

## **NICE implementation uptake report: laparoscopic surgery for colorectal cancer**

NICE implementation uptake reports provide information on national trends and activity associated with technologies recommended in NICE guidance.

### **Overview**

The number and percentage of colorectal resections performed using laparoscopic surgery is increasing in NHS hospitals in England (figure 1). In the 12 months to March 2007, the percentage of colorectal resections recorded as performed using the laparoscopic approach was 8.82% (table 1). The level of uptake at March 2007 is consistent with future forecasts made in the NICE cost impact analysis produced for this guidance (figure 2). Local organisations should consider referring to the NICE audit criteria to assess their performance in this area.

### **Laparoscopic surgery for colorectal cancer (surgical procedures)**

'Laparoscopic surgery for colorectal cancer' NICE technology appraisal 105 (August 2006). The current NICE guidance recommends laparoscopic surgery (including laparoscopically assisted surgery) as an alternative to open surgery for people with colorectal cancer.

This guidance replaces NICE technology appraisal 17 (December 2000). The previous guidance recommended that for colorectal cancer, open rather than laparoscopic resection should be the preferred surgical procedure.

## ***Surgical procedures: England***

This report provides information on surgical procedures for colorectal resections carried out in hospitals in England. The figures are obtained from the Hospital Episode Statistics (HES) national data warehouse which is maintained by the NHS Information Centre. Table 1 shows the number of Finished Consultant Episodes (FCEs) for colorectal resections in England in 2006/2007.

**Table 1 Finished Consultant Episodes for colorectal resections and % with laparoscopic surgery in 2006/2007**

OPCS-4 Classification		Number of procedures	Number of procedures with laparoscopic surgery	% with laparoscopic surgery
H04	Total excision of colon and rectum	167	6	3.59%
H05	Total excision of colon	196	6	3.06%
H06	Extended excision of right hemicolon	1,372	58	4.23%
H07	Other excision of right hemicolon	5,411	562	10.39%
H08	Excision of transverse colon	164	10	6.10%
H09	Excision of left hemicolon	1,210	91	7.52%
H10	Excision of sigmoid colon	1,545	186	12.04%
H11	Other excision of colon	359	15	4.18%
H33	Excision of rectum	8,625	746	8.65%
		<b>19,049</b>	<b>1,680</b>	<b>8.82%</b>

Source: Hospital Episode Statistics (HES), The Information Centre for Health & Social Care

