



## Guideline 2-19

A Quality Initiative of the  
Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

### Staging and Surgical Approaches in Gastric Cancer

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An assessment conducted in January 2026 deferred the review of Guideline 2-19. This means that the document remains current until it is assessed again next year. The PEBC has a formal and standardized process to ensure the currency of each document ([PEBC Assessment & Review Protocol](#))

Guideline 2-19 is comprised of 5 sections. You can access the summary and full report here:

<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/37866>

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# Staging and Surgical Approaches in Gastric Cancer

## Section 1: Recommendations

*This section is a quick reference guide and provides the guideline recommendations only. For key evidence associated with each recommendation, the systematic review, and the guideline development process, see the Full Report.*

### GUIDELINE OBJECTIVES

To develop recommendations on the optimal surgical management of gastric cancer in Ontario.

### TARGET POPULATION

These recommendations apply to adult men and women with Stage I to IV gastric cancer (specifically gastric adenocarcinoma) who are being considered for surgery. Gastroesophageal junction tumours and early gastric cancers are excluded because they require additional considerations.

### INTENDED USERS

Intended users of this guidance document are surgeons, gastroenterologists, medical oncologists, radiation oncologists, and the multidisciplinary team who treat gastric cancer.

### RECOMMENDATIONS

| Recommendation 1  |
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| <p>Endorsed from Lerut et al., 2012 [1]:</p> <ul style="list-style-type: none"><li>• All patients diagnosed with gastric cancer should be discussed at a multidisciplinary team meeting.</li><li>• In patients with newly diagnosed gastric cancer, CT scan of the chest and abdomen should always be performed.</li><li>• Endoscopic ultrasound (EUS) can be considered in patients planned for curative treatment on the basis of clinical presentation and/or CT. Fine-needle aspiration cytology of suspicious lymph nodes or metastases can be considered if technically feasible.</li><li>• The following examinations can be considered for specific indications: positron emission tomography (PET) scan, magnetic resonance imaging (MRI), laparoscopy.</li></ul>  |
| Qualifying Statements for Recommendation 1  |
| <ul style="list-style-type: none"><li>• Prior to embarking upon surgery, chemotherapy, or chemoradiation, accurate staging and multidisciplinary discussion are paramount to determine optimal sequencing of therapy.</li><li>• EUS should only be performed if results may change management plans (e.g., to assess for local invasion, nodal status, or metastatic spread).</li><li>• As the accuracy for CT scans in detecting M1 disease is only 81% [2], diagnostic laparoscopy may allow patients to avoid a laparotomy in up to 44% of cases of higher stage cancer [3]. Both Scottish Intercollegiate Guidelines Network (SIGN) [4] and Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) [5] guidelines suggest diagnostic laparoscopy in patients with clinically suspected T3 and T4 cancers, or those at higher risk for M1 disease, such as poorly differentiated cancers and those with a higher nodal burden. Diagnostic laparoscopy should be performed prior to</li></ul> |

starting chemotherapy for patients in whom a neoadjuvant approach is considered. Peritoneal washings may increase the accuracy of diagnostic laparoscopy.

- PET and MRI may be useful for further characterization of liver lesions, in clinical scenarios in which treatment plans would be changed by the finding of metastatic disease, but should not be routinely performed.

#### **Recommendation 2**

- A D2 lymph node dissection is preferred for curative intent resection of gastric cancer. In patients with T1N0 cancers or significant comorbidities a D1 dissection may be performed.

#### ***Qualifying Statements for Recommendation 2***

- Distal pancreatectomy and/or splenectomy should not be routinely performed, as morbidity and mortality is increased.

#### **Recommendation 3**

- A minimum of 16 lymph nodes should be assessed for adequate staging of curative-resected gastric cancer.

#### ***Qualifying Statements for Recommendation 3***

- American Joint Committee on Cancer/Union for International Cancer Control (AJCC/UICC) guidelines [6] state that 16 lymph nodes are necessary for adequate staging.
- Studies [7,8] suggest that removal and examination of more than 16 nodes may improve survival and increases accuracy of staging by decreasing under-staging, which leads to stage migration.

