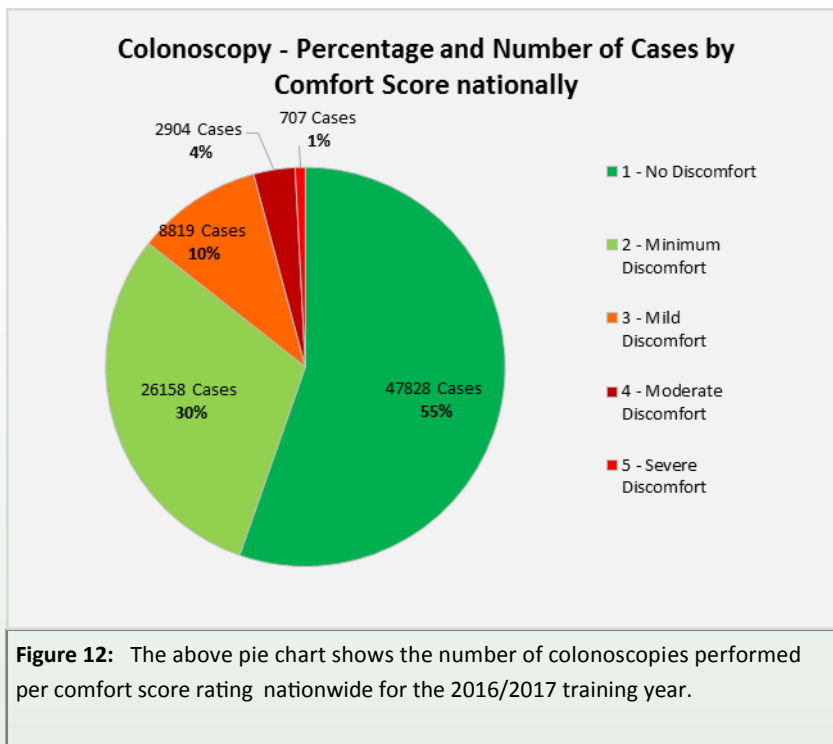


**Figure 11:** This pie chart shows the number of Endoscopists meeting the Comfort Score target nationwide. In order to meet this target an Endoscopist must have recorded a score of 1 or 2 (using the Gloucester 1-5 scale) for at least 80% of the colonoscopies they performed that year.

## Colonoscopy— Comfort Scores

### Gloucester Scale

- **1 - No:** 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, experienced frequently during the procedure.



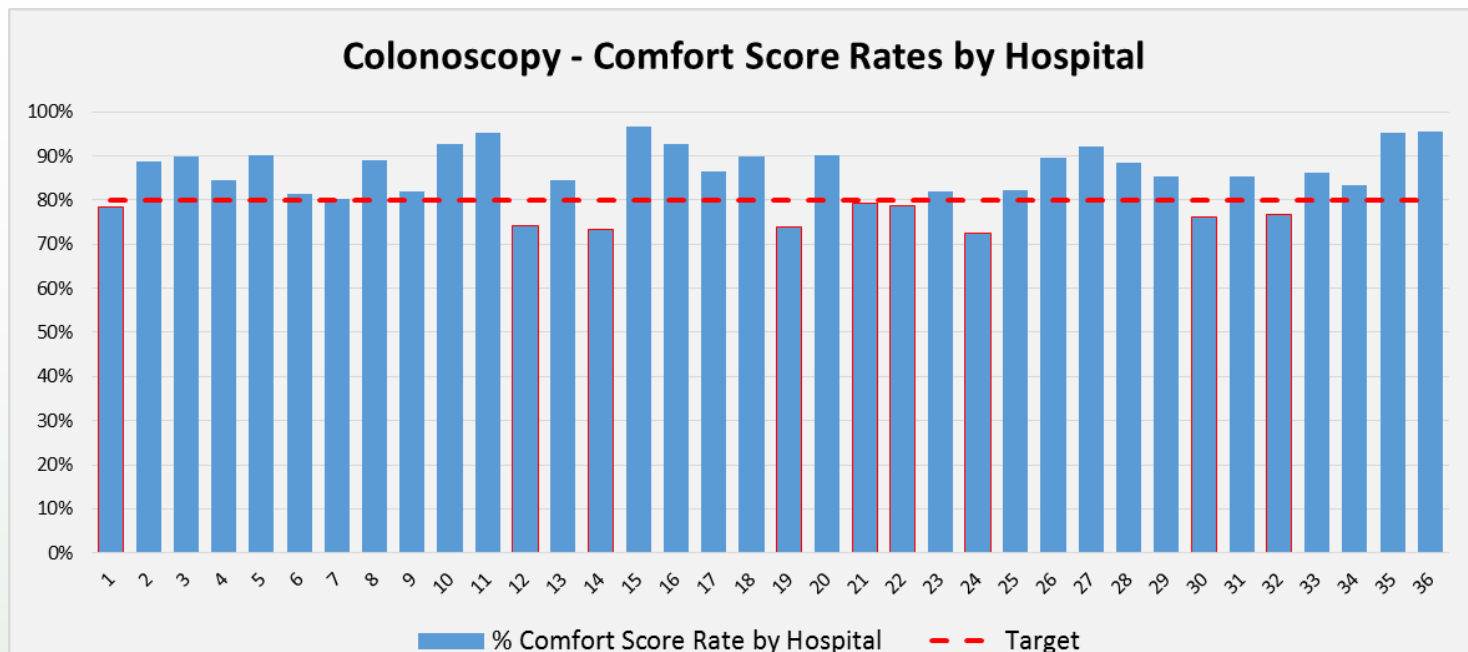
55% of colonoscopies are performed with no discomfort. Less than 1% of all cases are performed with severe discomfort.

The 2nd National Data Report has shown a reduction in the variation of Comfort Scores between hospitals shown in the 2015/2016 report. There is reason to believe that this reflects an increase in data quality and reliability for this KPI in this year's report.

A large majority of colonoscopies are performed nationally with no or minimal discomfort (85%).

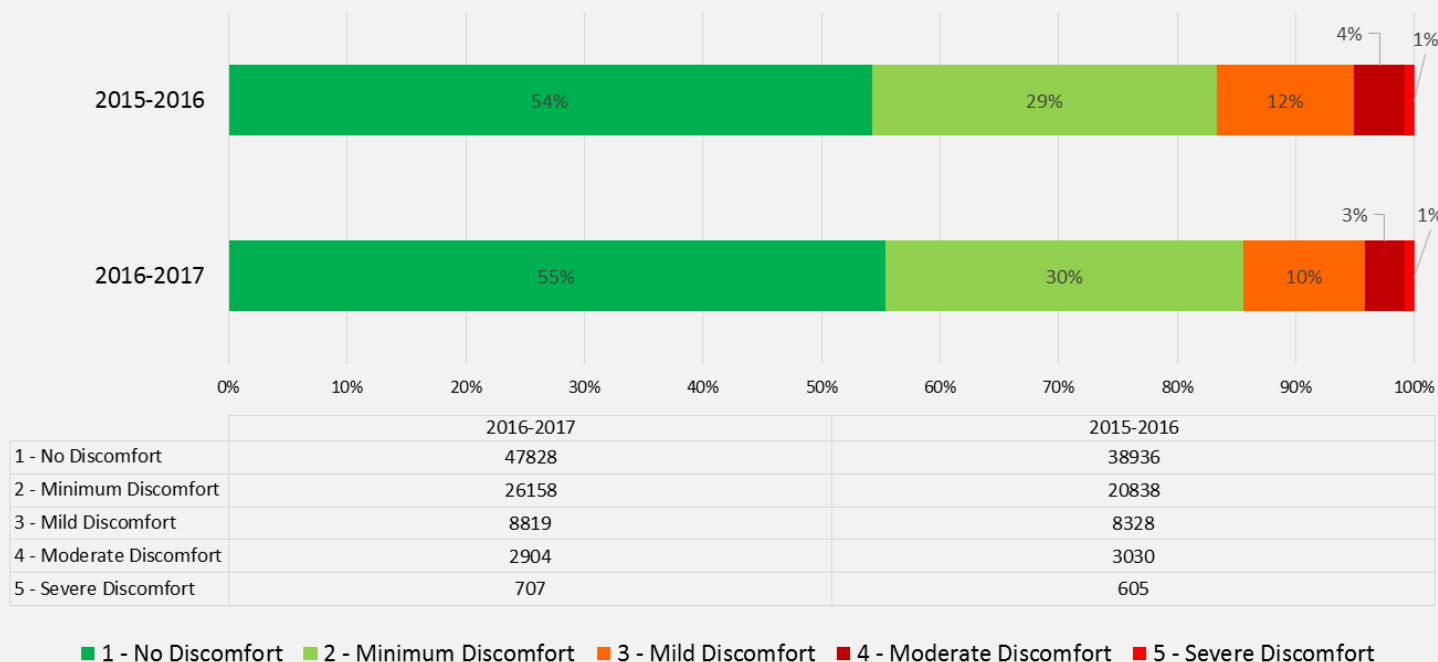
The cohort of Endoscopists who meet the target (64% meet target) perform the vast majority of colonoscopies (74% of cases).

## Colonoscopy— Comfort Scores



**Figure 13:** This bar chart shows the percentage of colonoscopies that recorded a Comfort Score of 1 or 2 in each hospital. E.g. In hospital 5, 90% of colonoscopies performed received a Comfort Score rating of 1 or 2.

### Comfort Scores - Year on Year Comparison



**Figure 14:** The Year on Year comparison shows the proportion of all cases nationwide according to the recorded Comfort Score. Underneath the 100% bar charts is a data table illustrating the number of cases that comprise each section.

## Colonoscopy— Polyp Detection Rate

Internationally accepted guidelines on performance indicators of colonoscopy recommend monitoring direct or proxy markers of detection of suspicious lesions including polyps, adenomas or withdrawal times. As a result of the difficulty of linking endoscopy reporting systems with histology, at this time, the QI Programme measures Polyp Detection Rates rather than measuring direct adenoma detection rates.

