



## Deaths Following Cancer Surgery

The risk of death after cancer surgery has decreased since the last report, now ranging from less than 1% to about 5% depending on the type of surgery. This range is consistent with the complexity of the surgery and other risk factors associated with the particular type of cancer.

	Goal	As of this report
Deaths after surgery		

### What's new this year?

This report presents new data for fiscal years 2005 and 2006. In addition, post-operative mortality rates for liver resection are being reported for the first time this year.

### Indicators by LHIN



- [Erie St. Clair LHIN](#)
- [South West LHIN](#)
- [Waterloo Wellington LHIN](#)
- [Hamilton Niagara Haldimand Brant LHIN](#)
- [Central West LHIN](#)
- [Mississauga Halton LHIN](#)
- [Toronto Central LHIN](#)
- [Central LHIN](#)
- [Central East LHIN](#)
- [South East LHIN](#)
- [Champlain LHIN](#)
- [North Simcoe Muskoka LHIN](#)
- [North East LHIN](#)
- [North West LHIN](#)

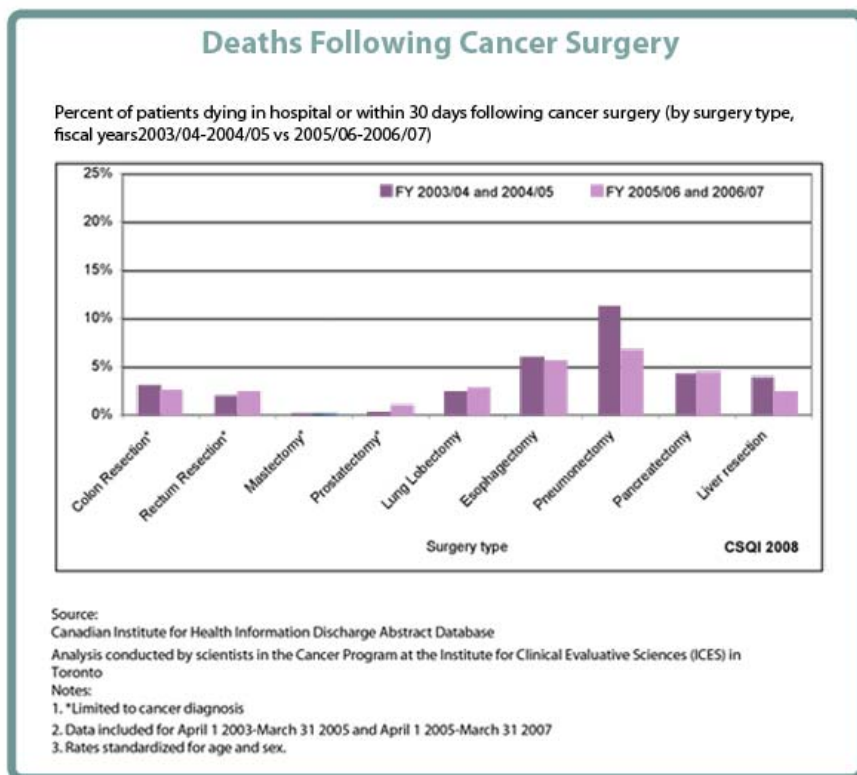


Figure 1: Percent of patients dying in hospital or within 30 days following cancer surgery (by surgery type, fiscal years 2003/04-2004/05 vs 2005/06-2006/07 | download in CSV or Excel format

