

## National Endoscopy Database Project

### KPI Definitions by procedure type

The following tables outline the projected key performance indicators (KPIs) that will be generated from the NED and presented to users. KPIs will be provided for the individual endoscopist, unit or trust as appropriate. The selected KPIs and their definitions are based on current BSG/JAG/ACPGBI recommendations as well as including KPIs already required for the JETS eportfolio and GRS audits.

It is highly desirable that data uploads from local ERS allow all KPIs to be generated.

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
<b>Colonoscopy</b>							
Procedure count  Core KPI	COLProcNum	Number of diagnostic or therapeutic colonoscopies performed by an endoscopist or site in a stated period of time	{procedureName}=[COLON]  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]	Integer	GRS  JETS  NED	None set	Provide number of therapies as a sub-list.  Attribute to Endoscopist 1, Trainee (if assisted or was observed,  Endoscopist 2 if assisted or was observed)
Caecal intubation	COLCIR	Percentage of colonoscopies	Numerator:	Percentage	JETS	Minimum standard	Note- anastomosis counts if most

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
rate  Core KPI		where caecum or anastomosis reached by a stated endoscopist or at a stated site in a stated period	<p>{procedureName}=[COLON], {ExtentTypeEnum}=[Caecum] or [terminal ileum] or [anastomosis] or [ileo-colon anastomosis] or [neo-terminal ileum]</p> <p>Denominator: {procedureName}=[COLON]</p> <p>Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatatype}= [x]to[y]</p>		NED	90%, aspirational target 95%	<p>proximal extent of colon.</p> <p>Note- photo documentation not assessed by NED.</p> <p>Attribute to Endoscopist 1, Trainee (if assisted or was observed, Endoscopist 2 if assisted or was observed.</p>
Terminal ileum intubation rate  2nd Tier KPI	COLTIIR	Percentage of colonoscopies where terminal ileum reached	<p>Numerator: {procedureName}=[COLON], {ExtentTypeEnum}= [terminal ileum] or [neo-terminal ileum]</p> <p>Denominator: {procedureName}=[COLON]</p>	Percentage	JETS	None set	<p>Attribute to Endoscopist 1, Trainee (if assisted or was observed, Endoscopist 2 if assisted or was observed.</p>

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
			Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatatype}= [x]to[y]				
Rectal retroversion      Core KPI	COLRRR	Percentage of colonoscopies where rectal retroversion is recorded as having been performed by a stated endoscopist or at a stated site in a stated period	Numerator: {procedureName}=[COLON], {rectal retroversion}=[Yes] Denominator: {procedureName}=[COLON]  Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatatype}= [x]to[y]	percentage	JETS NED BSG	Minimum Standard 90% (BSG)	No rectal retroversion field in Business management document (J manoeuvre in colonoscopy)  Attribute to Endoscopist 1, Trainee (if assisted or was observed,  Endoscopist 2 if assisted or was observed.
Colonoscopy Withdrawal time	COLNCCWT	Mean withdrawal time for all negative, complete	Numerator: Sum of {withdrawal time} where no procedure performed and no polyps	minutes	NED BSG	Minimum standard – mean of	Include procedures where pathology such as diverticular disease found. No exclusions for

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
Core KPI		colonoscopies performed by a stated endoscopist in a stated period	<p>detected (normal colonoscopy).</p> <p>Denominator:</p> <p>{procedureName}=[COLON] where no procedure performed AND no polyps detected (normal colonoscopy) AND {ExtentTypeEnum}=[Caecum] or [terminal ileum] or [anastomosis] or [ileo-colon anastomosis] or [neo-terminal ileum]</p> <p>Levels:</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>			<p>≥6mins</p> <p>Aspirational target- mean of ≥10 mins (BSG)</p>	<p>pathology such as cancer (likely to have biopsies taken or be incomplete anyway).</p> <p>Exclude procedures where therapy delivered, biopsies taken or polyps detected.</p> <p>Permissible range 0-60min (accept procedure if outwith range but exclude value from KPI calculations)</p> <p>Attribute to Endoscopist 1, Trainee (if assisted or was observed, Endoscopist 2 if assisted or was observed.</p>
Polyp detection rate	COLPDR	Percentage of colonoscopies performed by a stated endoscopist or at a stated site in a stated period at	<p>Numerator:</p> <p>{procedureName}=[COLON],</p> <p>{DiagnosisEnum}=[Polyp/s]</p>	percentage	NED BSG	<p>Minimum standard 15%</p> <p>Aspirational</p>	Decision taken at OG meeting (2/3/16) to only include complete procedures in calculation of PDR.

