

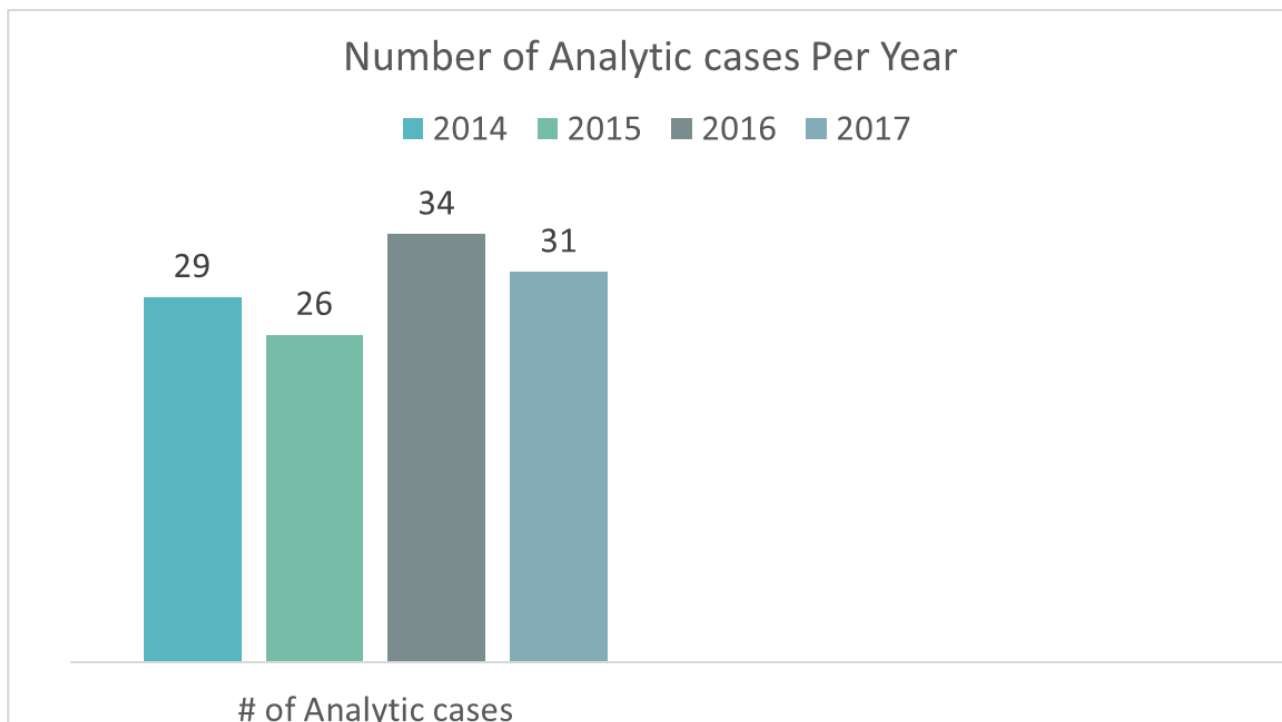
2018 Colon Site Specific Study (Std 4.6)

In 2018, the Cancer Committee of St. Luke's Cornwall Hospital recommended a review and evaluation of colon adenocarcinoma analytic cases identified in 2016 and 2017. This study evaluated our experience with colon adenocarcinoma, analyzed our incidence, age at diagnosis, stage at diagnosis and gender trends. We also evaluated the first course of treatment rendered for colon adenocarcinoma to determine our compliance with NCCN guidelines.

It is estimated that there will be 97,200 cases of colon cancer diagnosed in the United States in 2018 (American Cancer Society, 2018). An estimated 50,630 deaths from colorectal cancer will occur in 2018 (ACS, 2018). Accurate statistics on colon cancer death is not available due to misclassification of colon cancer versus rectal cancer at time of death (ACS, 2018). However, in the past 10 years for which data is available (2005 to 2014), incidence rates have declined by 3.8% annually for colon cancer among adults 55 years of age or older (ACS., 2018). Overall, the incidence of mortality due to colon cancer has dramatically decreased, which is believed to be due increased screening and improvements in treatment.

It has been identified that colon cancer continues to be an area of concern at St. Luke's Cornwall Hospital (SLCH). Review of our cancer registry data demonstrates that we are seeing patients at later stages at diagnosis, which has been approximately 13-21% in 2016-2017. In this study, we retrospectively examined all colon adenocarcinoma patients who were first diagnosed in 2016 and 2017 who had surgical intervention as first course of treatment at SLCH.