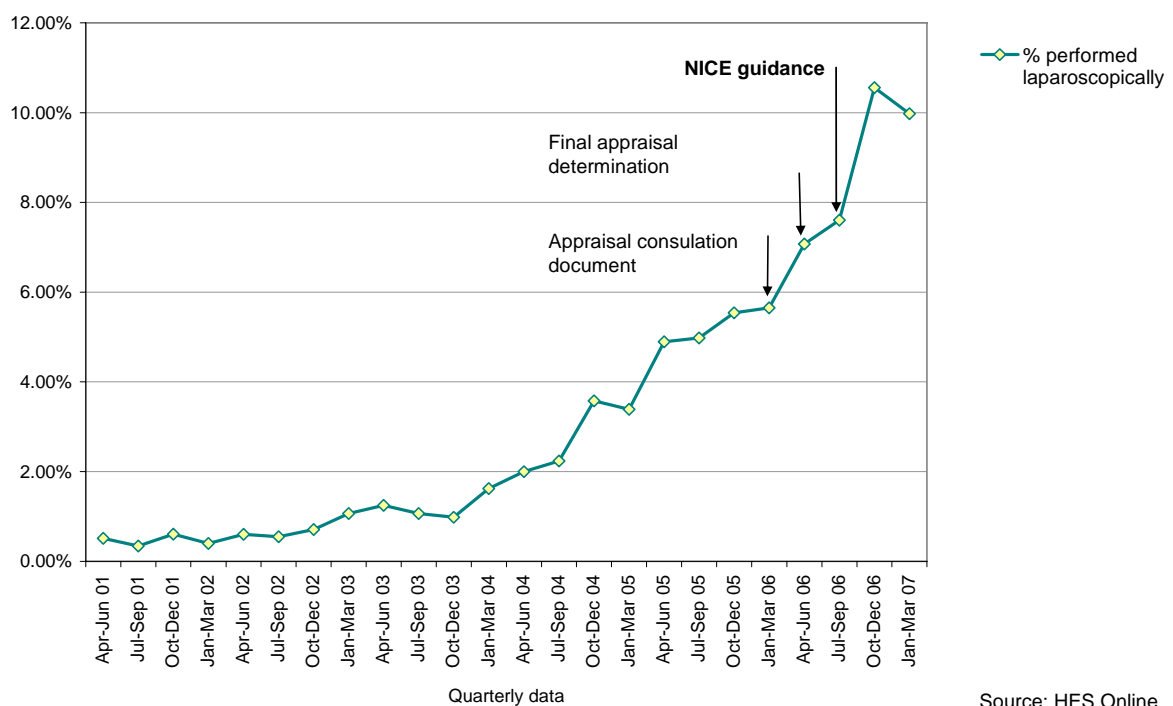
- Colorectal resections are defined where ICD-10 diagnosis codes C18, C19, and C20 appeared as the primary diagnosis and OPCS procedure codes H04-H11, H33 appeared as the main operation.  
C18 is malignant neoplasm of colon, C19 is malignant neoplasm of rectosigmoid junction and C20 is malignant neoplasm of rectum.
- Laparoscopic surgery is identified where OPCS subsidiary classification code Y508, Y751, Y752, Y753, Y754, Y755, Y758 and Y759 appeared in any of the secondary procedure codes (see [appendix 1](#) for further information).

ICD-10 (International Statistical Classification of Diseases and Related Health Problems, 10th Revision) – is used to classify diseases and other health problems recorded on many types of health records including hospital records.

OPCS-4 (Office of Population, Censuses and Surveys: Classification of Surgical Operations and Procedures, 4th Revision) - records details of any operations performed, e.g. hip replacement, inguinal hernia repair, colorectal resection.

A total of 19,049 FCEs were recorded where the main operation was a colorectal resection. Of these, 8.82% were identified as being performed using the laparoscopic approach. The number and percentage of repairs recorded as being done laparoscopically is increasing, as shown from the quarterly trend in figure 1. The publication of the NICE guidance appears to correspond with a further increase in the rate of uptake. It is too early to confirm a statistical link between guidance publication and change in uptake.

