### 3.4 KPI Definitions by procedure type

#### 3.5 Colonoscopy

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| KPI | Abbreviation | Definition | Required data fields | Output format | Relevant outcome source | Minimum Standard/ Target | Discussion points |
| Colonoscopy |  |  |  |  |  |  |  |
| 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 {Ukdatetype}= [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 rate  Core KPI | COLCIR | Percentage of colonoscopies where caecum or anastomosis reached by a stated endoscopist or at a stated site in a stated period | Numerator:  {procedureName}=[COLON], {ExtentTypeEnum}=[Caecum] or [terminal ileum] or [anastomosis] or [ileo-colon anastomosis] or [neo-terminal ileum]  Denominator:  {procedureName}=[COLON]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Percentage | JETS  NED | Minimum standard 90%, aspirational target 95% | Note- anastomosis counts if most proximal extent of colon.  Note- photo documentation not assessed by NED.  Attribute to Endoscopist 1, Trainee (if assisted or was observed,  Endoscopist 2 if assisted or was observed. |
| Terminal ileum intubation rate  2nd Tier KPI | COLTIIR | Percentage of colonoscopies where terminal ileum reached | Numerator:  {procedureName}=[COLON], {ExtentTypeEnum}= [terminal ileum] or [neo-terminal ileum]  Denominator:  {procedureName}=[COLON]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Percentage | JETS | None set | Attribute to Endoscopist 1, Trainee (if assisted or was observed,  Endoscopist 2 if assisted or was observed. |
| 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 {Ukdatetype}= [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  Core KPI | COLNCCWT | Mean withdrawal time for all negative, complete colonoscopies performed by a stated endoscopist in a stated period | Numerator:  Sum of {withdrawal time} where no procedure performed and no polyps detected (normal colonoscopy).  Denominator:  {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]  Levels:  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | minutes | NED  BSG | Minimum standard – mean of ≥6mins  Aspirational target- mean of ≥10 mins (BSG) | Include procedures where pathology such as diverticular disease found. No exclusions for pathology such as cancer (likely to have biopsies taken or be incomplete anyway).  Exclude procedures where therapy delivered, biopsies taken or polyps detected.  Permissible range 0-60min (accept procedure if outwith range but exclude value from KPI calculations  Attribute to Endoscopist 1, Trainee (if assisted or was observed,  Endoscopist 2 if assisted or was observed. |
| Polyp detection rate  Core KPI | COLPDR | Percentage of colonoscopies performed by a stated endoscopist or at a stated site in a stated period at which one or more polyps were detected | Numerator:  {procedureName}=[COLON],  {DiagnosisEnum}=[Polyp/s]  Denominator:  {procedureName}=[COLON]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]  Only include complete procedures:  {ExtentTypeEnum}=[Caecum] or [terminal ileum] or [anastomosis] or [ileo-colon anastomosis] or [neo-terminal ileum] | percentage | NED  BSG | Minimun standard 15%  Aspirational target 20% | Decision taken at OG meeting (2/3/16) to only include complete procedures in calculation of PDR.  Polyps should be counted toward PDR even if they are not removed. |
| Polyp retrieval success- percentage  2nd Tier KPI | 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], [polypSize]>=10mm  Denominator= : {procedureName}=[COLON],  {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 of  Pethidine <70  2nd Tier KPI | 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. | Numerator:  {procedureName}=[COL], {pethidine}=[number]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Exclude values from median calculation outwith range 12.5-200mg  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mg) | JETS  NED | Auditable Outcome (BSG)  Median total dose ≤50mg |  |
| Average dose of  Pethidine ≥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}≥[70]  Exclude values from median calculation outwith range 12.5-200mg  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mg) | NED | Auditable Outcome (BSG)  Median total dose ≤25mg |  |
| Average dose of  Midazolam <70  2nd Tier KPI | COLMLT70 | Median dose of midazolam administered when used for colonsocopy 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 {Ukdatetype}= [x]to[y] | Median dose (mg) | NED | Auditable Outcome (BSG)  Median total dose ≤5 mg |  |
| Average dose of  Midazolam ≥70  Core KPI | COLMGT70 | Median dose of midazolam 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], {midazolam}=[number]  Denominator:  {procedureName}=[COL]  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 {Ukdatetype}= [x]to[y] | Median dose (mg) | NED | Auditable Outcome (BSG)  Median total dose ≤2mg |  |
| Average dose of  Fentanyl <70  2nd Tier KPI | COLFLT70 | Median dose of fentanyl 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], {fentanyl}=[number]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Exclude values from median calculation outwith range 12.5-200mcg  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mcg) | NED | Auditable Outcome (BSG)  Median total dose ≤100mcg |  |
| Average dose of  Fentanyl ≥70  2nd Tier KPI | 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 age or older. | {procedureName}=[COL], {fentanyl}=[number]  Conditions:  Exclude where{pethidine}=[null]  {age}≥ [70]  Exclude values from median calculation outwith range 12.5-200mcg  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mcg) | NED | Auditable Outcome (BSG)  Median total dose ≤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  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Percentage | JETS  NED | Not set | Notes- include procedures in numerator where Entonox given. Exclude procedures where general anaesthetic given (if this data field available. |
| Sedation greater than recommended dose | COLGTRD | Percentage of colonosocpy 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 Comfort Score  Core KPI | COLCOM34 | Percentage of colonoscopies 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}=[COL],  Numerator: {DiscomfortEnum}= [moderate] or [severe]  Denominator:  {procedureName}=[COL] | Percentage where comfort score is moderate or severe | JETS  NED | Auditable outcome  Aim to have less than 10 % of patients with moderate or severe discomfort. (BSG) | All ERS should adopt modified 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)  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 suctioned and / or washed)  inadequate ( < 90 % of mucosa seen, mixture of semisolid and solid stool that could not be suctioned or washed). | Percentage | NED  BSG/JAG  GRS | Bowel preparation of sufficient diagnostic quality to not warrant repeat or alternative test (ie not inadequate)  Minimumm standard 90%  Aspirational target 95%  (BSG) | - For BSG KPI- map to levels bowel prep not of sufficient quality to require repeat or alternative test. |
|  |  |  |  |  |  |  | NED not currently able to capture adverse events accurately. Would require linkage with other registries and retrospective data entry.  Capturing adverse events remains the responsibility of the local organisation. |
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|  |  |  |  |  |  |  | NED not currently capable of capturing interval cancer data- this would require linkage with other registries. |

