PS1-39:

Diagnosis Codes for Cancer Metastasis on Medicare Claims Have Limited Accuracy and Completeness

Neetu Chawla[1]; K. Robin Yabroff[1]; Angela Mariotto[1]; Timothy McNeel[2]; Deborah Schrag[3]; Joan Warren[1]

[1]National Cancer Institute; [2]Information Management Services, Inc.; [3]Dana-Farber Harvard Cancer Center

Background/Aims: Researchers are increasingly using diagnosis codes from administrative claims for cancer patients to identify metastatic disease at initial diagnosis or recurrence. The validity of metastasis codes on claims has not been established in population-based data. We used SEER cancer registry linked to Medicare claims to assess the completeness and validity of metastasis codes from Medicare claims for the four most common cancers in the U.S. **Methods:** The study included 127,453 breast, lung, prostate, and colorectal cancer patients newly diagnosed with localized, regional, or distant disease in the SEER data between January 1, 2005 and December 31, 2007. From Medicare claims, patients were classified as having regional or distant disease at diagnosis if they had one hospital claim with a metastasis code or two physician claims with metastasis codes on separate days within 3 months of diagnosis. Patients without claims with metastasis codes were classified as having local disease. We calculated sensitivity, specificity, positive and negative predictive values, and conducted multivariate logistic regression analysis to evaluate patient factors associated with stage misclassification for each cancer site. **Results:** For patients with distant disease per SEER data, the sensitivity and PPV of the claims was: breast (50.6%, 67.3%), colorectal (72.2%, 68.8%), and lung cancer (42.1%, 88.6%). None of the measures for stage simultaneously exceeded 80% for sensitivity, specificity, and positive predictive values for any of the cancer sites. In adjusted analysis, older, lower-income, and African American patients were more likely to have stage at diagnosis misclassified from Medicare claims. **Conclusions:** Use of diagnosis codes alone in Medicare claims will misclassify stage at diagnosis for cancer patients, particularly for patients with metastatic disease. Since cancer patients are likely to be evaluated most comprehensively at the time of diagnosis, our findings suggest that using diagnosis codes in Medicare claims to define recurrence will also be limited.

Keywords: Metastasis Codes; Stage At Diagnosis; Medicare Claims

doi:10.3121/cmr.2013.1176.ps1-39

PS1-41:

Geographical Access to Mammography Services and Stage of Breast Cancer at Initial Diagnosis in Wisconsin

Adedayo Onitilo[1]; Doug Miskowiak[2]; Michael Broton[2]; Jessica Engel[1]; Hong Liang[1]; Rachel Stankowski[1]; Suhail Doi[3]

[1]Marshfield Clinic / Security Health Plan of Wisconsin; [2]University of Wisconsin, Stevens Point; [3]University of Queensland

Background/Aims: Early diagnosis of breast cancer is an important prognostic indicator and missed mammograms represent missed opportunities for earlier diagnosis. Geographical access to mammography services is an important factor in mammography screening. In rural regions, mammography access can be problematic and longer travel distance has been shown to adversely affect early breast cancer detection in rural populations, although results are mixed. Recent advances in geographic information systems (GIS) technology allows for more accurate determination of point distance and travel time via road networks. The goal of the present study was to utilize modern GIS technology to determine the association between geographic proximity to mammogram centers and stage of breast cancer at diagnosis. **Methods:** Female patients with an initial diagnosis of primary breast cancer at the Marshfield Clinic between January 1, 2002 and December 30, 2008 were identified electronically through the Marshfield Clinic/St. Joseph's Hospital cancer registry. Patients were classified by stage of breast cancer and analyzed to determine whether a correlation existed between stage and distance to closest facility, distance to visited facility, and rural or urban address location. ESRI ArcGIS Desktop version 10.0, ArcInfo license, Business Analyst extension, and StreetMap Premium using data from TeleAtlas 2010 were used to geocode point features and the ArcGIS Geocoding toolbar, Review/Rematch Addresses tool was used to substantiate the results. **Results:** A total of 1,368 patients with breast cancer was analyzed. A trend of increased travel time to nearest facility with increasing stage at diagnosis was observed ($P = 0.0643$), where median travel time was 17.1 minutes for stage 0 breast cancer and 23.9 min for stage 4 breast cancer. Significantly fewer mammograms were performed in the winter months (November through February) and the difference was particularly striking for patients living 30 or more miles from a mammography center ($P = 0.0448$). **Conclusions:** Using modern GIS technology, we showed that travel time affects mammogram utilization and thus stage at breast cancer diagnosis in the Marshfield Clinic service area. In rural areas, travel time and seasonal road conditions may impact on decisions to undergo mammography screening.

Keywords: Breast Cancer; Mammogram; Geographical Access

doi:10.3121/cmr.2013.1176.ps1-41

PS1-42:

Beyond Risk Reduction: Decision-Making Factors Among Breast Cancer Patients Undergoing Contralateral Prophylactic Mastectomy

Katharine Rendle[1]; Meghan Halley[1]; Nicole Ventre[1]; Dominick Frosch[1]; Suepattra May[1]

[1]Palo Alto Medical Foundation for Healthcare, Research and Education

Background/Aims: Women diagnosed with unilateral breast cancer are electing to undergo contralateral prophylactic mastectomy (CPM)—or removal of the healthy breast—at rapidly increasing rates worldwide. CPM significantly reduces the risk of recurrence of contralateral breast cancer; however, it is also believed to be unnecessary for most patients due to the relatively low risk of contralateral breast cancer, and the effectiveness of less invasive treatment options. Additionally, since the risk of systemic metastases often exceeds the risk of contralateral breast cancer, most patients will not receive any survival benefit. As such, there is a growing need to understand why patients are electing to have CPM. Drawing from prospective, in-depth interviews with breast cancer patients, we explore how women are making this decision and investigate what factors beyond risk reduction may be impacting their decision. **Methods:** Participants were recruited from a multispecialty clinic in Northern California. Participants were interviewed at four time points during their treatment journey. Medical records for each participant were reviewed to confirm therapies received. Analysis of interview transcripts used grounded theory to identify emergent decision-making factors across participants. **Results:** Of the 41 patients enrolled in the study, 11 (27%) women elected to have CPM. The majority of these women underwent BCRA testing (9 or 82%), but only two women received a positive result. Influential factors identified across participants were: 1) desire to reduce or avoid breast cancer treatment; 2) having a close relationship with someone who died from breast cancer; 3) wanting to maintain (or improve) breast appearance; and 4) receiving imaging results that showed "suspicious" but ultimately benign changes in their healthy breast. **Conclusions:** The decision to undergo CPM is impacted by a variety of factors including, but not limited to, risk reduction. Moreover, perceptions of risk are entangled with individual experiences prior to and during treatment, which may influence the ways patients understand risk as both a concept and a decision-making factor. Further investigation of the impact of both risk comprehension and perceived benefits of CPM—most notably reconstruction—on decision-making is needed to understand why women are electing to undergo this invasive and potentially medically unnecessary procedure.

Keywords: Breast Cancer; Contralateral Prophylactic Mastectomy; Decision-Making

doi:10.3121/cmr.2013.1176.ps1-42