Learning from the National GI Endoscopy Quality Improvement Programme

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QI Programme Working Group Chair

Dublin Castle 2018

Outline

- Background
- QI Process
- Programme Update and Achievements thus far
- Guidelines and Target Setting
- National Data Analysis
- Next Steps
  - Engagement
  - Further Data Analysis
  - Target Setting and Validation

Background to the QI Programmes

Need for Quality Improvement

➢ High Profile cancer misdiagnosis cases
   in 2007 & 2008

➢ No formal measures to reassure the public that Diagnostic
   Clinicians practice to the highest international standards

➢ No set national standards or benchmarks for key aspects of
   diagnostic service

Background to the QI Programmes

Need for Quality Improvement in Endoscopy

➢ > 200,000 endoscopy procedures performed annually in Ireland

➢ Wide variation in quality of endoscopy currently delivered

➢ 2.5-7.5% of colon cancer have had "normal" colonoscopy within 3 years

➢ >7% Upper GI cancer have had "normal" OGD within preceding year

➢ No information on national standards or benchmarks for key aspects of Endoscopic service

The National QI Programmes

– **National QI Programme in Histopathology** initiated January 2009 by the Faculty of Pathology, RCPI

January 2009 – 2018
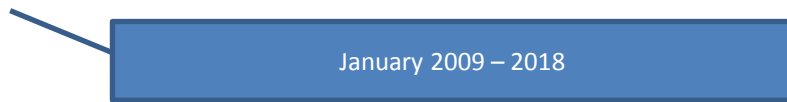
– **National QI Programme in Radiology** initiated January 2010 by the Faculty of Radiologists, RCSI

January 2010 –2018

– **National QI Programme in GI Endoscopy** initiated April 2011 by the Conjoint board of RCPI & RCSI
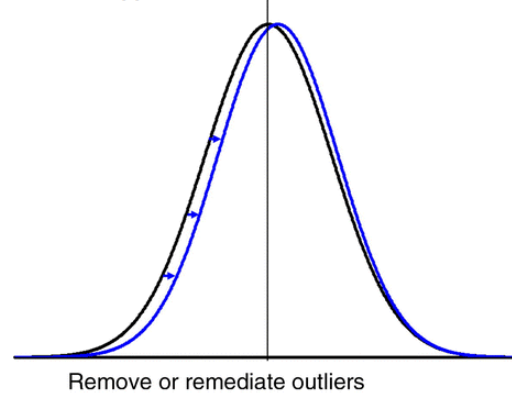
April 2011 –2018

– Programmes sponsored by **National Cancer Control Programme(NCCP) & National Cancer Screening Service(NCSS)**
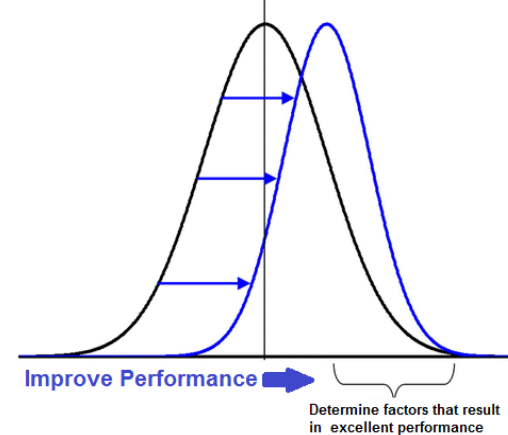
What are the Programmes?

- *Frameworks within each department, which routinely review performance and drive improvement, in key quality areas against the national performance and intelligent targets.*

- Operates within existing clinical governance structures

- Enhances patient care with consistent, accurate and complete diagnoses and reporting

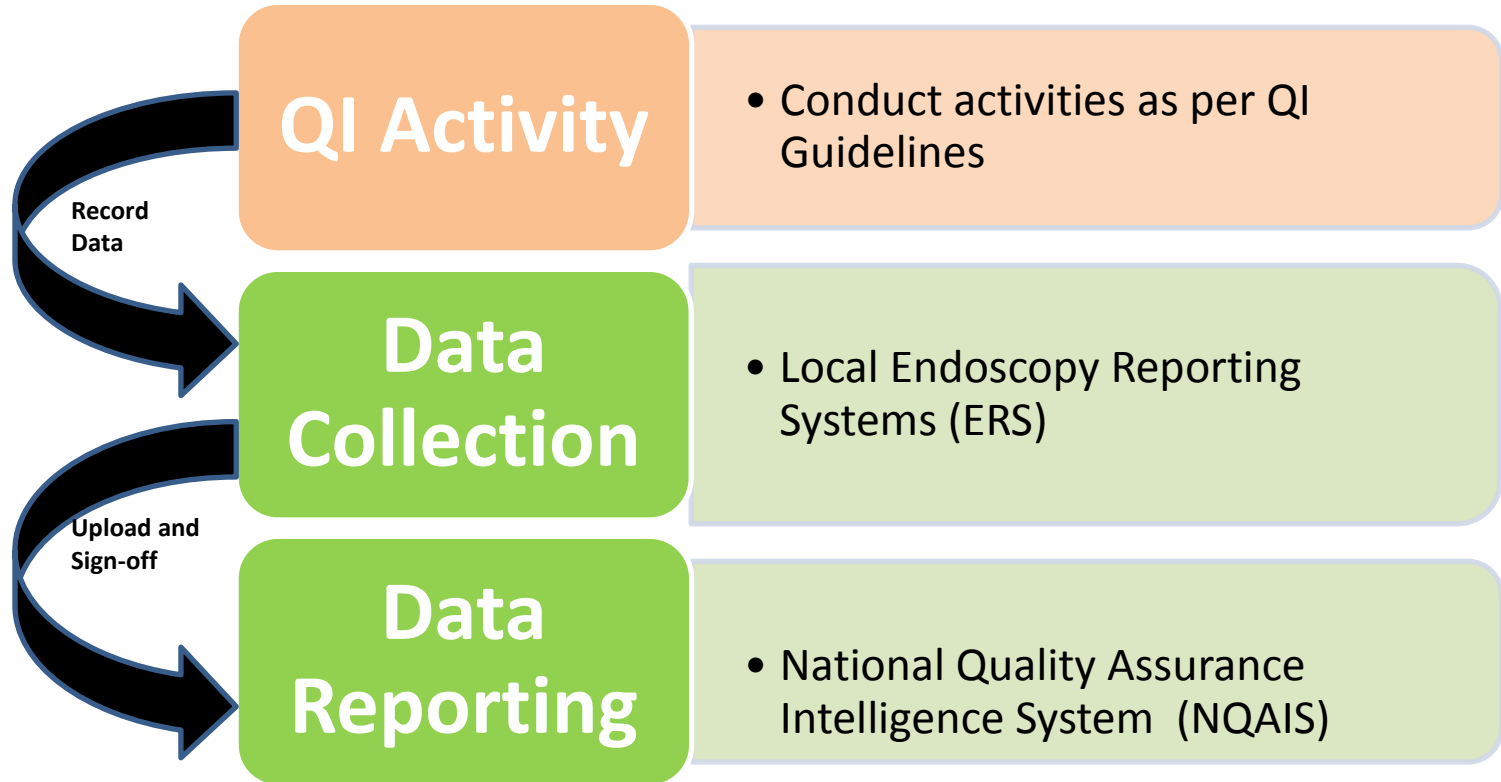- Clinician leadership

- Focus is raising standards overal

Traditional Approach to QI

Remove or remediate outliers

Modern Approach to QI

Improve Performance

Determine factors that result in excellent performance

Key Elements of the programme

QI Activity
- Conduct activities as per QI Guidelines

Record Data

Data Collection
- Local Endoscopy Reporting Systems (ERS)

Upload and Sign-off

Data Reporting
- National Quality Assurance Intelligence System (NQAIS)

QA Guidelines

➢ **Key Quality Data (KQD)**

  o refers to the information that is to be captured for the QI programme. These data are captured to facilitate future audit and review.

