Putting NICE guidance into practice

Resource impact report:
Virtual chromoendoscopy to assess colorectal polyps during colonoscopy (DG28)

Published: May 2017
Summary

The case for adopting virtual chromoendoscopy to assess colorectal polyps during endoscopy is supported by the evidence. Please see the guidance for details.

It is estimated that around 410 people for every 100,000 in the population, with polyps of 5 mm or less, are eligible for assessment with virtual chromoendoscopy. Uptake will be steady from year 5 after implementation, with around 330 people per 100,000 population having virtual chromoendoscopy with an estimated saving of £18,800 per 100,000 population (see table 1).

Table 1 Estimated annual cost saving of implementing the guidance, per 100,000 population, using NICE assumptions

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</thead>
<tbody>
<tr>
<td>People having virtual chromoendoscopy each year</td>
<td>65</td>
<td>130</td>
<td>200</td>
<td>260</td>
<td>330</td>
</tr>
<tr>
<td>Cost savings with Virtual chromoendoscopy (£)</td>
<td>−3,800</td>
<td>−7,500</td>
<td>−11,300</td>
<td>−15,000</td>
<td>−18,800</td>
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This report is supported by a resource impact template which may be used to calculate the resource impact of implementing the guidance by amending the variables. Organisations are encouraged to evaluate their own practices against the recommendations in the NICE guidance and assess resource impact locally.

This technology is commissioned by clinical commissioning groups (CCGs). Providers are NHS hospital trusts.
1 Introduction

1.1 This report looks at the resource impact of implementing the NICE guidance on virtual chromoendoscopy to assess colorectal polyps during colonoscopy in England.

1.2 The guidance states that:

- virtual chromoendoscopy using NBI, FICE or i-scan is recommended to assess polyps of 5 mm or less during colonoscopy, instead of histopathology, to determine whether they are adenomatous or hyperplastic, only if:
  - high-definition enabled virtual chromoendoscopy equipment is used
  - the endoscopist has been trained to use virtual chromoendoscopy, and accredited to use the technique under a national accreditation scheme
  - the endoscopy service includes systems to audit endoscopists and provide ongoing feedback on their performance and
  - the assessment is made with high confidence.

1.3 This report is supported by a resource impact template. The template aims to help organisations in England, Wales and Northern Ireland plan for the financial implications of implementing the NICE guidance by amending the variables.

1.4 This technology is commissioned by clinical commissioning groups (CCGs). Providers are NHS hospital trusts.

2 Background and epidemiology of colorectal polyps

2.1 Colorectal polyps are small growths on the inner lining of the colon that carry a small risk of becoming cancerous. Colorectal polyps are common, affecting 15% to 20% of the UK population. Most polyps produce no symptoms, but some larger polyps can cause a
small amount of rectal bleeding, diarrhoea, constipation, or abdominal pain.

2.2 Colorectal cancer is one of the most common cancers in the UK and is the second most common cause of cancer death. About 40,000 new cases are registered each year. Colorectal cancer is strongly related to age, with almost three-quarters occurring in people aged 65 or over.

2.3 Current practice is to remove all polyps found during colonoscopy investigations and send them to laboratory services for histopathology assessment. Polyps are examined to determine whether they are adenomatous, and therefore at high risk of cancer, or hyperplastic, and so at low risk.

2.4 Virtual chromoendoscopy technologies are intended to allow colour-enhanced visualisation of blood vessels and surface pattern compared with conventional colonoscopy, without using dyes. Using virtual chromoendoscopy technologies may allow real-time differentiation of adenomas and hyperplastic colorectal polyps during colonoscopy, which could lead to fewer unnecessary resections of low-risk polyps, quicker results and management decisions, and reduce use of histopathology examinations.
Table 2 Number of people eligible for assessment per 100,000 population

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<tr>
<th>Population</th>
<th>Proportion of previous row (%)</th>
<th>Number of people</th>
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</thead>
<tbody>
<tr>
<td>Total population per 100,000</td>
<td></td>
<td>100,000</td>
</tr>
<tr>
<td>Number of people having colonoscopy procedures</td>
<td>0.76</td>
<td>760</td>
</tr>
<tr>
<td>Number of people having colonoscopy procedures to diagnose/exclude cancer of colon or to look for pre-cancerous polyps</td>
<td>65</td>
<td>500</td>
</tr>
<tr>
<td>Number of people with polyps</td>
<td>87</td>
<td>430</td>
</tr>
<tr>
<td>Number of people with polyps of 5 mm or less</td>
<td>95</td>
<td>410</td>
</tr>
<tr>
<td>Total number of people eligible for assessment with virtual chromoendoscopy</td>
<td>100</td>
<td>410</td>
</tr>
<tr>
<td>Total number of people estimated to have virtual chromoendoscopy each year from year 5</td>
<td>80</td>
<td>330</td>
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</tbody>
</table>

2.5 Therefore it is estimated that approximately 410 people per 100,000 population are eligible for assessment with virtual chromoendoscopy each year.