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
Core KPI		which one or more polyps were detected	Denominator: {procedureName}=[COLON]  Levels: By {site}=[x] or By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]  Only include complete procedures: {ExtentTypeEnum}=[Caecum] or [terminal ileum] or [anastomosis] or [ileo-colon anastomosis] or [neo-terminal ileum]			target 20%	Polyps should be counted toward PDR even if they are not removed.
Polyp retrieval success- percentage	COLPRGT	Percentage of polyps successfully retrieved by a stated endoscopist or at a stated site in a stated period.	Numerator: {procedureName}=[COLON], {Therapeutic Type}= [polypectomy]=[successful], [retrieval]=[successful],	percentage	JETS	Minimum standard 90% (BSG)	Size cut off removed- previous KPI stated PRR of polyps>10mm in size.

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
2nd Tier KPI			<p>[polypSize]&gt;=10mm</p> <p>Denominator= :  {procedureName}=[COLON],  {Therapeutic Type}=  [polypectomy]=[successful]</p>				
<p>Average dose of Pethidine &lt;70</p> <p>2nd Tier KPI</p>	COLPLT70	Median dose of pethidine administered when used for colonoscopy by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	<p>Numerator:  {procedureName}=[COL],  {pethidine}=[number]</p> <p>Conditions:  Exclude where{pethidine}=[null]  {age}&lt;[70]</p> <p>Exclude values from median calculation outwith range 12.5-200mg</p>	Median dose (mg)	JETS NED	<p>Auditable Outcome (BSG)</p> <p>Median total dose ≤50mg</p>	

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
			Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatetype}= [x]to[y]				
Average dose of Pethidine $\geq 70$  2nd Tier KPI	COLPGT70	Median dose of pethidine administered when used for colonoscopy by a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.	{procedureName}=[COL], {pethidine}=[number]  Conditions: Exclude where{pethidine}=[null] {age} $\geq$ [70]  Exclude values from median calculation outwith range 12.5-200mg  Levels: By {site}=[x] or By {professionalbodycode}=[x]	Median dose (mg)	NED	Auditable Outcome (BSG)  Median total dose $\leq 25$ mg	

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
			In time period {Ukdatatype}= [x]to[y]				
Average dose of Midazolam <70  2nd Tier KPI	COLMLT70	Median dose of midazolam administered when used for colonoscopy by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	{procedureName}=[COL], {midazolam}=[number]  Conditions:  Exclude where {pethidine}=[null]  {age}<[70]  Exclude values from median calculation outwith range 0.5-10mg  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]	Median dose (mg)	NED	Auditable Outcome (BSG)  Median total dose ≤5 mg	



KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
<p>Average dose of Midazolam <math>\geq 70</math></p> <p>Core KPI</p>	COLMGT70	<p>Median dose of midazolam administered when used for colonoscopy</p> <p>by a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.</p>	<p>{procedureName}=[COL], {midazolam}=[number]</p> <p>Denominator: {procedureName}=[COL]</p> <p>Conditions: Exclude where {pethidine}=[null] {age}<math>\geq</math>[70]</p> <p>Exclude values from median calculation outwith range 0.5-10mg</p> <p>Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatatype}= [x]to[y]</p>	Median dose (mg)	NED	<p>Auditable Outcome (BSG)</p> <p>Median total dose <math>\leq 2</math>mg</p>	
Average dose of	COLFLT70	Median dose of fentanyl	{procedureName}=[COL], {fentanyl}=[number]	Median dose (mcg)	NED	Auditable Outcome	

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
Fentanyl <70  2nd Tier KPI		administered when used for colonoscopy by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	<p>Conditions:</p> <p>Exclude where{pethidine}=[null]</p> <p>{age}&lt;[70]</p> <p>Exclude values from median calculation outwith range 12.5-200mcg</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatatype}= [x]to[y]</p>			(BSG)  Median total dose ≤100mcg	
Average dose of Fentanyl ≥70	COLFGT70	Median dose of fentanyl administered when used for colonoscopy by a stated endoscopist or at a stated site in a stated period in patients 70 years of	<p>{procedureName}=[COL],</p> <p>{fentanyl}=[number]</p> <p>Conditions:</p> <p>Exclude where{pethidine}=[null]</p>	Median dose (mcg)	NED	Auditable Outcome (BSG)  Median total dose	

