

INTRODUCTION

Laparoscopic surgery and advances in colonoscopy have impacted on conventional open surgery for colorectal cancer (CRC). The NHS Bowel Cancer Screening Programme was phased in from 2006 across the West Midlands. The aim of this study was to analyse the trends in minimally invasive procedures (polypectomy and laparoscopic intervention) in the screening age group (60-69 years).

METHODS

A cohort of patients aged 60 to 69 years who underwent surgical intervention for CRC between 1998 and 2010 was obtained from the West Midlands cancer registration database (n=8,400). Emergency interventions (n=1,418) and cases with no surgery on HES or not matched to HES (n=375) were excluded resulting in a final cohort of 6,607 cases.

Trends were observed, and comparisons made between patients with screen-detected and symptomatic CRC post screening (2006 – 2010). Chi-squared statistics for testing observed trends and associated impacts were calculated.

RESULTS

Study cohort

Variable	Presentation type		Variable	Presentation type	
	Screen-detected Number (%)	Symptomatic Number (%)		Screen-detected Number (%)	Symptomatic Number (%)
All patients	578	6,029	Anatomical site		
Gender			RC & TC [^]	129 (22)	1,503 (25)
Male [^]	384 (66)	3,739 (62)	LC	274 (47)	1,962 (33)
Female	194 (34)	2,290 (38)	Rectum	163 (28)	2,302 (38)
Diagnosis year			Unspecified and overlapping	12 (2)	262 (4)
1998 - 2002 (Pre screening phase)		2,329 (39)	Dukes stage		
2003 - 2006	5 (1)	1,835 (30)	A [^]	224 (39)	1,059 (18)
2007 - 2010 (Screening phase)	573 (99)	1,865 (31)	B	159 (28)	2,182 (36)
Deprivation Quintile[#]			C	174 (30)	2,354 (39)
Least Deprived [^]	123 (21)	1,116 (19)	D	2 (0)	107 (2)
2	138 (24)	1,344 (22)	Rare and unknown [*]	19 (3)	327 (5)
Average	135 (23)	1,292 (21)	Surgery type		
4	86 (15)	1,064 (18)	Minimally Invasive	37 (6)	151 (3)
Most Deprived	96 (17)	1,213 (20)	Polypectomy [^]		
			Laparoscopic	173 (30)	356 (6)
			Routine		
			Surgical resection	368 (64)	5,522 (92)

[#] Income Domain of Indices of Multiple Deprivation (2007)

^{*} Includes carcinoids, sarcomas and tumours with an unknown stage. [^] p<0.001

Table 1. Patient and tumour characteristics by presentation type for CRC diagnosed 1998-2010