➢ **Quality Indicators (QI)**

  o refers to an outcome for which there is a sufficient evidence base to recommend a standard e.g. caecal intubation rate

➢ **Recommendations**

  o refers to recommendations that should be implemented in each endoscopy unit to fully support quality improvement activities.

  o Where quality indicators are absent, due to lack of sufficient evidence with which to base a standard upon, a key recommendation will usually be made.

  o These recommendations are wholly endorsed by the Conjoint Board of RCPI and RCSI.

QI GI Endoscopy Guidelines
Key Quality Data

Workload

1. No. of each procedures

Gastroscopy

1. Successful Intubations
2. Sedation and Reversal Agents
3. Retroflexion
4. Duodenal Second Part Intubations
5. Repeat Endoscopy

Colonoscopy

1. Sedation and Reversal Agents
2. Comfort Level
3. Tattooing
4. Completion Rates (caecal intubation)
5. Polyp Detection Rates
6. Polyp Recovery
7. Bowel Preparation
8. Diagnostic Colo-rectal Biopsies for Persistent Diarrhoea
9. Colonic and Post-polypectomy Perforation
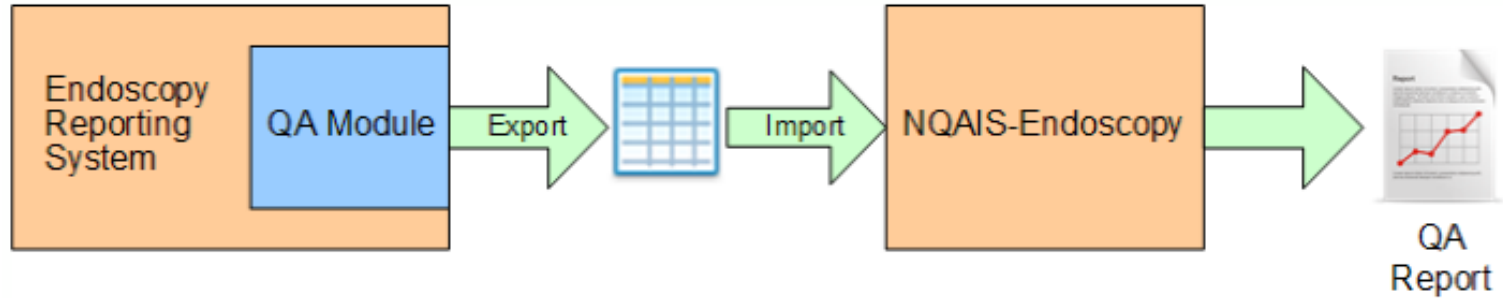10. Post-polypectomy Bleeding

Endoscopy Reporting Systems (ERS)

- Endorad
- Unisoft
- Adams-Fujinon
- Endosoft
- Medilogik
- Endobase
- Fujinon - Synapse

Data Collection Process

1) Run **Extract** from ERS (3 Months)

2) Upload **Extract** to NQAIS

3) Create **Report** based on **extract** (3 months)

4) Sign-off **Extract**
   (Optional - Create **Report** based on **signed off data)**

Data Collection Process Overview
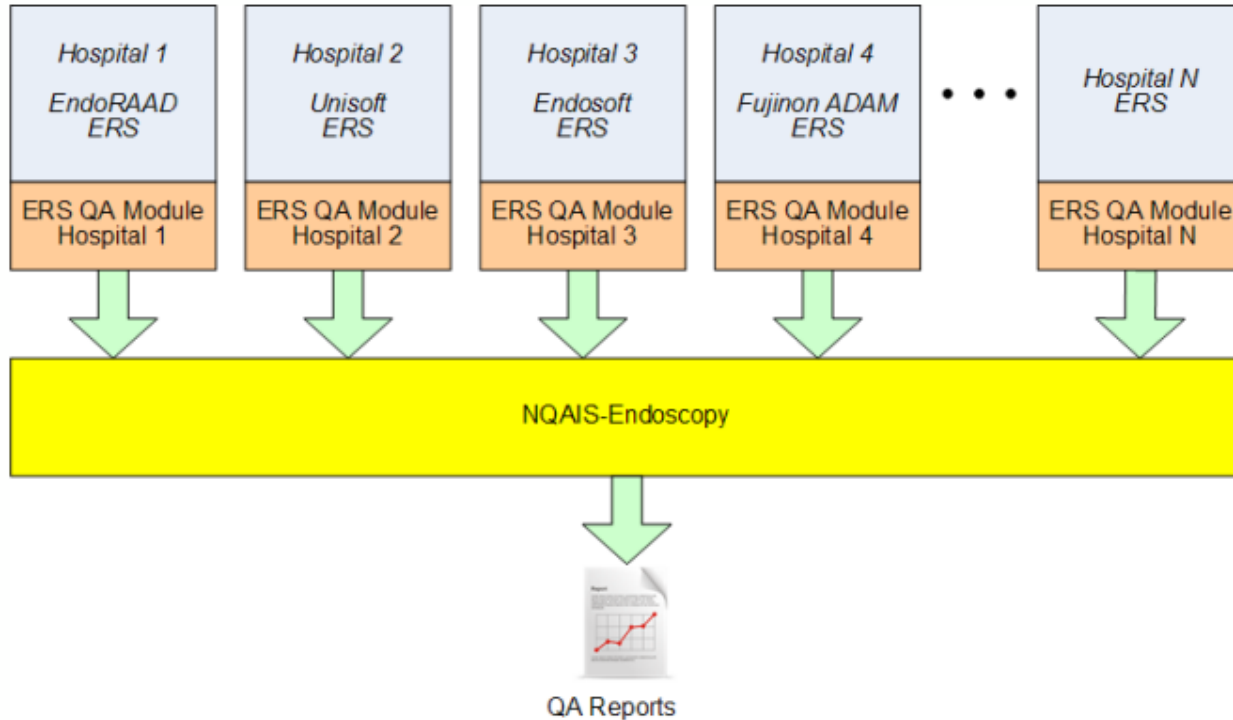
QI Reports

Local reports

- Clinical leads have the facility to access and analyse their own local data at all times in order to facilitate local review and quality improvement
- Endoscopy - Individual consultants are able to view their own reports

National reports

- Centrally generated reports are made available to participants, the respective Faculties/Conjoint Board and the Programme Steering Committee
  - National data with all hospitals summarised together and **hospital ID's anonymised**

NQAIS

National Quality Assurance Intelligence System

Central Repository of Data for Reporting

National Quality Assurance Intelligence System - Endoscopy

ABC: Test hospital

Key Quality Data   Generated: 19-Jun-2013

Snapshot 01 Jan 2012 - 31 Mar 2012   Trend 01 Apr 2011 - 31 Mar 2012   Interval Month   Comparison ALL

Colonoscopy

(# units)	Median	Snapshot	Trend	% Lvl 1 (No.)	% Lvl 2 (No.)	% Lvl 3 (No.)	% Lvl 4 (No.)	% Lvl 5 (No.)
(3) Comfort Level	2.0			0.00% (0)	82.95% (107)	17.05% (22)	0.00% (0)	0.00% (0)

(# units)	%	Snapshot	Trend	No.	No. with suspected malignant polyps			
(3) Tattooing	27.78			5	18			

(# units)	%	Snapshot	Trend	No.				
(3) Caecal Intubation Rate	93.02			120				
(3) Polyp Detection Rates	93.8			121				

(# units)	%	Snapshot	Trend	rate min	rate max			
(3) Polyp Recovery	83.96			50.0	100.0			

(# units)	%	Snapshot	Trend	% Score 1 (No.)	% Score 2 (No.)	% Score 3 (No.)	% Score 4 (No.)	
(3) Bowel Preparation Quality	89.92			37.98% (49)	51.94% (67)	9.30% (12)	0.78% (1)	