#### 3.6 Combined Colonoscopy and Flexible Sigmoidoscopy

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| KPI | Abbreviation | Definition | Required data fields | Output format | Relevant outcome source | Minimum standard/ target | Discussion points |
| Colonoscopy + Flexi Sig |  |  |  |  |  |  |  |
| Digital rectal examination2nd Tier KPI | 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 | Numerator:  {procedureName}=[COLON] or [Flexi], {Digitalrectal exam}=[Yes]  Denominator:  {procedureName}=[COLON] or [Flexi]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | percentage | JETS  NED  BSG | Rectal examination or omission should be recorded in 100% of cases (BSG) | BSG target is ‘documentation of rectal exam’. NED will record whether rectal exam is perfomed.  Attribute to Endoscopist 1 Trainee (if assisted or was observed,) |
| Tattoo of Cancers and polyps ≥20mm  Core KPI | CFSTATCAP | Proportion of suspected cancers or polyps ≥20mm (not in the caecum or rectum) where a tattoo is placed | {procedureName}=[COL] or [FLEXI]  Numerator: polyp≥20mm or cancer and tattoo placed [or previous tattoo] not in rectum or caecum  Denominator: number of polyps ≥20mm or cancers not in rectum or caecum | Percentage | BSG |  | Not specified  BSG Minimum standard 100% for polyps ≥20mm |
| Diagnostic biopsies for unexplained diarrhoea  2nd Tier KPI | COLRCB | Proportion of procedures where chronic diarrhoea is the indication and a minimum of 2 left colonic and 2 right colonic biopsies are obtained | {procedureName}=[COL] or [FLEXI]  Numerator:biopsiy taken  Denominator:  {procedureName}=[COL], {IndicationsEnum}=[Diarrhoea-chronic or Diarrhoea- chronic with blood] | Percentage | BSG  GRS | Minimum standard- Rectal biopsies taken in 100% of cases  Aspirational target- minimum of 2 right and 2 left biopsies | In phase 2 develop ability to include location of biopsies |