**Figure 1 percentage (%) of colorectal resections performed laparoscopically**



Source: HES Online

Uptake trajectory

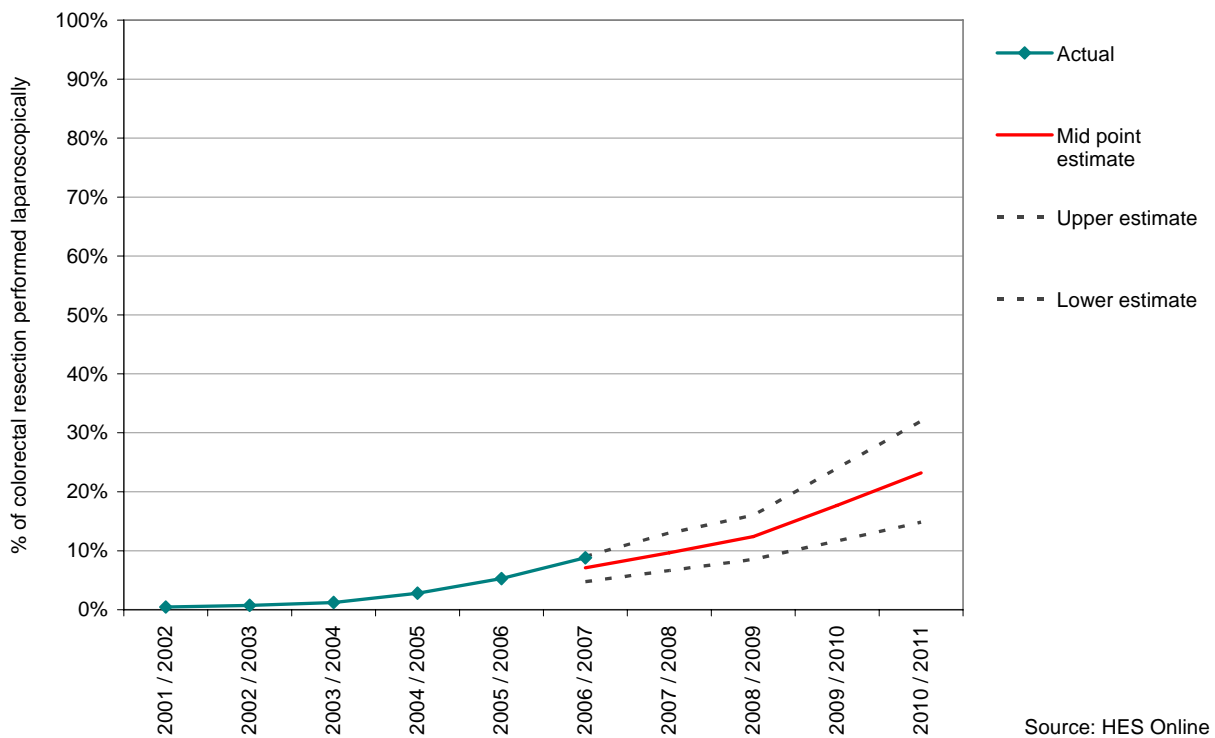
The NICE guidance recommends that laparoscopic surgery for colorectal cancer should only be performed by surgeons who have completed appropriate training in the technique, and who perform this procedure often enough to maintain competence.

The main rate limiting factor in uptake is a recognised shortage of surgeons skilled in this technique. Another factor to take into account is patient choice;

the NICE guidance recommends that patients should be fully informed about the risks of each of the types of surgery.

The NICE costing template, produced to support implementation of this guidance, provides possible scenarios for future uptake depending on the number of trained surgeons.<sup>1</sup> The future forecasts are shown in figure 2 alongside the actual uptake based on HES data from 2001/02 to 2006/07. The rate of uptake, based on HES data, is already at the higher end of the trajectory produced by NICE in August 2006.

**Figure 2 NICE trajectory for % of colorectal resections performed laparoscopically**



Source: HES Online

Analysis by NICE Implementation Team

<sup>1</sup> The costing template is available from: <http://www.nice.org.uk/guidance/index.jsp?action=download&o=33501>.

## ***Appendix 1: change to OPCS4 coding for laparoscopic surgery via abdominal cavity***

A new version of OPCS codes was developed by NHS Connecting for Health to reflect changing clinical practice and this was implemented in April 2006 - this new version is called OPCS4.3. All existing codes will remain. When using HES, care should therefore be taken when looking at procedures and interventions, in particular when using groups of codes as new codes and interventions have been introduced. More information on the change in classification of operations is available from: [www.connectingforhealth.nhs.uk](http://www.connectingforhealth.nhs.uk). Note that further developments have been made to the OPCS codes used in 2007-08 and quarterly 2007-08 data uses OPCS4.4.

### **List of OPCS4 codes for laparoscopic surgery relating to colorectal resections**

<b>OPCS 4.2</b>	<b>OPCS 4.3</b>	<b>OPCS 4.4</b>	<b>Description</b>
Y50.8	Y50.8	Y50.8	Other specified approach through abdominal cavity
Y50.8	Y75.1	Y75.1	Laparoscopically assisted approach to abdominal cavity
Y50.8	Y75.2	Y75.2	Laparoscopic approach to abdominal cavity NEC
Y50.8	Y75.3	Y75.3	Robotic minimal access approach to abdominal cavity
Y50.8	Y75.4	Y75.4	Hand assisted minimal access approach to abdominal cavity
Y50.8	Y75.5	Y75.5	Laparoscopic ultrasonic approach to abdominal cavity
Y50.8	Y75.8	Y75.8	Other specified minimal access to abdominal cavity
Y50.8	Y75.9	Y75.9	Unspecified minimal access to abdominal cavity