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
2nd Tier KPI		age or older.	{age} ≥ [70]  Exclude values from median calculation outwith range 12.5-200mcg  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]			≤50 mcg	
Unsedated procedures                2nd Tier KPI	COLUS	Percentage of colonoscopy  performed by a stated endoscopist or at a stated site in a stated period where the no midazolam, fentanyl or pethidine was administered.	{procedureName}=[COL], {pethidine}=[null], {midazolam}=[null], {fentanyl}=[null]  Denominator: {procedureName}=[COL]  Levels:  By {site}=[x] or	Percentage	JETS  NED	Not set	Notes- include procedures in numerator where Entonox given. Exclude procedures where general anaesthetic given (if this data field available).

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
			By {professionalbodycode}=[x] In time period {Ukdatetype}= [x]to[y]				
Sedation greater than recommended dose	COLGTRD	Percentage of colonoscopy performed by a stated endoscopist or at a stated site in a stated period where the dose of midazolam exceeded 5mg in patients aged <70 and 2.5mg in patients aged ≥70 OR the dose of fentanyl exceeded 100 mcg in patients aged <70 and 50mcg in patients aged ≥70 OR where the dose of pethidine exceeded 50 mg in patients aged <70 and 25 mg in patients aged ≥70	{procedureName}=[COL]  Age <70  {pethidine}>50mg  {midazolam}>5mg  {fentanyl}>100mcg  Age ≥70  {pethidine}>25mg  {midazolam}>2.5mg  {fentanyl}>50mcg	Percentage	JETS  NED	Auditable outcome	As per BSG safe sedation guidelines   Removed from this phase.
Colonoscopy	COLCOM34	Percentage of colonoscopies	{procedureName}=[COL],	Percentage where	JETS	Auditable	All ERS should adopt modified

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
Comfort Score  Core KPI		performed by a stated endoscopist or at a stated site in a stated period where the comfort level is recorded as moderate or severe discomfort.	Numerator: {DiscomfortEnum}=[moderate] or [severe]  Denominator: {procedureName}=[COL]	comfort score is moderate or severe	NED	outcome  Aim to have less than 10 % of patients with moderate or severe discomfort. (BSG)	Gloucester system:  Minimal- 1 or 2 episodes of mild discomfort with no distress  Mild- More than 2 episodes of discomfort without distress  Moderate- Significant discomfort experienced several times with some distress  Severe- Frequent discomfort with significant distress
Bowel preparation quality  Core KPI	COLBPQ	Proportion of colonoscopies where bowel prep inadequate	Numerator:  Number of procedure where bowel prep quality= inadequate  Denominator: {procedureName}=[COL]  Modified Aaronchick classification:  excellent (>90 % of mucosa seen, mostly liquid stool, minimal suctioning needed for adequate visualization)	Percentage	NED  BSG/JAG  GRS	Bowel preparation of sufficient diagnostic quality to not warrant repeat or alternative test (ie not inadequate)  Minimum standard 90%	- For BSG KPI- map to levels bowel prep not of sufficient quality to require repeat or alternative test.

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum Standard/ Target	Discussion points
			<p>good (&gt;90 % of mucosa seen, mostly liquid stool, significant suctioning needed for adequate visualization)</p> <p>fair (&gt;90 % of mucosa seen, mixture of liquid and semisolid stool, could be suctioned and / or washed)</p> <p>inadequate (&lt; 90 % of mucosa seen, mixture of semisolid and solid stool that could not be suctioned or washed).</p>			<p>Aspirational target 95%</p> <p>(BSG)</p>	
							<p>NED not currently able to capture adverse events accurately. Would require linkage with other registries and retrospective data entry.</p> <p>Capturing adverse events remains the responsibility of the local organisation.</p>
							<p>NED not currently capable of capturing interval cancer data- this would require linkage with other registries.</p>

