Health Insurance Expansion and Treatment of Pancreatic Cancer: Does Increased Access Lead to Improved Care?

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BACKGROUND: Pancreatic cancer is increasingly common and poised to become the second leading cause of cancer deaths by the year 2020. Surgical resection is the only chance for cure, yet significant disparities in resection rates exist by insurance status. The 2006 Massachusetts health care reform serves as natural experiment to evaluate the unknown impact of health insurance expansion on treatment of pancreatic cancer.

STUDY DESIGN: Using the Agency for Healthcare Research and Quality's State Inpatient Databases, this cohort study examines nonelderly, adult patients with no insurance, private coverage, or government-subsidized insurance plans, who were admitted with pancreatic cancer in Massachusetts and 3 control states. The primary end point was change in pancreatic resection rates. Difference-in-difference models were used to show the impact of Massachusetts health care reform on resection rates for pancreatic cancer, controlling for confounding factors and secular trends.

RESULTS: Before the Massachusetts reform, government-subsidized and self-pay patients had significantly lower rates of resection than privately insured patients. The 2006 Massachusetts health reform was associated with a 15% increased rate of admission with pancreatic cancer ($p = 0.043$) and a 67% increased rate of surgical resection ($p = 0.043$) compared with control states. Measured disparities in likelihood of resection by insurance status decreased in Massachusetts and remained unchanged in control states.

CONCLUSIONS: The 2006 Massachusetts health care reform was associated with increased resection rates for pancreatic cancer compared with control states. Our findings provide hopeful evidence that increased insurance coverage can help improve equity in pancreatic cancer treatment. Additional studies are needed to evaluate the longevity of these findings and generalizability in other states. (J Am Coll Surg 2015;221:1015–1022. © 2015 by the American College of Surgeons. Published by Elsevier Inc. All rights reserved.)

The incidence of pancreatic cancer is increasing, making it currently the fourth leading cause of cancer mortality in the United States, with projections of it becoming the second leading cause by the year 2020.[1,2] The overall 5-year survival rate continues to be <5%, and surgical resection remains the only chance for long-term survival.[3] Unfortunately, the majority of patients present with metastatic or locally advanced disease. For patients with locally advanced cancers, multimodality therapy has allowed for an improvement in survival in even the most challenging cases.[4,5] Although only 15% of patients present with resectable pancreatic cancer, 40% to 60% of these patients fail to undergo potentially curative resection.[6,7] Studies evaluating geographic and historic variability have shown areas with higher resection rates to be associated with improved overall survival.[7,8]

Disclosure Information: Nothing to disclose.

Disclosures outside the scope of this work: Dr Warshaw is a paid consultant to Novo Nordisk.

Support: Dr Song was supported by a grant from the National Institute on Aging (F30-AG039175).

Received July 31, 2015; Revised September 9, 2015; Accepted September 10, 2015.

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http://dx.doi.org/10.1016/j.jamcollsurg.2015.09.010
ISSN 1072-7515/15

Abbreviations and Acronyms
GSSP = government-subsidized/self-pay
IRR = incident rate ratio
OR = odds ratio
SID = State Inpatient Databases

Substantial disparities in the treatment of pancreatic cancer have been documented across the country. Lack of private insurance coverage has been linked to lower likelihood of presenting with resectable pancreatic cancer and decreased likelihood of undergoing surgery.[9] Socioeconomic status, including insurance coverage, is also associated with decreased receipt of care of pancreatic cancer in compliance with standard treatment guidelines.[10] Additional analyses suggest that gaps in treatment and overall survival for cancer diagnoses can be enhanced if access to health care is improved.[11]

The 2006 Massachusetts health care reform provides a unique natural experiment to evaluate the impact of health insurance expansion on disparities in pancreatic cancer. Nearly all provisions within the law were aimed at increasing access to insurance coverage through mechanisms that included the expansion of Medicaid, creation of a new subsidized insurance program for those ineligible for Medicaid, and expanding young adult eligibility on parental plans until age 26.[12] The law also provided the basic framework for the Patient Protection and Affordable Care Act, which has the potential of adding insurance coverage to more than 16 million Americans.[13] Since the implementation of the 2006 reform, Massachusetts has seen increased insurance coverage to about 96% of its residents. However, questions remain as to whether increased insurance coverage will translate into increased access to, or quality of, care for patients with pancreatic cancer.

Earlier studies have identified multiple drivers of disparities in diagnosis, treatment, and outcomes of pancreatic cancer. Uninsured patients are significantly less likely to be referred for surgical resection and are less likely to be evaluated at high-volume centers.[14] As centralization of pancreatic cancer treatment has increased in the past decades, questions have been raised as to how patients with already limited access to care might be impacted. To that end, the question remains whether increased coverage across a population will translate into increased receipt of surgery for patients with pancreatic cancer. We hypothesized that increased insurance coverage in Massachusetts would be associated with increased resection rates for pancreatic cancer. The primary aim of this study was to examine changes in surgical resection rates for patients with pancreatic cancer before and after the Massachusetts health reform in 2006. Our secondary aim was to evaluate changes in site of care during admission for pancreatic cancer.

METHODS

Study design and data

This cohort study used the Hospital Cost and Utilization Project's State Inpatient Databases (SID) for Massachusetts, New Jersey, New York, and Florida between January 1, 2001 and December 31, 2011. The SID are administrative databases capturing approximately 98% of all discharges from all hospitals across respective states each year. Data are collected and maintained by public-private partnerships, supported by the Agency for Healthcare Research and Quality. Control states were selected based on completeness of data and similar availability of surgical services.[15]

We included all inpatient admissions of nondisabled, nonelderly, adult patients with pancreatic cancer and no insurance coverage, private or Medicaid insurance coverage, or the newly created Commonwealth Care insurance (only in Massachusetts after reform). Admission with pancreatic cancer was determined using ICD-9 diagnosis codes (ICD-9-CM 15.7, 15.7x). Patients without insurance coverage, Medicaid, or Commonwealth Care coverage were grouped together and are subsequently referred to in this article as government-subsidized/self-pay (GSSP). This cohort represents the primary population impacted by the 2006 health reform in Massachusetts that predominantly led to increased enrollment in either Medicaid or Commonwealth Care coverage.[16] Patients with Medicare coverage were excluded from this analysis, as no significant changes to Medicare eligibility or enrollment occurred as a part of the Massachusetts law. Patients aged younger than 18 years or older than 65 years were also excluded, as coverage for these individuals was not directly affected by the insurance expansion.

Outcome measures

The primary end point was surgical resection for pancreatic cancer. Surgical resection was defined using ICD-9 procedure codes (ICD-9-CM 52.5x, 52.6, 52.7). We also identified patients who underwent palliative procedures, including gastroenterostomy (ICD-9-CM 44.32, 44.38, 44.39, 46.39), biliary bypass (ICD-9-CM 51.36, 51.37, 51.39), endoscopic stents (ICD-9-CM 51.87, 52.93), or percutaneous procedures on biliary track (ICD-9-CM 51.980). Patients undergoing any surgery included those who underwent pancreatectomy, palliative