## ***Appendix 2: uptake trajectory (upper and lower estimate)***

This trajectory is adapted from a model provided in the NICE costing impact analysis produced to support implementation of this guidance. The model is based on 19,000 annual finished consultant episodes in England where the main operation was a colorectal resection.

Additional note: It is suggested that between 10 and 20 per cent of operations for colorectal resection started using the laparoscopic technique are converted to open surgery, depending on the experience of the surgeon. This conversion rate is not reflected these scenarios.

### Upper estimate

Surgeons trained each year	30
Increase in training capacity per year	5
Lap resections per experienced surgeon per year	40
Lap resections per inexperienced surgeon per year	20
Years before trained surgeons become experienced	2

	2006/07	2007/08	2008/09	2009/10	2010/11
Finished consultant episodes where the main operation was a colorectal resection	19,000	19,000	19,000	19,000	19,000
Source: based on HES data for 2006/2007					
Experienced surgeons performing laps	45	45	45	75	105
Recently trained surgeons performing laps	-	30	65	75	90
Total laps by experienced surgeons	1,800	1,800	1,800	3,000	4,200
Total laps by inexperienced surgeons	-	600	1,300	1,500	1,800
Total resections performed laparoscopically	1,620	2,100	2,660	3,900	5,220
<b>TRAJECTORY</b> (proportion of all resections performed laparoscopically)	9.00%	13.00%	16.00%	24.00%	32.00%
<b>ACTUAL</b>	8.82%	-	-	-	-

Lower estimate

Surgeons trained each year	30
Increase in training capacity per year	0
Lap resections per experienced surgeon per year	20
Lap resections per inexperienced surgeon per year	12
Years before trained surgeons become experienced	2

	2006/07	2007/08	2008/09	2009/10	2010/11
Finished consultant episodes where the main operation was a colorectal resection	19,000	19,000	19,000	19,000	19,000
Source: based on HES data for 2006/2007					
Experienced surgeons performing laps	45	45	45	75	105
Recently trained surgeons performing laps	-	30	60	60	60
Total laps by experienced surgeons	900	900	900	1,500	2,100
Total laps by inexperienced surgeons	-	360	720	720	720
Total resections performed laparoscopically	810	1,098	1,386	1,926	2,466
TRAJECTORY (proportion of all resections performed laparoscopically)	5.00%	7.00%	9.00%	12.00%	15.00%
<b>ACTUAL</b>	<b>8.82%</b>	-	-	-	-

## Definitions of data used in this report

### ***Hospital episode statistics***

Hospital Episode Statistics (HES) is the national statistical data warehouse for England of the care provided by NHS hospitals and for NHS hospital patients treated elsewhere. HES is the data source for a wide range of healthcare analysis. It contains admitted patient care data from 1989 onwards.

The information in this uptake report comes from the HES Interrogation System which is an online version of the data. The NHS Information Centre maintains the system.

**Finished Consultant Episode (FCE):** The FCE is a period of admitted patient care under one consultant within one healthcare provider. The figures do not represent the number of patients, as a person may have more than one episode of care within the year.

**Primary Diagnosis:** The Primary Diagnosis is the first of up to 14 diagnosis fields in the Hospital Episode Statistics (HES) data set and provides the main reason why the patient was in hospital.

**Main operation:** The main operation is the first recorded operation in the HES data set and is usually the most resource intensive procedure performed during the episode.

**Secondary operation:** As well as the main operative procedure, there are up to 11 secondary operation fields in Hospital Episode Statistics (HES) that show secondary or additional procedures performed on the patient during the episode of care.

## **Publication date**

This uptake report was last updated in February 2008

Previous update(s): none