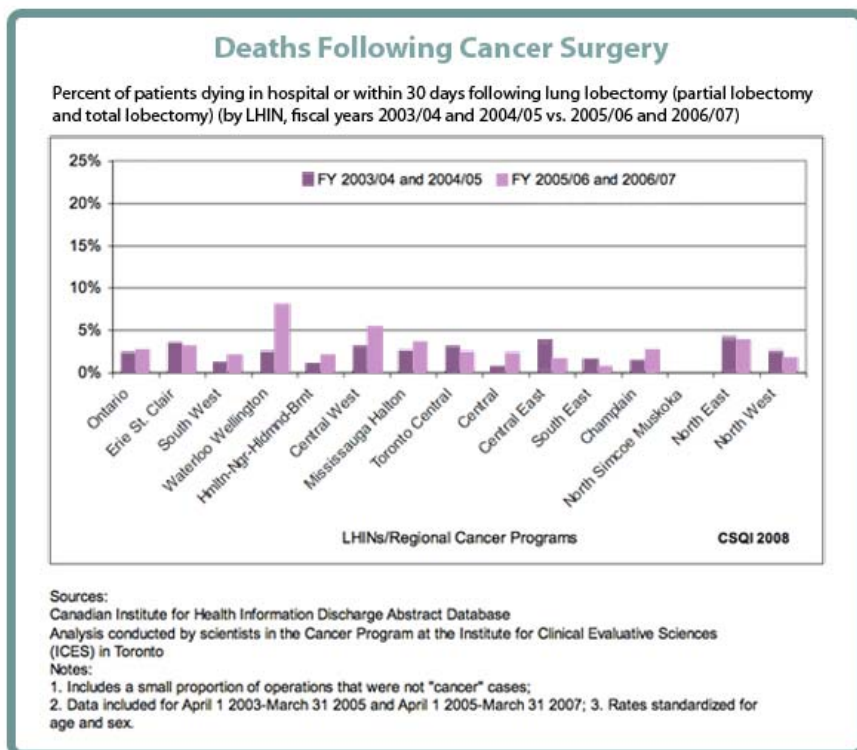


Figure 2: Percent of patients dying in hospital or within 30 days following lung lobectomy (partial lobectomy and total lobectomy) (by LHIN, fiscal years 2003/04 and 2004/05 vs 2005/06 and 2006/07) | download in CSV or Excel format

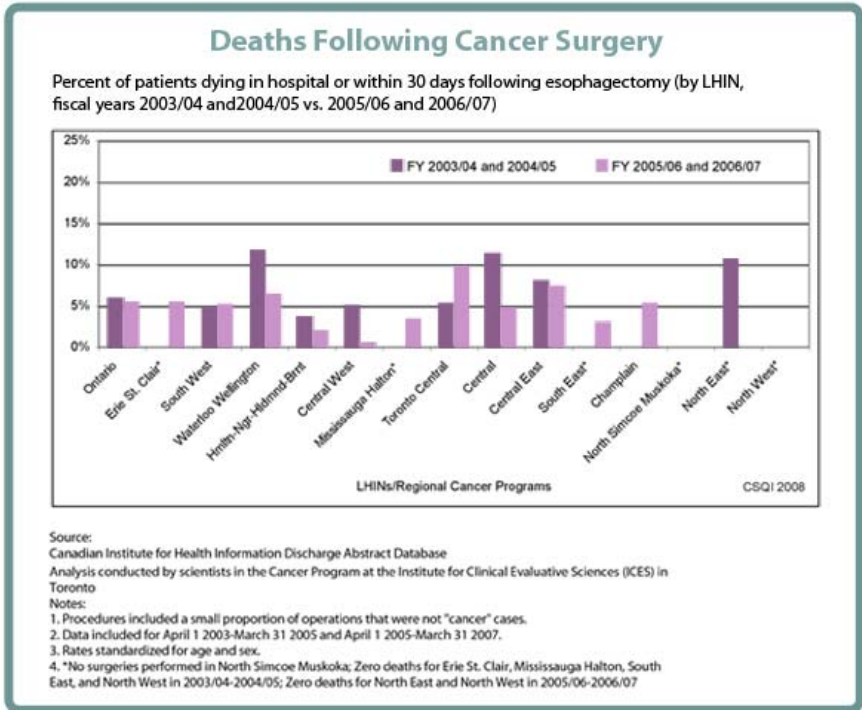


Figure 3: Percent of patients dying in hospital or within 30 days following esophagectomy (by LHIN, fiscal years 2003/04 and 2004/05 vs 2005/06 and 2006/07) | download in CSV or Excel format

