Post Colonoscopy Colorectal Cancer (PCCRC) National Audit Project

Early progress report

Dr Roland Valori
Gloucestershire Hospitals
on behalf of the National PCCRC Audit project team
Statement 4. We recommend that services perform a Root Cause Analysis (see table 3) of every PCCRC case identified, to determine the most plausible explanation for the PCCRC, and where appropriate to identify and implement changes in practice to improve performance, monitoring them for effectiveness.

GRADE of evidence: very low; Strength of recommendation: strong.

Four things
1. Identify cases
2. Explain why they happened
3. Identify what needs to be improved
4. Take action to improve
Early report of National PCCRC Audit tool

• What we have done:
  • Created a process for identifying PCCRCs and
  • A portal with an audit template
  • Tested in 12 sites

• Why?
  • Quality improvement exercise
  • Data outputs
PCCRC-4yr - identifying PCCRCs

Hospital Episode Statistics + Cancer Registry → PCCRC-4yr

0-20% PCCRCs diagnosed in a different hospital
PCCRC-4yr - audit template

Hospital Episode Statistics

Cancer Registry

PCCRC-4yr

Audit template
WEO categorisation of PCCRCs

- **Adenoma seen in same bowel segment?**
  - Yes
    - **Lesion resected?**
      - Yes: A: Possible missed lesion, examination adequate
      - No: B: Possible missed lesion, examination inadequate
  - No: Caecum intubated & bowel prep good?
    - Yes: A: Possible missed lesion, examination adequate
    - No: B: Possible missed lesion, examination inadequate

- **Lesion resected?**
  - Yes
    - C: Detected lesion, not resected
  - No
    - D: Likely incomplete resection
It is not just about finding and removing adenomas

- Patient factors
- Clinical decision-making
- Administrative factors
- Surveillance processes

Patient factors

- Biology
- Preferences
- Procedural
- Co-morbidity

Biological risk

- Lynch
- IBD
- Post - CRC
- Polyposis & LNPCP

Methods

• Patients
  • Male/female patients in the Cancer Registry aged ≥18 years at diagnosis
  • Diagnosed with C180, C182-C189, C19 and C20 between 01/01/2018 and 31/12/2020
  • Where a colonoscopy (OPCS 4.8 code H20-H22) was identified in HES Admitted Care, HES Outpatient, or NHS Bowel Cancer Screening data in the 6-48 months preceding diagnosis

• Pilot sites
  • 12 hospitals selected: mix of large/small; teaching/non teaching; geographically spread
Information governance

Data Protection Impact Assessment produced to identify and minimise data protection risks

Pseudonymisation algorithm applied to all IDs prior to sharing data (outside of PHE) for analysis
Post Colonscopy Colorectal Cancer Audit

Welcome to the Post Colonscopy Colorectal Cancer Audit. To be added at some point?

Helpful guides on how to use this site and how to add new users are available:

- A link to a pdf.

You have completed: 0
To do: 2

While completing the audit you will be able to:

- Review your patient's record and submit data
- Register other colleagues in the trust to support data collection
- Let us know about missing patients or patients incorrectly assigned to your trust

Please note: You can save any changes, sign out, and come back at any time to complete your patient's records.

See My Patients
See All Patients
Add another user at this trust

In partnership with

Any problems? visit the Glossary, or Email phe.clinicalaudit@nhs.net.
Patient Details

Enter the details on the Patient

Trust of colonoscopy

Sex
- Male
- Female

Colonic IBD
- No
- Crohn's colitis
- Ulcerative colitis

Diverticular disease

Submit this case to PCCRC?
- Yes, submit as checked
- Save changes and return to list
- Save now
- Cancel changes

Any problems? visit the Glossary, or Email phe.clinicalaudit@nhs.net.
Data outputs
# Indication for index colonoscopy