Combined Colonoscopy and Flexible Sigmoidoscopy

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Minimum standard/target	Discussion points
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<i>Colonoscopy + Flexi Sig</i>							
<p><i>Digital rectal examination</i></p> <p><i>2nd Tier KPI</i></p>	CFSDRE	Percentage of colonoscopies where a digital rectal examination is recorded as having been performed by a stated endoscopist or at a stated site in a stated period	<p>Numerator: {procedureName}=[COLON] or [Flexi], {Digitalrectal exam}=[Yes]</p> <p>Denominator: {procedureName}=[COLON] or [Flexi]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>	percentage	JETS NED BSG	Rectal examination or omission should be recorded in 100% of cases (BSG)	<p>BSG target is 'documentation of rectal exam'. NED will record whether rectal exam is performed.</p> <p>Attribute to Endoscopist 1 Trainee (if assisted or was observed,)</p>
<p>Tattoo of Cancers and polyps ≥20mm</p> <p>Core KPI</p>	CFSTATCAP	Proportion of suspected cancers or polyps ≥20mm (not in the caecum or rectum) where a tattoo is placed	<p>{procedureName}=[COL] or [FLEXI]</p> <p>Numerator: polyp≥20mm or cancer and tattoo placed [or previous tattoo] not in rectum or caecum</p> <p>Denominator: number of polyps ≥20mm or cancers not in rectum or caecum</p>	Percentage	BSG		<p>Not specified</p> <p>BSG Minimum standard 100% for polyps ≥20mm</p>



<p>Diagnostic biopsies for unexplained diarrhoea</p> <p>2<sup>nd</sup> Tier KPI</p>	<p>COLRCB</p>	<p>Proportion of procedures where chronic diarrhoea is the indication and a minimum of 2 left colonic and 2 right colonic biopsies are obtained</p>	<p>{procedureName}=[COL] or [FLEXI]</p> <p>Numerator:biopsiy taken</p> <p>Denominator:</p> <p>{procedureName}=[COL], {IndicationsEnum}=[Diarrhoea-chronic or Diarrhoea- chronic with blood]</p>	<p>Percentage</p>	<p>BSG</p> <p>GRS</p>	<p>Minimum standard-Rectal biopsies taken in 100% of cases</p> <p>Aspirational target-minimum of 2 right and 2 left biopsies</p>	<p>In phase 2 develop ability to include location of biopsies</p>
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*Flexi Sig*

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Mininum standard/target	Discussion points
<i>Flexi Sig</i>							
Procedure count  Core KPI	FSProcNum	Number of diagnostic or therapeutic flexible sigmoidoscopies performed by an endoscopist or site in a stated period of time	{procedureName}=[FLEXI]  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]	Integer	GRS  JETS  NED		Provide number of therapies as a sub-list.
Rectal retroversion  2 <sup>nd</sup> Tier KPI	FSRRR	Percentage of flexible sigmoidoscopy where rectal retroversion is recorded as having been performed by a stated endoscopist or at a stated site in a stated period	Numerator:  {procedureName}=[FLEXI], {rectal retroversion}=[Yes]  Denominator:  {procedureName}=[FLEXI]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]	percentage	JETS  NED  BSG		
Polyp	FSPDR	Percentage of flexible	Numerator:	percentage	NED		Numerator could

detection rate  2 <sup>nd</sup> Tier KPI		sigmoidoscopy performed by a stated endoscopist or at a stated site in a stated period at which one or more polyps were detected	{procedureName}=[FLEXI], {DiagnosisEnum}=[Polyp/s]  Denominator: {procedureName}=[FLEXI]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]		BSG		be based on therapeutic field=polypectomy
Polyp retrieval success- percentage  2nd Tier KPI	FSPRGT	Percentage of polyps successfully removed and retrieved by a stated endoscopist or at a stated site in a stated period.	Numerator: {procedureName}=[Flexi], {Therapeutic Type}= [polypectomy]=[successful], [retrieval]=[successful], [polypSize]>=10mm  Denominator= : {procedureName}=[Flexi], {Therapeutic Type}= [polypectomy]=[successful]	percentage	JETS	Minimum standard 90% (BSG)	Size cut off removed-previous KPI stated PRR of polyps>10mm in size.
Average dose	FSPLT70	Average dose of pethidine administered when used for	Numerator:	Average	JETS		Exclude from median value

<p>of Pethidine &lt;70</p> <p>2nd Tier KPI</p>		<p>flexible sigmoidoscopy by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.</p>	<p>{procedureName}=[FLEXI], {pethidine}=[number]</p> <p>Denominator:</p> <p>{procedureName}=[FLEXI]</p> <p>colonoscopy</p> <p>Conditions:</p> <p>Exclude where{pethidine}=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>	<p>dose (mg)</p>	<p>NED</p>		<p>calculation if value outwith the range 12-5-200mg</p>
<p>Average dose of Pethidine ≥70</p>	<p>FSPGT70</p>	<p>Average dose of pethidine administered when used for flexible sigmoidoscopyby a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.</p>	<p>{procedureName}=[FLEXI], {pethidine}=[number]</p> <p>Denominator:</p> <p>{procedureName}=[FLEXI]</p> <p>Conditions:</p>	<p>Average dose (mg)</p>	<p>NED</p>		<p>Exclude from median value calculation if value outwith the range 12-5-200mg</p>

