



A story of connections

2018 Annual Report

QUALITY

Reducing timeframes and costs for comprehensive community-based breast cancer programs

Introduction

Delays in starting breast cancer treatments are often largely due to system delays.¹ The multidisciplinary team at Baylor Scott & White Medical Center – Waxahachie sought to decrease non-value added wait time from system delays and increase patient throughput from biopsy to treatment initiation using a Six Sigma DMAIC (Define, Measure, Analyze, Improve, Control) model and a systems-thinking approach to coordinated care.

Measure

Manually captured data from clinic visits, biopsies, diagnostic testing appointments, treatment initiation appointments (surgery, chemotherapy, radiation therapy) were put into a spreadsheet for process mapping. A swim lane process map was created outlining the process from biopsy to treatment. Value stream mapping was also used to identify non-value added time and tasks. Scatter plots were created to show pre- and post-intervention timeframes with averages and error calculations.

Timeframes were defined as time from process step to the next process step in business days. Overall patient throughput was defined as time from biopsy to treatment initiation, which was the first modality initiated (surgery, chemotherapy, radiation therapy).

Analysis

Baseline data for six months was evaluated and analyzed. The mean time from biopsy to treatment initiation was 30.2 days, with a range from three to 58 days (n=39). One of the largest identified sources of system delay was time from initial oncologist consult to imaging completion, which had a mean time of 17.5 days. In addition, the team identified potential non-value added wait time due to multiple visits with multiple providers and the time in between. No numerical data was collected for this timeframe, just visualized from the process map.

Improve

A multidisciplinary breast clinic team led by the surgical oncology team was created and consisted of surgical, medical and radiation oncology, and nurse navigation to systematically improve the overall experience and throughput for breast cancer patients. The appointment and scheduling efforts were led by navigation and nursing that coordinated weekly appointments and collaborated with the multi-modality providers. The team also coordinated pre-reserved slots with outpatient imaging for breast cancer patients centered around weekly multidisciplinary breast clinic team days.

Results

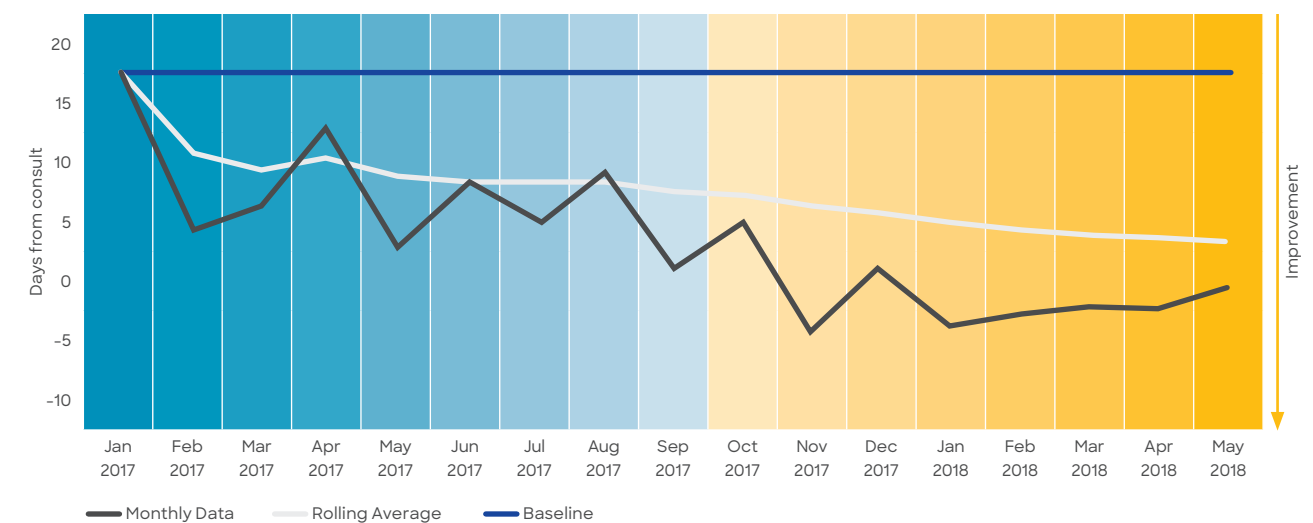
Timeframes from consult to imaging completion were reduced over three months from 17.5 days to six days, ultimately improving and sustaining to a rolling average timeframe of 3.2 days over 17 months, a reduction of 14.3 days of non-value added wait time. Facility visits decreased by two visits for patients as they saw all three oncologic disciplines in one day in the same facility, which resulted in an estimated \$227 savings per patient in facility fees.