Guidelines and Target Setting

Phase 1		
Key Quality Data	**Target/Recommendation**	**Reason/Evidence for Target**
1. Volume of OGD procedures, Flexible Sigmoidoscopy and Colonoscopy procedures performed by each Endoscopist	**RECOMMENDATION:** Performing more procedures is a possible means to increase proficiency in meeting KQD targets	**International Standards**
Upper GI Endoscopy		
2. Percentage of successful intubations per endoscopist	**95%**	**Working Group Opinion**
3./4. Median sedative dosage, per endoscopist, based upon sedative type and patient cohort (e.g. patients under 70 years of age, and patients 70 years of age and older) 5. Number of times each reversal agent is used	Median quantity of: Midazolam • =<5mg for below 70yrs • =<3mg for above 70yrs Fentanyl =<100mcg Pethidine =< 50mg Reversal Agent – No Target, review use **General Anaesthetic** e.g. Propofol - record use, irrespective of dose	**International Standards** and **Working Group Opinion**
6. Percentage of cases in which Duodenal 2nd part intubation was achieved per endoscopist	**95%**	**International Standards**
7. Percentage of repeat endoscopies requests in cases where gastric ulcer(s) is present. Repeat endoscopy to be completed within 12 weeks.	**RECOMMENDATION:** **80%**	**International Standards** and **Working Group Opinion**

Guidelines and Target Setting

| Phase 1		
Colonoscopy		
Key Quality Data	**Target/Recommendation**	**Reason/Evidence for Target**
8./9. Median sedative dosage, per endoscopist, based upon sedative type and patient cohort (e.g. patients under 70 years of age, and patients 70 years of age and older) 10. Number of times each reversal agent is used	Median quantity of: **Midazolam** • =<5mg for below 70yrs • =<3mg for above 70yrs **Fentanyl** =<100mcg **Pethidine** =< 50mg Reversal Agent – No Target, review use General Anaesthetic e.g. Propofol - record use, irrespective of dose	**International Standards** and **Working Group Opinion**
11. Percentage of cases where the comfort level score is 1 or 2 per endoscopist	**80%** (of colonoscopies with a score of 1 or 2)	**Working Group Opinion and National Data- NQAIS**
12. Caecal Intubation Rate	**90%**	**International Standards**
13. Percentage of colonoscopies where polyps are detected	**20%**	**Working Group Opinion and National Data- NQAIS**
14. Percentage of cases where bowel preparation is classified as excellent or adequate	**90%** (of colonoscopies recorded as excellent or adequate)	**International Standards**
15. Percentage of cases where mucosal biopsy was taken where persistent diarrhoea was present, per endoscopist	**95%**	**Working group Opinion and International Standards**

Current Programme Status

- 40 Hospitals now live on NQAIS-Endoscopy
  - 33/37 Public Hospitals
  - 7 Private Hospitals

- Nearing 100% roll out to public hospitals

- Hospital Group Clinical Leads have been appointed and now sit on QI Working Group

- Working to upgrade NQAIS-Endoscopy based on user feedback

- Endoscopy QI Workshop – December 2018
  - 3rd National Data Report to be launched on the day

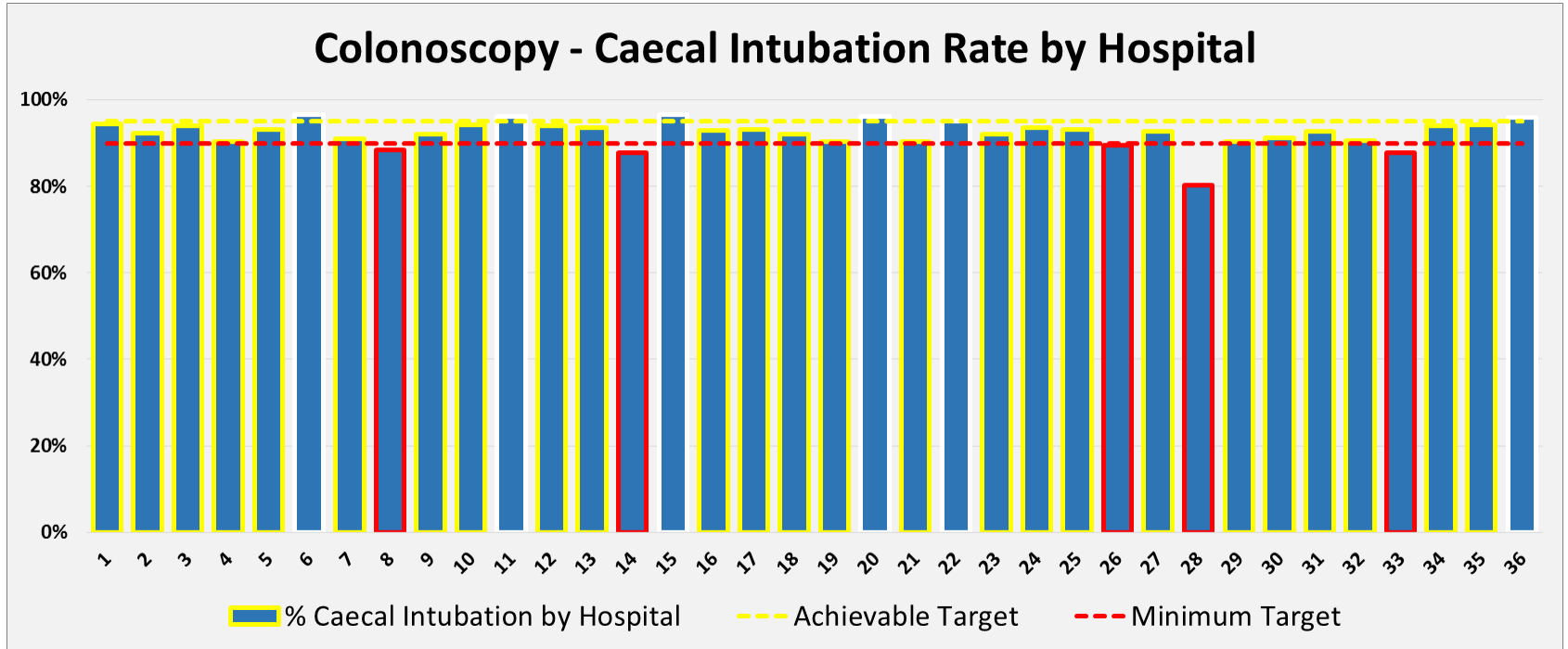| Live (40)	Preparing to Sign-off (1)	Units with ERS & QA Extract (2)	Units with ERS - QA Extract in progress (3)	Not Started (7)
27 EndoRAAD (ER), 11 Unisoft (US), 1 Fujinon and 1 Medilogik	NQAIS Go Live Scheduled	Awaiting confirmation of NQAIS training/Go Live date.	EQI and hospital work required to make ERS NQAIS compatible	Public - No ERS – Delayed. Privates – No ERS. Team follow-up
• Bantry General (US) • Beacon Hospital (Medilogik) • Beaumont (ER) • Blackrock Clinic (ER) • Bon Secours Dublin (ER) • Bon Secours Galway (ER) • Bons Secours Tralee (ER) • Cavan General (ER) • Connolly CHB (ER) • Cork University Hospital (US) • Galway Clinic (ER) • Galway University (ER) • Kerry General Hospital (US) • Letterkenny General (ER) • Louth County (ER) • Mallow General (US) • Mater Misericordiae (ER) • Mater Private, Dublin (ER) • Mercy University (ER) • Monaghan (ER) • MRH Tullamore (ER) • Our Lady of Lourdes (ER) • Roscommon County (ER) • Sligo General Hospital (US) • South Infirmary – Victoria (US) • South Tipp General Hospital (ER) • St. James (Fujinon) • St. John's, Limerick (US) • St. Luke's General (ER) • St. Michael's (ER) • St. Vincent's University (ER) • Tallaght/AMNCH (US) • UL Ennis (US) • UL Nenagh Hospital (US) • University Hospital Limerick (US) • Waterford Regional (ER) • Wexford General (ER) • OLH, Navan (ER) • Naas General (ER) • MRH Mullingar (ER)	• Hermitage Clinic (US) • St. Columcille's (ER) • Portlaoise (ER)	• Whitfield – (EndoBASE)	• Mayo General (EndoSoft – Upgrading to EndoVault) • Bon Secours Cork (Fujinon) • Portiuncula (ER)	Children's Hospitals: • Temple Street • Children's Hospital Tallaght • Crumlin Other Privates: • Kingsbridge • Mater Private, Cork • St Vincent's Private *Not participating* • *St. Francis* (no ERS plan) • *Clane General* • *Bon Secours Limerick (formerly Barrington's)*

