Overview of the breast cancer surgery episode of care

State of Ohio

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Overview of the breast cancer surgery episode of care

1. CLINICAL OVERVIEW AND RATIONALE FOR DEVELOPMENT OF THE BREAST CANCER EPISODES

There are three episodes of care covering the journey of patients at risk for breast cancer or diagnosed and treated for breast cancer: breast biopsy, breast cancer surgery, and breast medical oncology. Section 1.1 of this document, which lays out the rationale for the development of the breast cancer episodes, is therefore identical for the breast biopsy, breast cancer surgery, and breast medical oncology episodes of care.

1.1 Rationale for development of the breast cancer episodes of care

Breast cancer is the most frequently diagnosed cancer in women worldwide, with an estimated 1.7 million new cases diagnosed in 2012.[1] It is also the second most common cause of cancer death among women worldwide, with an estimated 521,900 deaths in 2012.[2] Guidelines for the diagnosis and treatment of breast cancer patients are well established.[3] Despite these clear guidelines, medical practices vary widely among providers.[4,5] Unique patient needs sometimes necessitate variation in treatment; but practice variation due to reasons not related to patient and not concordant with clinical guidelines may lead to sub-optimal patient outcomes, higher than necessary costs, or both.

1 American Cancer Society. Global Cancer Facts & Figures 3rd Edition. Atlanta: American Cancer Society; 2015.d

2 Ibid

3 "NCCN Guidelines for Patients® | Stage 1-4 Breast Cancer." NCCN Guidelines for Patients®. N.p., n.d. Web. 10 Aug. 2016.

4 Zimmerman, C. Time trends and geographic variation in the use of minimally invasive breast biopsy. J Am Coll Surg. 2013 Apr; 216(4): 814–824

5 Sariego, J. Regional variation in breast cancer treatment throughout the United States. Am J Surg. 2008 Oct;196(4):572-4. doi: 10.1016/j.amjsurg.2008.06.017.

About 1 in 8 women in the U.S. (about 12%) will develop invasive breast cancer during their lifetime. According to American Cancer Society, [6] nearly 250,000 new cases of invasive breast cancer will be diagnosed in the U.S. in 2016, with 9,390 new cases diagnosed in Ohio. An estimated 40,000 women will die of breast cancer in U.S. in 2016, with 1,700 deaths in Ohio.[7]

The incidence and death rates for breast cancer vary by region, race, and ethnicity. The incidence of breast cancer in Ohio is 120.5[6] (the incidence for the U.S. as a whole is 123.5), whereas the death rate for breast cancer in Ohio is 23.5[7] (the death rate for the U.S. is 21.9). Although Ohio has the 36th highest incidence rate for female breast cancer among all states in the U.S., it has the 5th highest death rate for female breast cancer.[8] Breast cancer incidence is highest in non-Hispanic Caucasian women followed by African American women and is lowest among Asian/Pacific Islander women. In contrast, breast cancer death rates are highest for African American women followed by non-Hispanic Caucasian women and are lowest among Asian/Pacific Islander women.[9]

The early stages of breast cancer are usually not symptomatic. The process of diagnosis begins with the detection of an abnormality (such as an abnormal breast mass), whether through self-examination or physical examination by a clinician or through a screening mammography. The 2015 American Cancer Society guidelines[10] recommend an annual screening mammogram for women 45 years or older, and for all women at higher than average risk. An abnormal mammogram may warrant additional workup and imaging (e.g. diagnostic mammogram, breast ultrasound). Lesions that remain suspicious after additional imaging are biopsied for a definitive diagnosis. Patients diagnosed with breast cancer may follow several treatment paths. Depending on factors such as tumor type, cancer stage, and patient preference, treatment usually involves a combination of surgery (breast-conserving surgery or mastectomy), systemic therapy (chemotherapy, targeted therapy, and/or hormonal

6 Incidence rates, 2008-2012: per 100,000, age adjusted to the 2000 US standard population.

7 Death rates, 2008-2012: per 100,000, age adjusted to the 2000 US standard population

8 Ibid

9 Ibid

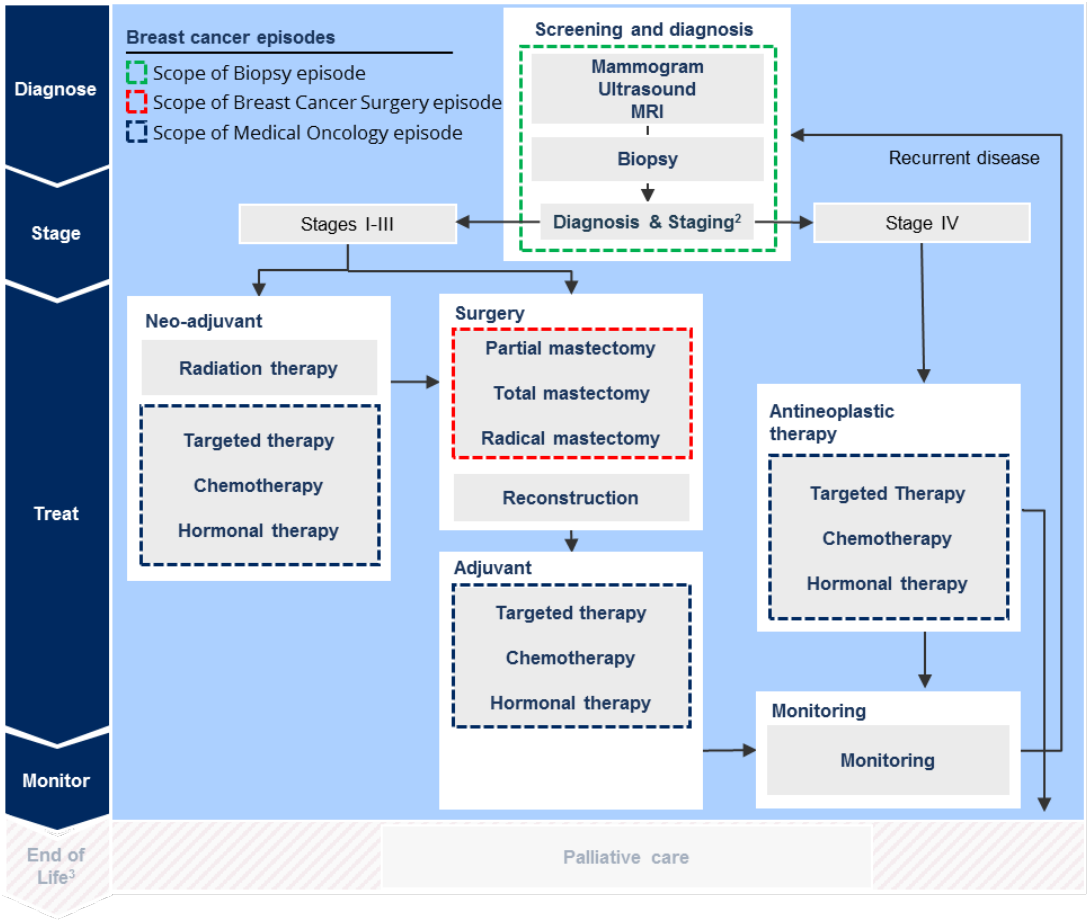
10 American Cancer Society (2015). American Cancer Society recommendations for early breast cancer detection in women without breast symptoms, last revised 10/20/2015. Available at http://www.cancer.org/cancer/breastcancer/moreinformation/breastcancerearlydetection/breast-cancer-early-detection-acs-recs# Accessed August 08, 2016