Colon Cancer Incidence at St. Luke's Cornwall Hospital

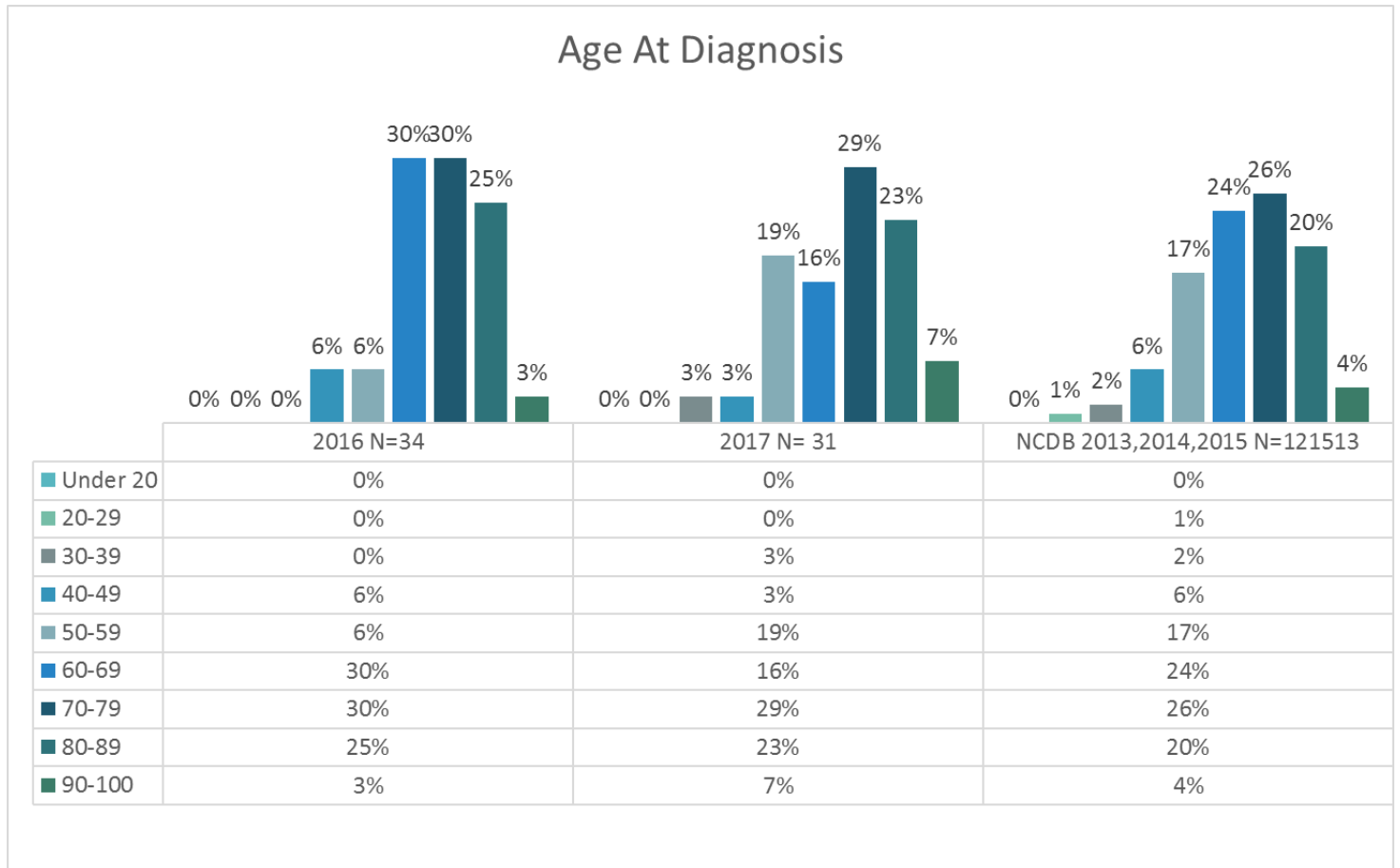


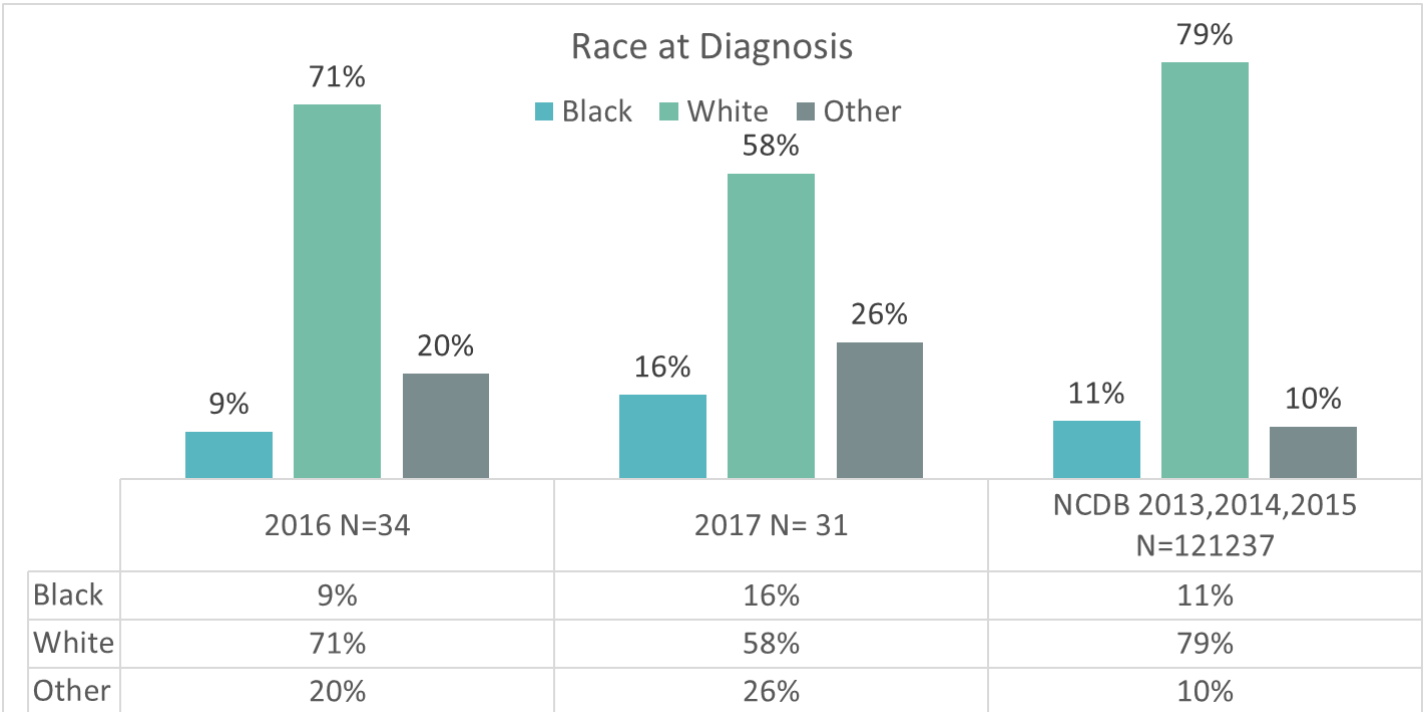
The annual incidence rate of colon cancer at SLCH has increased in 2016-17 as compared to what we saw in the previous three years (2013-2015). There was a total of 65 new colon cancer cases diagnosed and/or treated at SLCH in 2016 and 2017.

Patient Demographics

The following data profiles the age at diagnosis of our patients over a two-year period as compared to the NCDB database of 719 hospitals.