Current Programme Status
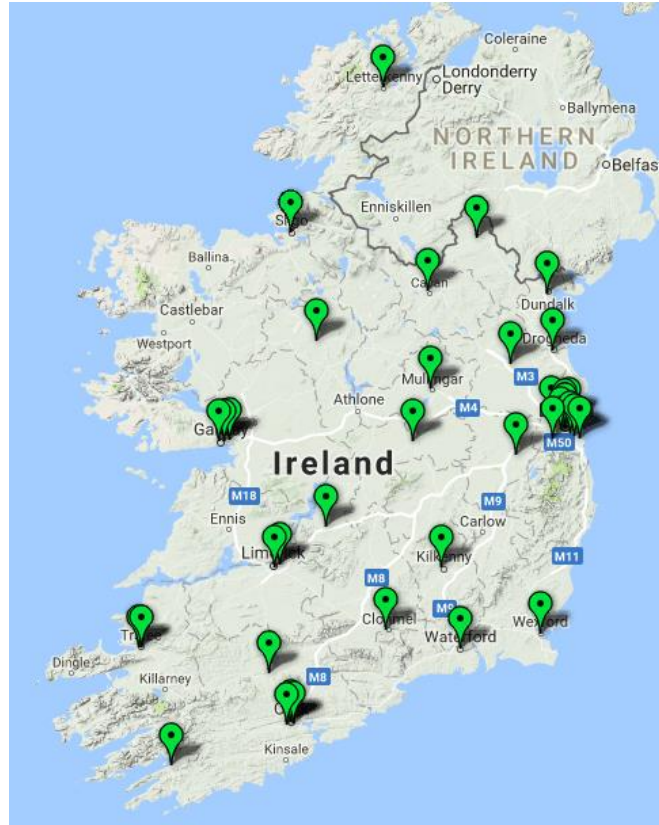
2016/2017 National Data Report

- 36 Hospitals submitted data for the full training year

- 186,906 procedures covered in the report
  - 86416 Colonoscopies
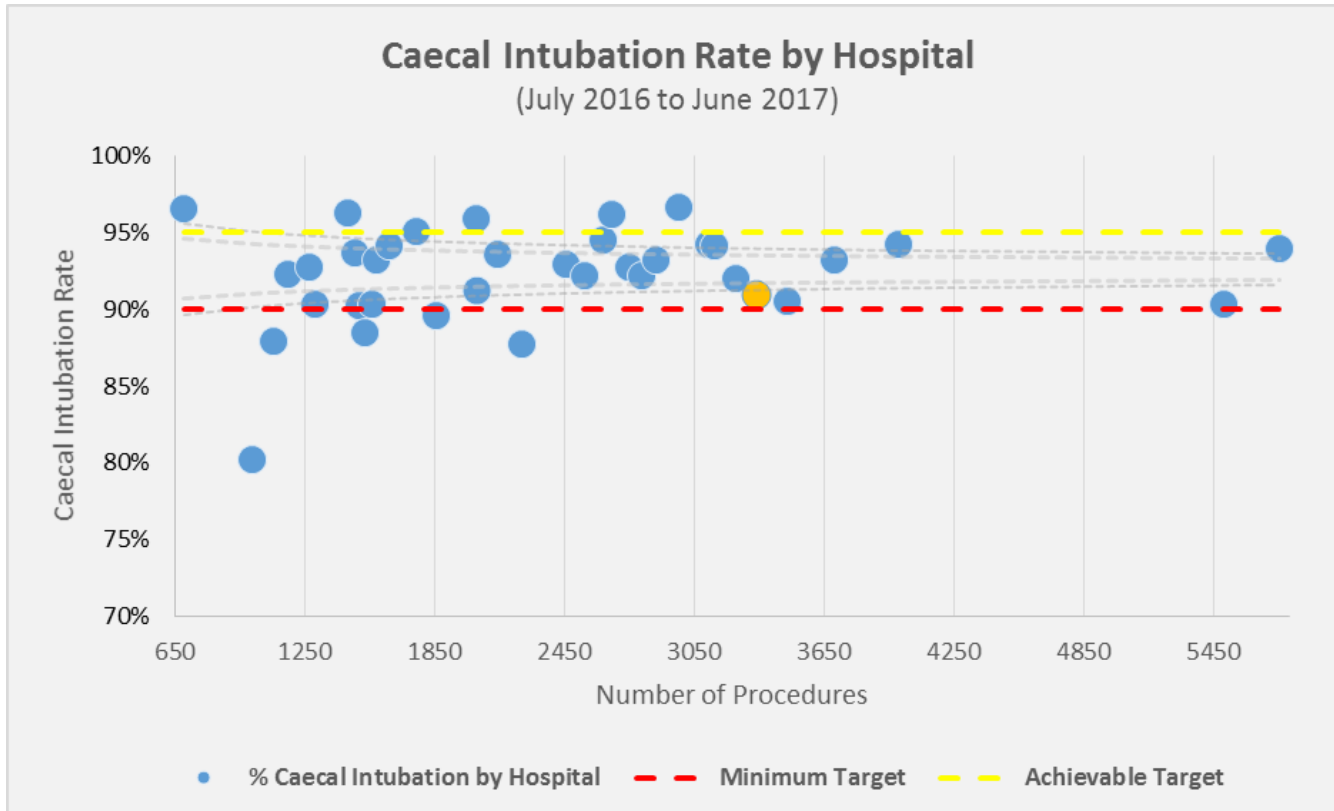 - 85579 OGDs
  - 14911 FSIGs

