Improving the timeliness from referral to first appointment in the infusion center

The Cancer Committee at Baylor Scott & White All Saints Medical Center – Fort Worth identified a potential area for improvement related to the length of time of patient referral to scheduled first chemotherapy at the Outpatient Infusion Clinic. Before initiating changes, the Committee elected to understand and validate average current delay times for the infusion clinic for first time chemotherapy appointments. In addition, the Committee suggested investigating performance rates of similar outpatient infusion centers.

Areas of focus for data collection

• Data will be collected utilizing the patient scheduling log for the month of August 2018 to quantify how long it takes, on average, for the infusion center to schedule first chemotherapy appointments.

• Literature will also be assessed to determine recommendations and/or best practices/target time frames recommended for similar outpatient centers and compare those findings to the Baylor Scott & White – Fort Worth current processes.

Findings

A review of the infusion center’s scheduling log for the month of August revealed a wide range of variation in turnaround time (TAT) for scheduling first appointments for chemotherapy. The time delay from order received to time of first appointment ranged anywhere from one day to 15 days, with a mean of 5.9 days. The graph below illustrates the high degree of variation, validating there are opportunities to improve our scheduling processes.

As it relates to identifying benchmark values, The Joint Commission published an article that reviewed scheduling and timeliness of care for outpatient chemotherapy patients at each stage of the process: from time of first contact to time to first appointment through the ability to schedule recurring appointments consistent with the patient’s treatment protocol, as well as how to minimize treatment delays during the outpatient episode of care. The team used this information to provide some context and serve as a reference point for expectations and goals.

National benchmark

The study published in the article referenced on page 2 by The Joint Commission published a study that looked at improvements related to number of days from referral to first appointment in an outpatient clinic for first-time chemotherapy patients. The study showed a median of a nine-day delay prior to implemented improvements. After process improvements were implemented, the delay time was reduced to a median of three days.

When this benchmark value is compared to our internal performance—both the mean and the median—there is confirmation that our process can be better streamlined and improved.

TAT comparison—days from referral to first appointment

Action taken at completion of study

The results of the study illustrated that there was a clear opportunity for improvement in scheduling appointments for our new chemotherapy patients. In our desire to provide excellent and timely service to this patient population, a quality improvement team was developed to reduce the amount of time from order received to first treatment for our outpatient infusion clinic chemotherapy patients.

References

Enhancing access to the outpatient infusion clinic by reducing the mean time from ‘order received’ to ‘treatment provided’

The infusion center at Baylor Scott & White – Fort Worth provides outpatient infusion services to patients needing a wide range of chemotherapy and biotherapy treatments, treating numerous cancer diagnosis and blood disorders. One of the most important components of a successful infusion center is access to care (available appointments).

Based on the study of quality “Timeliness of Referral to First Appointment in the Infusion Center” an opportunity to decrease time from ‘order received’ to ‘treatment provided’ was identified.

The goal established was by December 1, 2018, the Infusion Center Quality Improvement Team will decrease the mean time from referral to treatment from 5.8 days to less than two days.

**Action plan**

The initial step taken by the team was to map each step in the process from ‘order received’ to ‘treatment’, which allowed visualization of the sequence of events along the pathway to care, as well as an understanding of the process as a whole.

Next, through brainstorming, issues causing delays in the process were identified. To ensure that appropriate/high-priority issues were addressed, a 2 x 2 priority matrix was utilized to identify issues that had a high frequency of occurrence and a high impact on delaying the process. This revealed three issues that were our biggest root-causes for delays in the ‘order’ to ‘treatment’ process.

These included:
- Invalid order
- Variation in medication authorization
- Scheduling process issues

**Process map**

<table>
<thead>
<tr>
<th>HD office Faxes Order</th>
<th>Cristina creates a pre-account</th>
<th>Send other information to Dallas (corporate)</th>
<th>Corporate does a “stat edit”</th>
<th>Medication and/or blood platelet</th>
<th>No prior authorization required</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-hold in folder with other pending orders</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>pharmacy approves?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Referral is held until the pharmacist confirms order</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Confirm with access services</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Access services approved</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Schedule patient</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Infusion clinic works with pharmacy to see whether patient gets infusion</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Evaluation**

Strategy and sequencing of events included initial review and improvement of the process related to obtaining a valid physician order, standardization of the authorization process, and finally, stabilization of the scheduling processes.

**Addressing “invalid order”**

The team requested referring physicians to submit a predetermination letter (medical necessity information) at the time of referral to ensure that the program has the required information that constitutes a valid order.