### Key Quality Data:

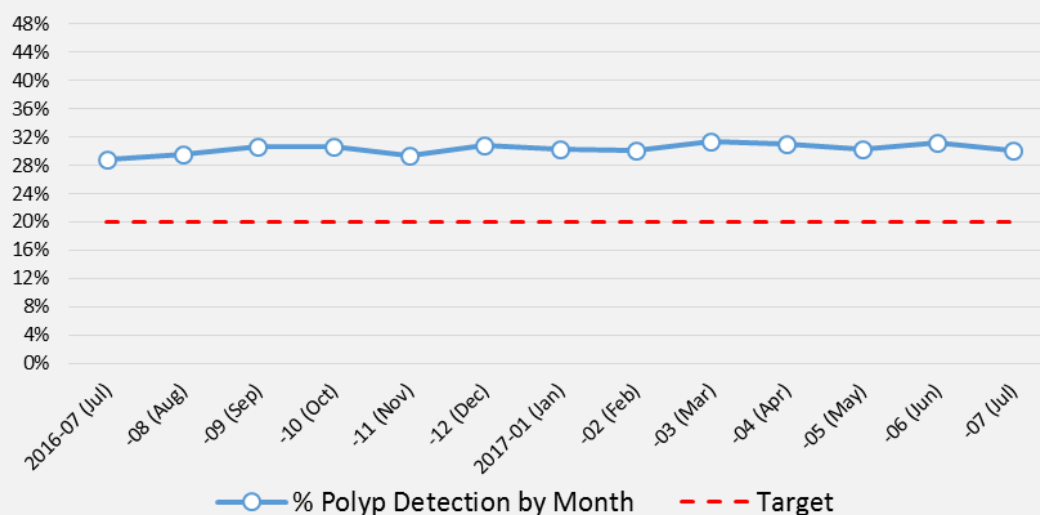
- Colonoscopies with polyps detected expressed as a % of total colonoscopies per Endoscopist

### Key Quality Target:

- 20% of all colonoscopies have a polyp(s) detected

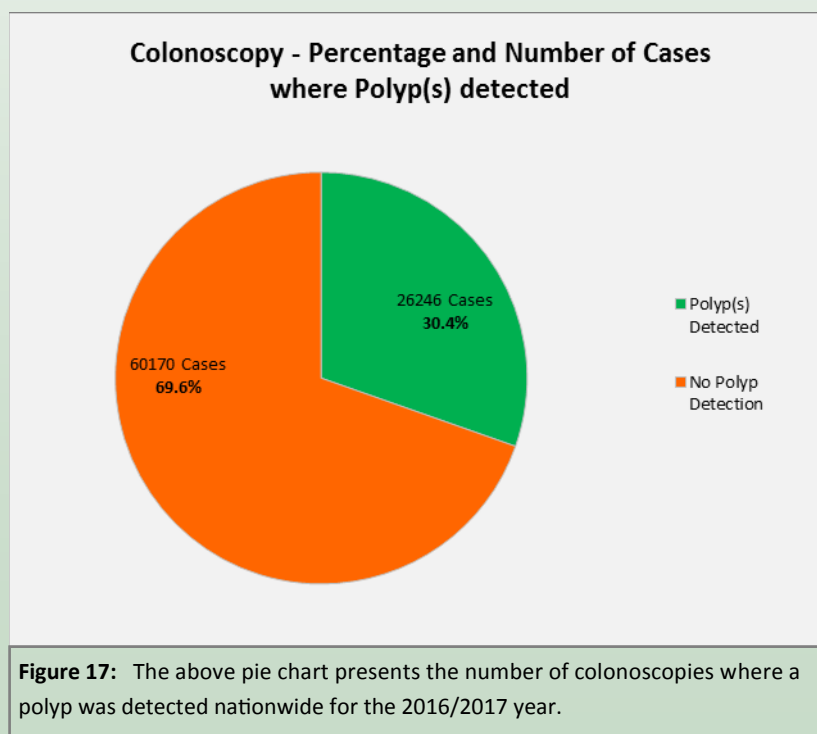
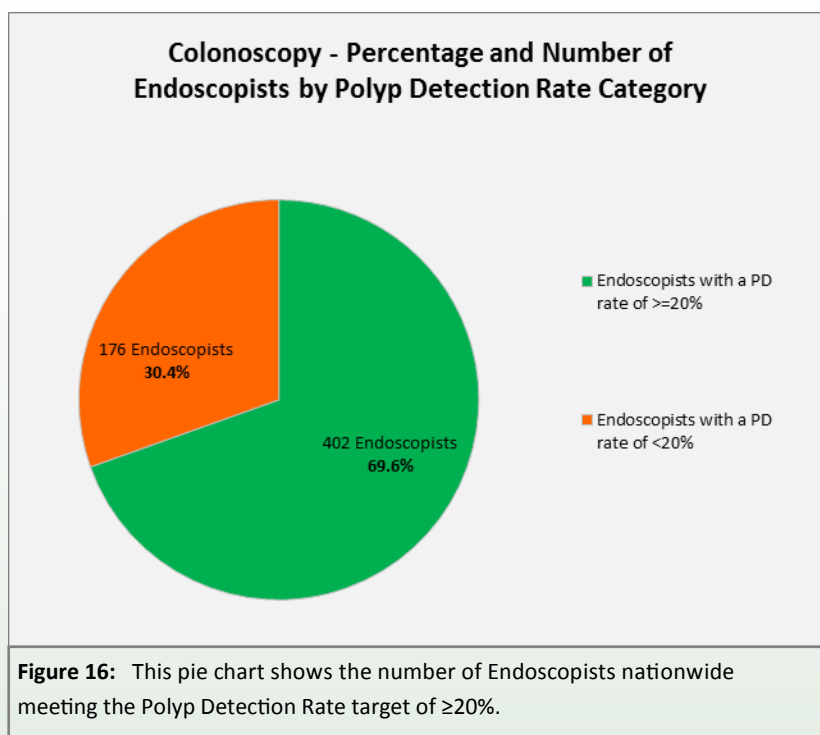
The 2016/2017 national Polyp Detection rate is 30%, up 3% from last year.

### Colonoscopy - Percentage of Cases with Polyp Detection by Month (July 2016 - 7 July 2017)



**Figure 15:** The line graph above shows the national Polyp Detection rate for each month of the 2016/2017 training year. Polyp Detection is determined by the number of colonoscopies where a polyp was detected as a percentage of the total number of colonoscopies.

## Colonoscopy — Polyp Detection Rate



## Colonoscopy — Polyp Detection Rate

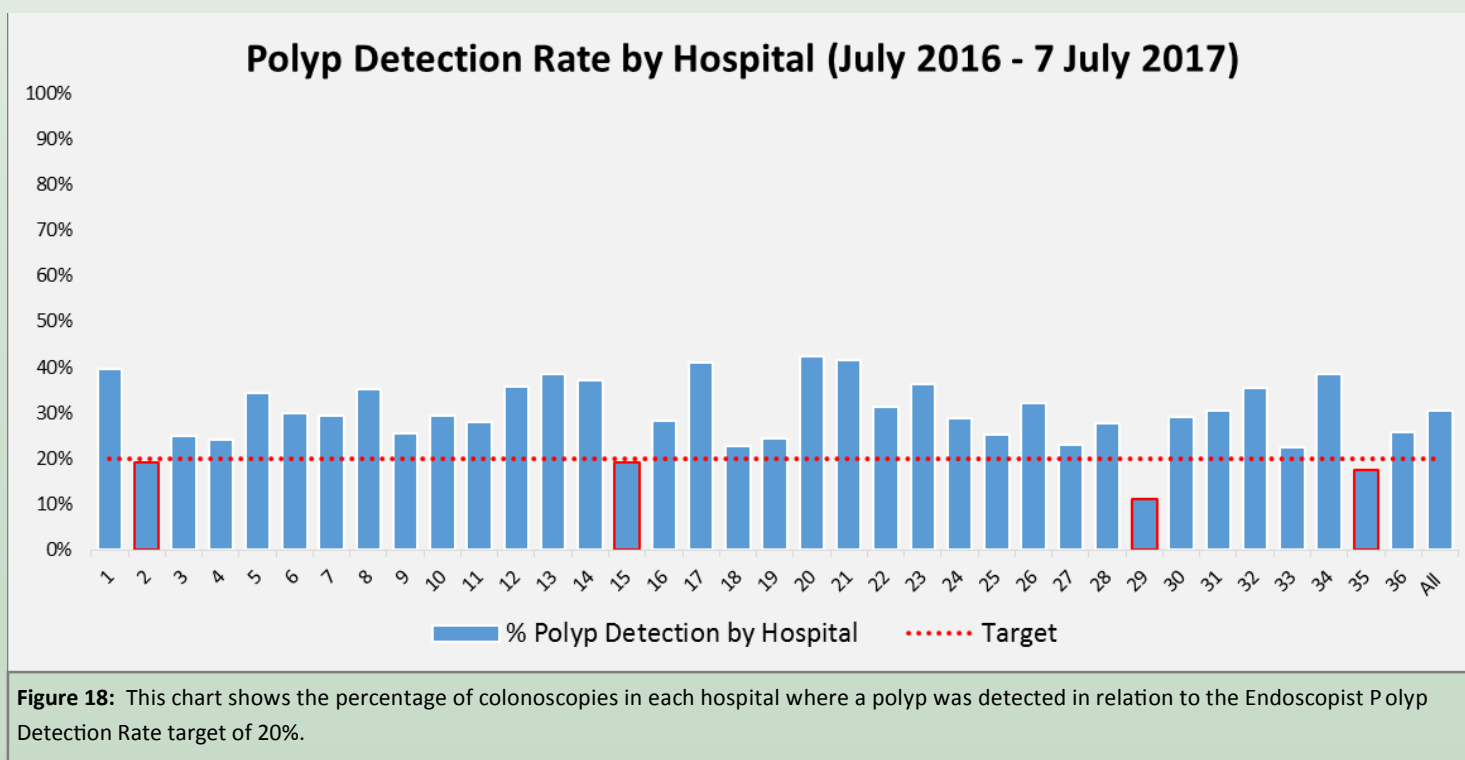
70% of Endoscopists met the Polyp Detection rate target

32 out of 36 hospitals recorded a Polyp Detection rate of  $\geq 20\%$ .