2016/2017 National Data Analysis

OGD - National Duodenal 2nd Part Intubation Rate per month - Year on Year

2016/2017 National Data Analysis
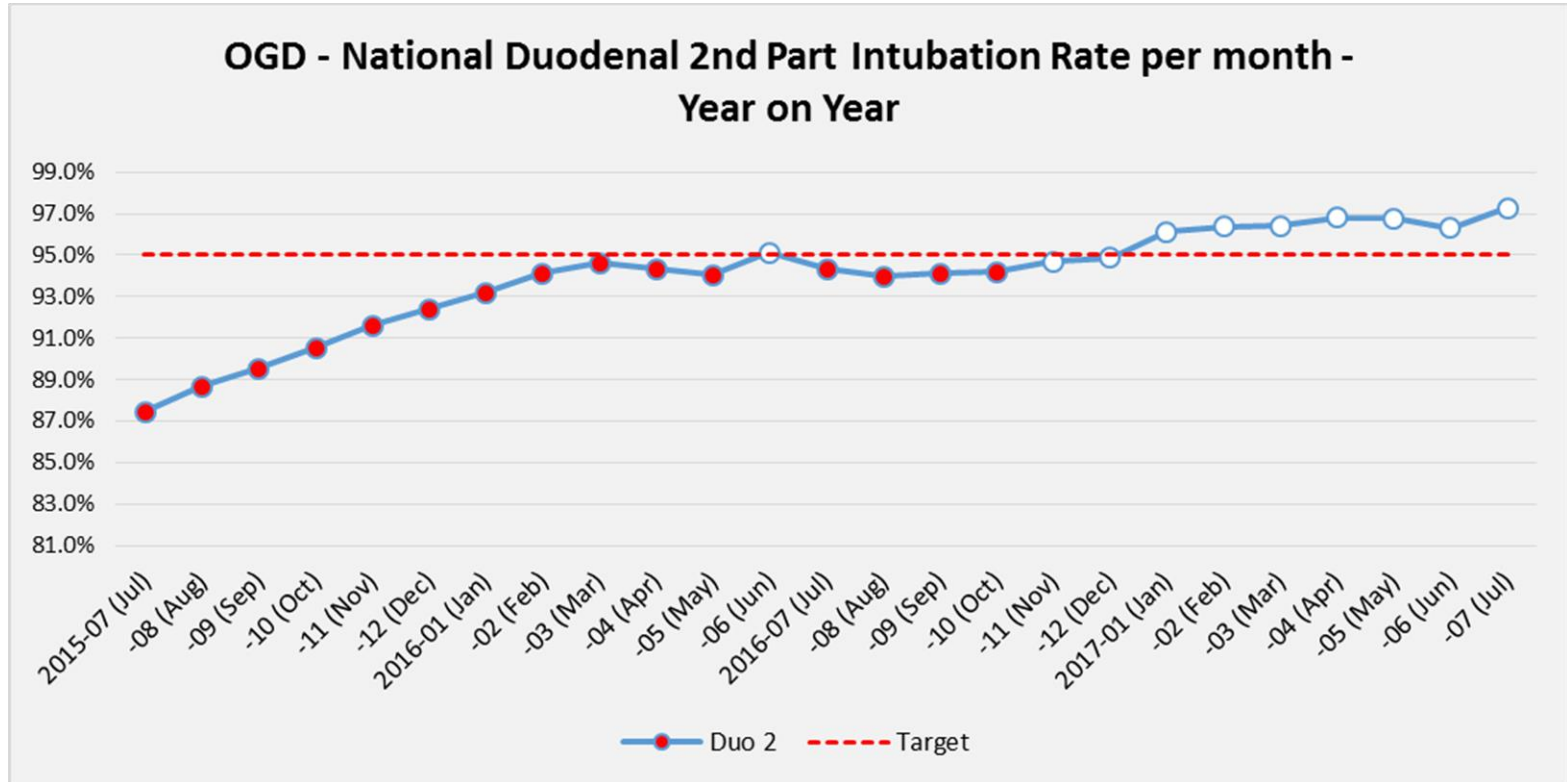
Colonoscopy - Caecal Intubation Rate by Hospital
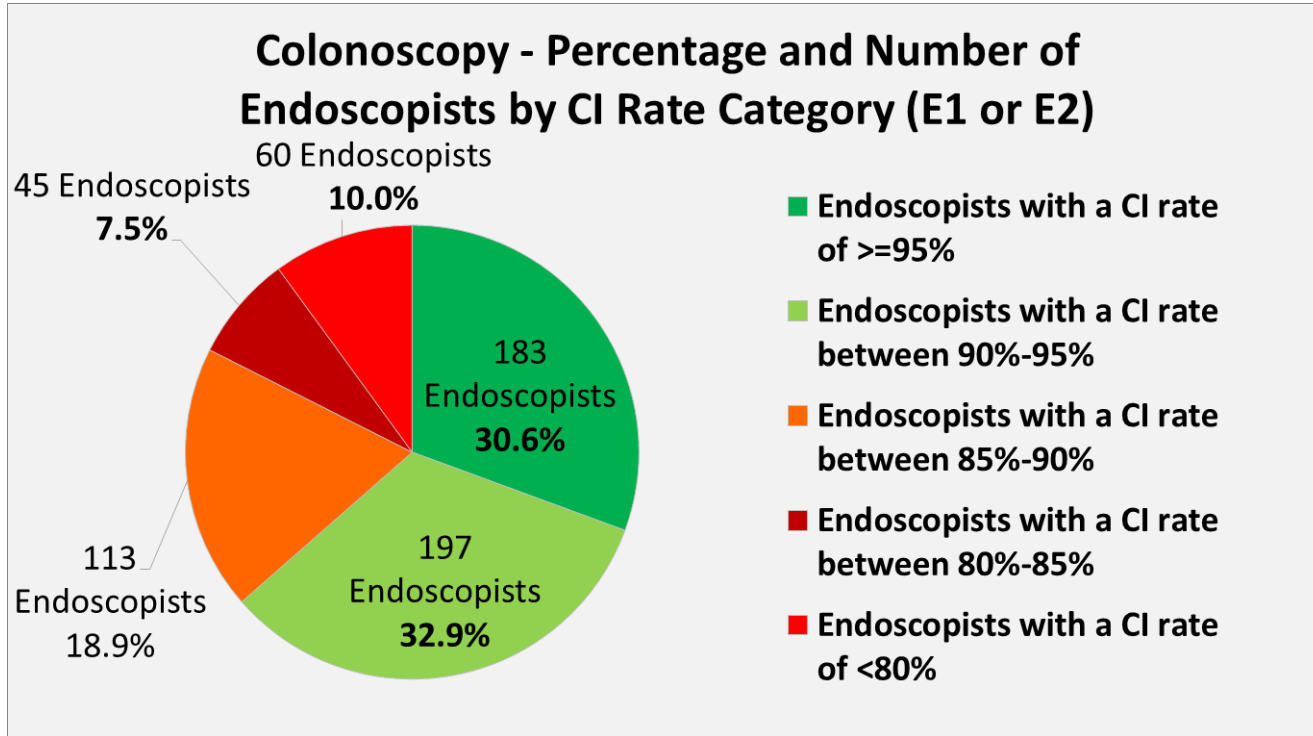
National Caecal Intubation Rate: **92.6%**

Funnel Plots – Caecal Intubation - National

2016/2017 National Data Analysis

Colonoscopy - Percentage and Number of Endoscopists by CI Rate Category (E1 or E2)

- 60 Endoscopists 10.0%
- 45 Endoscopists 7.5%
- 113 Endoscopists 18.9%
- 183 Endoscopists 30.6%
- 197 Endoscopists 32.9%

- Endoscopists with a CI rate of >=95%
- Endoscopists with a CI rate between 90%-95%
- Endoscopists with a CI rate between 85%-90%
- Endoscopists with a CI rate between 80%-85%
- Endoscopists with a CI rate of <80%