**Addressing “variation in medication authorization”**

Oncology partnered with access services, who agreed to verify account accuracy daily. The process was streamlined so that authorization of different elements happen in parallel to ensure the order does not get tied up with any one stakeholder.
Addressing “scheduling process issues”
A refresher course with the infusion center schedulers was delivered, which included:
• Review of the verification process
• How to appropriately enter an order as STAT
• How to escalate delays
• Re-emphasis on the importance of timeliness

To monitor compliance with these interventions, daily huddles with the infusion center scheduler, infusion center medical assistant, oncology service-line director, access services and pharmacy was instituted to review pending orders and discuss and/or remove barriers to treatment.

Following these interventions, the average time from ‘order received’ to ‘treatment provided’ dropped from an average of 5.9 days to 1.2 days in September, 3.3 days in October (due to two outliers), and 2.0 days in November:

• Baseline: 28% of patients received care within two days of their referral

Follow-up actions
After reviewing the results, the team made the decision to continue all interventions, with the exception of the daily huddle, which was scaled down to weekly as the team was able to successfully validate that the newly implemented processes were working.

Through the weekly huddle, the team will continue to identify barriers and opportunities for improvement and looks forward to continuously improving the access and delivery of care to our oncology patients at the Baylor Scott & White – Fort Worth infusion center.

Take the Shot. Prevent Cancer.
Baylor Scott & White – Fort Worth’s and Cook Children’s Medical Center’s community collaboration to eradicate HPV and prevent cancer

Human papillomavirus (HPV) is the most common sexually transmitted virus. There are currently 79 million Americans infected with HPV and approximately 14 million people who become newly infected each year. Sadly, every year in the United States, almost 31,000 men and women are diagnosed with more than six forms of cancer caused by an HPV infection. HPV is also responsible for 70 percent of head and neck cancers and 90 percent of cervical cancers. It is predicted that head and neck cancers will surpass cervical cancer as the most common cancer caused by HPV.

Fortunately, cancer-causing strains of HPV are preventable with a routine vaccine. However, the United States’ HPV vaccination rates pale in comparison to other countries. More specifically, Texas is ranked 47th in the nation for vaccination rates. In addition, Texas currently has one of the highest rates of HPV-related cancers with 11.3% of all cancers diagnosed being HPV related. Clearly, more work is warranted to raise awareness about the prevalence and dangers of HPV as well as how to prevent the infection and subsequent cancers.

Obviously, tackling something of this magnitude is complex and demands the attention of community-wide, multilevel healthcare professionals and entities. Baylor Scott & White – Fort Worth and Cook Children’s Medical Center recognized the urgency and are passionate about addressing this potentially deadly epidemic. In April 2018, the two entities joined forces to launch an HPV campaign “Take the Shot. Prevent Cancer.” This multi-tiered educational program targeted three audiences: physicians and healthcare professionals; adults potentially affected by HPV and eligible to receive the HPV vaccine; and parents and guardians of children 11-12 years of age who are eligible to receive the HPV vaccine.

Based on Centers for Disease Control, Commission on Cancer and American Cancer Society guidelines, Cook Children’s and Baylor Scott & White – Fort Worth developed community brochures (see appendix A) and a website, PreventHPV.org, designed to educate the target audiences, debunk myths about HPV, and educate physicians and consumers about Gardasil®9, the HPV vaccine. Additionally, Cook Children’s hosted a Facebook live stream in which two Cook Children’s pediatricians and a radiation oncologist on the medical staff at Baylor Scott & White – Fort Worth spoke candidly about the prevalence,
transmission, symptoms and dangers of HPV (see appendix B). They also discussed
the HPV vaccine, including some of the myths and misconceptions.

Cook Children’s and Baylor Scott & White – Fort Worth also hosted a professional
education program, “Prevent HPV,” which was attended by 49 primary care physicians,
internal medicine physicians, obstetricians, gynecologists, dentists, pediatricians and
advance practice nurses (see appendix C).

Based on the information presented at the
program, Baylor Scott & White’s provider
group re-examined the process in which
they communicated to patients and parents
of eligible children about the HPV vaccine
and potential risk factors associated with not
receiving the HPV vaccine. They expanded the
age range, based on CDC recommendations,
of potential patients. Physicians reported being
better informed on communication strategies
and talking points regarding patients’ and
parents’ concerns about the HPV vaccine.

To increase community education, Cook
Children’s Medical Center and Baylor Scott &
White – Fort Worth developed an education
program and oral cancer screening tool.
The team collaborated with Texas Christian
University to pilot a presentation geared
toward educating college students on the
prevalence of cancers associated with HPV
that are preventable with early intervention,
including the HPV vaccine. The team also
leveraged the Cook Children’s current
program, “Save a Smile,” at Tarrant County
College in Northeast Tarrant County to
provide education, oral cancer screenings
and navigation resources to parents of at-
risk children. Based on the location of the
community college, the team was able to
expand efforts to include Baylor Scott &
White Medical Center – Grapevine’s service
area. To date, 11 patients have been screened
for oral cancer, with three positive results,
and 150 individuals have attended the
information sessions.