therapy), and/or radiation therapy. Patients may also elect to undergo breast reconstruction either at the time of surgery or at a later time.

As part of a concerted effort aimed at improving overall breast cancer diagnosis and treatment for Ohio Medicaid patients, three episodes of care related to breast cancer are being deployed to cover the entire patient journey: breast biopsy, breast cancer surgery, and a medical oncology episode specific to breast cancer. The rationale is threefold. First, the complexity of breast cancer care requires multiple types of specialists to assume primary accountability for the patient for different portions of care. Second, at any point in time, the overall patient journey may require a different mix of specialists to be involved; having multiple episodes acknowledges that varied involvement over time. Third, the coordination of care across the patient journey is best enabled by having each key specialist incentivized to collaborate with others, as opposed to having a single type of specialist solely accountable. Creating three separate but related episodes of care enables the "ecosystem" of clinicians critical to breast cancer care to drive value-based outcomes both within and across the relevant specialties.

Despite being a potential part of the breast cancer patient journey, a specific episode targeting radiation therapy is not currently within the scope of these three episodes of care. The variable timing of when radiation therapy is delivered with regard to surgical or medical oncology treatment depends on patient-specific factors (e.g., cancer stage), making it difficult to accurately evaluate value and variation in the context of one of the existing episodes. Instead, coordination of care relating to radiation is addressed through quality metrics that characterize transitions of care in the existing episodes. At some point in the future, the potential exists for the cost and quality of radiation therapy to be addressed through a separate radiation episode. Exhibit 1 illustrates the scope of each of these episodes.

EXHIBIT 1 – OVERVIEW OF BREAST CANCER EPISODES[1]



1 The above exhibit represents the most common patient pathways (specific patient pathways may be different from the pathways shown above based on a patient's clinical condition); In order to capture the full variety of potential patient journeys, some non-standard care may be reflected in the pathways in the exhibit (e.g., use of neo-adjuvant radiation therapy is rarely recommended in the treatment of breast cancer patients)

2 Some staging procedures excluded from the scope of the biopsy episode

3 End of life care is not currently addressed in the suite of episodes

Source: National Cancer Institute, American Cancer Association, NCCN, ASCO, clinical experts

Implementing the breast cancer episodes will provide incentives for evidence-based, guideline-concordant care through an outcomes-based payment model. Alongside the other episodes of care in the breast cancer suite of episodes, other episodes of care outside breast cancer, and patient-centered medical homes, the breast cancer surgery episode will contribute to a model of care delivery that benefits patients through improved care quality, improved long-term health outcomes, and lower overall cost of care.

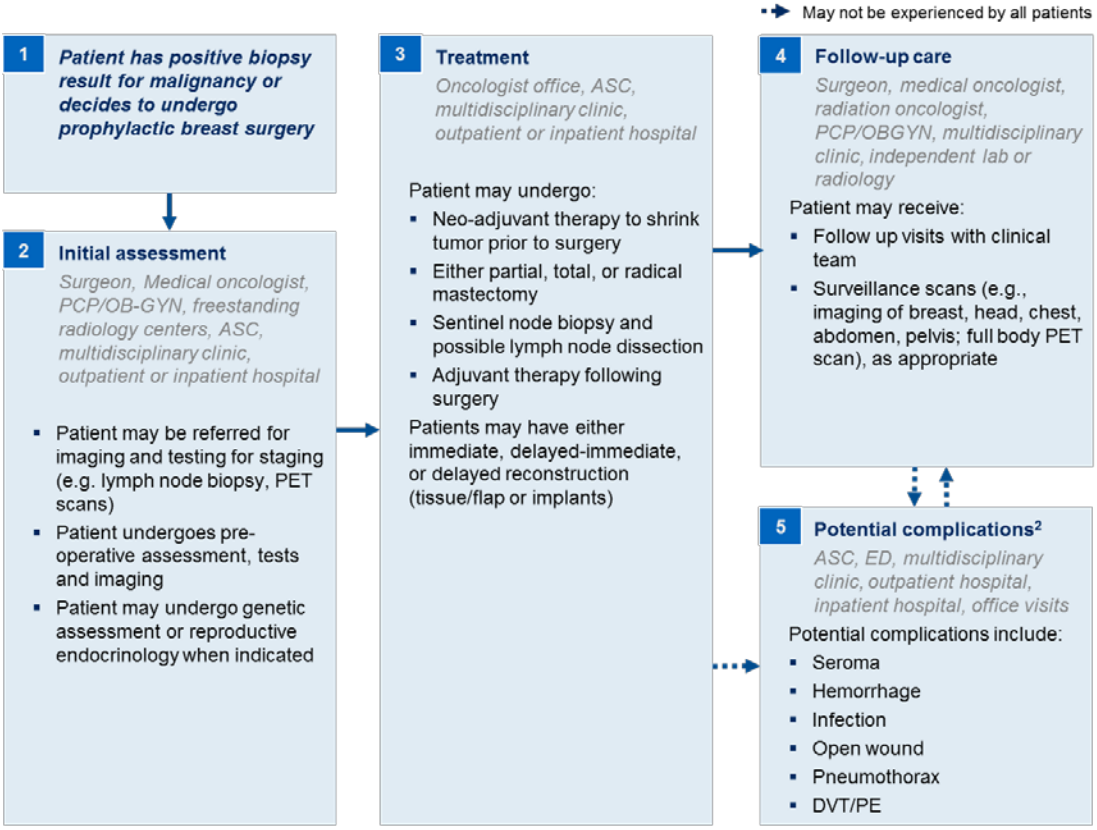
1.2 Clinical overview and typical patient journey for a breast cancer surgery procedure