#### **Recommendation 4**

- Surgery for gastric cancer should aim at achieving an R0 margin.

#### ***Qualifying Statements for Recommendation 4***

- National Comprehensive Cancer Network (NCCN) [9] guidelines suggest 4 cm margins in order to assure negative margins, while the Japanese Gastric Cancer Treatment Guidelines [10] suggest that margins of 3 cm for T1/T2 cancer and 5 cm for T3/T4 cancers be obtained.
- Intra-operative frozen section analysis should be considered in cases where there is concern about a high risk of positive margin.
- Cancers with higher T and N stage, and higher grade tumours, such as diffuse-type histology including signet ring carcinoma, are more likely to have microscopic margins involved, and intra-operative planning or neoadjuvant therapy should take these factors into consideration.
- For patients with poor biology (>5 lymph nodes positive, diffuse-type histology including signet ring carcinoma), an extended resection of the adjacent organs or intra-thoracic esophagus may not result in improved long-term survival, as multivariable analyses in many studies have shown that tumour biology may be a stronger determinant of outcomes than a positive margin.

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| <ul style="list-style-type: none"> <li>Extended resection should be undertaken selectively and with multidisciplinary discussion.</li> </ul>   |
| <b>Recommendation 5</b>  |
| <ul style="list-style-type: none"> <li>In the metastatic setting, nonsurgical management options are preferred in patients without symptoms.</li> <li>In the metastatic setting, surgery should only be considered for palliation of symptoms that cannot be addressed through less-invasive means (i.e., radiation, chemotherapy, stenting).</li> </ul> |
| <b><i>Qualifying Statements for Recommendation 5</i></b>   |
| <ul style="list-style-type: none"> <li>As the rate of complications appears to be highest in more extensive resections, a palliative total gastrectomy should be performed only in exceptional circumstances, and with multidisciplinary discussion.</li> </ul>  |

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| <b>Recommendation 6</b>   |
| <ul style="list-style-type: none"> <li>Given evidence that higher-volume centres are associated with lower rates of procedure-related mortality, patients should be referred to higher-volume centres for surgical resection.</li> <li>Gastric cancer surgery should be performed in centres with sufficient support to prevent or manage complications (e.g., interventional radiology, anesthesia, level 1 intensive care unit).</li> </ul>   |
| <b><i>Qualifying Statements for Recommendation 6</i></b>  |
| <ul style="list-style-type: none"> <li>In most studies, higher-volume centres are associated with improved outcomes. There is no common definition of a high-volume centre compared with medium or low volume within the studies; however, it should be noted that five or fewer annual cases are considered low, or very low volume in all studies.</li> <li>An expected 30-day or in-hospital peri-operative mortality should be less than 5%. This is based on published mortality rates from high-volume centres, as well as the “Hepatic, Pancreatic and Biliary Tract (HPB) Surgical Oncology Standards” (EBS#17-2) [11], which recommends a 30-day or in-hospital mortality rate of less than 5% for major pancreatic resection and 3% for anatomical liver resection. As these procedures are more complicated than gastric cancer surgery, it is reasonable to expect a similar or lower mortality rate.</li> <li>Hospitals performing gastric cancer surgery should know their mortality rates, and recognize that lower volumes create larger confidence intervals for mortality estimates.</li> </ul> |

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| <b>Recommendation 7</b>   |
| <ul style="list-style-type: none"> <li>Quality metrics for lymph nodes, margins, peri-operative mortality, and oncologic outcomes should be met regardless of surgical technique (e.g., open or minimally invasive).</li> </ul>   |
| <b><i>Qualifying Statements for Recommendation 7</i></b>  |
| <ul style="list-style-type: none"> <li>While laparoscopic resection has been shown to be equal or superior to open surgery for short-term outcomes, there is no evidence regarding long-term cancer outcomes. Several ongoing randomized trials will report on oncologic survival.</li> </ul> |