<table>
<thead>
<tr>
<th>Indication</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic</td>
<td>70</td>
<td>49%</td>
</tr>
<tr>
<td>Surveillance</td>
<td>53</td>
<td>37%</td>
</tr>
<tr>
<td>NHS Bowel Cancer Screening Programme</td>
<td>8</td>
<td>6%</td>
</tr>
<tr>
<td>Abnormal investigation</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Planned polypectomy</td>
<td>4</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surveillance category</th>
<th>N</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveillance (CRC)</td>
<td>8</td>
<td>6%</td>
<td>15%</td>
</tr>
<tr>
<td>Surveillance (polyps)</td>
<td>28</td>
<td>20%</td>
<td>53%</td>
</tr>
<tr>
<td>Surveillance (IBD)</td>
<td>13</td>
<td>9%</td>
<td>25%</td>
</tr>
<tr>
<td>Surveillance (HNPCC)</td>
<td>4</td>
<td>3%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Warning: this is preliminary data
## Indication for index colonoscopy

<table>
<thead>
<tr>
<th>Indication</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic</td>
<td>70</td>
<td>49%</td>
</tr>
<tr>
<td>Surveillance</td>
<td>53</td>
<td>37%</td>
</tr>
<tr>
<td>NHS Bowel Cancer Screening Programme</td>
<td>8</td>
<td>6%</td>
</tr>
<tr>
<td>Abnormal investigation</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Planned polypectomy</td>
<td>4</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surveillance category</th>
<th>N</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveillance (CRC)</td>
<td>8</td>
<td>6%</td>
<td>15%</td>
</tr>
<tr>
<td>Surveillance (polyps)</td>
<td>28</td>
<td>20%</td>
<td>53%</td>
</tr>
<tr>
<td>Surveillance (IBD)</td>
<td>13</td>
<td>9%</td>
<td>25%</td>
</tr>
<tr>
<td>Surveillance (HNPCC)</td>
<td>4</td>
<td>3%</td>
<td>7%</td>
</tr>
</tbody>
</table>
## Endoscopist type/level

<table>
<thead>
<tr>
<th>Endoscopist type</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroenterologist</td>
<td>66</td>
<td>46.5</td>
</tr>
<tr>
<td>Colorectal surgeon</td>
<td>26</td>
<td>18.3</td>
</tr>
<tr>
<td>Gastro trainee/fellow</td>
<td>13</td>
<td>9.2</td>
</tr>
<tr>
<td>Surgical trainee/fellow</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Nurse endoscopist</td>
<td>27</td>
<td>19.0</td>
</tr>
<tr>
<td>Non-consultant grade</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Locum/agency</td>
<td>7</td>
<td>4.9</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Warning:
1. Do not know the numerators
2. Some professional groups may be scoping higher risk patients

Warning: this is preliminary data
Age

- Age distribution:
  - 80+ (largest bar)
  - 70-79 (second largest bar)
  - 60-69
  - 51-59
  - <50 (smallest bar)

Sex

- Male and Female distribution (pie chart)

Warning: this is preliminary data
Interval and non-interval types

Only 15.5% are ‘interval’ cancers

Warning: this is preliminary data
WEO categorisation of PCCRCs

1. Adenoma seen in same bowel segment?
   - No
     - Caecum intubated & bowel prep good?
       - No
         - B: Possible missed lesion, examination inadequate
           - 26/142 (18.3%)
       - Yes
         - A: Possible missed lesion, examination adequate
           - 90/142 (63.4%)
   - Yes
     - Lesion resected?
       - No
         - C: Detected lesion, not resected
           - 21/142 (14.8%)
       - Yes
         - D: Likely incomplete resection
           - 5/142 (3.5%)

Warning: this is preliminary data
Beyond WEO categorisation

- Patient factors
- Clinical decision-making
- Administrative factors
- Surveillance processes

## Patient factors

<table>
<thead>
<tr>
<th>Reason</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient failed to attend despite multiple attempts to arrange further tests</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>Further tests delayed for socio-economic reasons</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Decision not to investigate further because of co-morbidity</td>
<td>7</td>
<td>4.9</td>
</tr>
<tr>
<td>Patient declined further tests</td>
<td>6</td>
<td>4.2</td>
</tr>
<tr>
<td>None</td>
<td>123</td>
<td>86.7</td>
</tr>
</tbody>
</table>