Breast cancer surgery pertains to surgical procedures involving removal of the entire breast (total mastectomy), removal of tumor along with a rim of normal tissue around it (partial mastectomy/lumpectomy/breast conserving surgery), removal of the breast, lymph nodes and portion of the chest wall muscles (radical/modified radical mastectomy), removal of a few axillary lymph nodes (sentinel lymph node biopsy), or removal of most axillary lymph nodes (axillary lymph node dissection).

As depicted in Exhibit 2, the patient journey begins when a patient has a positive biopsy result for malignancy or decides to undergo a prophylactic breast surgery. The patient is deemed to require a mastectomy and/or lymph node(s) removal by a surgeon. Prior to the surgery, the patient is likely to undergo pre-operative assessment and potential additional imaging and diagnostic testing. The patient may also undergo neo-adjuvant therapy to shrink the tumor before surgery in order to become a better surgical candidate for breast conserving surgery. During the surgery, local or general anesthesia is used, and the procedure is performed. Depending on the type of procedure, the patient may be discharged either on the same day (common for partial mastectomy), or after a short hospital stay (common for total/radical mastectomy).

Following surgery, the patient may receive adjuvant antineoplastic medical therapy and/or radiation therapy as part of the breast cancer treatment regimen. The patient may also receive routine follow-up care for pain and supportive management. Complications such as infection, edema, and/or cosmetic deformities may occur following the procedure. The patient may be referred for reconstructive surgery.

EXHIBIT 2 – BREAST CANCER SURGERY PATIENT JOURNEY[1]



1 The above exhibit represents the most common patient pathways (specific patient pathways may be different from the pathways shown above based on patients clinical condition). In order to capture the full variety of potential patient journeys, some non-standard care may be reflected in the pathways in the exhibit. This exhibit is not intended to be used as a clinical guideline

2 List of potential complications is not exhaustive

SOURCE: National Cancer Institute, American Cancer Association

1.3 Potential sources of value within the breast cancer surgery patient journey

Within the breast cancer surgery patient journey, providers have several opportunities to improve quality of care and reduce unnecessary spend associated with the episode (see Exhibit 3). An important source of value is the timeliness of breast cancer surgery and/or other follow-up therapies after a breast cancer diagnosis. Studies have shown that a longer wait time between diagnosis and surgery is associated with lower overall and disease-specific survival.[11] Additionally, providers can utilize appropriate

[11] Bleicher, R et al. Time to surgery and breast cancer survival in the United States. JAMA Oncol. 2016;2(3):330-339. doi:10.1001/jamaoncol.2015.4508.

imaging studies as necessitated by patient's clinical status. Another important source of value is choosing the appropriate type of surgery and anesthesia. Studies have shown breast conserving therapy to be an effective choice for most women with early breast cancer.[12,13] However, studies have also shown that many women may elect to have total mastectomies even though they are eligible for a breast-conserving procedure.[14] Based on the patient's clinical status and diagnosis, providers can also deliver more efficient and timely care by appropriate use of neo-adjuvant and adjuvant therapy. Overall, providers can bring about an improvement in the coordination of breast cancer treatments and improvement in overall outcomes.

EXHIBIT 3 – BREAST CANCER SURGERY SOURCES OF VALUE

[12] van Maaren MC, de Munck L, de Bock GH, et al. Higher 10-year overall survival after breast conserving therapy compared to mastectomy in early stage breast cancer: A population-based study with 37,207 patients. 2015 San Antonio Breast Cancer Symposium. Abstract S3-05. Presented December 10, 2015.

[13] Veronesi, U et all. Twenty-year follow-up of a randomized study comparing breast-conserving surgery with radical mastectomy for early breast cancer N Engl J Med. 2002 Oct 17;347(16):1227-32.

[14] Collins, E.D. et al. Can women with early-stage breast cancer make an informed decision for mastectomy? JCO Feb 1, 2009:519-525; published online on December 29, 2008

2. OVERVIEW OF THE BREAST CANCER SURGERY EPISODE DESIGN

2.1 Episode Trigger

The breast cancer surgery episode is triggered by a professional claim for a breast cancer surgery procedure that occurs in an inpatient or outpatient setting. The range of procedure codes that trigger an episode include CPT codes for mastectomy, sentinel lymph node biopsy, or an axillary lymphadenectomy, with an associated facility claim that includes a diagnosis code related to breast cancer or its symptoms. A complete list of trigger procedure and confirming diagnosis codes is included in Table 1a and Table 1b in the Appendix. See Exhibit 4 in the Appendix for an analysis of triggers.

2.2 Principal Accountable Provider

The principal accountable provider (PAP) is the person or entity best positioned to influence the patient journey and the clinical decisions made throughout the course of the episode. For the breast cancer surgery episode, the PAP is the clinician or group performing the surgery. Because this provider is directly involved in the procedure, he or she is in the best position to promote adherence to guidelines, prevent complications, and influence other sources of value (see Exhibit 5 in the Appendix for the distribution of average non-risk adjusted spend by PAP).

Although there are some services rendered during the patient journey that may not be performed directly by the PAP, the PAP is selected as the person or entity best positioned to influence the patient journey and clinical decisions made throughout the course of the episode. The episode is designed to reward providers for coordinating care with high-quality, efficient providers in their medical neighborhood, including some relevant services that may occur before the PAP sees the patient for the first time as well as those occurring after the triggering procedure.