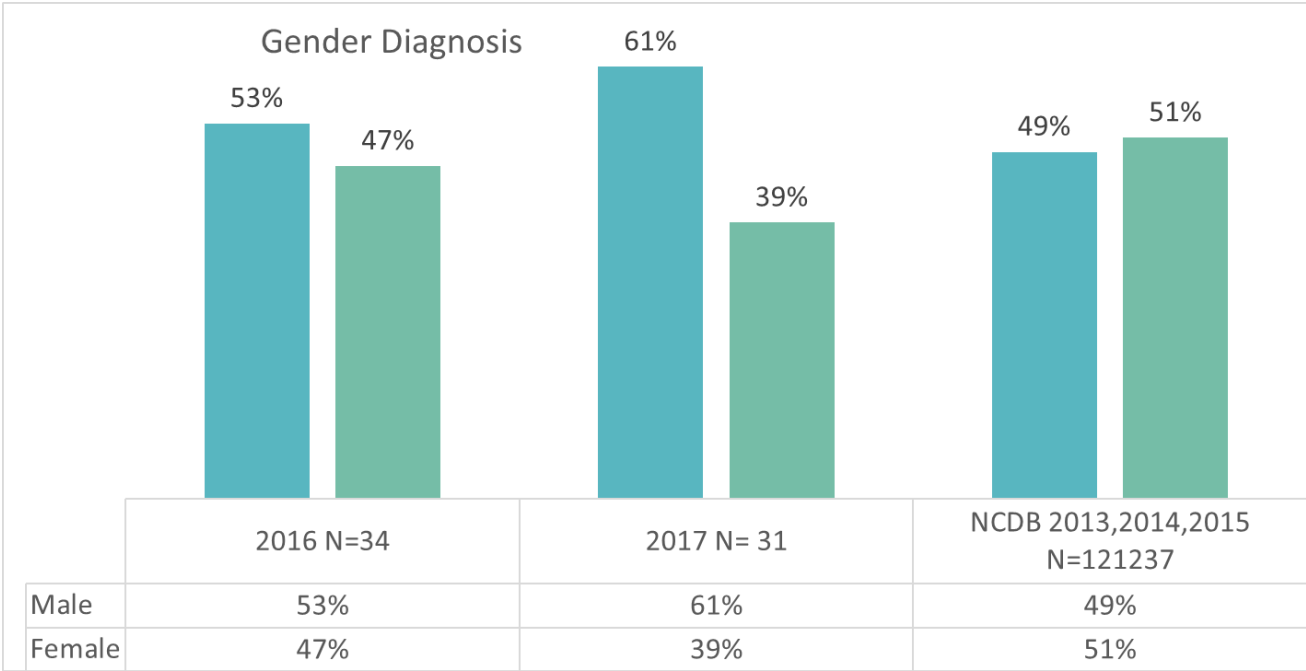
Age at Diagnosis: Our patient population appears to have a higher percentage of patients who were diagnosed at a later age (60-79 years of age) than the NCDB database.



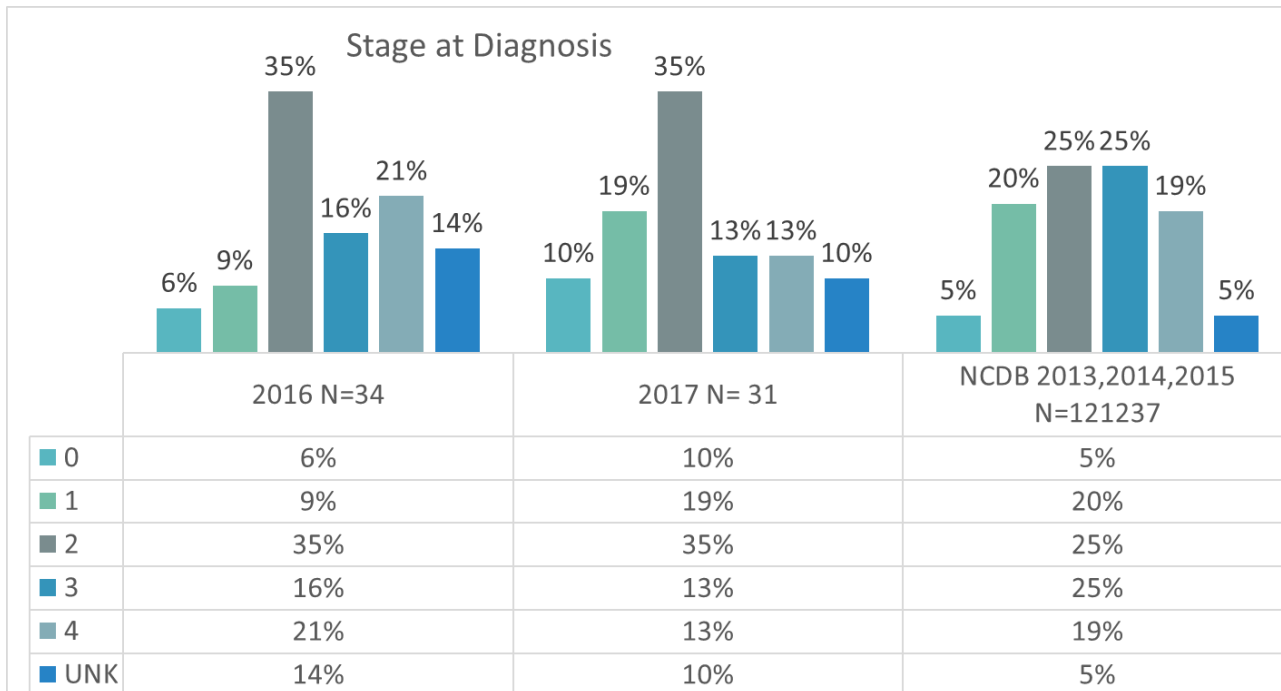


Race: Recognizing that our experience reflects a small # of cases, we have a higher percentage of patients who are categorized as black and “other” for Race, than the NCDB. This is not considered to be unusual given SLCH’s patient population and demographics in our region which includes a higher Hispanic population.