Funnel Plots – Caecal Intubation – Single Hospital

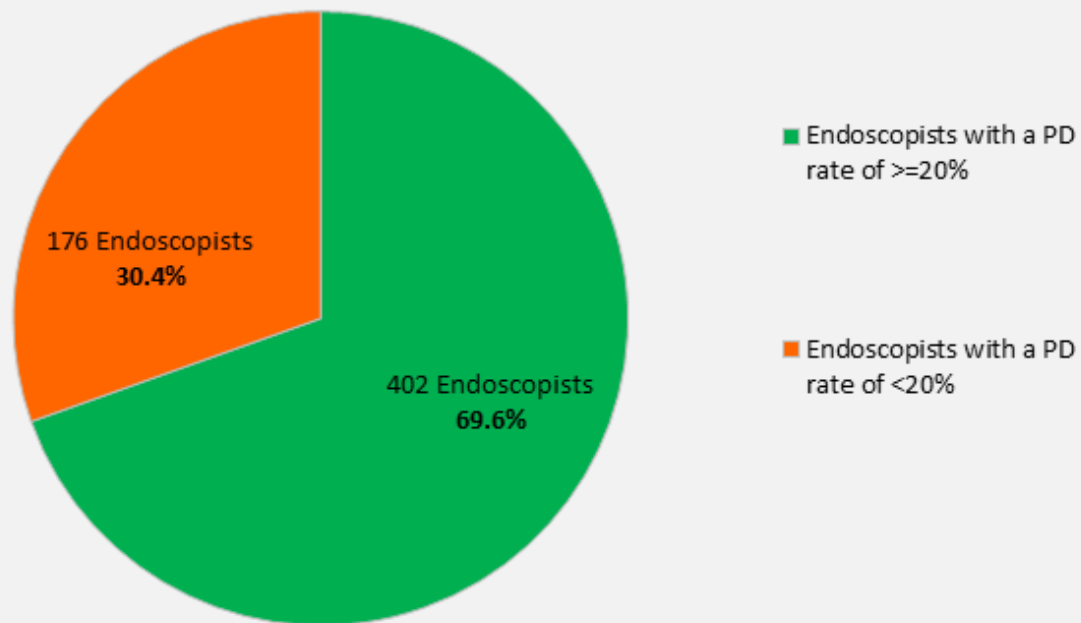Beaumont Hospital - Endoscopist Caecal Intubation Rate
(July 2016 to June 2017)
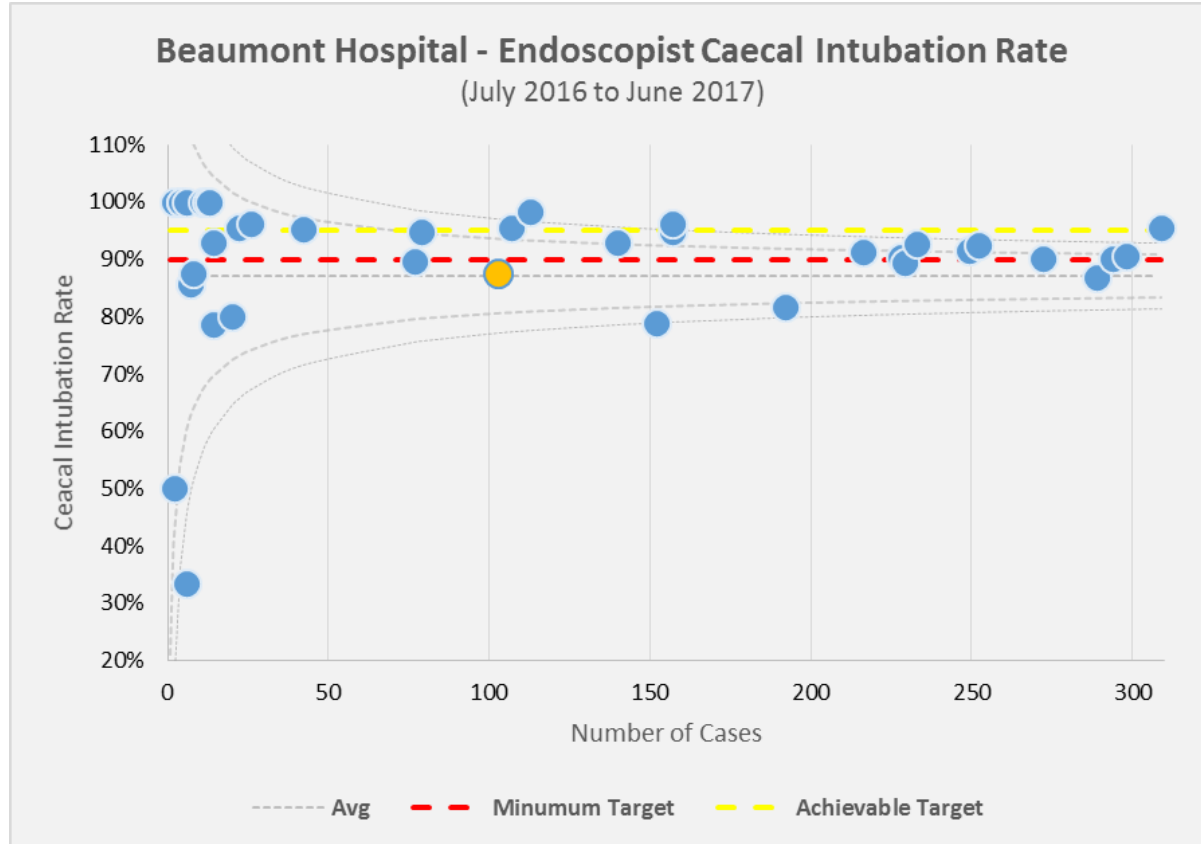
Polyp Detection Rate by Hospital (July 2016 - 7 July 2017)