2nd Tier KPI			<p>Exclude where{pethidine}=[null]</p> <p>{age}≥[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>				
<p>Average dose of Midazolam &lt;70</p> <p>2nd Tier KPI</p>	FSMLT70	Average dose of midazolam administered when used for flexible sigmoidoscopy by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	<p>{procedureName}=[FLEXI], {midazolam}=[number]</p> <p>Denominator: {procedureName}=[FLEXI]</p> <p>Conditions: Exclude where{pethidine}=[null] {age}&lt;[70]</p> <p>Levels: By {site}=[x] or By {professionalbodycode}=[x]</p>	Average dose (mg)	NED		Exclude from median value calculation if value outwith the range 0.5-10mg

			In time period {Ukdatetype}= [x]to[y]				
Average dose of Midazolam ≥70  Core KPI	FSMGT70	Average dose of midazolam administered when used for flexible sigmoidoscopy  by a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.	{procedureName}=[FLEXI], {midazolam}=[number]  Denominator:  {procedureName}=[FLEXI]  Conditions:  Exclude where{pethidine}=[null]  {age}≥[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]	Average dose (mg)	NED		Exclude from median value calculation if value outwith the range 0.5-10mg
Average dose of Fentanyl <70	FSFLT70	Average dose of fentanyl administered when used for flexible sigmoidoscopy by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	{procedureName}=[FLEXI], {fentanyl}=[number]  Denominator:  {procedureName}=[FLEXI]	Average dose (mcg)	NED		Exclude from median value calculation if value outwith the range 12-5-200mcg

2nd Tier KPI			<p>Conditions:</p> <p>Exclude where{pethidine}=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>				
<p>Average dose of Fentanyl ≥70</p> <p>2nd Tier KPI</p>	FSFGT70	Average dose of fentanyl administered when used for flexible sigmoidoscopy by a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.	<p>{procedureName}=[FLEXI], {fentanyl}=[number]</p> <p>Denominator: {procedureName}=[FLEXI]</p> <p>Conditions:</p> <p>Exclude where{pethidine}=[null]</p> <p>{age}≥ [70]</p> <p>Levels:</p>	Average dose (mcg)	NED		Exclude from median value calculation if value outwith the range 12-5-200mcg

			By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatatype}= [x]to[y]				
Sedation greater than recommended dose	FSGTRD	Percentage of flexible sigmoidoscopy performed by a stated endoscopist or at a stated site in a stated period where the dose of midazolam exceeded 5mg in patients aged <70 and 2.5mg in patients aged ≥70 OR the dose of fentanyl exceeded 100 mcg in patients aged <70 and 50mcg in patients aged ≥70 OR where the dose of pethidine exceeded 50 mg in patients aged <70 and 25 mg in patients aged ≥70	{procedureName}=[Flexi]  Age <70 {pethidine}>50mg {midazolam}>5mg {fentanyl}>100mcg  Age ≥70 {pethidine}>25mg {midazolam}>2.5mg {fentanyl}>50mcg	Percentage	JETS  NED		As per BSG safe sedation guidelines
Comfort scores	FSCOM34	Percentage of flexible sigmoidoscopy performed by a stated endoscopist or at a stated site in a stated period where the comfort level is recorded as moderate or severe discomfort	{procedureName}=[FLEXI],  Numerator: {DiscomfortEnum}= [moderate] or [severe]	Percentage where comfort score is moderate or severe	JETS  NED		



			Denominator:  {procedureName}=[FLEXI]				
Bowel preparation quality	FSBPQ	Proportion of flexible sigmoidoscopy where bowel prep	Numerator:  number of procedues wherebowel preparation quality=inadequate  Denominator:  {procedureName}=[ FLEXI]  Modified Aaronchick classification:  excellent (>90 % of mucosa seen, mostly liquid stool, minimal suctioning needed for adequate visualization)  good (>90 % of mucosa seen, mostly liquid stool, significant suctioning needed for adequate visualization)  fair (>90 % of mucosa seen, mixture of liquid and semisolid stool, could be	Percentage	NED  BSG/JAG  GRS		- For BSG KPI- map to levels bowel prep not of sufficient quality to require repeat or alternative test.

