



**Queensland  
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## Uptake of laparoscopic resection for colorectal cancer in Queensland, 1999/2000 to 2007/2008.

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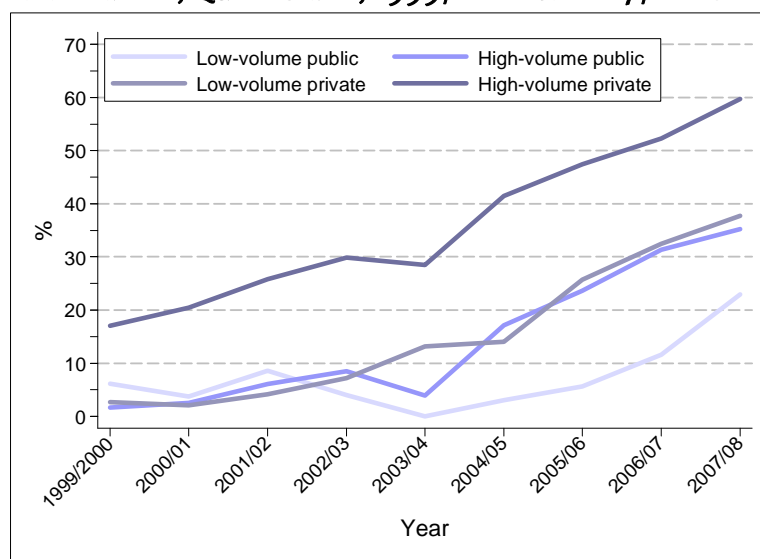
Laparoscopic resection is associated with short term benefits to patients and reduced length of hospital stay<sup>1</sup>. Laparoscopic resection for colorectal cancer (CRC) has gradually become an accepted alternative to open resection as evidence of its long term oncological safety grows and as surgeons develop the necessary skills. This paper examines the uptake of laparoscopic resection for CRC across Queensland's high and low volume hospitals in the public and private sectors over the last nine years. Resection of cancers of the rectum requires higher level skills than for resection of cancers of the colon and findings are presented separately.

Using data extracted from the Queensland Hospital Admitted Patients Data Collection, the percentage of colorectal resections documented in combination with a code for laparoscopy was determined for all elective admissions with a diagnosis code of CRC between 1999/2000 and 2007/2008 (see Table 1 for definitions used). Hospitals were defined as high volume if they conducted a minimum of 40 colorectal resections each year for 8 or more of the years included in the study.

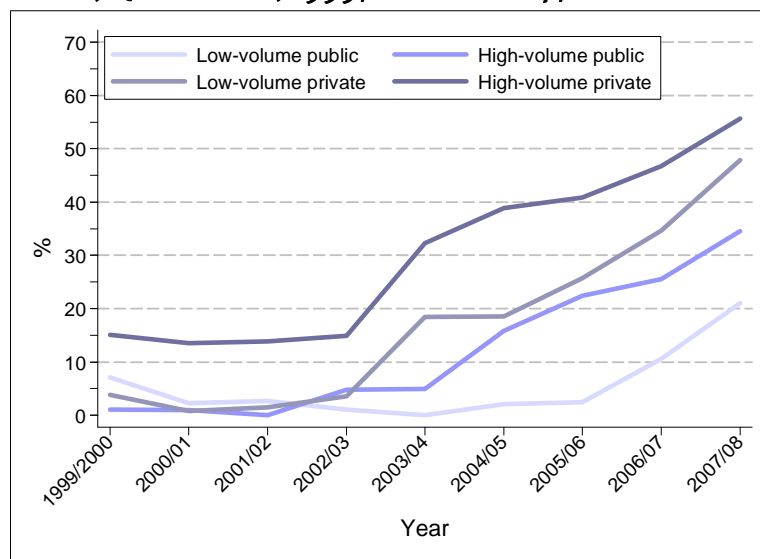
There has been an increase in the number of elective resections between 1999/2000 and 2007/2008 for cancers of both the colon (1053 to 1249) and rectum (397 to 586). Over the 9 years, the absolute percentage increase in elective segmental resections for colon cancer which were done laparoscopically was 34.5%; the corresponding increase for elective resections for rectal cancer was 36.8%. The laparoscopic percentage for elective rectal resections remained at a low level of 4% to 7% until 2003/2004 when there was a large increase to 15.6%.

For each year in the study, private hospitals conducted the greatest number of all elective resections. In 2007/2008, there was a total of 1835 elective resection of which 532 (29%) were done in high-volume private hospitals, 545 (30%) in low-volume private hospitals, 563 (31%) in high-volume public hospitals and 195 (11%) in low-volume public hospitals). For resections of the colon and rectum, high-volume private hospitals have consistently performed the

**Figure 1. Rate of laparoscopic segmental resections for colon cancer, Queensland, 1999/2000 to 2007/2008**



**Figure 2. Rate of laparoscopic resections for rectal cancer, Queensland, 1999/2000 to 2007/2008**



<sup>1</sup> Schwenk W, Haase O, Neudecker J, Muller JM. Short term benefits for laparoscopic colorectal resection. Cochrane Database Syst Rev. 2005(3):CD003145.

greatest percentage of laparoscopic resections (figures 1 and 2). For cancers of the colon, high-volume private hospitals experienced the greatest increase (42.7%), while low-volume public hospitals experienced the smallest increase (16.8%) (figure 1).

Figure 2 illustrates that for resections of the rectum, there was very little change in rates of laparoscopy until around 2003, at which point all hospital types saw a dramatic increase, with the exception of low-volume public hospitals whose increase was later in 2005/2006. Largest increases were seen in the percentage of rectal cancers resected laparoscopically in private hospitals (high-volume: 40.7% and low-volume: 44.1%) and low-volume public hospitals experienced the least increase (14.0%).

Queensland has experienced a dramatic increase in laparoscopic resections for CRC. Despite a later start, the percentage of laparoscopic resection of the rectum is similar to that for colon. Private hospitals, particularly high volume, conduct the highest percentage of laparoscopic resections and have experienced the greatest increase.

**Table 1: ICD10-AM codes used to define resections of the colon and rectum and the codes indicating laparoscopic access.**

Procedure category	Procedure	ICD10-AM codes *	Additional ICD10-AM codes indicating laparoscopic resection
Segmental resections of colon	Right hemicolectomy	3200301	3039000 or 3039300
		3200001	
	Left hemicolectomy	3200600	
		3200601	
	High anterior resection	3202400	
	Extended right hemicolectomy	3200501	
		3200401	
	Sub-total colectomy	3200500	
3200400			
Sigmoidectomy	3200300		
	3200000		
Resections of rectum	Low anterior resection	3202500	3039000 or 3039300
		3202600	
	Ultra low anterior resection	3202800	
Abdomino-perineal resection	3203900		
			Reason for exclusion
Excluded procedures	Hartmann's procedure	3203000	Emergency procedure
	Proctocolectomy	3205100	Not usually conducted with laparoscopic access
		3205101	
		3201500	
	Total colectomy	3201200	Not usually conducted with laparoscopic access
3200900			

\* In combination with a principal diagnosis code of C18.0 - C20.9