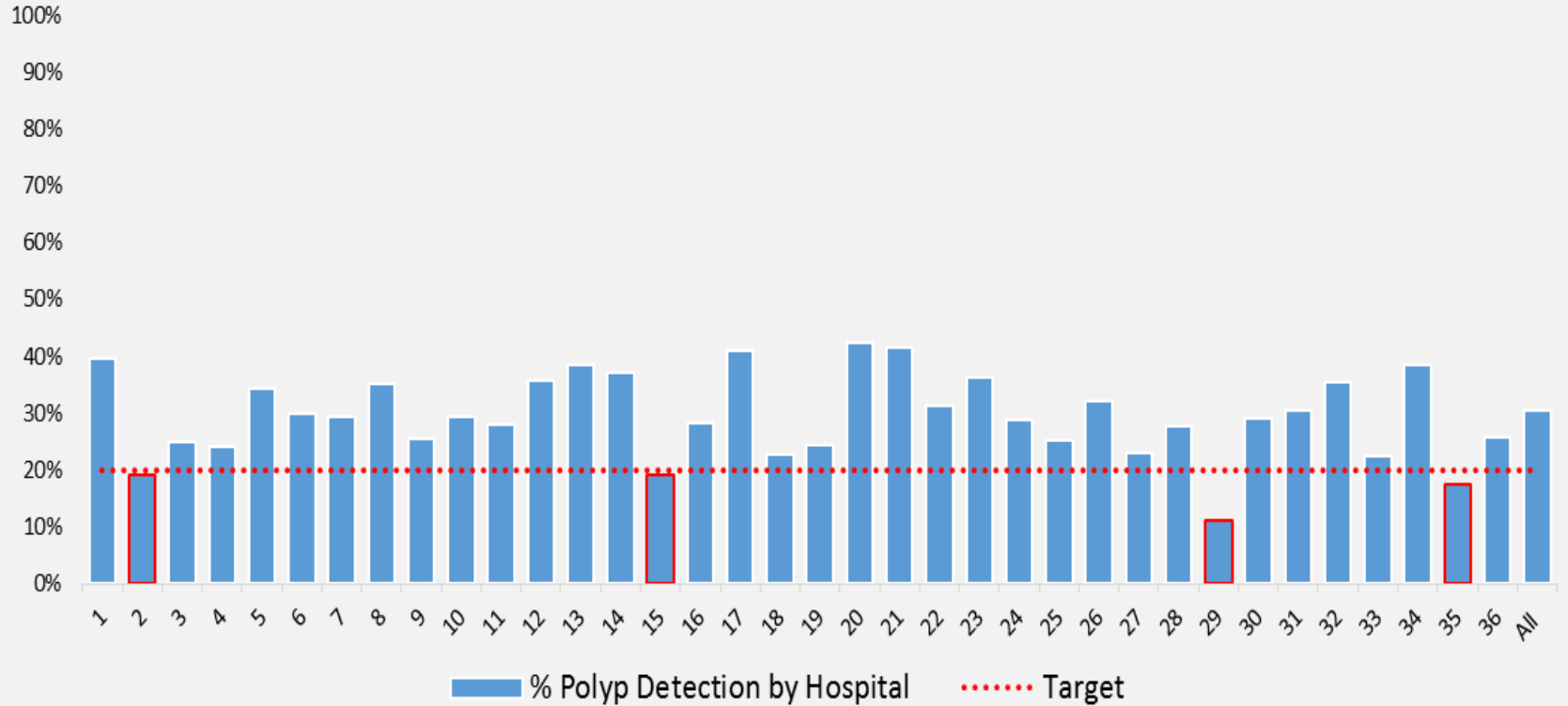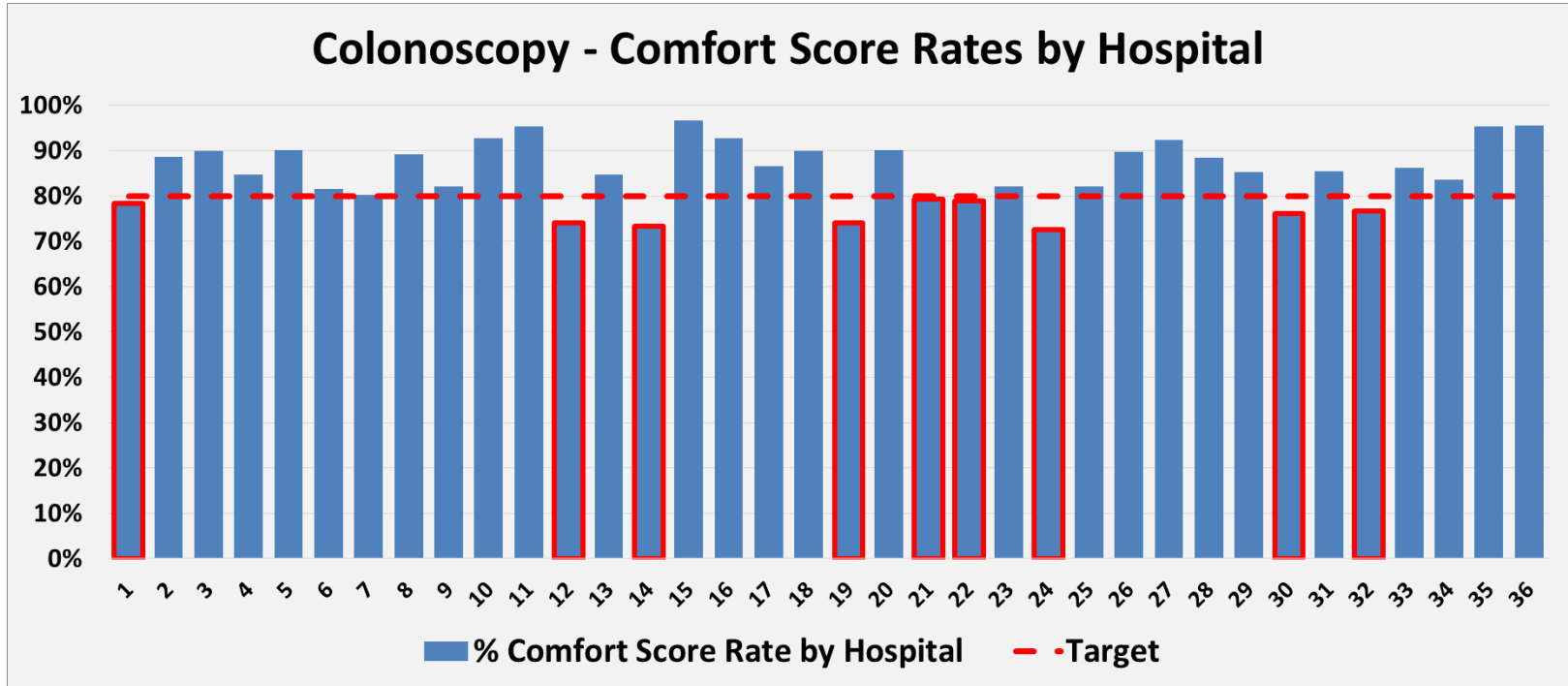
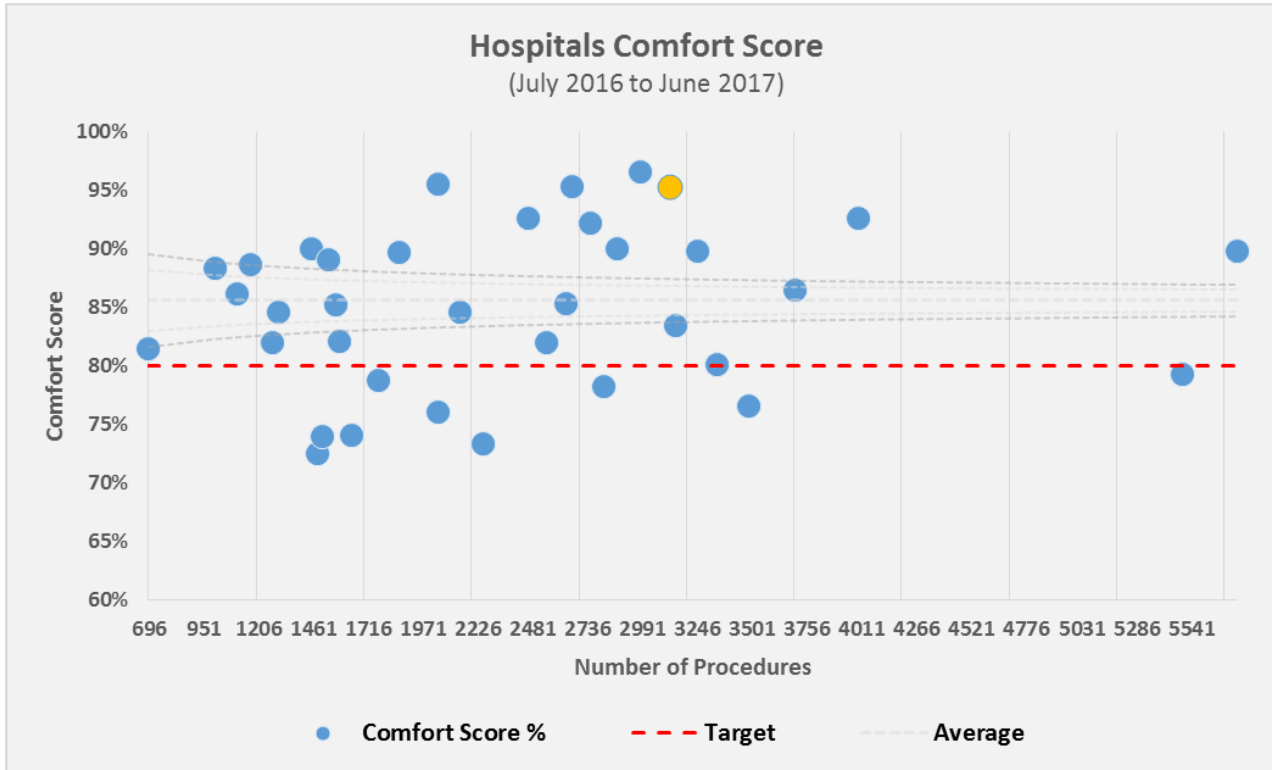## Colonoscopy - Percentage and Number of Endoscopists by Polyp Detection Rate Category
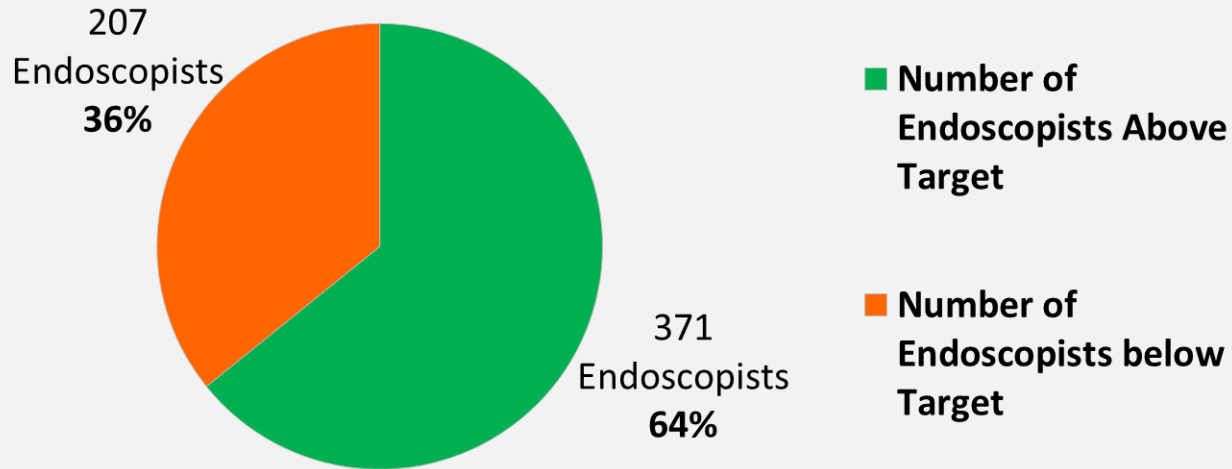
2016/2017 National Data Analysis