Gender Distribution: SLCH vs. NCDB- we appear to have a higher percentage of males diagnosed at SLC vs the NCDB



Stage at Diagnosis: SLCH vs. NCDB

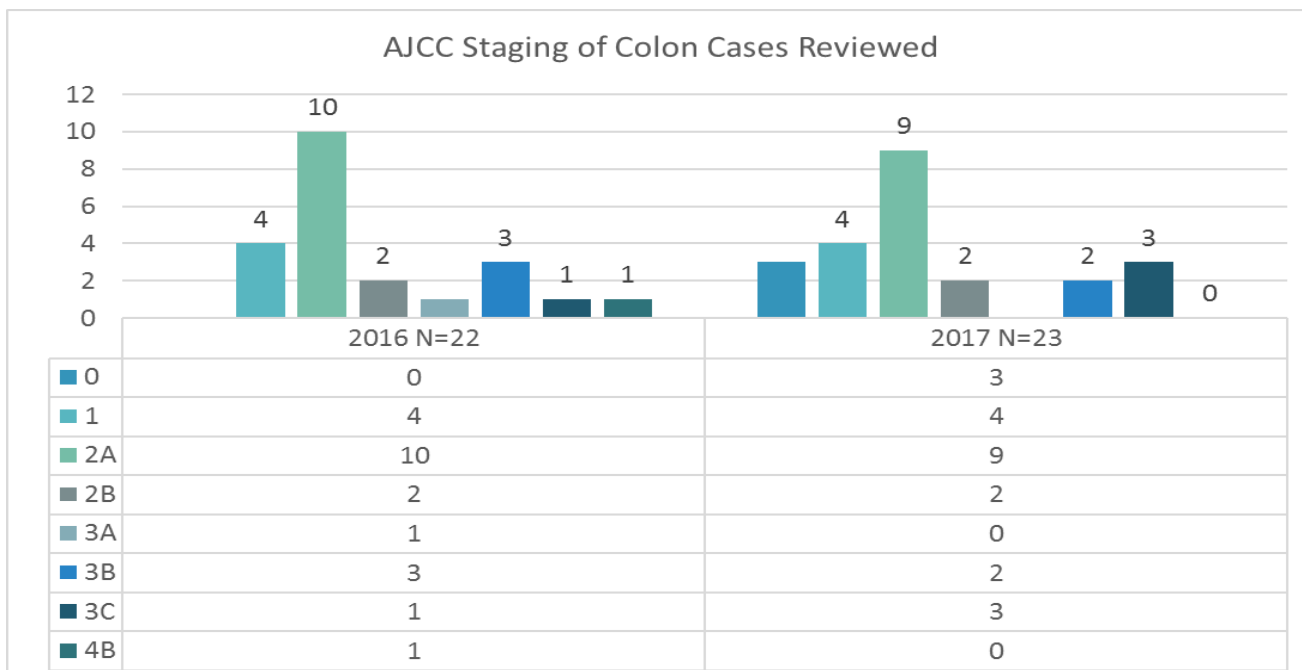


Criteria

A retrospective analysis of all patients diagnosed with colon adenocarcinoma at St. Luke’s Cornwall Hospital from January 1, 2016 through December 31, 2017 with surgical intervention as first course of treatment was conducted. We then divided the cohort into stages (stage 0, Stage 1, Stage II, Stage III and Stage IV) based on pathological evaluation.