Conclusion

The implementation of a community-based multidisciplinary cancer team using process mapping, lean and Six Sigma methodologies was shown to decrease system delays in treatment initiation and improve coordinated care. Patient satisfaction increased as demonstrated by customer satisfaction scores for outpatient cancer center care as well as via lean waste reduction.

This project led to a decrease in cost for patients as well as soft cost reduction for the organization as a whole, ultimately leading to a system-based approach for providing high-value care.

Number of days from initial consult to diagnostic imaging completion for breast cancer



¹Rangel-Mendez JA, Novelo-Tec JF, Sanchez-Cruz JF, Cedillo-Rivera R, Moo-Puc RE. (2018). Healthcare delay in breast cancer patients: a case study in a low-density population region from Mexico. *Future Oncology*,14(20): 2067-2082

	NCDB Target	CoC State of Texas Performance Rate	My CoC Program Type (ACAD)	CoC Census Region Performance Rate (West South Central)	All CoC Programs Performance Rate	Baylor Scott & White Medical Center - Waxahachie Performance Rate		
						2016 Forward	2015*	2016*
Breast								
BCS: Breast conservation surgery rate for women with AJCC clinical stage 0, I, or II breast cancer (Surveillance Measure)	NA	59.5%	71.6%	60.0%	67.3%	57.1%	67.6%	81.1%
NbX: Image or palpation-guided needle biopsy (core or FNA) is performed for the treatment of breast cancer (Quality Improvement Measure)	80.0%	91.5%	90.5%	91.2%	90.9%	87.9%	94.5%	94.0%
HT: Adjuvant Hormonal Therapy: Tamoxifen or third generation aromatase inhibitor is considered or administered within 1 year (365 days) of diagnosis for women with AJCC T1cNoMo, or Stage II or III hormone receptor positive breast cancer (Accountability Measure)	90.0%	81.4%	89.6%	83.4%	92.0%	95.0%	96.7%	92.6%
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)	90.0%	76.0%	83.8%	78.0%	86.5%	100.0%	100.0%	100.0%
BCRST: Post Breast Conserving Surgery Irradiation: 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)	90.0%	82.8%	88.8%	85.4%	91.3%	100.0%	93.8%	94.1%
MAC: Adjuvant Chemotherapy: Combination chemotherapy is considered or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cNoMo, or Stage II or III hormone receptor negative breast cancer (Accountability Measure)	NA	87.3%	91.7%	88.5%	92.9%	100.0%	100.0%	100.0%
Colon								
ACT: Adjuvant Chemotherapy: Adjuvant chemotherapy is considered or administered within 4 months (120 days) of diagnosis to patients under age 80 with AJCC III (lymph node positive) colon cancer (Accountability Measure)	NA	80.3%	88.0%	82.0%	88.1%	85.7%	100.0%	100.0%
12 RLN: Surgical Resection Includes at Least 12 Lymph Nodes: At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer (Quality Improvement)	85.0%	93.4%	90.3%	92.7%	92.7%	100.0%	90.9%	95.0%
Rectal								
RECRCT: Pre-operative chemo and radiation are administered for clinical AJCC T3N0, T4N0, or Stage III; or postoperative chemo and radiation are administered within 180 days of diagnosis for clinical AJCC T1-2N0 with pathologic AJCC T3N0, T4N0, or Stage III; or treatment is considered; for patients under the age of 80 receiving resection for rectal cancer (Quality Improvement)	85.0%	83.9%	87.1%	86.1%	87.3%	No Data	100.0%	100.0%
Gastric								
G15RLN: At least 15 regional lymph nodes are removed and pathologically examined for resected gastric cancer (Quality Improvement)	80.0%	70.3%	50.8%	65.6%	64.7%	No Data	No Data	100.0%
Ovary								
OVSAL: Salpingo-oophorectomy with omentectomy, debulking/ cytoreductive surgery, or pelvic exenteration in Stages I-IIIc ovarian cancer (Surveillance Measure)	NA	59.0%	55.2%	60.9%	67.6%	No Data	No Data	No Data