			suctioned and / or washed)  inadequate (< 90 % of mucosa seen, mixture of semisolid and solid stool that could not be suctioned or washed).				
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*OGD*

KPI	Abbreviation	Definition	Required data fields	Output format	Reference	Standards	Discussion points
<i>OGD</i>							
Procedure count  Core KPI	UGIProcNum	Number of diagnostic or therapeutic OGD performed by an endoscopist or site in a stated period of time	{procedureName}=[OGD]  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]	Integer	GRS  JETS  NED		Provide number of therapies as a sub-list.  Allow breakdown of number of procedures by indication
D2 intubation rate  Core KPI	OGDD2IR	Percentage of OGD performed by a stated endoscopist /site in a stated period where D2 reached	Numerator:  {procedureName}=[OGD], {extent}=[Duodenum 2 <sup>nd</sup> part]  Denominator:  {procedureName}=[OGD]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]  Exclude procedures where indication	Percentage	GRS  JETS  NED		

			=Barretts oesophagus or varices surveillance/screening				
J manoeuvre rate  Core KPI	OGDJR	Percentage of OGD performed by a stated endoscopist /site in a stated period where J manoeuvre successfully performed	Numerator: {procedureName}=[OGD], {jManoeuvre}=[Yes]  Denominator: {procedureName}=[OGD]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]	percentage	JETS  NED		
Median dose of Pethidine<70  2 <sup>nd</sup> tier KPI	OGDPLT70	Median dose of pethidine administered <b>when used</b> for OGD by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	Numerator: {procedureName}=[OGD], {pethidine}=[number]  Denominator: {procedureName}=[OGD]  Conditions:	Median dose (mg)	JETS  NED		Exclude from median value calculation if value outwith the range 12-5-200mg

			<p>Exclude where{pethidine}=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatatype}= [x]to[y]</p>				
<p>Median dose of Pethidine ≥70</p> <p>2<sup>nd</sup> tier KPI</p>	OGDPGT70	<p>Median dose of pethidine administered when used for OGD by a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.</p>	<p>{procedureName}=[OGD], {pethidine}=[number]</p> <p>Denominator: {procedureName}=[OGD]</p> <p>Conditions: Exclude where{pethidine}=[null] {age}≥[70]</p> <p>Levels: By {site}=[x] or By {professionalbodycode}=[x]</p>	Median dose (mg)	NED		<p>Exclude from median value calculation if value outwith the range 12-5-200mg</p>

			In time period {Ukdatatype}= [x]to[y]				
Median dose of Midazolam <70  2 <sup>nd</sup> tier KPI	OGDMLT70	Median dose of midazolam administered when used for OGD by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	{procedureName}=[OGD], {midazolam}=[number]  Denominator:  {procedureName}=[OGD]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]	Median dose (mg)	NED		Exclude from median value calculation if value outwith the range 0.5-10mg
Median dose of Midazolam ≥70	OGDMGT70	Median dose of midazolam administered when used for OGD by a stated endoscopist or at a stated site in a stated period in	{procedureName}=[OGD], {midazolam}=[number]  Denominator:  {procedureName}=[OGD]	Median dose (mg)	NED		Exclude from median value calculation if value outwith the range 0.5-10mg

Core KPI		patients 70 years of age or older.	<p>Conditions:</p> <p>Exclude where {pethidine}=[null]</p> <p>{age}≥[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatatype}= [x]to[y]</p>				
<p>Median dose of Fentanyl &lt;70</p> <p>2<sup>nd</sup> tier KPI</p>	OGDFLT70	Median dose of fentanyl administered when used for OGD by a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age.	<p>{procedureName}=[OGD], {fentanyl}=[number]</p> <p>Denominator: {procedureName}=[OGD]</p> <p>Conditions: Exclude where {pethidine}=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p>	Median dose (mcg)	NED		Exclude from median value calculation if value outwith the range 12-5-200mcg