70% of Endoscopists met the Polyp Detection rate target. An increase of 15% on the previous National Data Report.

This reflects an increase in the reliability and accuracy of data reported to NQAIS-Endoscopy over the 2016/2017 year. Data will continue to mature as the programme embeds in hospitals.

**26,246**  
Cases with at least one  
polyp detected



## Colonoscopy—Bowel Preparation Score

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 Data:

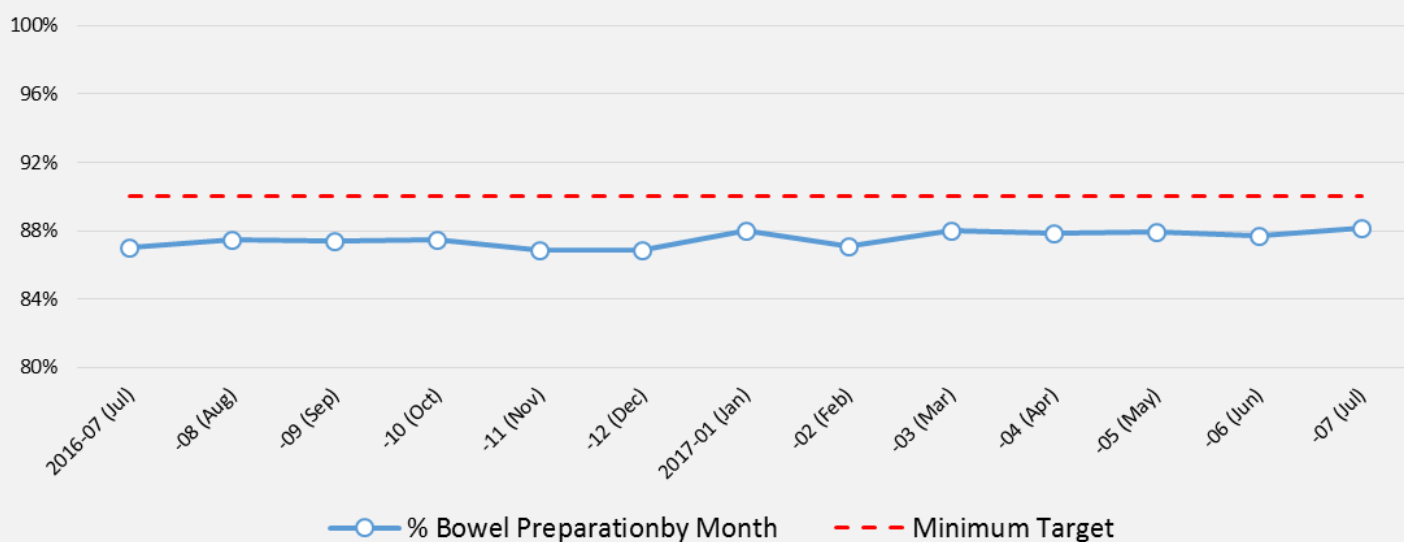
Record the bowel preparation for each colonoscopy. Express the total number of colonoscopies with Adequate and Excellent scores as a % of all colonoscopies

### Key Quality Target:

Bowel preparation described as excellent or adequate in  $\geq 90\%$  of colonoscopies

Nationally, the Bowel Preparation rate has been consistently below target of 90% for both the 2015/2016 year and the 2016/2017. At 88%, although still below target, the national average has increased from 86% last year.

**Colonoscopy - Percentage of Cases meeting Bowel Prep target by month (July 2016 - 7 July 2017)**

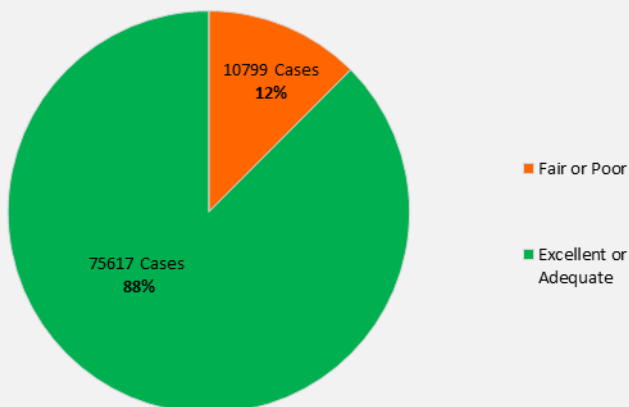


**Figure 19:** This line graph shows the national average Bowel Preparation rate for each month of the 2016/2017 year in relation to the target. The target requires  $\geq 90\%$  of colonoscopies to have recorded a Bowel Preparation score of “Excellent” or “Adequate”.

## Colonoscopy—Bowel Preparation Score continued

- **Excellent**
  - \* No or minimal solid stool and only clear fluid requiring suction
- **Adequate**
  - \* Collections of semi-solid debris that are cleared with washing/suction
- **Complete despite poor prep**
  - \* Solid or semi-solid debris that cannot be cleared effectively but which still permits intubation to caecum
- **Failed due to poor prep**
  - \* Solid debris that cannot be cleared effectively and prevents intubation to caecum.

Colonoscopy - Percentage and Number of Cases by Bowel Prep Score

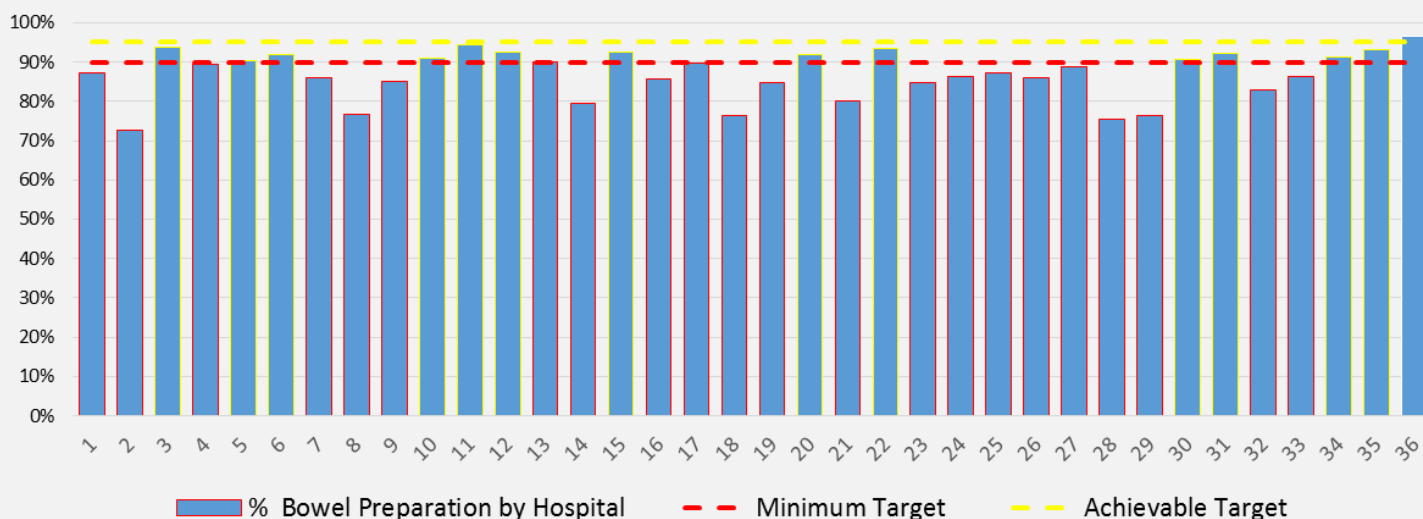


**Figure 20:** The above pie chart illustrates the number of colonoscopies that received a Bowel Prep score of “Excellent” or “Adequate” nationwide.

# 14

Hospitals had a Bowel Prep rate above QI target

Colonoscopy - Bowel Preparation rate by Hospital



**Figure 21:** This bar chart shows the number of colonoscopies performed in each hospital that reported a Bowel Preparation score of “Excellent” or “Adequate” as a percentage of the total colonoscopies performed in that hospital.