2.3 Episode Duration

The breast cancer surgery episode begins 30 days prior to the triggering procedure (called the “pre-trigger window”), includes the day of the procedure, related admission and recovery in an inpatient setting (called the “trigger window”), and ends 30 days after discharge (called the “post-trigger window”). The 30-day pre-trigger window was deemed an appropriate period of time to capture the majority of pre-operative diagnostics, workup, and management.

2.4 Included Services

The episode model is designed to address spend for care and services directly related to the diagnosis, treatment, and immediate recovery phase of the patient journey. Each period of the patient journey, or episode "window," has a distinct claim inclusion logic derived from two major criteria: 1) that the type of included care and services must correspond to that period of the patient journey and 2) that the included care and services are understood to be directly or indirectly influenced by the PAP during that period.

The breast cancer surgery episode is comprised of three distinct windows for the purpose of spend inclusions: a pre-trigger window, a trigger window, and a post-trigger window. During the pre-trigger window all diagnostic work-up (e.g., breast MRIs) and pre-operative preparation (e.g., E&M visits, anesthesia) are included. Costs related to breast biopsy are not included in the spend in the pre-trigger window.

During the trigger window—when the procedure itself occurs—all spend is included (including medical and drug spend). During the post-trigger window (one through 30 days following the procedure), immediate post-operative complications (e.g. wound infection, lymphedema, or seroma) and routine follow up care (e.g., wound care, medication management, routine imaging) are included. Costs related to breast reconstruction, radiation therapy, or antineoplastic therapy are excluded in the episode window.

The total episode spend is calculated by adding up the spend amounts on all of the individual claims that were included in each of the episode windows.

2.5 Episode Exclusions and Risk Factors

To ensure that episodes are comparable across patient panels select risk factors and exclusions are applied before assessing PAP performance. In the context of episode design, risk factors are attributes (e.g., age) or underlying clinical conditions (e.g., dense breast, cancer metastasis) that are likely to impact a patient's course of care and the spend associated with a given episode.

Risk factors are selected via a standardized and iterative risk-adjustment process based on Ohio-specific regression analysis that gives due consideration to clinical

relevance, statistical significance, and other contextual factors.[15] Based on the selected risk factors, each episode is assigned a risk score. The total episode spend and the risk score are used to arrive at an adjusted episode spend, which is the spend on which providers are compared to each other. A detailed list of risk factors for the breast cancer surgery episode is included in Table 2 and analysis of these risk factors is in Exhibit 6 in the Appendix.

By contrast, an episode is excluded from a patient panel when the patient has clinical factors that suggest the patient has experienced a distinct or different journey and/or which drive significant increases in spend relative to the average patient. In addition, there are several "business-related" exclusions relating to reimbursement policy (e.g., whether a patient sought care out of state), the completeness of spend data for that patient (e.g., third-party liability or dual eligibility), and other topics relating to episode design and implementation, such as overlapping episodes (e.g. patients receiving antineoplastic treatment for breast cancer during the post-trigger window), during the comparison period. Episodes with no exclusions are known as "valid" and used for provider comparisons. Episodes that have one of any of the exclusions are known as "invalid" episodes.

For the breast cancer surgery episode, both clinical and business exclusions apply. Several of the business and clinical exclusions (e.g., dual Medicare and Medicaid eligibility, patient left against medical advice) are standard across most episodes while others relate to the specific scope of the episode design. Clinical exclusions such as pregnancy, male, spinal cord injury. A detailed list of business and clinical exclusions is included in Table 3, and analysis of these exclusions is in Exhibit 7 in the Appendix.

2.6 Quality and Utilization Metrics

To ensure the episode model incentivizes quality care, the breast cancer surgery episode has select quality and utilization metrics. These are calculated for each PAP meeting the minimum threshold for valid episodes.

The breast cancer surgery episode has eight quality and utilization metrics. Three of the quality and utilization metrics are linked to performance assessment, meaning that performance thresholds on these metrics must be met for the episodes to be eligible

[15] Garrett B., et al. (2014). Risk adjustment for retrospective episode-based payment: Guiding principles and proposed methodology. McKinsey Healthcare Systems and Services Practice. Available at http://healthcare.mckinsey.com/risk-adjustment-retrospective-episode-based-payment Accessed July 21, 2016

for positive incentive payments within the episode model. The specific threshold amount will be determined during the informational reporting period. Five of the quality metrics are for informational purposes only. The metrics tied to positive incentive payments include rate of partial mastectomy, rate of surgical complications, and rate of radiation therapy following partial mastectomy. The informational metrics are repeat surgery following partial mastectomy, rate of neo-adjuvant radiation, rate of adjuvant chemotherapy, timely transition to mastectomy and timely clinical registry reporting. Please note that registry data is currently unavailable for the calculation of this metric. When registry data becomes available, a value for this metric will be displayed in the episode provider reports. A complete list of quality metrics is provided in Table 4, and analysis of these quality and utilization metrics is in Exhibit 8 in the Appendix.

3. APPENDIX: SUPPORTING INFORMATION AND ANALYSES

Table 1a – Episode triggers[16]

Trigger group	Trigger codes (CPT codes)	Description
Partial mastectomy	19301	Mastectomy, partial
	19302	Mastectomy, partial with axillary lymphadenectomy
Total mastectomy	19303	Mastectomy, simple, complete
	19304	Mastectomy, subcutaneous
Radical mastectomy	19305	Mastectomy, radical with pectoral muscles and axillary lymph nodes
	19306	Mastectomy, radical with pectoral muscles and axillary and internal lymph nodes
	19307	Mastectomy, modified radical
Sentinel lymph biopsy	38500	Biopsy/excision of lymph nodes, open superficial
	38525	Biopsy/excision of lymph nodes, open deep axillary nodes
Lymphadenectomy	38740	Axillary lymphadenectomy, superficial
	38745	Axillary lymphadenectomy, complete

Table 1b – Episode triggers (Diagnosis codes related to breast cancer)

Trigger group	Trigger codes (ICD-9 Dx codes)	Description
Breast cancer	1740	Malignant Neoplasm Of Nipple And Areola Of Female Breast
	1741	Malignant Neoplasm Of Central Portion Of Female Breast
	1742	Malignant Neoplasm Of Upper-Inner Quadrant Of Female Breast
	1743	Malignant Neoplasm Of Lower-Inner Quadrant Of Female Breast
	1744	Malignant Neoplasm Of Upper-Outer Quadrant Of Female Breast
	1745	Malignant Neoplasm Of Lower-Outer Quadrant Of Female Breast
	1746	Malignant Neoplasm Of Axillary Tail Of Female Breast
	1748	Malignant Neoplasm Of Other Specified Sites Of Female Breast

16 An inpatient or outpatient associated facility claim with a diagnosis code related to breast cancer or its symptoms is required.