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Non-Small Cell Lung								
10RLN: At least 10 regional lymph nodes are removed and pathologically examined for AJCC Stage 1A, 1B, IIA, and IIB resected NSCLC (Surveillance Measure)	NA	49.0%	38.7%	51.1%	49.1%	No Data	No Data	No Data
LNoSurg: Surgery is not first course of treatment for cN2, M0 cases (Quality Improvement)	85.0%	93.0%	94.3%	94.0%	92.9%	No Data	No Data	100.0%
LCT: Systemic chemotherapy is considered or administered within 4 months to the day pre-operatively or day of surgery to 6 months postoperatively or surgically resected cases with pathologic lymph node positive (pN1) and (pN2) NSCLC (Quality Improvement)	85.0%	84.1%	90.8%	86.7%	90.2%	No Data	100.0%	No Data
Cervix								
CBRR: Use of brachytherapy in patients treated with primary radiation with curative intent in any stage of cervical cancer (Surveillance Measure)	NA	72.1%	52.2%	72.2%	70.7%	No Data	No Data	No Data
CERR: Radiation therapy completed within 60 days of initiation of radiation among women diagnosed with any stage of cervical cancer (Surveillance Measure)	NA	85.6%	85.3%	82.8%	81.2%	No Data	No Data	No Data
CERCT: Chemotherapy administered to cervical cancer patients who received radiation for Stages IB2-IV cancer (Group 1) or with positive pelvic nodes, positive surgical margin, and/or positive parametrium (Group 2) (Surveillance Measure)	NA	92.5%	90.0%	92.6%	89.1%	100.0%	No Data	No Data
Endometrium								
ENDLRC: Endoscopic, laparoscopic, or robotic performed for all endometrial cancer (excluding sarcoma and lymphoma), for all stages except Stage IV (Surveillance Measure)	NA	75.0%	69.2%	76.3%	80.3%	No Data	100.0%	No Data
ENDCTR: Chemotherapy and/or radiation administered to patients with Stage IIIc or IV endometrial cancer (Surveillance Measure)	NA	76.5%	71.7%	77.7%	83.7%	No Data	No Data	No Data
Bladder								
BL2RLN: At least 2 lymph nodes are removed in patients under 80 undergoing partial or radical cystectomy (Surveillance Measure)	NA	92.9%	74.6%	92.9%	92.7%	0.0%	No Data	No Data
ABLCSTRI: Radical or partial cystectomy; or tri-modality therapy (local tumor destruction/excision with chemotherapy and radiation) for clinical T234N0M0 patients with urothelial carcinoma of the bladder, first treatment within 90 days of diagnosis (Surveillance Measure)	NA	43.9%	42.6%	49.9%	54.1%	100.0%	No Data	No Data
BLCT: Neo-adjuvant or adjuvant chemotherapy recommended or administered for patients with muscle invasive cancer undergoing radical cystectomy (Surveillance Measure)	NA	60.2%	70.4%	62.2%	67.3%	39.9%	No Data	No Data
Kidney								
PD1RLN: At least 1 regional lymph node is removed and pathologically examined for primarily resected unilateral nephroblastoma (Surveillance Measure)	NA	No Data	No Data	No Data	89.3%	No Data	No Data	No Data

*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.