# Oesophagogastroduodenoscopy (OGD)

## OGD - Successful Intubation

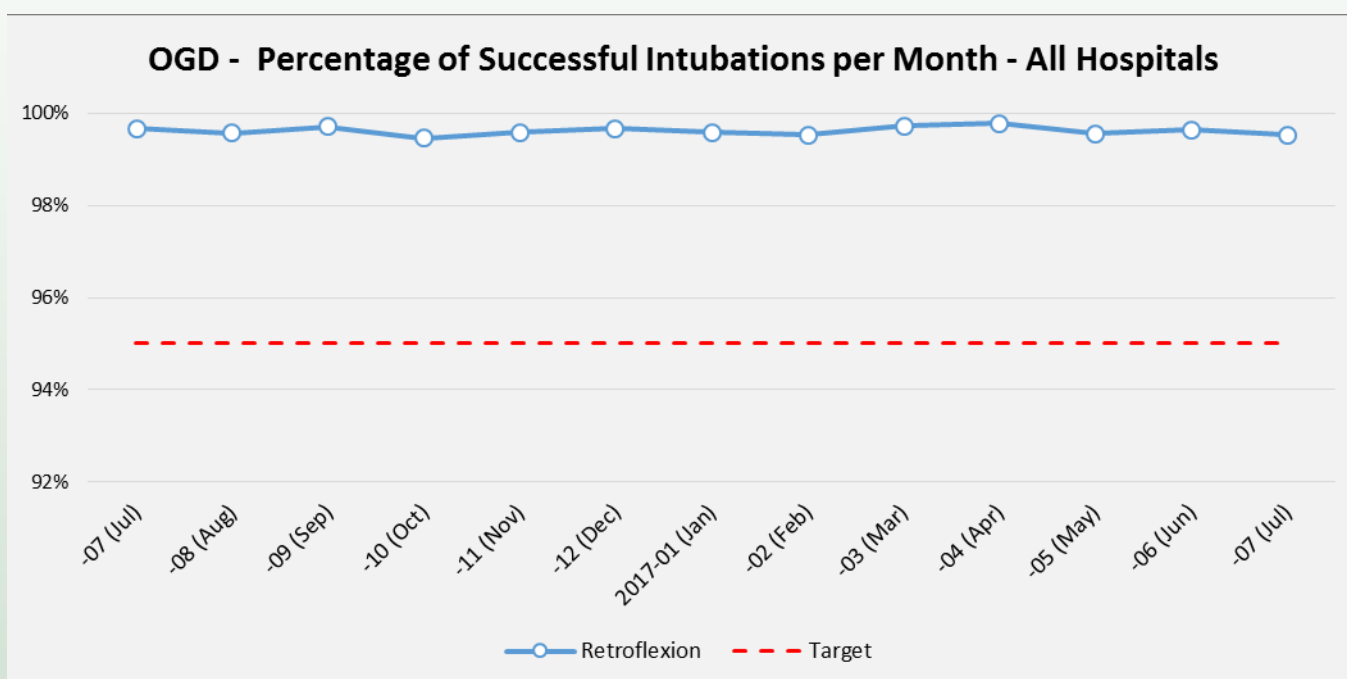
An oesophago-gastro-duodenoscopy (OGD) necessitates successful intubation into the oesophagus.

### Key Quality Data:

Number of successful intubations expressed as a percentage of all cases recorded as being intended to be OGDs

### Key Quality Target:

Successful Intubation percentage of  $\geq 95\%$  of all OGD cases per Endoscopist



**Figure 22:** The above line graph shows the national successful intubations per month for the 2016/2017 training year.

The national Successful Intubation rate, at 99.6%, is consistently well above the target Successful Intubation rate of  $\geq 95\%$

## OGD - Duodenal Second Part Intubation Rate

Duodenal Second Part Intubation is an important quality measure of the completeness of a procedure. In order to complete this measure, the endoscope should be passed through the pylorus to examine the first and second parts of the duodenum.

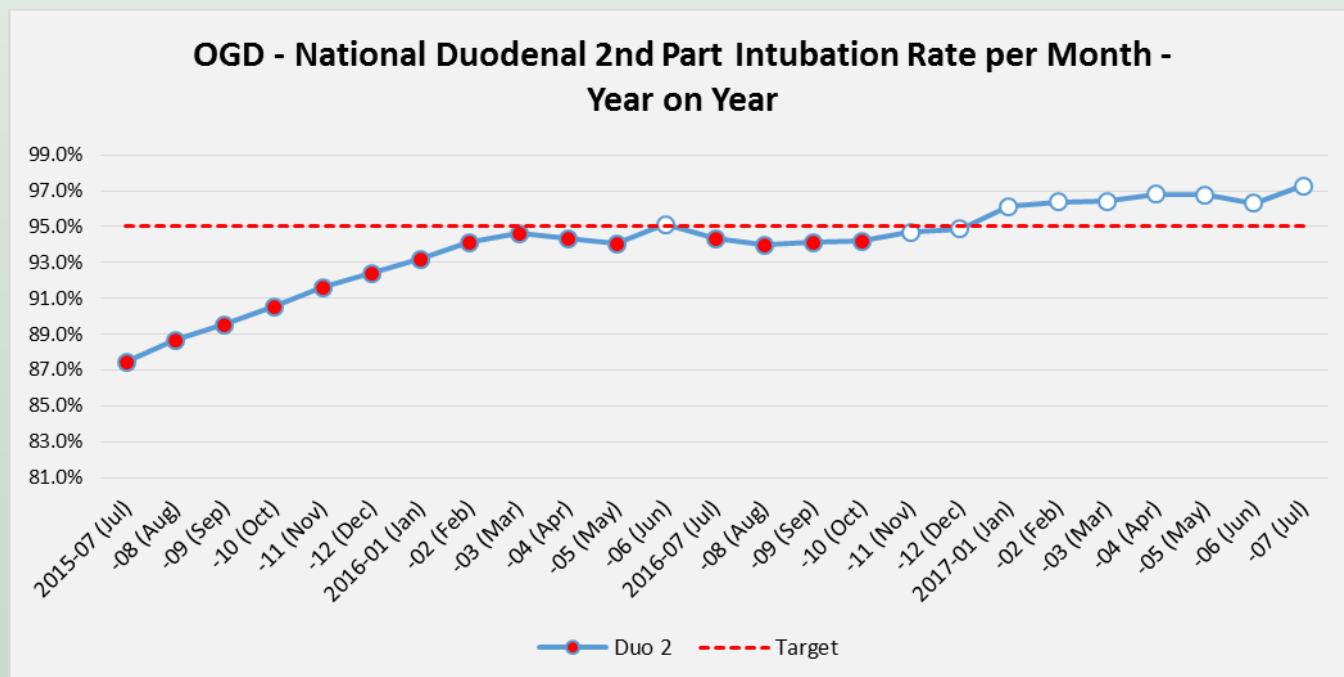
### Key Quality Data:

Number of cases in which Duodenal 2nd part intubation was achieved expressed as a % of total OGD cases per Endoscopist

**Key Quality Target:** Intubation of Duodenum Second Part in  $\geq 95\%$  of cases

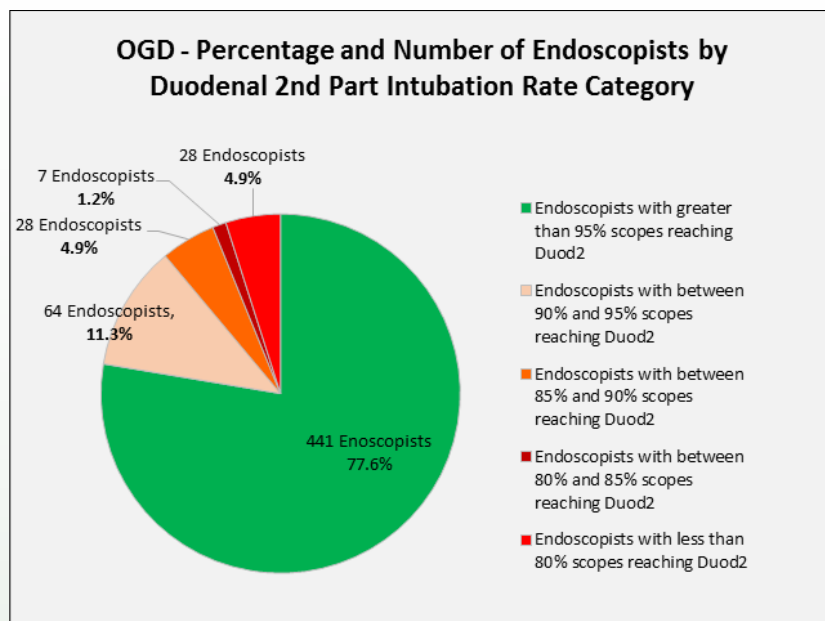
**95.5%**  
2016/2017 National  
Average Duo 2  
Intubation Rate

The consistent increase in national 2nd Part Intubation Rates over the past 2 training years suggests a maturing of QI data for this KPI



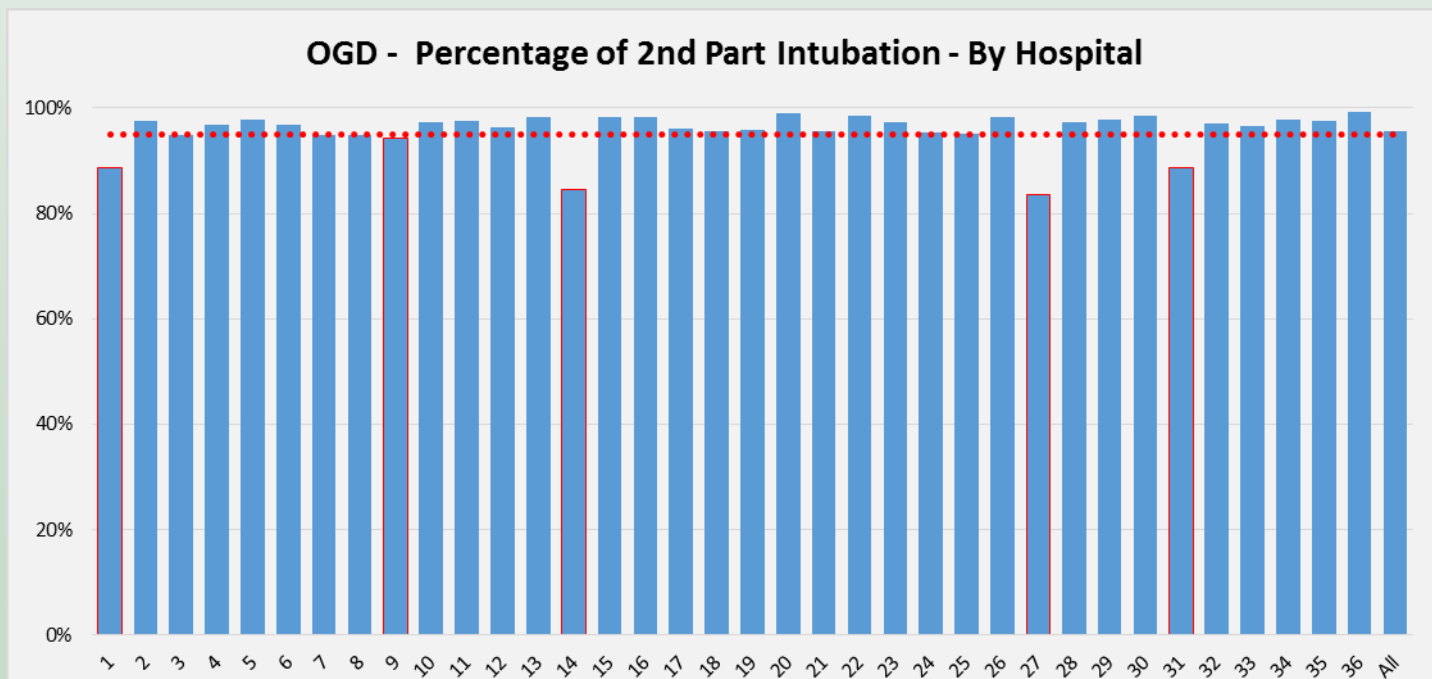
**Figure 23:** This line graph shows the national percentage of cases in which duodenal 2nd part intubation was achieved for both the 2015/2016 training year and the 2016/2017 training year, by month.

