

**A provincial audit to assess the quality of magnetic resonance imaging (MRI) for the staging of rectal cancer in Ontario**

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Accurate preoperative staging of rectal cancer is essential in order to select patients who are most likely to benefit from preoperative chemo-radiotherapy (CRT) while minimizing morbidity to patients who can safely avoid it. This is increasingly achieved using magnetic resonance imaging (MRI). The purpose of this study is to: 1) describe the quality of MRI protocols and images and the completeness of reports issued for local rectal cancer staging in Ontario, and 2) assess interobserver agreement on MRI by Ontario radiologists for key items required for local rectal cancer staging.

Ontario surgeons will identify patients who have had a preoperative MRI for the staging of rectal cancer and have completed treatment. A systematic literature review completed by our group in preparation for this study has identified the key protocol parameters required (T2 weighted sequences, high-resolution images perpendicular to the long axis of the tumour) as well as the key items necessary (T stage, nodes, circumferential resection margin) for local staging of rectal cancer on MRI. The quality of MRI protocols utilized and images produced, and the completeness of reports issued will be assessed with respect to whether they address these key parameters/items. Inter-observer agreement among radiologists of different training backgrounds and experience will then be assessed for each key item.

The results of this study will help to identify variation in the performance, interpretation and reporting of preoperative MRI and allow the development of strategies to reduce variation and improve consistency in the staging of rectal cancer. This will improve the overall quality of care by appropriately selecting patients who will benefit from preoperative CRT.