#### 3.7 Flexi Sig

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| KPI | Abbreviation | Definition | Required data fields | Output format | Relevant outcome source | Minumum standard/target | Discussion points |
| Flexi Sig |  |  |  |  |  |  |  |
| 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  2nd 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 detection rate  2nd Tier KPI | FSPDR | Percentage of flexible sigmoidoscopy performed by a stated endoscopist or at a stated site in a stated period at which one or more polyps were detected | Numerator:  {procedureName}=[FLEXI],  {DiagnosisEnum}=[Polyp/s]  Denominator:  {procedureName}=[FLEXI]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | percentage | NED  BSG |  | Numerator could 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 of  Pethidine <70  2nd Tier KPI | FSPLT70 | Average dose of pethidine 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. | Numerator:  {procedureName}=[FLEXI], {pethidine}=[number]  Denominator:  {procedureName}=[FLEXI]  colonoscopy  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) | JETS  NED |  | Exclude from median value calculation if value outwith the range 12-5-200mg |
| Average dose of  Pethidine ≥70  2nd Tier KPI | FSPGT70 | 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. | {procedureName}=[FLEXI], {pethidine}=[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 12-5-200mg |
| Average dose of  Midazolam <70  2nd Tier KPI | FSMLT70 | Average dose of midazolam administered when used for flexible sigmoidoscopyby a stated endoscopist or at a stated site in a stated period in patients less than 70 years of age. | {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  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  2nd Tier KPI | 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]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Average dose (mcg) | NED |  | Exclude from median value calculation if value outwith the range 12-5-200mcg |
| Average dose of  Fentanyl ≥70  2nd Tier KPI | 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. | {procedureName}=[FLEXI], {fentanyl}=[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 (mcg) | NED |  | Exclude from median value calculation if value outwith the range 12-5-200mcg |
| Sedation greater than recommended dose | FSGTRD | Percentage of flexible sigmoidoscopyperformed 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 sever discomfort | {procedureName}=[FLEXI],  Numerator: {DiscomfortEnum}= [moderate] or [severe]  Denominator:  {procedureName}=[FLEXI] | Percentage where comfort score is moderate or severe | JETS  NED |  |  |
| 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 suctioned and / or washed)  inadequate ( < 90 % of mucosa seen, mixture of semisolid and solid stool that could not be suctioned or washed). | Percentage | NED  BSG/JAG  GRS |  | - For BSG KPI- map to levels bowel prep not of sufficient quality to require repeat or alternative test. |

#### 3.8 OGD

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| KPI | Abbreviation | Definition | Required data fields | Output format | Reference | Standards | Discussion points |
| OGD |  |  |  |  |  |  |  |
| 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 2nd part]  Denominator:  {procedureName}=[OGD]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y]  Exclude procedures where indication =Barretts oesophagus or varices surveillance/screening | Percentage | GRS  JETS  NED |  |  |
| 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], {jManoeuve}=[Yes]  Denominator:  {procedureName}=[OGD]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | percentage | JETS  NED |  |  |
| Median dose of  Pethidine<70  2nd tier KPI | OGDPLT70 | Median dose of pethidine 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. | Numerator:  {procedureName}=[OGD], {pethidine}=[number]  Denominator:  {procedureName}=[OGD]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mg) | JETS  NED |  | Exclude from median value calculation if value outwith the range 12-5-200mg |
| Median dose of  Pethidine ≥70  2nd tier KPI | OGDPGT70 | 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. | {procedureName}=[OGD], {pethidine}=[number]  Denominator:  {procedureName}=[OGD]  Conditions:  Exclude where{pethidine}=[null]  {age}≥[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mg) | NED |  | Exclude from median value calculation if value outwith the range 12-5-200mg |
| Median dose of  Midazolam <70  2nd 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 {Ukdatetype}= [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  Core KPI | OGDMGT70 | Median dose of midazolam 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. | {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 {Ukdatetype}= [x]to[y] | Median dose (mg) | NED |  | Exclude from median value calculation if value outwith the range 0.5-10mg |
| Median dose of  Fentanyl <70  2nd tier KPI | 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. | {procedureName}=[OGD], {fentanyl}=[number]  Denominator:  {procedureName}=[OGD]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Median dose (mcg) | NED |  | Exclude from median value calculation if value outwith the range 12-5-200mcg |
| Median dose of  Fentanyl ≥70  2nd tier KPI | 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. | {procedureName}=[OGD], {fentanyl}=[number]  Denominator:  {procedureName}=[OGD]  Conditions:  Exclude where{pethidine}=[null]  {age}≥ [70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | 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 period where the no midazolam, fentanyl or pethidine was administered. | {procedureName}=[OGD], {pethidine}=[null], {midazolam}=[null], {fentanyl}=[null]  Denominator:  {procedureName}=[OGD]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Percentage | JETS  NED |  | Pharyngeal anaesthesia may be given in unsedated 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 comfort level is recorded as moderate or severe. | {procedureName}=[OGD],  Numerator: {DiscomfortEnum}= [moderate] or [severe]  Denominator:  {procedureName}=[OGD] | Percentage where comfort score is moderate or severe | JETS  NED |  | All ERS should adopt modified Gloucester system:  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 |