## OGD—Duodenal Second Part Intubation Rate



**Figure 24:** This pie chart illustrates the number and percentage of Endoscopists by Duodenal 2nd Part Intubation Rate category. E.g. 441 (77.6%) of Endoscopists had a Duo 2 Intubation rate greater than or equal to 95%.

31 out of 36 hospitals have recorded a successful 2nd Part Intubation for at least 95% of the OGD procedures performed in their hospital.



**Figure 25:** The above chart shows the percentage of OGD procedures in each hospital where a successful 2nd part intubation has been recorded.



## OGD—Retroflexion

Retroflexion, also known as the J manoeuvre, allows for a full view and inspection of the cardia and fundus of the stomach. It is an important quality measure of the completeness of the procedure. Ulcers in the body of the stomach and fundus tend to arouse more clinical suspicion.

### Key Quality Data:

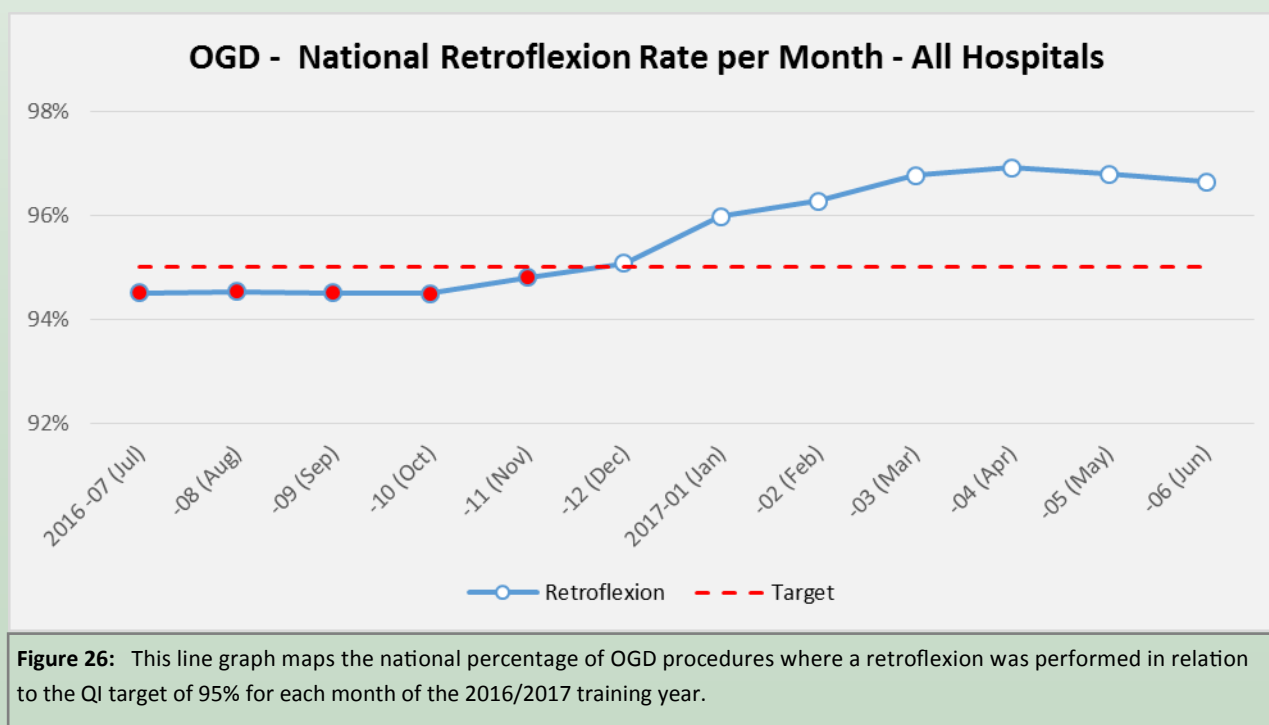
- Number of cases in which retroflexion was performed expressed as a % of all OGD cases per endoscopist

### Key Recommendation:

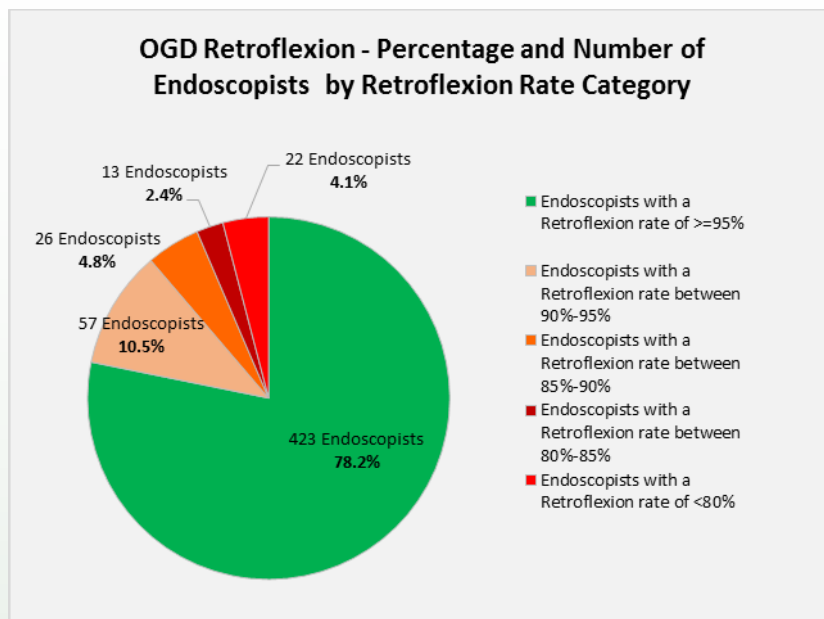
- Retroflexion (J manoeuvre) in stomach to visualise fundus in  $\geq 95\%$  of cases

The national Retroflexion average is 95.7%, just above the QI Target of  $\geq 95\%$

Given the standard nature of retroflexions, it is the opinion of the Working Group that the increase in retroflexion rates is most likely due to a maturing of data recording quality rather than an increase in amount of retroflexions being performed.

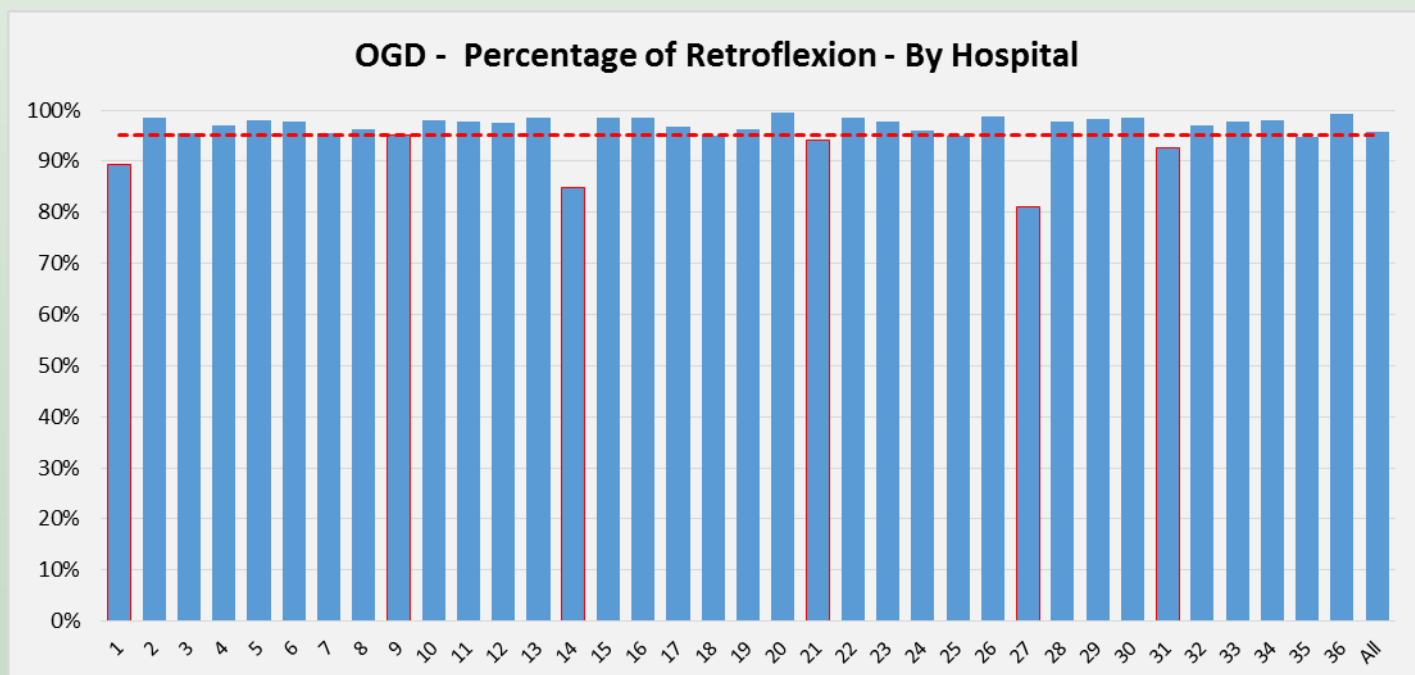


## OGD—Retroflexion



**Figure 27:** This pie chart shows the number and percentage of Endoscopists by Retroflexion rate category. E.g. 78.2% of Endoscopists had Retroflexion rate of greater than or equal to 95%. This is calculated using E1 and E2 statistics.