Trigger group	Trigger codes (ICD-9 Dx codes)	Description
	1749	Malignant Neoplasm Of Breast (Female) Unspecified Site
	1750	Malignant Neoplasm Of Nipple And Areola Of Male Breast
	1759	Malignant Neoplasm Of Other And Unspecified Sites Of Male Breast
	1961	Secondary And Unspecified Malignant Neoplasm Of Intrathoracic Lymph Nodes
	1963	Secondary And Unspecified Malignant Neoplasm Of Lymph Nodes Of Axilla And Upper Limb
	19881	Secondary Malignant Neoplasm Of Breast
	217	Benign Neoplasm Of Breast
	2290	Benign Neoplasm Of Lymph Nodes
	2330	Carcinoma In Situ Of Breast
	2383	Neoplasm Of Uncertain Behavior Of Breast
	2393	Neoplasm Of Unspecified Nature Of Breast
Breast cancer related signs and symptoms	6101	Diffuse Cystic Mastopathy
	6102	Fibroadenosis Of Breast
	6103	Fibrosclerosis Of Breast
	6104	Mammary Duct Ectasia
	6108	Other Specified Benign Mammary Dysplasias
	6110	Inflammatory Disease Of Breast
	6111	Hypertrophy Of Breast
	6113	Fat Necrosis Of Breast
	61171	Mastodynia
	61172	Lump Or Mass In Breast
	61179	Other Signs And Symptoms In Breast
	61189	Other Specified Disorders Of Breast
	6119	Unspecified Breast Disorder
	7576	Specified Congenital Anomalies Of Breast
	7856	Enlargement Of Lymph Nodes
	78659	Other Chest Pain
	7866	Swelling Mass Or Lump In Chest
Abnormal radiological examination of breast	79380	Unspecified (Abnormal) Mammogram
	79381	Mammographic Microcalcification
	79389	Other (Abnormal) Findings On Radiological Examination Of Breast
History of breast cancer	V103	Personal History Of Malignant Neoplasm Of Breast

Trigger group	Trigger codes (ICD-9 Dx codes)	Description
	V163	Family History Of Malignant Neoplasm Of Breast
Acquired absence of breast and nipple	V4571	Acquired Absence Of Breast And Nipple
Prophylactic breast removal	V5041	Prophylactic Breast Removal
Genetic susceptibility to breast cancer	V8401	Genetic Susceptibility To Malignant Neoplasm Of Breast

Table 2 – Potential episode risk factors

Risk factor	Time frame
Anemia	During the episode window or during the 365 days before the episode window
Bilateral mastectomy	During the trigger window
Conduction disorders	During the episode window or during the 365 days before the episode window
Family history of breast cancer	During the episode window or during the 365 days before the episode window
Genetic susceptibility to breast cancer	During the episode window or during the 365 days before the episode window
Pulmonary heart disease	During the episode window or during the 365 days before the episode window
Secondary malignancy of axillary lymph nodes	During 365 days prior to the trigger

Table 3 – Potential episode exclusions

Exclusion type	Episode exclusion	Description	Relevant time period
Business exclusion	Dual	An episode is excluded if the patient had dual coverage by Medicare and Medicaid	During the episode window
	FQHC/RHC	An episode is excluded if the PAP is classified as a federally qualified health center or rural health center	During the episode window
	Incomplete	An episode is excluded if the non-risk adjusted episode spend (not the risk-adjusted episode spend) is less than the incomplete episode threshold	During the episode window
	Enrollment	Patient is not enrolled in Medicaid	During the episode window
	Long Hospitalization	An episode is excluded if the patient has one or more hospital admissions for a duration greater than 30 days	During the episode window
	Long Term Care	An episode is excluded if the patient has one or more long-term care claim detail lines which overlap the episode window	During the episode window
	Multi-Payer	An episode is excluded if a patient changes enrollment between FFS and an MCP or between MCPs	During the episode window
	No DRG	An episode is excluded if a DRG-paid inpatient claim is missing the APR-DRG and severity of illness	During the episode window
	No PAP	An episode is excluded if the PAP cannot be identified	During the episode window
	Out of state	PAP operates out of state	N/A
	Third party liability	An episode is excluded if third-party liability charges are present on any claim or claim detail line or if the patient has relevant third-party coverage at any time	During the episode window
	Cardiac arrest	Patient has diagnosis of cardiac arrest	During the episode or up to 365 days before the start of the triggering event

Exclusion type	Episode exclusion	Description	Relevant time period
Standard clinical exclusion[17]	Coma	Patient has diagnosis of coma during the episode	During the episode or up to 365 days before the start of the triggering event
	Cystic Fibrosis	Patient has diagnosis of cystic fibrosis during the episode	During the episode or up to 365 days before the start of the triggering event
	End stage renal disease (ESRD)	Patient has diagnosis or procedure for end-stage renal disease	During the episode or up to 365 days before the start of the triggering event
	HIV	Patient has diagnosis of HIV	During the episode or up to 365 days before the start of the triggering event
	Meningitis or encephalitis	Patient has diagnosis of meningitis or encephalitis	During the episode window or during 365 days before the start of the triggering event
	Multiple Sclerosis	Patient has diagnosis of multiple sclerosis	During the episode window or during 365 days before the start of the triggering event
	Transplant	An episode is excluded if a patient has an organ transplant	During the episode or up to 365 days before the start of the triggering event
	Paralysis	Patient has diagnosis of paralysis	During the episode or up to 365 days before the start of the triggering event
	Tuberculosis	Patient has diagnosis of tuberculosis	During the episode or up to 365 days before

[17] Active cancer treatment is not included as a clinical exclusion for the Breast cancer medical oncology episode