			<p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatatype}= [x]to[y]</p>				
<p>Median dose of Fentanyl ≥70</p> <p>2<sup>nd</sup> tier KPI</p>	OGDFGT70	Median dose of fentanyl administered when used for OGD by a stated endoscopist or at a stated site in a stated period in patients 70 years of age or older.	<p>{procedureName}=[OGD], {fentanyl}=[number]</p> <p>Denominator: {procedureName}=[OGD]</p> <p>Conditions: Exclude where{pethidine}=[null] {age}≥ [70]</p> <p>Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatatype}= [x]to[y]</p>	Median dose (mcg)	NED		Exclude from median value calculation if value outwith the range 12-5-200mcg
Unsedated procedures	OGDUS	Percentage of OGD performed by a stated endoscopist or at a stated site in a stated	{procedureName}=[OGD], {pethidine}=[null], {midazolam}=[null], {fentanyl}=[null]	Percentage	JETS NED		Pharyngeal anaesthesia may be given in unsedated



		period where the no midazolam, fentanyl or pethidine was administered.	Denominator: {procedureName}=[OGD]  Levels: By {site}=[x] or By {professionalbodycode}=[x]  In time period {Ukdatatype}= [x]to[y]				procedures.
Greater than recommended dose	OGDGTRD	Percentage of OGD performed by a stated endoscopist or at a stated site in a stated period where the dose of midazolam exceeded 5mg in patients aged <70 and 2.5mg in patients aged ≥70	{procedureName}=[OGD]  Age <70 {midazolam}>5mg  Age ≥70 {midazolam}>2.5mg	Percentage	JETS  NED		As per BSG safe sedation guidelines
Comfort score	OGDCOM34	Percentage of OGD performed by a stated endoscopist or at a stated site in a stated period where the	{procedureName}=[OGD],  Numerator: {DiscomfortEnum}= [moderate] or [severe]	Percentage where comfort score is moderate or	JETS  NED		All ERS should adopt modified Gloucester system:

		comfort level is recorded as moderate or severe.	Denominator: {procedureName}=[OGD]	severe			None- No discomfort  Minimal- 1 or 2 episodes of mild discomfort with no distress  Mild- More than 2 episodes of discomfort without distress  Moderate- Significant discomfort experienced several times with some distress  Severe- Frequent discomfort with significant distress
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### 3.9 ERCP

The BSG standards include variables in the indicators to reflect the competence of the endoscopist and the difficulty of the procedure. These variable may be difficult to account for when generating KPIs within the confines of the NED data schema.

KPI	Abbreviation	Definition	Required data fields	Output format	Relevant outcome source	Standards	Discussion points
<i>ERCP</i>							
Procedure count	ERCPProcNum	Number of diagnostic or therapeutic	{procedureName}=[ERCP]	Integer	JETS		

		colonoscopies performed by an endoscopist or site in a stated period of time	By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatetype}= [x]to[y]		BSG		
Cannulation rate for accessible virgin main papilla							<b>Current ERCP KPIs under discussion.</b>
Brushings rate for histologically undiagnosed strictures							
Successful clearance rate for Stones < 10mm							
Successful duct decompression for stones > 10mm							
Successful stenting of low/mid cbd strictures							
Successful stenting of attempted hilar strictures							
Successful							

insertion of prophylactic pancreatic stents							
Overall procedural success rate							
Median dose of Pethidine <70			<p>Numerator:  {procedureName}=[ERCP],  {pethidine}=[number]</p> <p>Denominator:  {procedureName}=[ERCP]</p> <p>Conditions:  Exclude where{pethidine}=[null]  {age}&lt;[70]</p> <p>Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]</p>			Exclude from median value calculation if value outwith the range 12-5-200mg	
Median dose of			Numerator:			Exclude from median	

Pethidine ≥70			<p>{procedureName}=[ERCP], {pethidine}=[number]</p> <p>Denominator: {procedureName}=[ERCP]</p> <p>Conditions: Exclude where{pethidine}=[null] {age}&lt;[70]</p> <p>Levels: By {site}=[x] or By {professionalbodycode}=[x] In time period {Ukdatetype}= [x]to[y]</p>		value calculation if value outwith the range 12-5-200mg	
Median dose of Midazolam <70			<p>Numerator: {procedureName}=[ERCP], {midazolam}=[number]</p> <p>Denominator: {procedureName}=[ERCP]</p>		Exclude from median value calculation if value outwith the range 0.5-10mg	

			<p>Conditions:</p> <p>Exclude where {midazolam }=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>			
Median dose of Midazolam $\geq$ 70			<p>Numerator:</p> <p>{procedureName}=[ERCP], {midazolam }=[number]</p> <p>Denominator:</p> <p>{procedureName}=[ERCP]</p> <p>Conditions:</p> <p>Exclude where {midazolam}=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p>			Exclude from median value calculation if value outwith the range 0.5-10mg