**78.2% of Endoscopists performing OGDs nationwide are above the Retroflexion target of  $\geq 95\%$**



**Figure 28:** The above chart illustrates the percentage of OGD procedures where a retroflexion was recorded in each hospital in relation to the QI Target of 95%.

# Sedatives

## Sedatives

Many patients tolerate upper endoscopy with only topical anesthesia of the oropharynx, however some patients may need sedation. Likewise, colonoscopy can be an uncomfortable experience but this discomfort can be reduced by careful patient preparation and sedation. Sedation improves patient tolerance of endoscopy however, excessive sedation is considered to be an important contributor to cardio-respiratory complications following endoscopy in high risk patients or elderly patients.

### Key Quality Data:

Sedative type and quantity used for patients under 70 years of age, and 70 years and over expressed as a median figure per Endoscopist

### Key Recommendations:

Sedative should be used to achieve conscious sedation; where the patient displays purposeful response to verbal stimulation.

The median level of sedation for older patients ( $\geq 70$  years of age) should be approximately half that of patients under that age.

The use of reversal agents should be minimised. Its use should require that case be reviewed.

### Key Quality Targets:

**Median** quantity of Midazolam:

**$\leq 5\text{mg}$**  for patients **under 70** years of age

**$\leq 3\text{mg}$**  for patients **70 years of age and above**

**Fentanyl:**  $\leq 100\text{mcg}$

**58%**  
Of colonoscopies with  
patients aged  $\geq 70$  are  
using recommended  
dosage

## Sedatives—Midazolam (Colonoscopy)

Overall, for colonoscopy patients less than 70 years old, 82% received the recommended dosage of 5mg midazolam or less.

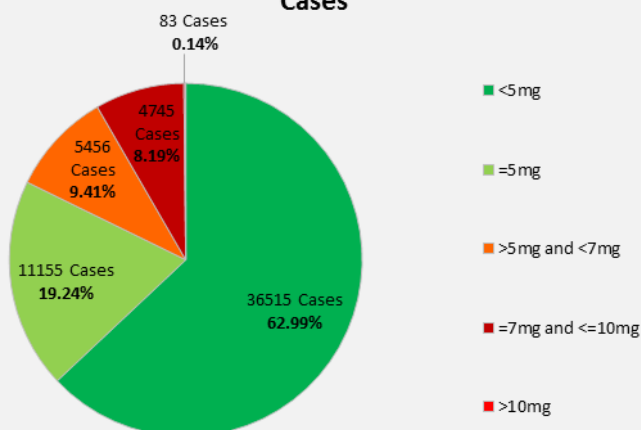
In comparison, 58% of colonoscopies performed on patients aged 70 and older used the recommended target dosage of  $\leq 3$ mg of Midazolam.

It appears that many Endoscopists may be giving the same dosage of midazolam to all patients irrespective of patient age. This continues to presents an opportunity to improve practice.

**82%**  
Of colonoscopies  
with patients <70  
using recommended  
dosage

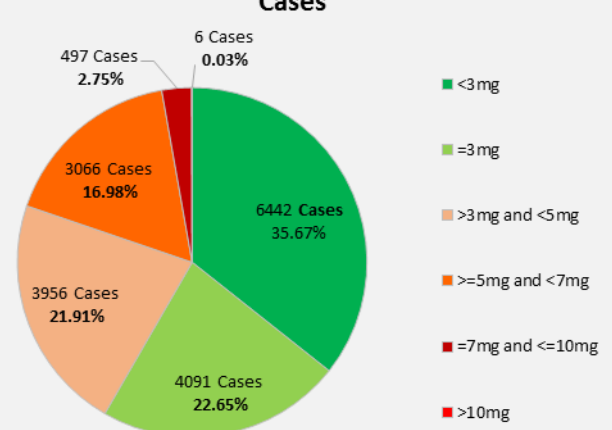
**Please note:** Due to the different targets for patients aged above and below 70 years old, the following charts contain legends that alter depending on the age category. Please remember to consult the legend of each chart. Green colours denote dosages that meet the target for that cohort of patients.

**Colonoscopy - Midazolam Dosages in Patients less than 70 - Number and Percentage of Cases**



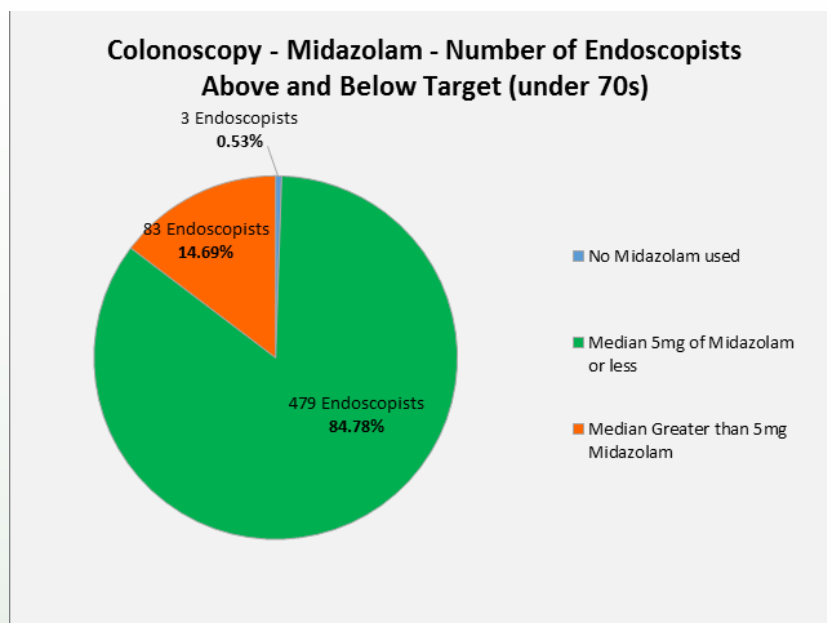
**Figure 29:** The above pie chart shows the midazolam dosages administered to patients aged **under 70** for colonoscopies nationwide. E.g. 63% of colonoscopies in patients under 70 used <5mg of Midazolam

**Colonoscopy - Midazolam Dosages in Patients 70 and Older- Number and Percentage of Cases**

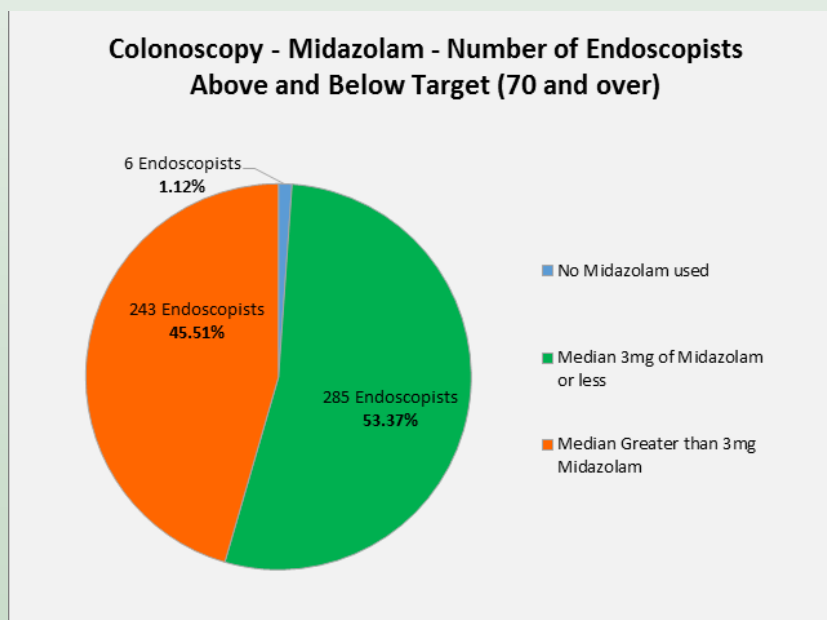


**Figure 30:** The above pie chart shows the midazolam dosages administered to patients aged **70 and Older** for colonoscopies nationwide. E.g. 36% of colonoscopies in patients 70 and Older used <3mg of Midazolam.