Stage at Diagnosis:

AJCC staging is used as the staging method at SLCH. We have seen more patients diagnosed at stage 2 than NCDB

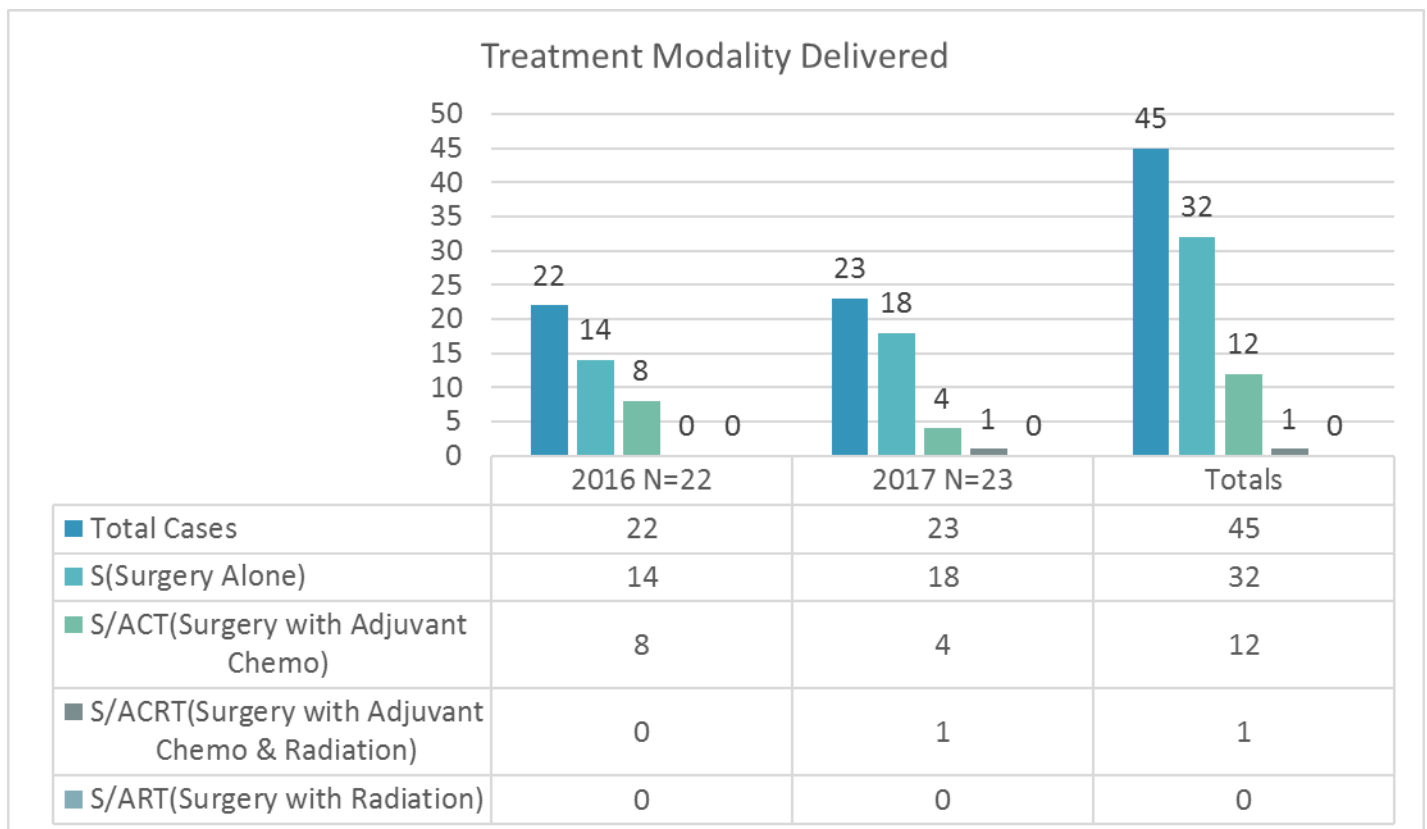


First Course of Treatment by Stage: SLCH vs. NCCN Guidelines

There are several first course of treatment regimens used in the treatment of colon adenocarcinoma. The first course of treatment is decided based on stage and presentation of disease. Treatment of colon cancer can include surgery alone (S), surgery combined with adjuvant chemotherapy (S/ACT), surgery combined with adjuvant chemotherapy and radiation therapy (S/ACRT) and surgical resection combined with radiation therapy (S/ART).

2016 Review against NCCN guidelines:

- There was a total of 22 colon adenocarcinoma cases reviewed from 2016.
- There was one patient of pT1; N0; M0 followed with observation post surgical resection in accordance with NCCN guidelines.
- There were 3 patients of pT2; N0; M0 followed with observation post surgical resection in accordance with NCCN guidelines.
- There were 11 patients with pathological diagnosis of T3; N0; M0. Of the 11 cases, 2 received chemotherapy and there was one patient where chemotherapy was recommended but patient refused.
- There were 7 patients with advanced disease who did not have further treatment or were started on a palliative care plan.