As a result of the success of the screening
and prevention program in calendar year 2018, the
goal for 2019 is to increase the number of oral
cancer screenings and community education
sessions to reach a wider audience of parents
of vaccine-eligible children and young adults.
Currently, the program is expanding to
include programs for higher education, local
community centers, health fairs and school
districts. Baylor Scott & White – Fort Worth
and Cook Children’s are in the process of
developing a toolkit that includes professional
education/continuing medical education
presentations, community brochures/website
development information, and community
information session templates that can be
easily replicated throughout communities.

Appendix A

Appendix B

Appendix C
<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2016 Performance Rate</th>
<th>2015 Performance Rate</th>
<th>2016 Performance Rate</th>
<th>2017 Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breast</strong></td>
<td></td>
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</tr>
<tr>
<td>BCS: Breast conservation surgery rate for women with AJCC stage II or III breast cancer (Quality Improvement)</td>
<td>59.5%</td>
<td>67.4%</td>
<td>60.0%</td>
<td>67.3% (CoC)</td>
</tr>
<tr>
<td>NAI: Image or palpation-guided needle biopsy (core or FNA) is performed for the treatment of breast cancer (Quality Improvement)</td>
<td>91.5%</td>
<td>91.2%</td>
<td>91.2%</td>
<td>90.9% (CoC)</td>
</tr>
<tr>
<td>HT: Adjunct Hormonal Therapy: Tamoxifen or third generation aromatase inhibitor is considered or administered within 1 year (365 days) of diagnosis for women with AJCC T1-2N0, or Stage II or III hormone receptor positive breast cancer (Accountability Measure)</td>
<td>81.4%</td>
<td>92.3%</td>
<td>83.4%</td>
<td>92.0% (CoC)</td>
</tr>
<tr>
<td>MASTR: Radiation therapy is considered or administered following any mastectomy within 1 year (365 days) of diagnosis for women with 4 positive lymph nodes (Accountability Measure)</td>
<td>76.0%</td>
<td>85.9%</td>
<td>78.0%</td>
<td>95.5% (CoC)</td>
</tr>
<tr>
<td>BCRT: Post Breast Conserving Surgery Iradication: Radiation therapy is administered within 1 year (365 days) of diagnosis for women under age 70 and receiving breast conserving surgery for breast cancer (Accountability Measure)</td>
<td>82.8%</td>
<td>91.6%</td>
<td>85.4%</td>
<td>91.3% (CoC)</td>
</tr>
<tr>
<td>MAC: Adjunct Chemotherapy: Combination chemotherapy is considered or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1-2N0, or Stage II or III hormone receptor negative breast cancer (Accountability Measure)</td>
<td>87.3%</td>
<td>92.2%</td>
<td>88.5%</td>
<td>92.9% (CoC)</td>
</tr>
<tr>
<td><strong>Colon</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ACT: Adjunct Chemotherapy: Adjunct chemotherapy is considered or administered within 4 months (120 days) to patients under age 80 with AJCC II (lymph node positive) colon cancer (Accountability Measure)</td>
<td>NA</td>
<td>82.3%</td>
<td>88.7%</td>
<td>82.0% (CoC)</td>
</tr>
<tr>
<td>12 RLN: Surgical Resection Includes at Least 12 Lymph Nodes: At least 12 regional lymph nodes are removed and pathologically examined for resected colon (Quality Improvement)</td>
<td>85.0%</td>
<td>93.4%</td>
<td>92.4%</td>
<td>92.7% (CoC)</td>
</tr>
<tr>
<td><strong>Rectal</strong></td>
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</tr>
<tr>
<td>RECRTC: Pre-operative chemoradiotherapy are administered for clinical AJCC T3N0, T4N0, or Stage I, II or III; or postoperative chemo and radiation are administered within 90 days of diagnosis for clinical AJCC T1-2N0 with pathologic AJCC T3N0, T4N0, or Stage I; or treatment is considered for patients under the age of 80 receiving radiation therapy for rectal cancer (Quality Improvement)</td>
<td>85.0%</td>
<td>83.9%</td>
<td>89.4%</td>
<td>86.1% (CoC)</td>
</tr>
<tr>
<td><strong>Gastric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GISRUL: At least 15 regional lymph nodes are removed and pathologically examined for resected gastric cancer (Quality Improvement)</td>
<td>80.0%</td>
<td>70.3%</td>
<td>58.0%</td>
<td>65.6% (CoC)</td>
</tr>
<tr>
<td><strong>Ovary</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>OVYSA: Salpingo-oophorectomy with omentectomy, debulking/cytoreductive surgery, or pelvic exenteration in Stages I-II ovarian cancer (Surveillance Measure)</td>
<td>NA</td>
<td>59.0%</td>
<td>68.5%</td>
<td>60.9% (CoC)</td>
</tr>
</tbody>
</table>