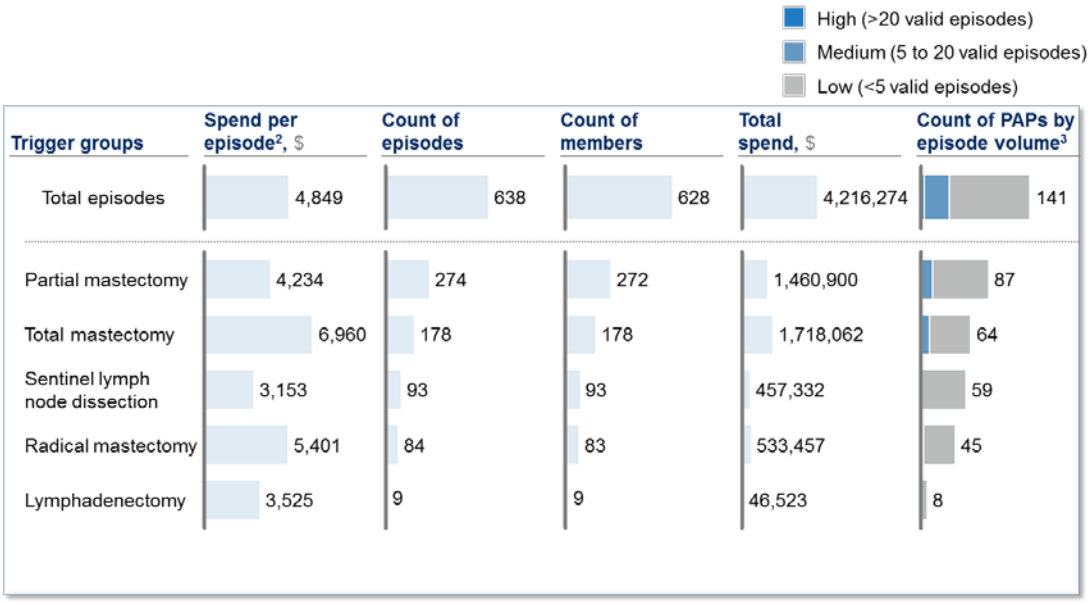
Exclusion type	Episode exclusion	Description	Relevant time period
			the start of the triggering event
	Death	An episode is excluded if the patient has a discharge status of "expired" on any inpatient or outpatient claim	During the episode window
	Left Against Medical Advice	Patient has discharge status of "left against medical advice"	During the episode window
Episode-specific exclusions	Age	Patient is younger than 13 years or older than 64 years	As of episode start date
	Aspiration pneumonitis	Patient has diagnosis of aspiration pneumonitis	During the 365 days before the start of the triggering event
	Fracture of hip	Patient has a diagnosis of fracture of hip	During the post-trigger window
	Pregnancy	Patient has diagnosis of pregnancy	During the episode or up to 365 days before the start of the triggering event
	Lung disease due to external agents	Patient has diagnosis of lung disease due to external agents	During the episode or up to 365 days before the start of the triggering event
	Male	Patient is male	N/A
	Other CNS infection and poliomyelitis	Patient has diagnosis of other CNS infection or poliomyelitis	During the episode or up to 365 days before the start of the triggering event
	Parkinson's disease	Patient has diagnosis of parkinson's disease	During the 365 days before the start of the triggering event
	Respiratory distress syndrome	Patient has diagnosis of respiratory distress syndrome	During the 365 days before the start of the triggering event
	Spinal cord injury	Patient has diagnosis of spinal cord injury	During the episode or up to 365 days before the start of the triggering event

Exclusion type	Episode exclusion	Description	Relevant time period
	Multiple other comorbidities	Patient is affected by too many risk factors to reliably risk adjust the episode spend	During the episode or up to 365 days before the start of the triggering event
Outlier	High outlier	An episode is excluded if the risk-adjusted episode spend (not the non-risk adjusted episode spend) is greater than the high outlier threshold	During the episode or up to 365 days before the start of the triggering event

Table 4 – Episode quality and utilization metrics (PAP level)

Metric type	Quality metric	Description	Relevant time period
Tied to incentive payments	Rate of partial mastectomy	Percent of valid episodes that undergo a partial mastectomy	During the trigger
Tied to incentive payments	Rate of surgical complications	Percent of valid episodes with a surgical complication	During the trigger or post-trigger window
Tied to incentive payments	Rate of radiation therapy treatment following partial mastectomy	Percent of valid episodes with radiation therapy following a partial mastectomy	During post-trigger window or 1 month after the post-trigger window
Informational	Rate of repeat surgery	Percent of valid episodes with repeat surgery following a partial mastectomy	During post-trigger window
Informational	Neo-adjuvant radiation	Percentage of valid episodes with neo-adjuvant radiation therapy	Up to 180 days before the triggering procedure
Informational	Timely transition to mastectomy	Percentage of valid episodes with evidence of biopsy or antineoplastic therapy	Up to 60 days before the triggering procedure
Informational	Rate of adjuvant antineoplastic following non-partial mastectomy	Percentage of valid episodes with antineoplastic therapy following total, radical mastectomy or lymphadenectomy	During post-trigger window or 1 month after the post-trigger window
Informational	Timely clinical registry reporting	Percent of total episodes (valid and invalid) with complete patient-level clinical factor reporting to the Cancer Registry for patients receiving a breast cancer diagnosis during the post-trigger window	Within six months of episode end date
		Please note that registry data is currently unavailable for the calculation of this metric. When registry data becomes available, a value for this metric will be displayed in the episode provider reports.	