#### 3.9 ERCP

Current BSG document on ERCP quality indicators is in development. It is planned that NED KPIs will reflect the BSG proposed standards.

The BSG standards include variables in the indicators to reflect the competence of the endoscopist and the difficulty of the procedure. Thes 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 |
| ERCP |  |  |  |  |  |  |  |
| Procedure count | ERCPProcNum | Number of diagnostic or therapeutic colonoscopies performed by an endoscopist or site in a stated period of time | {procedureName}=[ERCP]  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] | Integer | JETS  BSG |  |  |
| Cannulation rate for accessible virgin main papilla |  |  |  |  |  |  | **Current ERCP KPIs under discussion.** |
| 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 |  |  | Numerator:  {procedureName}=[ERCP], {pethidine}=[number]  Denominator:  {procedureName}=[ERCP]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] |  |  | Exclude from median value calculation if value outwith the range 12-5-200mg |
| Median dose of  Pethidine ≥70 |  |  | Numerator:  {procedureName}=[ERCP], {pethidine}=[number]  Denominator:  {procedureName}=[ERCP]  Conditions:  Exclude where{pethidine}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] |  |  | Exclude from median value calculation if value outwith the range 12-5-200mg |
| Median dose of  Midazolam <70 |  |  | Numerator:  {procedureName}=[ERCP], {midazolam}=[number]  Denominator:  {procedureName}=[ERCP]  Conditions:  Exclude where{ midazolam }=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] |  |  | Exclude from median value calculation if value outwith the range 0.5-10mg |
| Median dose of  Midazolam ≥70 |  |  | Numerator:  {procedureName}=[ERCP], { midazolam }=[number]  Denominator:  {procedureName}=[ERCP]  Conditions:  Exclude where{midazolam}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] |  |  | Exclude from median value calculation if value outwith the range 0.5-10mg |
| Median dose of  Fentanyl <70 |  |  | Numerator:  {procedureName}=[ERCP], {fentanyl}=[number]  Denominator:  {procedureName}=[ERCP]  Conditions:  Exclude where{fentanyl}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] |  |  | Exclude from median value calculation if value outwith the range 12-5-200mcg |
| Median dose of  Fentanyl ≥70 |  |  | Numerator:  {procedureName}=[ERCP], {fentanyl}=[number]  Denominator:  {procedureName}=[ERCP]  Conditions:  Exclude where{fentanyl}=[null]  {age}<[70]  Levels:  By {site}=[x] or  By {professionalbodycode}=[x]  In time period {Ukdatetype}= [x]to[y] |  |  | Exclude from median value calculation if value outwith the range 12-5-200mcg |
| Comfort score |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

## 3.0 Defining key performance indicators

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 form local ERS allow all KPIs to be generated.

### 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

### 3.2 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 haveassisted 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. It 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.

### 3.3 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.