**Non-Small Cell Lung**

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2016 Performance Rate</th>
<th>2015 Performance Rate</th>
<th>2016 Performance Rate</th>
<th>2017 Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLRN: At least 10 regional lymph nodes are removed and pathologically examined for AJCC Stage I A, IB, IIA, and IIB resected NSCLC (Surveillance Measure)</td>
<td>NA</td>
<td>49.0%</td>
<td>47.3%</td>
<td>51.1% (CoC)</td>
</tr>
<tr>
<td>UnicSur: Surgery is not first course of treatment for ch2. M0 cases (Quality Improvement)</td>
<td>85.0%</td>
<td>93.0%</td>
<td>93.5%</td>
<td>94.0% (CoC)</td>
</tr>
<tr>
<td>LCT: Systemic chemotherapy is considered or administered within 4 months to the day pre-operative or day of surgery to 6 months postoperatively or surgically resected cases with pathologic lymph node positive (pN+) and (pN2) NSCLC (Quality Improvement)</td>
<td>85.0%</td>
<td>84.1%</td>
<td>90.4%</td>
<td>86.7% (CoC)</td>
</tr>
</tbody>
</table>

**Cervix**

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2016 Performance Rate</th>
<th>2015 Performance Rate</th>
<th>2016 Performance Rate</th>
<th>2017 Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBRII: Use of brachytherapy in patients treated with primary radiation with curative intent in any stage of cervical cancer (Surveillance Measure)</td>
<td>NA</td>
<td>72.1%</td>
<td>66.0%</td>
<td>72.0% (CoC)</td>
</tr>
<tr>
<td>CBRT: Radiation therapy completed within 60 days of initiation of radiation among women diagnosed with any stage of cervical cancer (Surveillance Measure)</td>
<td>NA</td>
<td>85.6%</td>
<td>77.6%</td>
<td>82.8% (CoC)</td>
</tr>
<tr>
<td>CBRC: Chemotherapy administered to cervical cancer patients who received radiation for Stages IB2-II cancer (Group 1) and with positive pelvic nodes, positive surgical margin, and/or positive parametrium (Group 2) (Surveillance Measure)</td>
<td>NA</td>
<td>92.5%</td>
<td>89.8%</td>
<td>92.6% (CoC)</td>
</tr>
</tbody>
</table>

**Endometrium**

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2016 Performance Rate</th>
<th>2015 Performance Rate</th>
<th>2016 Performance Rate</th>
<th>2017 Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENDLIN: Endoscopic, laparoscopic, or robotic performed for all endometrial cancer, excluding sarcoma and lymphoma, for all stages except Stage IV (Surveillance Measure)</td>
<td>NA</td>
<td>75.0%</td>
<td>82.5%</td>
<td>76.3% (CoC)</td>
</tr>
<tr>
<td>ENDCRT: Chemotherapy and/or radiation administered to patients with Stage IIC or IV endometrial cancer (Surveillance Measure)</td>
<td>NA</td>
<td>76.5%</td>
<td>79.9%</td>
<td>77.7% (CoC)</td>
</tr>
</tbody>
</table>

**Bladder**

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2016 Performance Rate</th>
<th>2015 Performance Rate</th>
<th>2016 Performance Rate</th>
<th>2017 Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2LRN: At least 2 lymph nodes are removed in patients under 80 undergoing partial or radical cystectomy (Surveillance Measure)</td>
<td>NA</td>
<td>92.9%</td>
<td>88.2%</td>
<td>92.9% (CoC)</td>
</tr>
<tr>
<td>ABLSTRI: Radical or partial cystectomy or tri-modality therapy (local tumor destruction/excision with chemotherapy and radiation) for clinical T2-4N0M0 patients with urothelial carcinoma of the bladder, first treatment within 90 days of diagnosis (Surveillance Measure)</td>
<td>NA</td>
<td>43.9%</td>
<td>49.9%</td>
<td>49.9% (CoC)</td>
</tr>
<tr>
<td>BLCRT:Neo-adjuvant or adjuvant chemotherapy recommended or administered for patients with muscle invasive cancer undergoing radical cystectomy (Surveillance Measure)</td>
<td>NA</td>
<td>60.2%</td>
<td>68.3%</td>
<td>62.2% (CoC)</td>
</tr>
</tbody>
</table>

**Kidney**

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>2016 Performance Rate</th>
<th>2015 Performance Rate</th>
<th>2016 Performance Rate</th>
<th>2017 Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSUL: At least 1 regional lymph node is removed and pathologically examined for primarily resected unilateral nephroblastos (Surveillance Measure)</td>
<td>NA</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data (CoC)</td>
</tr>
</tbody>
</table>

*Data results released from the National Cancer Data Base as of 12/5/18.
**Data in pending results by the Rapid Quality Reporting Process via the National Cancer Data Base.