2.6 From year 5 it is estimated that 330 people for every 100,000 population will have assessment with virtual chromoendoscopy each year once uptake has reached 80%.

3 Assumptions made

3.1 The resource impact template makes the following assumptions:

- The prevalent population remains the same over time.
- The number of people having endoscopy procedures has been estimated using data from NHS England monthly diagnostics waiting times and activity data collection 2016/17.
- The proportion of people having colonoscopy procedures to diagnose/exclude cancer of colon or to look for pre-cancerous
polyps has been estimated using data from Public Health England NHS Atlas of variation in healthcare, September 2016.

- The number of people with polyps of 5 mm or less is derived from modelling by the external assessment group (EAG) and clinical expert opinion provided to committee.
- For people having standard endoscopy, all polyps are resected and sent to histopathology for investigation.
- The prevalence of adenomas and the average numbers of polyps and adenomas for each risk group have been taken from the EAG’s modelling and is based on Raju et al, 2013.
- Figures for probability of having polypectomy are taken from EAG’s modelling and are based on sensitivity and specificity data from supporting studies, adjusted for confidence level.
- The probability of adverse events happening during polypectomy are assumed to be 0.3% for both hospitalisation for bleeding and perforation (in line with the EAG’s modelling).
- The lifetime risk of colorectal cancer was not included in the model because it is similar for endoscopy with or without chromoendoscopy.
- Currently, no people are having endoscopy with virtual chromoendoscopy.
- Future uptake of virtual chromoendoscopy will be 80% from year 5, based on manufacturer estimate.
- Uptake is based on NICE assumptions and increases evenly over 5 years. The resource impact template should be amended to reflect local uptake estimates.
- Unit costs for endoscopy procedures are taken from the national tariff 2017/18.
- The unit cost of histopathology assessment is taken from NHS reference costs 2014 to 15. The committee considered that this average figure may be lower than the real cost of histopathology assessment for colorectal polyps, and that the savings
generated from reducing unnecessary tests would therefore be greater.

- The unit cost of virtual chromoendoscopy is assumed to be £14.72, and is based on specialised training costs. This is calculated based on 2 days of an endoscopist’s time, divided by 150 endoscopies per year.

4 Resource impact

4.1 The annual saving associated with implementing the guidance for every 100,000 population is £18,800 from year 5 onwards, as shown in table 3.

Table 3 Resource impact of implementing the guidance per 100,000 population using NICE assumptions

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4.2 We encourage organisations to evaluate their own practices against the recommendations in the NICE guidance and assess costs using the resource impact template.

5 Savings and benefits

5.1 The guidance could be cost saving for the NHS and may improve patient experience. The level of savings depends on avoiding unnecessary histopathology assessments when assessing colorectal polyps.

5.2 Using virtual chromoendoscopy may also change the surveillance intervals recommended for people at risk of bowel cancer who have had adenomas resected.

6 Other considerations

6.1 The cost of upgrading colonoscopy equipment has not been included because it is assumed that most hospitals already have equipment with virtual-chromoendoscopy-enabled technology in
place. Hospitals which do not have the equipment are expected to get it in the future, as part of standard procurement.

6.2 The cost of training for virtual chromoendoscopy has been included in the modelling because it is specialised training. Training would be in addition to the existing levels of assessment and audit which endoscopists already need to have.

7 Implications for commissioners

7.1 Commissioners are encouraged to agree a strategy with NHS hospital providers for adopting the guidance.

7.2 Virtual chromoendoscopy to assess polyps during endoscopy falls within the programme budgeting category 13B problems of the gastro intestinal system lower GI.
About this resource impact report

This resource impact report accompanies the NICE guidance on virtual chromoendoscopy to assess colorectal polyps during colonoscopy and should be read in conjunction with it. See terms and conditions on the NICE website.

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