Colonoscopy - Comfort Score Rates by Hospital

National Comfort Score Rate: **85%**

Funnel Plots – Comfort Score - National

Hospitals Comfort Score
(July 2016 to June 2017)

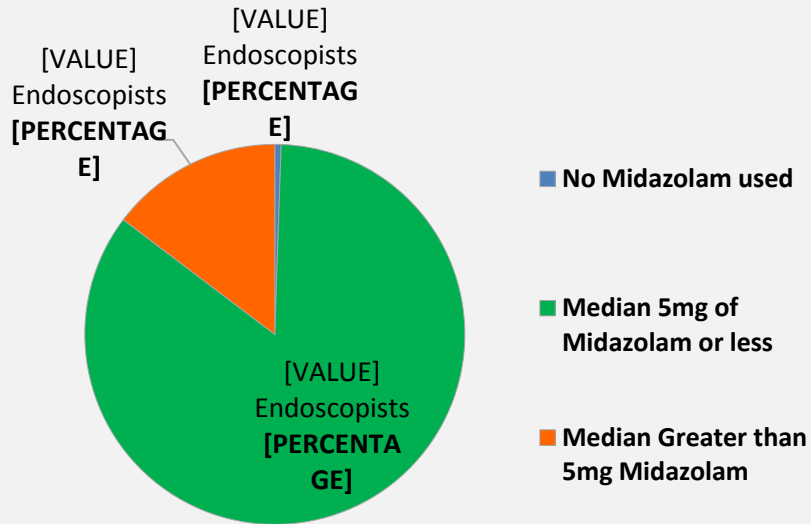# 2016/2017 National Data Analysis

2016/2017 National Data Analysis

Colonoscopy - Midazolam Dosages in Patients 70 and Older-
Percentage of Cases by Hospital
Endoscopists Target Median: 3mg
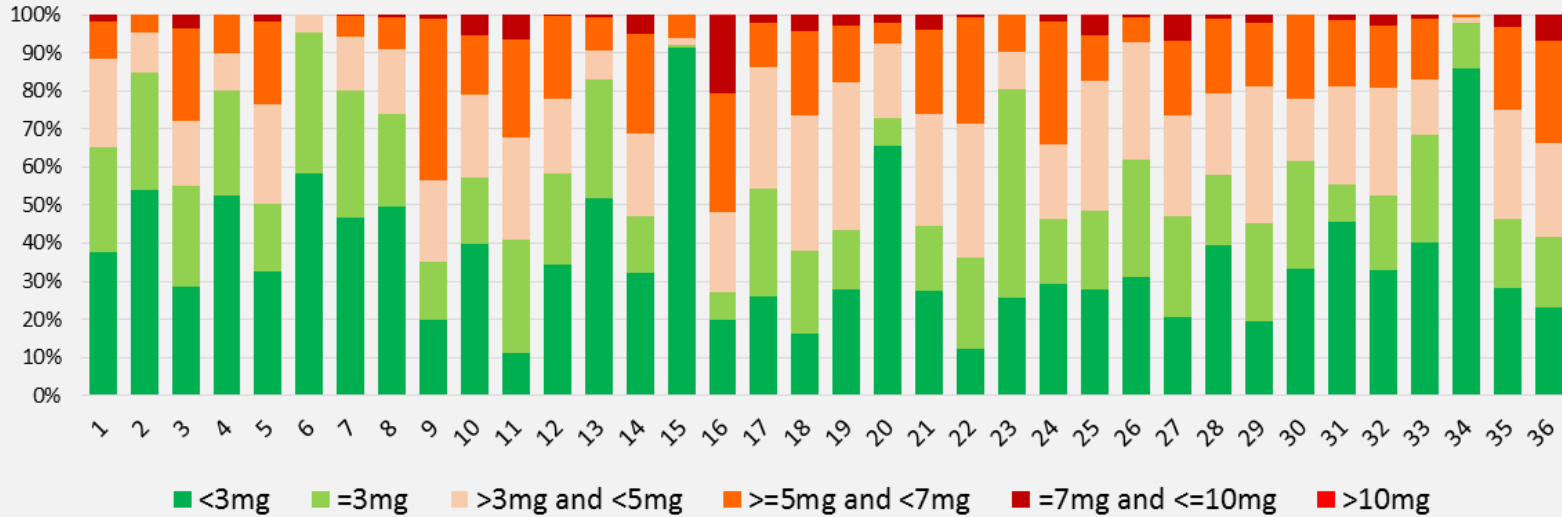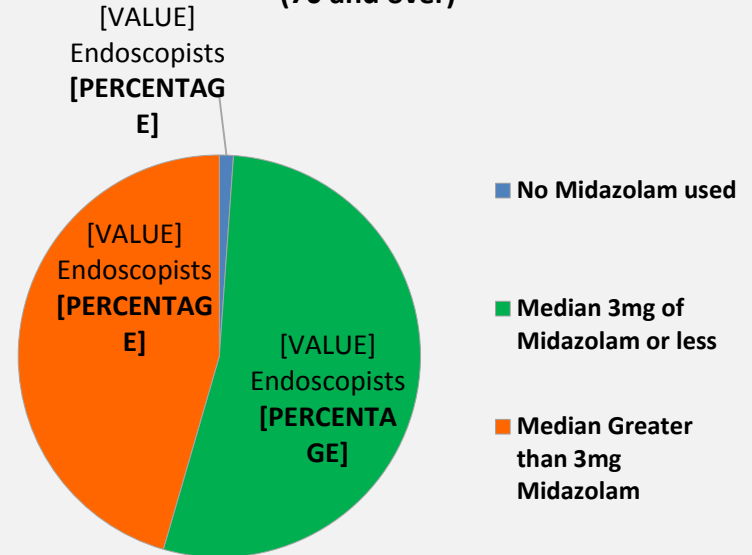
2016/2017 National Data Analysis

Colonoscopy - Midazolam - Number of Endoscopists above and below target (under 70s)

- No Midazolam used
- Median 5mg of Midazolam or less
- Median Greater than 5mg Midazolam

Colonoscopy - Midazolam - Number of Endoscopists above and below target (70 and over)

- No Midazolam used
- Median 3mg of Midazolam or less
- Median Greater than 3mg Midazolam

2016/2017 National Data Analysis

- Data Quality is at a high level and increasing for those KQIs which may have been subject to data entry mistakes in the past

- Endoscopists should continue to monitor their own statistics

- Consistently unrealistic data reporting can also be a flag to review local data (e.g. 100% CI Rate consistently with high volume of procedures)

- Full National Data Report is available from the Endoscopy QI Programme website: https://www.rcpi.ie/quality-improvement-programmes/gastrointestinal-endoscopy/

Next Steps

- Move from "roll out" to "embedding phase"

  – Focus on increasing NQAIS usage & understanding
  – Making NQAIS more user friendly & intuitive
  – Follow up training with all units
  – NQAIS training videos are being produced

- Last data upload: 16/07/2018

- Publication of 3rd annual National Data report in December 2018

Benefits

- Improved patient safety, reduced risk, enhanced patient care

- Public confidence increases - greater diagnostic accuracy

- Standardised quality assurance system - raise standards nationally

- Large scale "look backs", less need - method available if required

- Identification & sharing of good practice

- Identification of areas requiring development

- Better efficiency of services (hospital resources, clinician time, patient time) with less duplication of work

- Improved communication between institutions

- Development of national targets for QI activities

- Contributor to quality culture and continuous improvement

Challenges

- Implementing change in a busy health system
- Legal
- Information Governance / Oversight
- Integration and Prioritisation of QI activities into day to day work in busy environments
- Maintain Momentum & embedding ownership of programmes in sites & nationally
- Limited resources
- Poor data quality
- Poor compliance with uploads