2017 Review against NCCN guidelines:

- There was a total of 23 colon adenocarcinoma cases reviewed from 2017.
- There were 3 patients with pathological diagnosis of Tis; N0; M0. In accordance with NCCN guidelines these patients were followed with observation after surgical intervention.
- 4 patients had a pathological diagnosis of T2; N0; M0 which were followed with observation after surgical intervention in accordance with NCCN guidelines.
- There were 9 patients of T3; N0; M0 colon adenocarcinoma followed with observation after surgical resection in accordance with NCCN guidelines.
- There were 6 patients with advanced disease who received chemotherapy following surgical resection in accordance with NCCN guidelines. One patient received chemotherapy prior to surgical resection and one patient was offered but refused chemotherapy post-surgical resection.

Conclusion:

45 colon adenocarcinoma 2016 & 2017 cases were reviewed. All cases were in concordance with NCCN guidelines. Two cases recommended chemotherapy, however the patients refused further treatment.

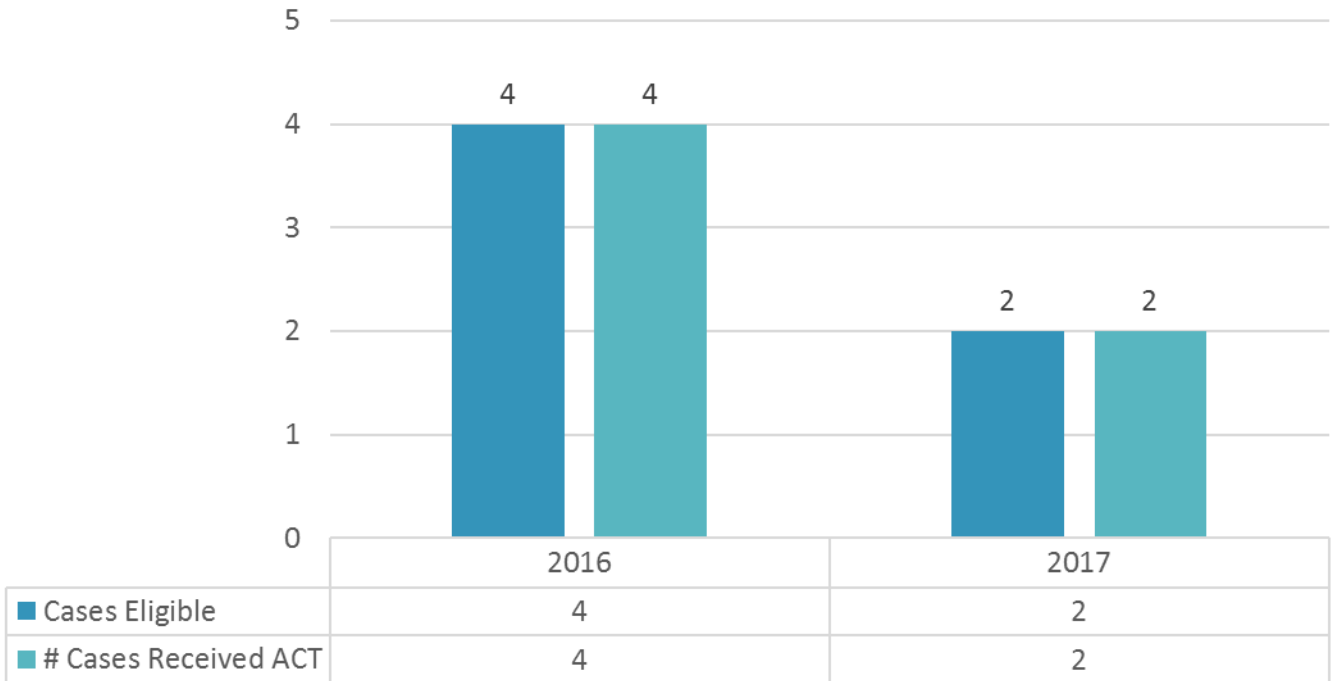
Cancer Program Practice Profile (CP3R):

The American College of Surgeons' Commission on Cancer requires all accredited Cancer Programs to participate in the Cancer Program Practice Report (CP3R). Each hospital collects this data in their cancer registry to evaluate whether patients have been managed according to national guidelines. Following are the CP3R metrics related to colon cancer that are currently being evaluated by the Commission.

The use of adjuvant chemotherapy in Stage III colon cancer has been shown to have survival benefits compared to surgical resection alone. The National Comprehensive Cancer Network (NCCN) has recognized the use of adjuvant chemotherapy in Stage III colon cancer as a standard of care. St. Luke's Cornwall Hospital reports and submits treatment data to the National Cancer Data Base annually (NCDB).