			<p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>			
Median dose of Fentanyl <70			<p>Numerator:</p> <p>{procedureName}=[ERCP], {fentanyl}=[number]</p> <p>Denominator:</p> <p>{procedureName}=[ERCP]</p> <p>Conditions:</p> <p>Exclude where{fentanyl}=[null]</p> <p>{age}&lt;[70]</p> <p>Levels:</p> <p>By {site}=[x] or</p> <p>By {professionalbodycode}=[x]</p> <p>In time period {Ukdatetype}= [x]to[y]</p>			Exclude from median value calculation if value outwith the range 12-5-200mcg
Median dose of			Numerator:			Exclude from median value calculation if

Fentanyl ≥70			<p>{procedureName}=[ERCP],  {fentanyl}=[number]</p> <p>Denominator:  {procedureName}=[ERCP]</p> <p>Conditions:  Exclude where{fentanyl}=[null]  {age}&lt;[70]</p> <p>Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]</p>			value outwith the range 12-5-200mcg	
Comfort score							



### 3.1 Endoscopist Role

The NED data schema and methodology for producing KPIs will require that all ERS platforms use standardised endoscopist descriptors as described below to accurately define the role of each endoscopist present. These descriptors are:

#### Endoscopist 1

The independent endoscopist who is present in the room and either performs the procedure themselves or trains a trainee.

This is not the consultant supervising or responsible for the list if they are not in the room during the procedure. ERS will need to have the capacity to record the consultant responsible for the list separately.

#### Endoscopist 2

An independent endoscopist who is assisting endoscopist 1 (either verbally or physically) during the procedure. This will usually be an independent and established endoscopist who joins the procedure to assist or advise. The data will not be added to the portfolio of endoscopist 2.

#### Trainee endoscopist

Either an independent or non-independent trainee endoscopist who physically performs all or part of the procedure

Please note:

ERS should also offer the capacity to record the consultant responsible for the list separately as this may not be Endoscopist 1 if they are not present. For instance, if the procedure/list is being performed by an independent nurse endoscopist or an independent specialty trainee (Endoscopist 1).

An additional consideration is that the consultant responsible for the patient (ie the referring physician) may be different to the endoscopist or the supervising consultant and there will need to be capacity for recording this.

An independent Endoscopist is defined as one who has full JAG accreditation to perform the relevant procedure. This may be a nurse endoscopist or a specialty trainee doctor

## KPI calculation

For the purpose of many KPIs, the numerator (total number of specific procedures performed by a specific endoscopist in a stated period of time) will be derived from procedures where the endoscopist is recorded as 'Independent endoscopist 1'.

For a trainee, this will be the total number of procedures where the trainee is listed as 'trainee' or as 'Independent endoscopist 1' (but is known to be an independent trainee by cross referencing the unique endoscopist ID with their training status).

Endoscopists will be uniquely identified by their GMC/NMC number. Non clinical endoscopists or endoscopists not willing to be identified by their GMC/NMC number will need to inform JAG of their name and GMC/NMC number. They will then be added to the exclude table in NED where their data will still be uploaded, but assigned a "dummy" identifier.

An important role of the NED database will be to allow individual colonoscopists, units and hospital trusts to count the overall number of procedures of each type they are performing. Additionally, the database will allow these data to be broken down by indication and procedure findings and the ability to drill down to hospital and trust level.

ALL KPIs will be attributed to both Endoscopist 1. The KPI will also be attributed to the Trainee or Endoscopist 2 (when present) IF they have assisted or performed the procedure or relevant component of it. For example, in a training procedure, if the trainee reached the caecum on their own under observation by the Trainer, both the Trainer and trainee will be accredited with caecal intubation. If the trainee only reaches the transverse and the trainer reaches the caecum, only the Trainer would be accredited with reaching the caecum. The same rules apply for KPIs such as j manoeuvre and polypectomy.

The NED user interface will allow Trainer endoscopists to view their KPIs separately for all their procedures and training procedures.

## **Definition of target and standards**

In some areas of colonoscopy, no clear evidence currently exists to support the setting of national standards. Nevertheless, there are key performance indicators which are based on a consensus of expert opinion and which will be measured by NED. To support the measurement of quality indicators, the terms auditable outcome (an important indicator for which no clear evidence base exists) and quality standard (an auditable outcome for which there is an evidence base that can support a minimum standard) have been adopted.

Guidelines often present a minimum standard and a target for each auditable outcome or quality standard.