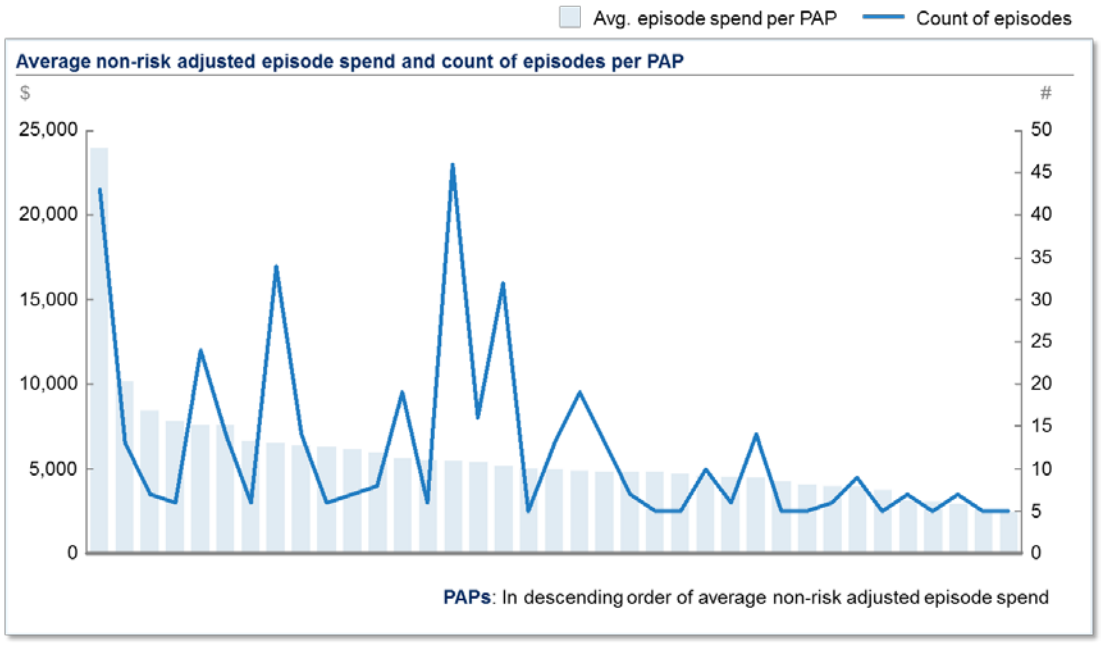
EXHIBIT 4 – BREAST CANCER SURGERY EPISODE TRIGGER GROUPS[1]



1. For valid episodes (638 episodes) across 141 PAPs; valid episodes do not include episodes with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., HIV); count of PAPs includes valid PAPs (e.g. ≥ 5 valid episodes) and invalid PAPs (e.g. < 5 valid episodes)
2. Median spend based on the current episode algorithm
3. Low volume is defined as PAPs with less than five valid episodes, Medium volume as PAPs with five to 20 valid episodes and High volume as PAPs with more than 20 valid episodes

SOURCE: OH claims data, episodes ending between 1/1/2014 and 12/31/2014

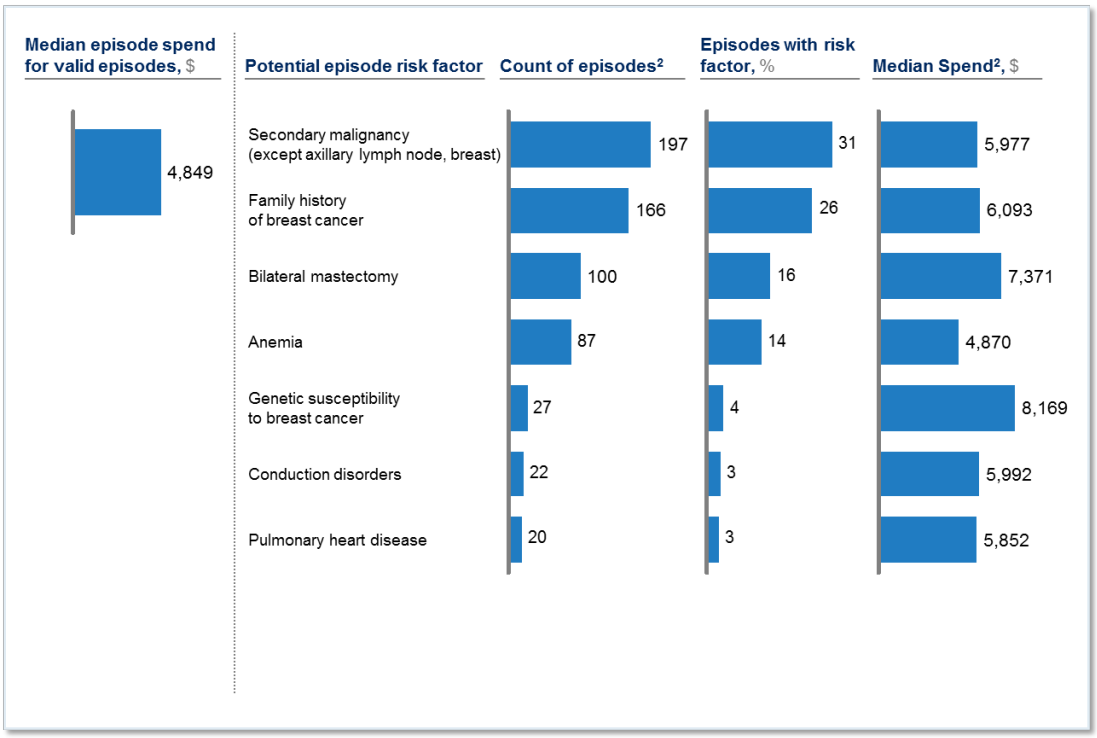
EXHIBIT 5 – DISTRIBUTION OF NON-RISK ADJUSTED AVERAGE EPISODE SPEND AND COUNT BY PAP[1]



1. For valid episodes (457) across valid PAPs (37); valid episodes do not include episodes with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., ESRD); valid PAPs are physicians with five or more episodes during 1/1/2014 to 12/31/2014 period. Valid episodes for invalid PAPs (those with less than five valid episodes) are not included in this analysis.