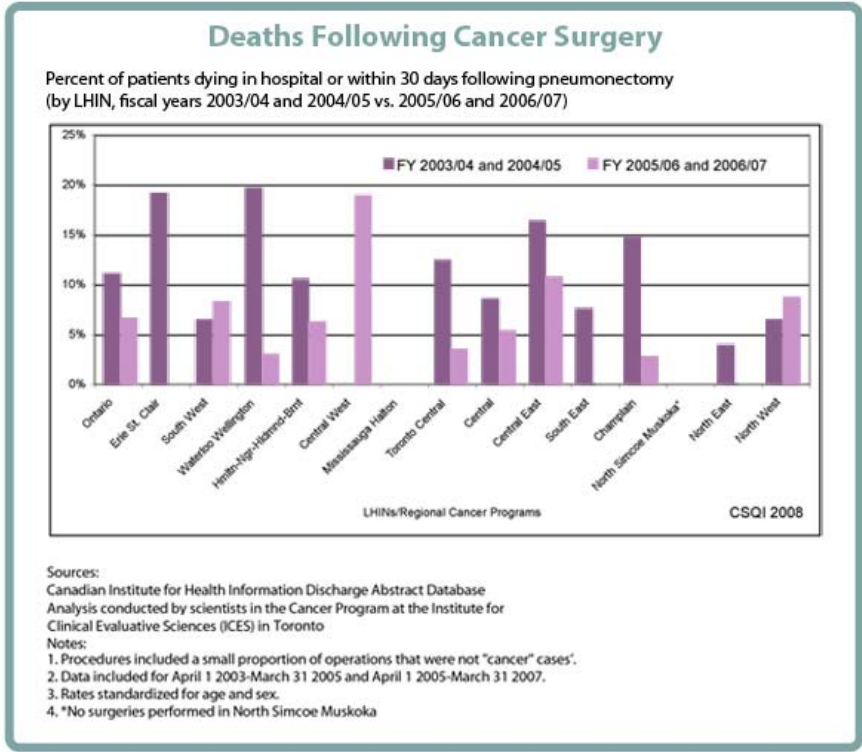


Figure 4: Percent of patients dying in hospital or within 30 days following pneumonectomy (by LHIN, fiscal years 2003/04 and 2004/05 vs 2005/06 and 2006/07) | download in CSV or Excel format

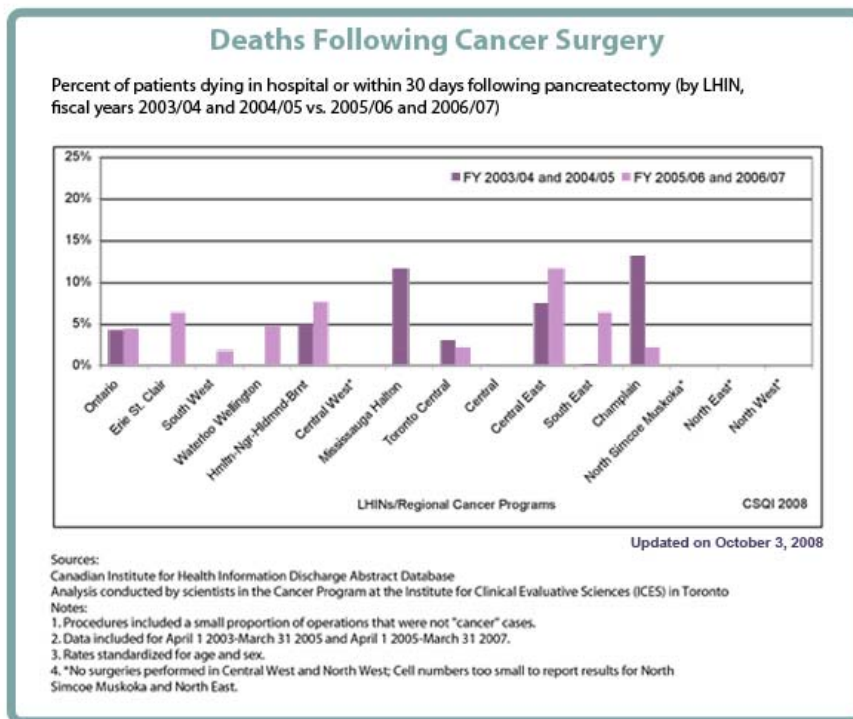


Figure 5: Percent of patients dying in hospital or within 30 days following pancreatectomy (by LHIN, fiscal years 2003/04 and 2004/05 vs 2005/06 and 2006/07) | download in CSV or Excel format