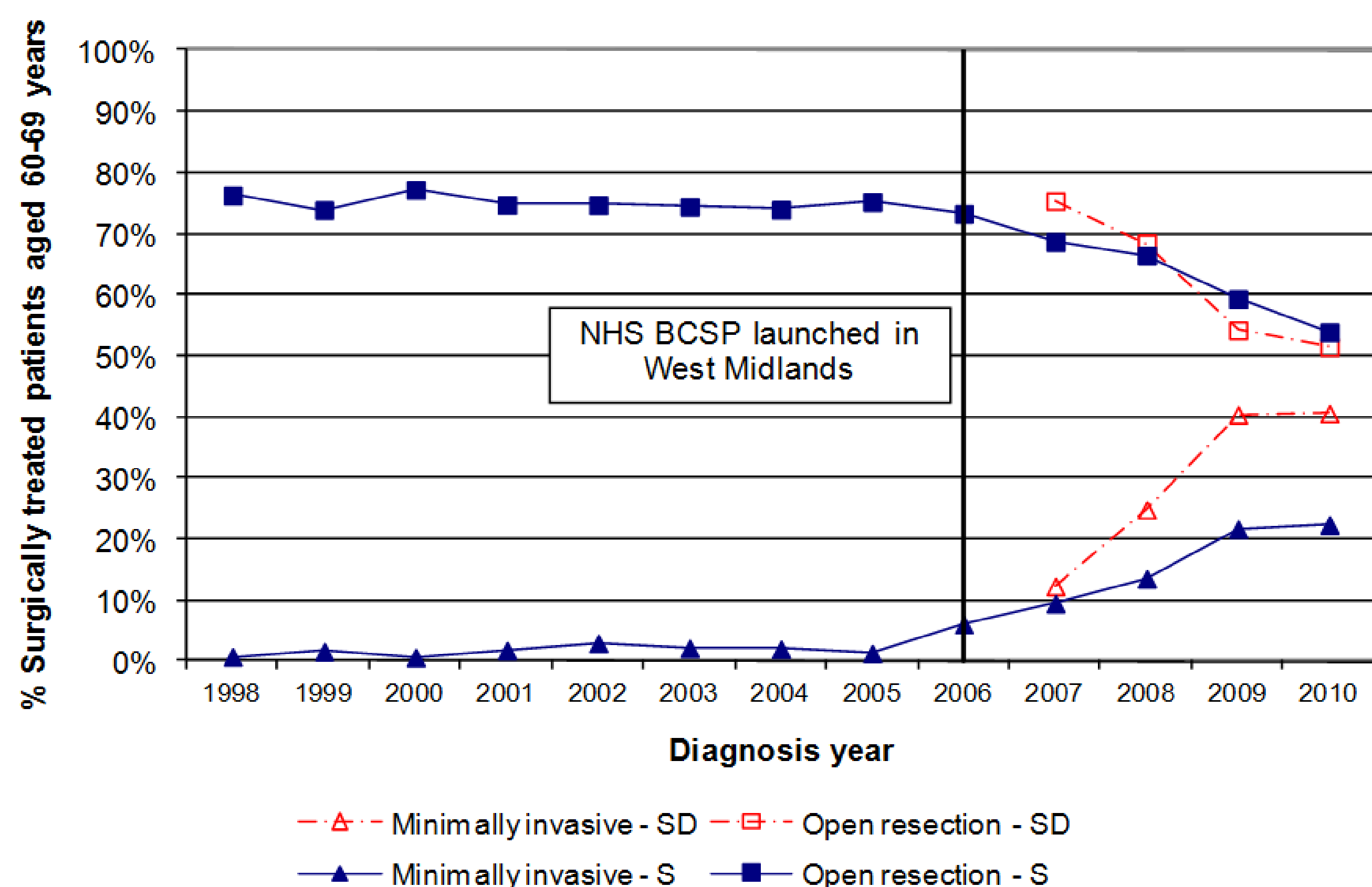


Figure 1. Trends in surgery type in patients aged 60-69 at diagnosis

The patient and tumour characteristics of the screen-detected and symptomatic cohorts who underwent elective minimally invasive interventions or polypectomy and included in this study are shown in Table 1. 578 patients (9%) had screen-detected CRC and 6,029 (91%) had symptomatic CRC. In 2010, 36% of patients with screen-detected CRC had a minimally invasive procedure compared with 25% of symptomatic patients (Figure 1).

Between 2006 and 2010, polypectomies were performed in 6.4% (n=37/578) of surgically treated patients who presented with screen-detected CRC compared to 3.1% (n=72/2323) in the symptomatic group (p<0.001).

There were also more polypectomies and laparoscopic procedures in the screen-detected group compared to the symptomatic group (40.6% and 22.4% respectively in 2010 [p<0.001]). The increase in polypectomies and laparoscopic procedures observed in both groups coincided with a fall in other elective procedures.