SOURCE: OH claims data, episodes ending between 1/1/2014 and 12/31/2014

EXHIBIT 6– EPISODE COUNT AND SPEND BY POTENTIAL EPISODE RISK FACTOR[1]

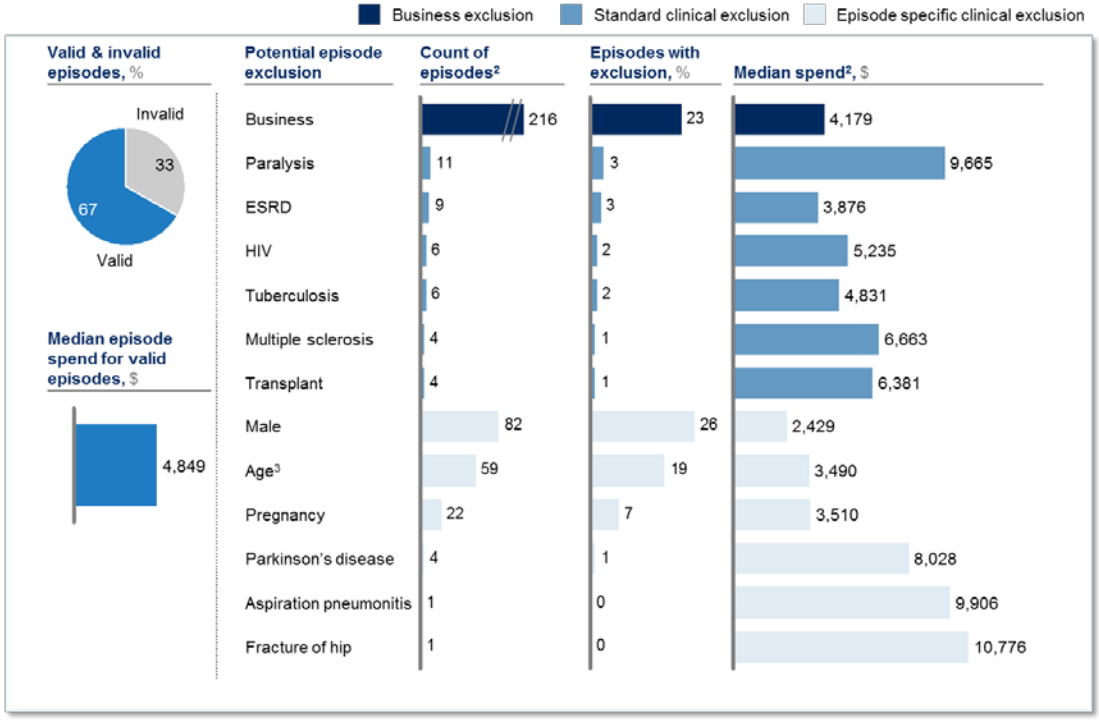


1 Showing 7 factors that were statistically significant in the risk model for this episode; 638 valid episodes across all PAPs; valid episodes do not include those with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., HIV)

2 For episodes with this potential risk factor; one episode can have multiple risk factors

SOURCE: OH claims data with episodes ending between 1/1/2014 and 12/31/2014

EXHIBIT 7 – EPISODE COUNT AND SPEND BY POTENTIAL EPISODE EXCLUSION[1]



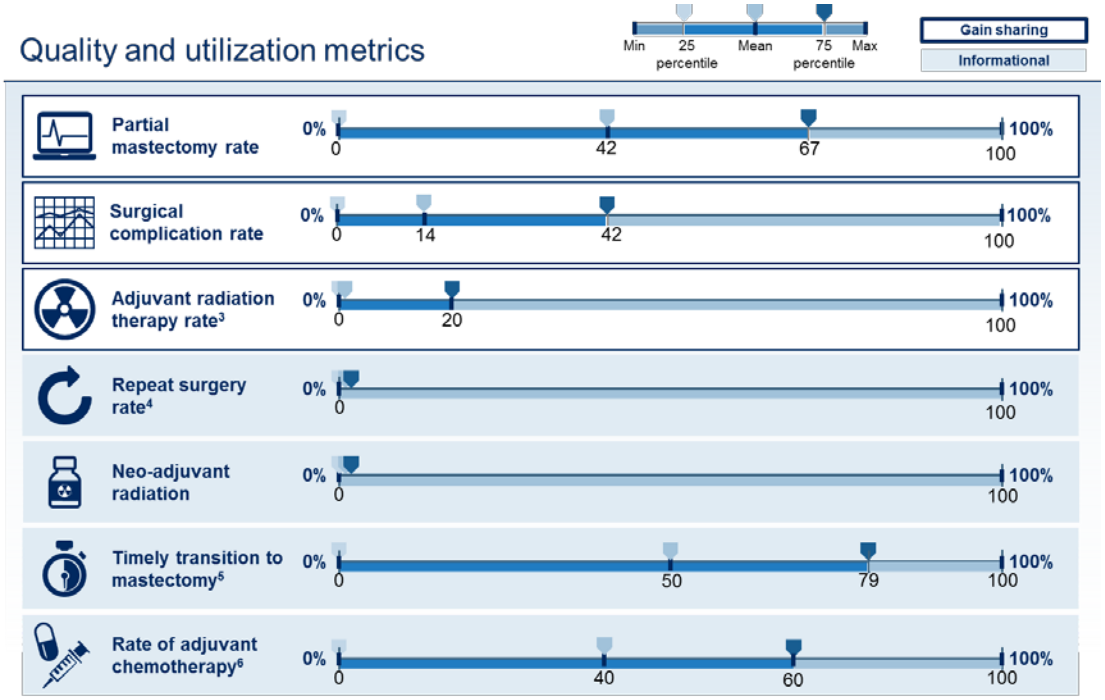
1 Showing a select number of potential exclusions

2 For episodes with this potential exclusion; one episode can have multiple exclusions

3 Age includes patients under 13 years or over 64 years of age

SOURCE: OH claims data with episodes ending between 1/1/2014 and 12/31/2014

EXHIBIT 8 - PAP PERFORMANCE ON PROPOSED EPISODE QUALITY AND UTILIZATION METRICS[1,2]



1 For valid episodes (457) across PAPs with 5 or more valid episodes (37); valid episodes for PAPs with 4 or less episodes are not included in this analysis; valid episodes do not include those with business (e.g., third-party liability, dual eligibility) or clinical exclusions (e.g., ESRD)

2 Quality metrics for cancer registry reporting rate is not currently reflected here

3 Rate of adjuvant radiation therapy following a partial mastectomy

4 Repeat surgery rate after a partial mastectomy

5 Evidence of biopsy or antineoplastic therapy up to 60 days before the triggering procedure

6 Rate of adjuvant chemotherapy following total mastectomy, radical mastectomy or lymphadenectomy

SOURCE: OH claims data with episodes ending between 1/1/2014 and 12/31/2014