## Sedatives—Midazolam (Colonoscopy)

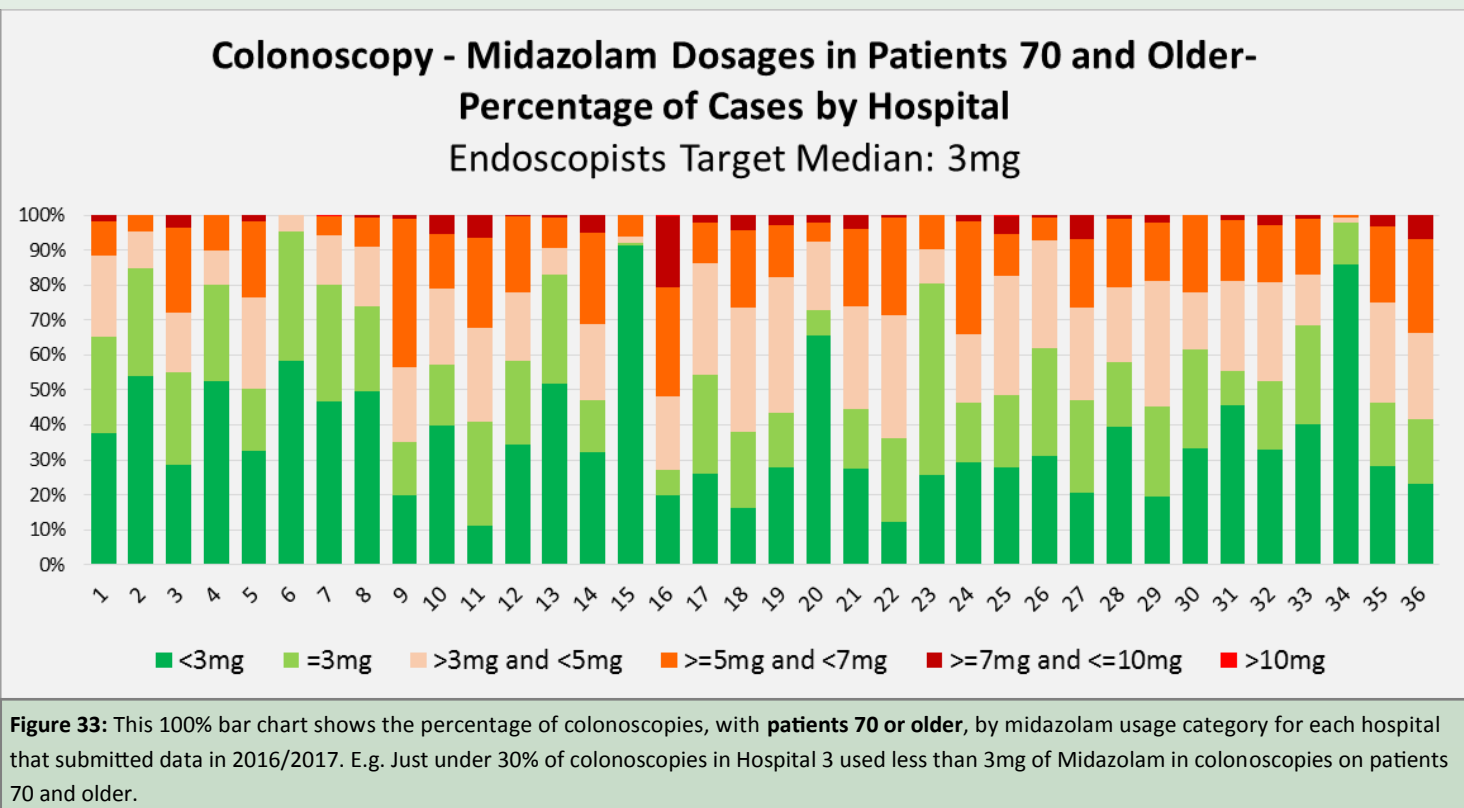
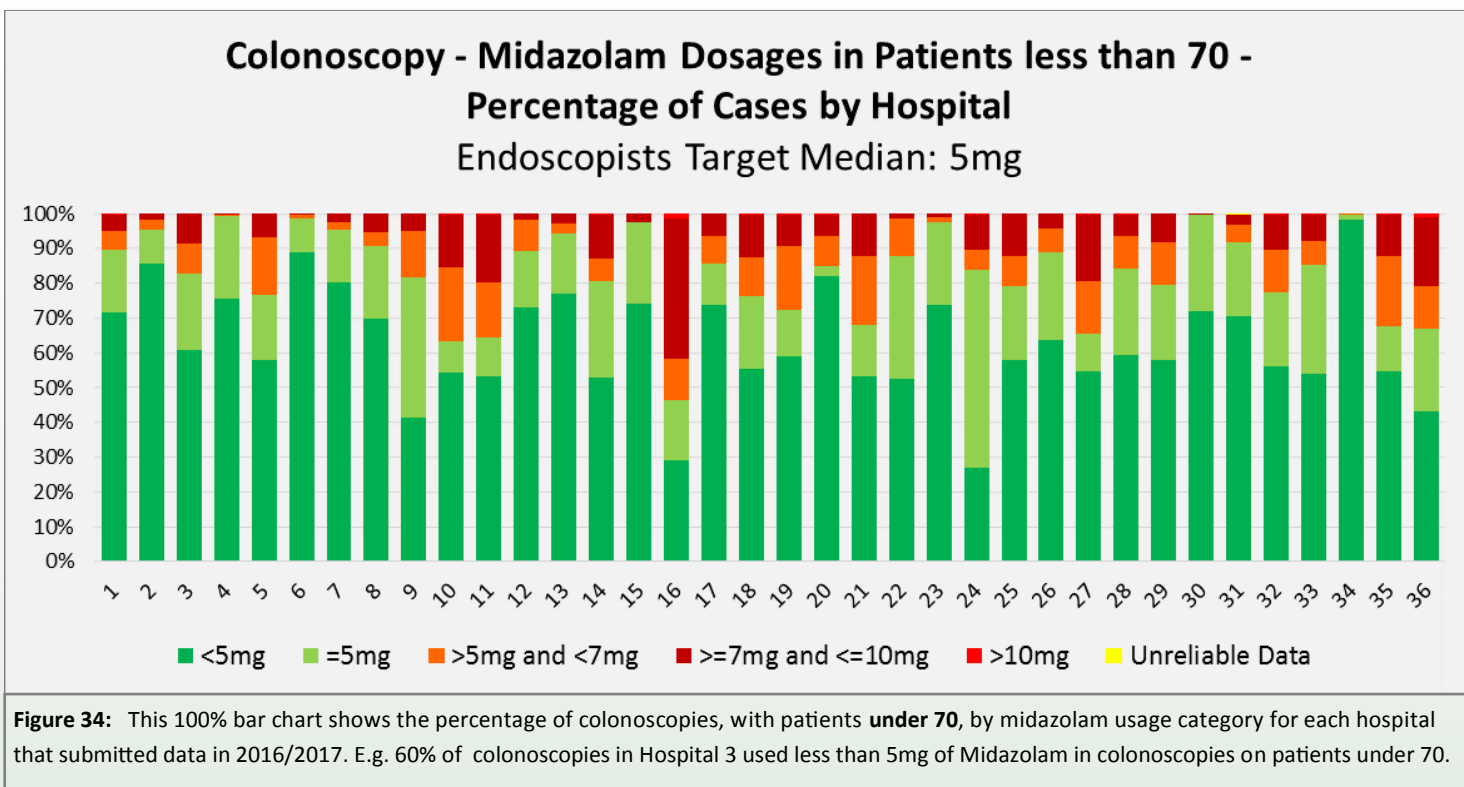


**Figure 31:** This pie chart shows the number and percentage of Endoscopists who are meeting the target median quantity of Midazolam ( $\leq 5\text{mg}$ ) used in colonoscopies where the patient was **under 70**.

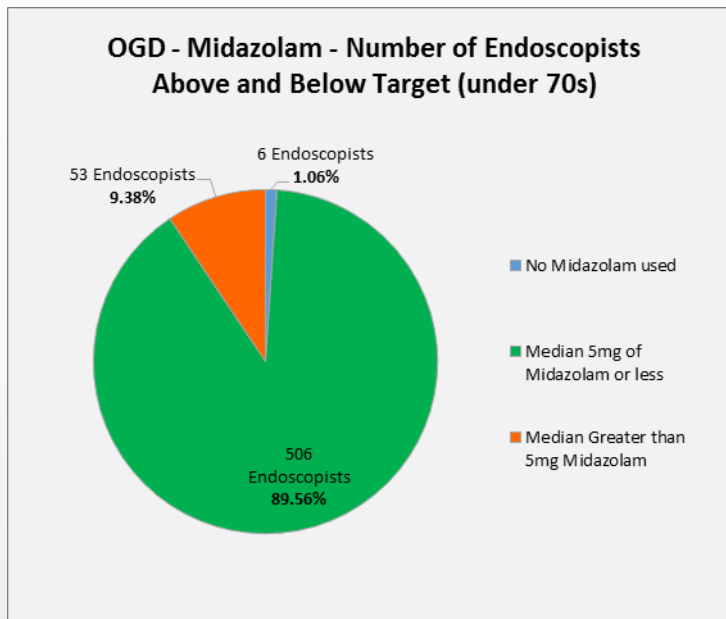


**Figure 32:** This pie chart shows the number and percentage of Endoscopists who are meeting the target median quantity of Midazolam ( $\leq 3\text{mg}$ ) used in colonoscopies where the patient was **70 or older**.

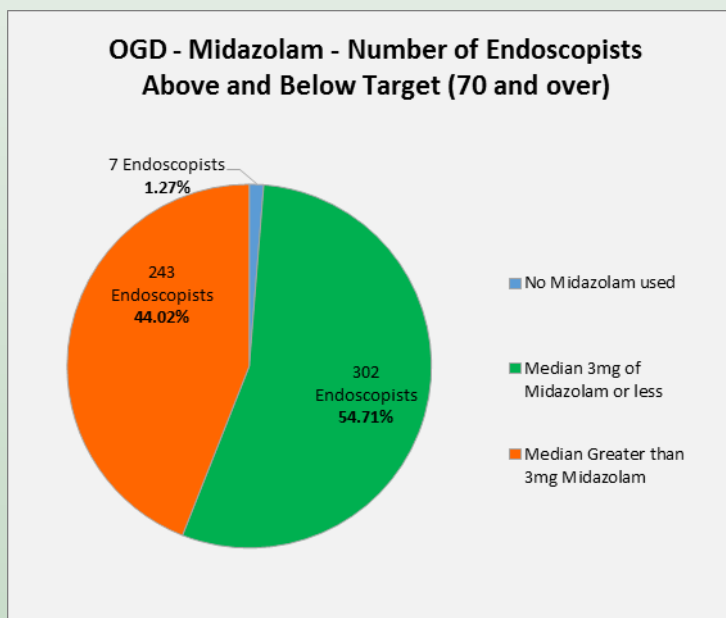
## Sedatives—Midazolam (Colonoscopy)