Trends in admission methods and elective surgery

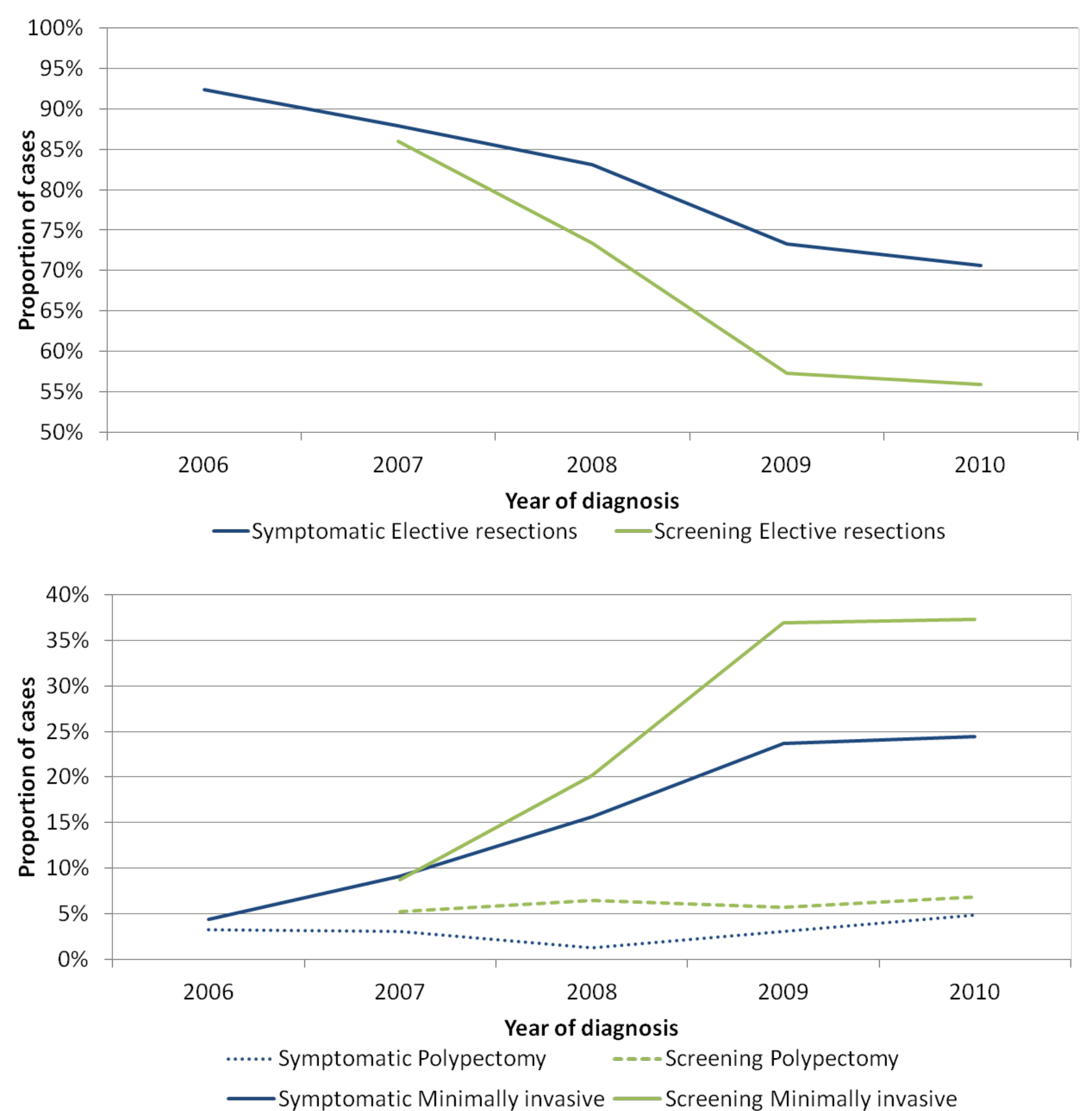


Figure 2. Trends in elective surgery types in patients aged 60-69 at diagnosis by presentation route.

CONCLUSIONS

Our data show that patients presenting through screening, are more likely to have their CRC treated with a polypectomy or a minimally invasive laparoscopic intervention. In respect to intervention type, minimally invasive procedures have increased over time, with a corresponding reduction in open resections; this change in practice may not however be solely related to the introduction of the bowel screening, but be related to increased training and specialisation by clinicians.