STD 4.7 Study of Quality and Outcomes:
Study: Rectal Cancer MRI Synoptic Reporting

Problem Statement:
A concern was identified regarding the inconsistent level of compliance for MRI synoptic reporting of Stage I-III rectal cancer. The sequencing and protocols for MRI of the pelvis are not the same at both Alexian Brothers and St Alexius Medical Centers. We are concerned there is a lack of standardization and consistency in the reporting elements as well as TNM staging.

Methodology:
An audit of total Stage I-III rectal cancer cases from 2018 will be completed by a subcommittee, this will include verifying if TNM staging occurred and through what procedure, MRI or ultrasound. The process of using a new template will result in the development of similar protocol for rectal cancer MRI reports at both facilities. All results will be reported to the Cancer Committee. An audit will be done to determine if use of new template increased amount of TNM staging that were completed through use of MRI.

Discussion/Findings:
The scanners are different at each location, resulting in less cases at ABMC (1.5) then at SAMC (3T Magnet).
The protocols will be slightly different, but the implementation of the template to be used at both facilities will result in the same reporting process. Through this study there is hope that the organization can promote a better staging process, resulting in increase in referrals directly related to an increase in physician satisfaction with the improved reports.

<table>
<thead>
<tr>
<th>Year</th>
<th># Rectal Cancer</th>
<th># had CT of Abdomen</th>
<th># that had U/S</th>
<th># that had MRI</th>
<th>% of MRIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>20</td>
<td></td>
<td>12</td>
<td>SAMC-2</td>
<td>10%</td>
</tr>
<tr>
<td>2019 (Jan-Sept)</td>
<td>20</td>
<td>9</td>
<td>ABMC-1</td>
<td>9</td>
<td>45%</td>
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2019 Outliers:
2nd Opinion review-August-1 pt

A literature review showed that MRI has replaced endorectal ultrasound as the primary imaging modality used for the local staging of rectal cancer. MRI’s significant advantages are: the ability to have independent review, improved accuracy of extramural depth of invasion and extramural vascular invasion, detection of the anticipated circumferential margin clearance, and the ability to compare pre-and post-treatment studies. The protocol for MRI staging of rectal cancer has been refined and standardized by European experts. For MRI staging to be effective, the technique of acquiring and interpreting the images must be uniform, and the results must be reported in a standardized report. It has been reported that without standardized reporting less than 40 percent of MRI reports contains all the necessary information to make treatment decisions.

These standards have been adopted by National Accreditation Program for Rectal Cancer. In addition, the staging results for 95% of previously untreated rectal cancer patients who complete MRI exams are to be recorded in a standardized report containing the minimum required elements. The newly developed template will be used to maintain compliance.
To date the use of MRI for diagnosing rectal cancer has grown from 10% in 2018 to 45% in 2019 showing that the use of a newly improved universal template and education of physicians on usage of tool has successfully supported the cancer patient in the diagnostic process. As well as a decrease in the use of ultrasound for staging from 6% in 2018 to .5 % in 2019 supporting the replacement of MRI from ultrasound as the primary imaging modality for staging rectal cancer.

**Benchmarks/Guideline:**


**Conclusion: Action Plan/Follow Up:**

Action: A staging template was designed by radiology medical staff with reference to the Cancer Care Ontario and the European Society of Gastrointestinal and Abdominal Radiology (ESGAR) templates and was implemented in February at St Alexius Medical Center.

August 2019 Update-Alexian Brothers Medical Center has confirmed use of new template, but due to not having high numbers of rectal cancer patients the template has not been used. Radiologist has confirmed the number of rectal cancer patients who had MRI and at what location for 2019 with Regional Director’s assistance.

November 2019 Update-Radiology department will continue to use the newly designed template for reports at both facilities. Improving the information within the report as well as increasing the number of MRIs performed due to change in departmental practices and use of template.