## Sedatives—Midazolam (OGD)



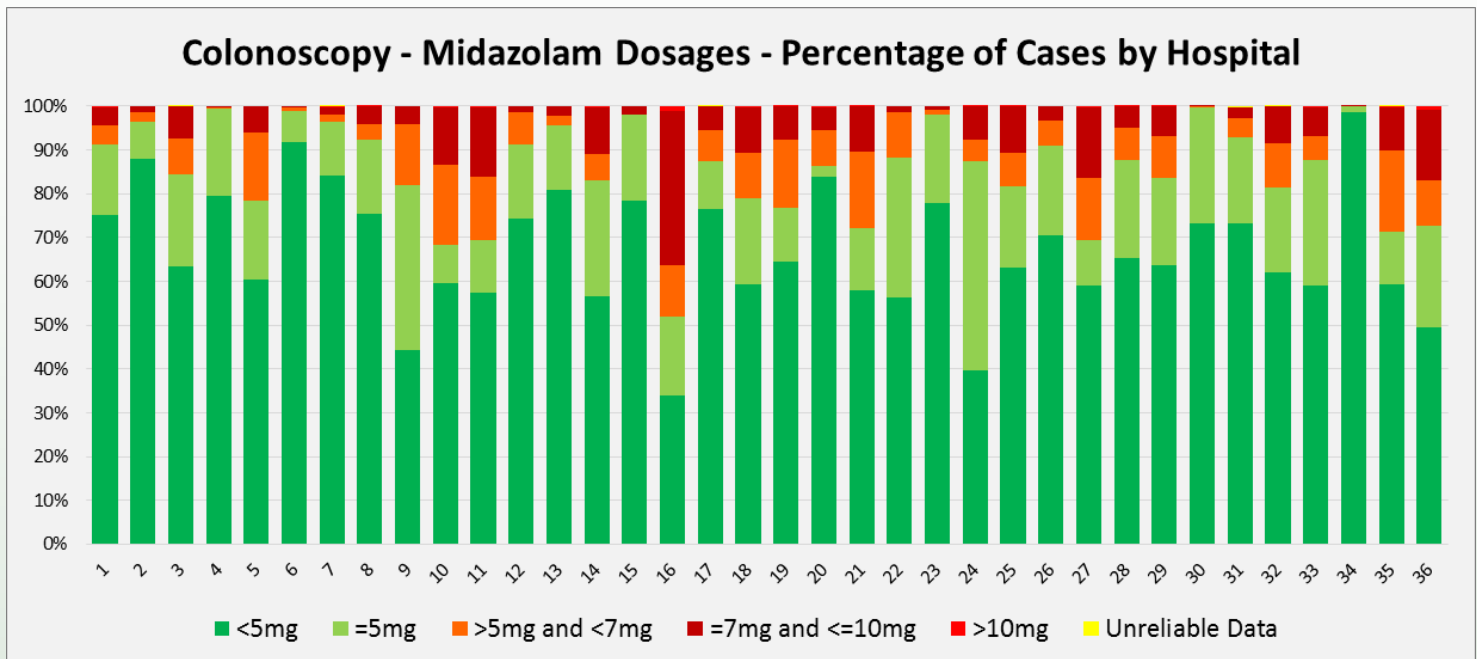
**Figure 34:** This pie chart shows the number and percentage of Endoscopists who are meeting the Midazolam target in OGDs where the patient was aged **under 70** (median dosage of  $\leq 5\text{mg}$ ) .



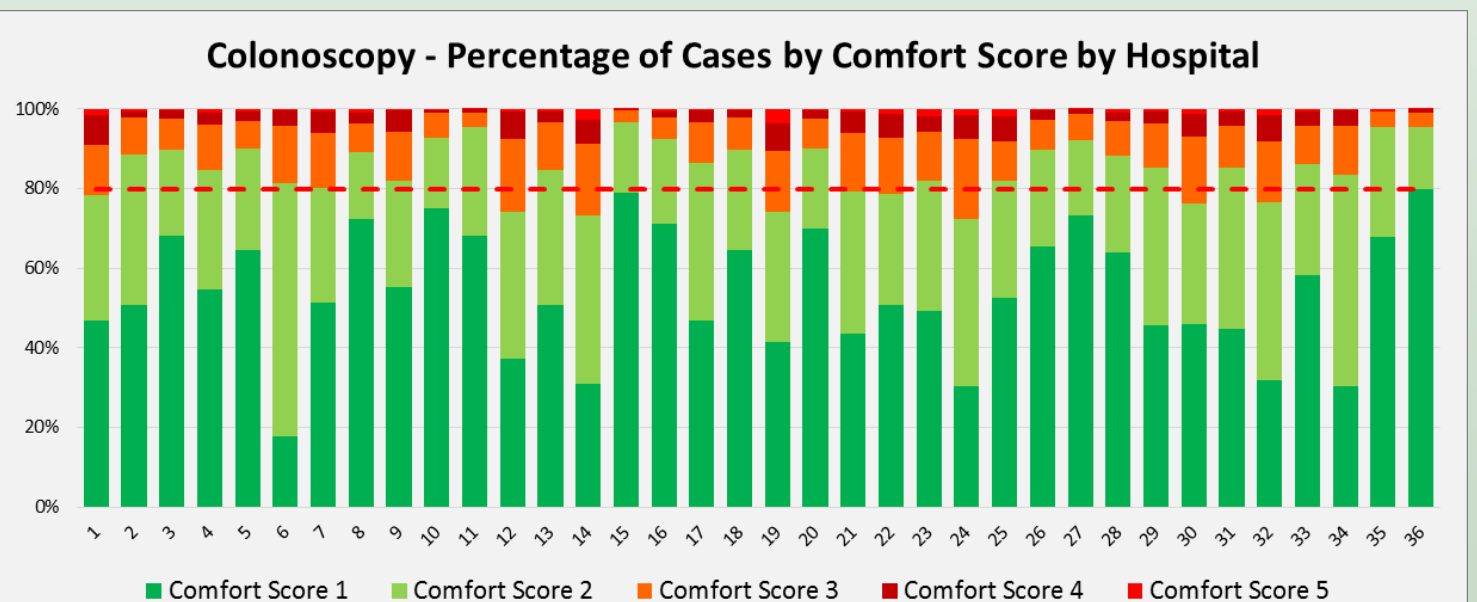
**Figure 35:** This pie chart shows the number and percentage of Endoscopists who are meeting Midazolam target used in OGDs where the patient was aged **70 or older** (median dosage of  $\leq 3\text{mg}$ ) .

## Sedatives and Comfort Score

When determining the quality of procedures, it may be useful to compare the amount of Midazolam used in colonoscopies and the Comfort Scores attained in each hospital. It would be expected that the higher the amount of Midazolam used would correlate with higher Comfort Scores.



**Figure 36:** The bar chart above shows the proportion of Colonoscopies by Midazolam dosage category for **both age categories combined**. E.g. 34% of all colonoscopies, regardless of age, in hospital 16 received a dosage of less than 5mg of Midazolam. **Please note:** As there is no target median for the combined age categories, green does not denote target being met in this instance.



**Figure 37:** The above chart presents similar information presented in Figure 13. The Comfort Score information in this instance is presented as a 100% bar chart to allow for easy comparisons to be made between the amount of Midazolam used (Fig 36) and Comfort Score in each hospital.

## Sedatives—Fentanyl

Table 5

Number and Percentage of Cases by Fentanyl Use and Dosage				
	OGD		Colonoscopy	
Dosage (mcg)	Number of Cases	% of Cases	Number of Cases	% of Cases
No Fentanyl Used	68182	79.7%	29549	34.2%
25 or 50	12094	14.1%	32061	37.1%
75 or 100	2625	2.9%	18744	21.7%
125 or 150	19	0.022%	92	0.11%
175 or 200	10	0.012%	22	0.025%
>200	16	0.019%	8	0.009%
Unreliable Data	2808	3.3%	5940	6.9%

Of those who do receive Fentanyl, the vast majority, 99.75%, receive the recommended Fentanyl dosage of  $\leq 100$  mcg.

“Unreliable Data” accounts for 13% of cases that have recorded Fentanyl use. Data is deemed unreliable if the dosage is recorded in the ERS as less than 1 (e.g. 0.25), or is not a multiple of 25 mcg. The majority of the cases presenting unreliable data are located in 3 hospitals.

## KPI Summary

The table below shows a summary of the percentage of Endoscopists in the country meeting the main Endoscopist centred KPIs, in both 2016/2017 and 2015/2016, to allow for comparison between years.

With the exception of Midazolam dosages administered, all other KPIs have seen an increase in the amount of Endoscopists meeting target over the course of the 2 training years.

As mentioned previously in the report, some of these increases could be due to increased data quality. It is expected that the 3rd cycle of analysis for the 2018/2019 year will be based on a more matured data set and should return a more stable set of statistics.

Table 6

		2016 - 2017	2015 - 2016
Colonoscopy	KPI Minimum Target	% of Endoscopists Meeting Target	% of Endoscopists Meeting Target
CI Rate	≥ 90%	63.50%	59%
Comfort Score	≥ 80%	64%	55%
Polyp Detection	≥ 20%	70%	55%
Midazolam Dosgae: Aged ≥70	Median: ≤ 3mg	53%	56%
Midazolam Dosgae: Aged <70	Median: ≤ 5mg	85%	90%
<b>OGD</b>			
Duo 2 Intubation Rate	≥ 95%	77.6%	61%
Retroflexion	≥ 95%	78%	N/A
Midazolam Dosgae Aged ≥70	Median: ≤ 3mg	55%	70%
Midazolam Dosgae Aged <70	Median: ≤ 5mg	90%	89%

There is an increase in the percentage of Endoscopists nationwide meeting 5 of the main KPI targets measured in last years report.

[www.rcpi.ie/quality-improvement-programmes/gastrointestinal-endoscopy/](http://www.rcpi.ie/quality-improvement-programmes/gastrointestinal-endoscopy/)

The background features a dark green field. In the lower half, there are two overlapping light green triangles. The first triangle is oriented with its base at the bottom left and its apex pointing towards the top right. The second triangle is oriented with its base at the bottom right and its apex pointing towards the top left. These two triangles overlap in the center of the lower half of the image.