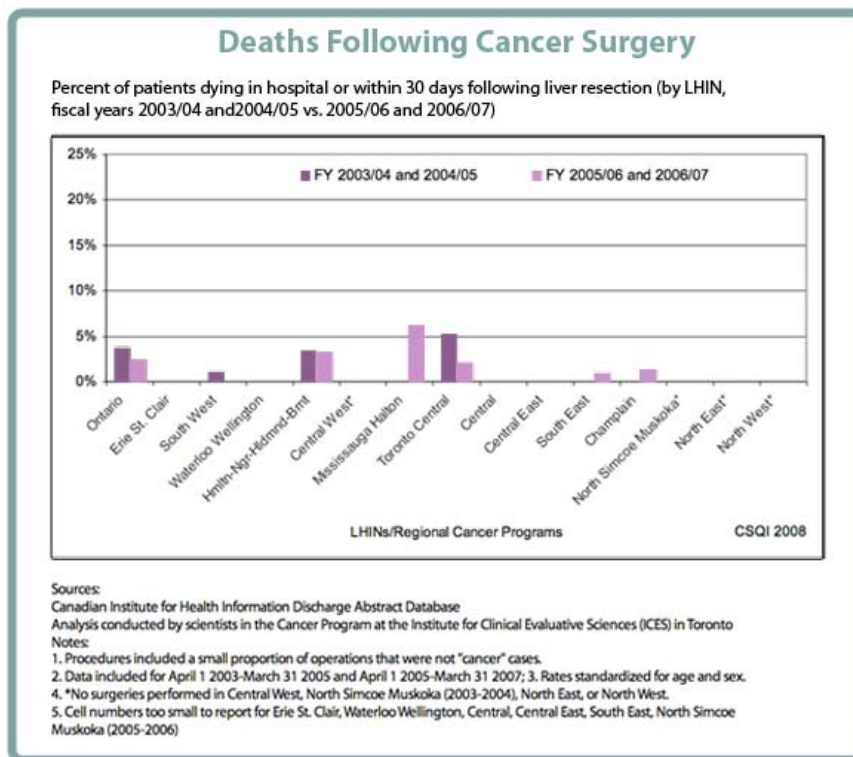


Figure 6: Percent of patients dying in hospital or within 30 days following liver resection (by LHIN, fiscal years 2003/04 and 2004/05 vs 2005/06 and 2006/07) | download in CVS or Excel format

What do the results show?

Fewer people are dying after cancer surgery

As seen in Figure 1, deaths after cancer surgery have generally decreased over the past several years, with the greatest reductions seen in deaths after pneumonectomy. The risk of death in hospital or within 30 days after surgery now ranges from less than 1% for breast and prostate cancers to 5.5% for esophagectomy and 6.5% for pneumonectomy. This is consistent with the complexity of the surgery and other risk factors associated with the diseases targeted in these surgeries.

Results vary across regions and procedures

The results illustrated in Figures 2–6 show some variation in mortality rates among Local Health Integration Networks. These differences may be attributable to factors such as patients' age, or the presence of more than one disease. The differences were also more pronounced for certain procedures, namely lung resections, esophagectomy, pneumonectomy, pancreatectomy and liver resection. Given the small case volumes for these procedures, however, it may not be easy to establish significant differences.

## Why is this important to patient care?

Better insight into mortality rates can lead to better post-operative outcomes

The rate of deaths after cancer surgery is an important measure of the quality of cancer care, especially in complex operations that carry significant risks. Identifying situations where mortality rates are higher than expected makes it possible to improve processes and, ultimately, post-surgery outcomes.

## How does Ontario compare?

Ontario mortality rates are in line with other jurisdictions

The observed mortality rates for Ontario are generally similar to those from other jurisdictions. However, the method for calculating post-operative mortality is not yet standardized enough to allow detailed comparisons with other provinces or jurisdictions.

## What is being done?

A detailed analysis by hospital

Where significant variances from expected mortality rates are observed, Cancer Care Ontario will carry out a detailed hospital-by-hospital analysis that will include a measurement of co-morbidities or multiple diseases, and an analysis of risk factors and processes of care.

Standards for delivering cancer-related thoracic surgery

In 2005, Cancer Care Ontario released the *Thoracic Surgical Oncology Standards*, <http://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=14336>, which detail the best system for delivering cancer-related thoracic surgery in Ontario. These standards were developed based on evidence and expert consensus, and include surgeon and hospital criteria, and expected minimum volumes. <sup>1</sup> To learn how the thoracic standard is being implemented across Ontario please see [CSQI 2008: Thoracic Indicator](#).

Standards for liver and pancreatic surgery

In 2006, Cancer Care Ontario released standards for hepatobiliary (liver) and pancreatic surgery. These standards include recommendations for training health professionals and their organizations, and detailing the support services and organizational structures needed in institutions that offer surgery for these cancers. Cancer Care Ontario is working with stakeholders to facilitate, monitor and encourage implementation of these standards.

Directing complex surgeries to centres with the appropriate skills and resources

Cancer Care Ontario has recommended that highly complex and uncommon types of cancer services be provided in regional or provincial centres with the expertise, experience and resources needed to achieve the best outcomes.

### Notes

<sup>1</sup> Sundaresan S, Langer B, Oliver T, Schwartz F, Brouwers M, Stein H, et al. Thoracic surgical oncology standards. Toronto: Cancer Care Ontario; 2005. Available at <http://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=14336>. Accessed March 24, 2008.

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