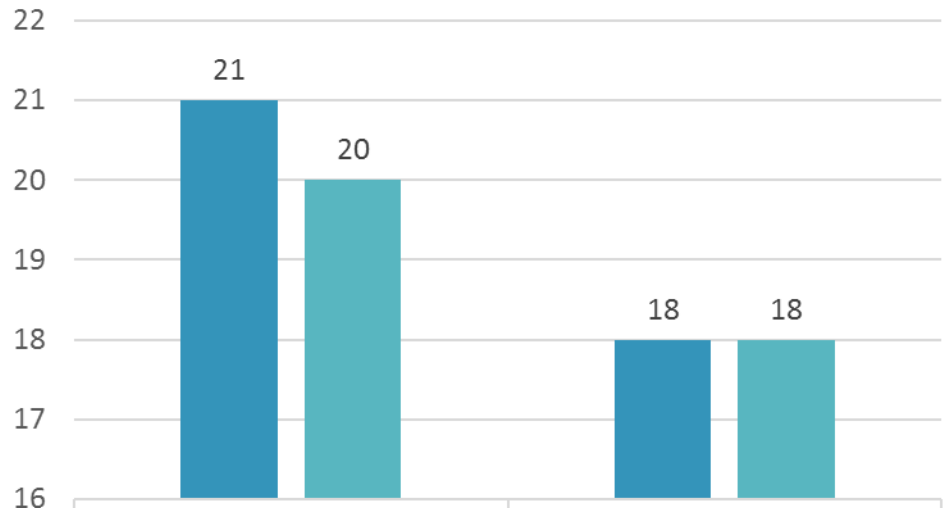
The following data demonstrates SLCH concordance rate regarding the use of adjuvant chemotherapy in the treatment of patients with Stage III colon cancer. The data presented is preliminary CP3R data for this period at SLCH. The last CP3R metrics available in the NCDB is 2015. SLCH preliminary 2016 & 2017 CP3R data demonstrates a 100% compliance in the administration of adjuvant chemotherapy treatment (ACT) within 4 months of diagnosis for patients under the age of 80 with AJCC stage III lymph node positive colon cancer.

2016 & 2017 Colon Cancer Cases Concordant with CPR3 Metrics for ACT-Adjuvant Chemotherapy Treatment in Stage III Patients



The following data demonstrates SLCH concordance rate with the removal of greater than 12 regional lymph nodes (RLN) during surgical intervention. The National Cancer Database measures concordance rates on the removal of greater than 12 regional lymph nodes during surgical intervention and has set forth a compliance rate of 85%, last measured in 2015. 2016 data for SLCH demonstrates a 95% concordance rate in the removal of >12 regional lymph nodes. One case was identified as non-concordant but was appropriate as the patient had prior abdominal surgery not allowing 12-regional lymph nodes to be removed on subsequent surgery. Preliminary 2017 data for SLCH demonstrates a 100% concordance rate in the removal of > 12 regional lymph nodes.

2016 & 2017 Colon Cases Concordant with CPR3 Metrics For Cancer Cases > 12 RLN Removed



| | 2016 | 2017 |
|-------------------------------------|------|------|
| # of Cases | 21 | 18 |
| # of Cases with Removal of > 12 RLN | 20 | 18 |

Discussion:

An in-depth review of all surgical colon adenocarcinoma cases at SLCH for 2016 & 2017 has demonstrated good standing with compliance against NCCN guidelines at St. Luke’s Cornwall Hospital. There are several pathways that are considered when treating colon cancer and patient preference also plays a large role in the decision making of treatment plans and survivorship. Of the 45 patients reviewed in this study 32 (63%) were followed with observation after surgical resection.

A quality study conducted this year for the cancer program has also highlighted the need for considering genetics and genetic markers in the treatment of colon cancer. As options for treatment and the evolution of immunotherapy changes the landscape of care, the importance of genetics will be at the forefront of decision making in the treatment of colon cancer. These results are reflected in a separate study submitted to the cancer committee. SLCH will continue to monitor genetic testing in colon pathology cases aiming for all cases to have MMR/MSI study completed.

Respectfully Submitted,

Paul Reichman, MD
 General and Trauma Surgeon, SLCH

References:

American Cancer Society. *Cancer Facts & Figures 2018*. Atlanta: American Cancer Society; 2018