Give case examples and

*Warning: this is preliminary data*
# Administration factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booking delay</td>
<td>10</td>
<td>7.0</td>
</tr>
<tr>
<td>No test booked</td>
<td>4</td>
<td>2.8</td>
</tr>
<tr>
<td>None</td>
<td>128</td>
<td>90.1</td>
</tr>
</tbody>
</table>

**Warning:** this is preliminary data
## Decision-making factors

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No clear decision</td>
<td>8</td>
<td>5.6</td>
</tr>
<tr>
<td>Decision not acted upon</td>
<td>2</td>
<td>1.4</td>
</tr>
<tr>
<td>Inappropriate decision</td>
<td>15</td>
<td>10.6</td>
</tr>
<tr>
<td>None</td>
<td>117</td>
<td>82.4</td>
</tr>
</tbody>
</table>

*Warning: this is preliminary data*
Factors affecting outcome

Take home message: 34.5% of PCCRCs are unrelated to the quality of the procedure

Warning: this is preliminary data
# Procedural factors

<table>
<thead>
<tr>
<th>Procedural factors mentioned in report</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe diverticula disease</td>
<td>15</td>
<td>10.6</td>
</tr>
<tr>
<td>Rigidity or fixation of colon</td>
<td>7</td>
<td>4.9</td>
</tr>
<tr>
<td>Excessive looping</td>
<td>14</td>
<td>9.9</td>
</tr>
<tr>
<td>Very obese patient</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lengthy procedure, for whatever reason</td>
<td>2</td>
<td>1.4</td>
</tr>
<tr>
<td>Patient intolerance</td>
<td>6</td>
<td>4.2</td>
</tr>
<tr>
<td>Poor bowel prep</td>
<td>8</td>
<td>5.6</td>
</tr>
<tr>
<td>Cardio-respiratory complications</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>5.6</td>
</tr>
<tr>
<td>No difficulties reported</td>
<td>96</td>
<td>67.6</td>
</tr>
</tbody>
</table>

Take home message: 33.4% maybe related to difficult procedures

Warning: this is preliminary data
Site of diagnosis

Audit

- ICV – 2
- Unknown - 8

General population

- 2.9%
- 5.2%
- 2.2%
- 2.9%
- 8.2%
- 14.6%
- 28%
Site of diagnosis

Audit

- 5, 3.5%
- 16, 11.3%
- 24, 16.9%
- 19, 13.4%
- 8, 5.6%
- 12, 8.4%
- ICV – 2
  Unknown - 8
- 19, 13.4%
- 29, 20.4%

General population

- 2.9%
- 5.2%
- 8.2%
- 14.6%
- 28%
- 28.4%

Warning: this is preliminary data
Completion and adequate photodocumentation

Complete procedure with adequate photo
29 (62%)

Complete procedure with adequate photo
15 (52%)

Warning: this is preliminary data
Stage of diagnosis

Take home message:
More early stage (I/II) and fewer late stage (IV)

Warning: this is preliminary data
Photodocumentation of caecum and rectum

Caecum

Rectum

Warning: this is preliminary data
Size/stage of PCCRC versus delay in diagnosis

Growth of ≤5mm/year

Warning: this is preliminary data
Conclusions

• We have a process for
  • Identifying PCCRCs for individual hospitals
  • Auditing PCCRCs against a structured template
  • Identifying areas for quality improvement
Next steps

• Refine audit tool based on trial site feedback
  • Specification complete; programming ongoing
• National roll out to all NHS hospitals
  • August – November 2021
• Data analysis
  • January – March 2022
• Sustainable solution
  • Integrate into JAG accreditation and regulator requirements
• Create similar tools for other cancers
  • Upper GI cancer
  • Pancreatic cancer
Acknowledgements

This work uses data provided by patients and collected by the NHS as part of their care and support

Project Team
• Nick Burr
• Eva Morris
• David Beaton
• Emma Saunsbury
• Andrew Lee
• Nigel Trudgill
• Natasha Wood
• Matt Rutter
• Tameera Rahman
• Kim Whittlestone
• Brian Shand
• Nathaniel Rashbass
• Jem Rashbass