



Returns to specialization: Evidence from the outpatient surgery market[☆]



Elizabeth L. Munnich^{a,*}, Stephen T. Parente^b

^a Department of Economics, University of Louisville, United States

^b Carlson School of Management, University of Minnesota, United States

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ABSTRACT

Technological changes in medicine have created new opportunities to provide surgical care in lower cost, specialized facilities. This paper examines patient outcomes in ambulatory surgery centers (ASCs), which were developed as a low-cost alternative to outpatient surgery in hospitals. Because we are concerned that selection into ASCs may bias estimates of facility quality, we use predicted changes in federally set Medicare facility payment rates as an instrument for ASC utilization to estimate the effect of location of treatment on patient outcomes. We find that patients treated in an ASC are less likely to be admitted to a hospital or visit an emergency room a short time after outpatient surgery. The findings in this paper indicate that factors other than patient and physician heterogeneity contribute to the observed returns to specialization in the ASC market.

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1. Introduction

Technological developments in medicine have drastically changed the landscape of medical care in the United States over the past 30 years. Beginning in the early 1980s, surgical care shifted from the inpatient setting to hospital outpatient departments (HOPDs), in large part due to advances in anesthesia and the development of laparoscopic surgery that made it possible for patients to recover more quickly from surgery (Sloss et al., 2006; Kozak et al., 1999). Subsequently, the number of outpatient surgeries nationwide increased considerably, from 3.8 million in 1981

to nearly 39 million in 2005, and outpatient procedures now represent over 80% of all surgeries.¹ This massive change in surgical care has created new opportunities for providing medical services outside of traditional acute care hospitals in potentially lower cost, specialized settings. The growing market for these specialized settings contributes to increased competition among surgical facilities, which could lead to welfare gains due to lower healthcare prices and higher quality patient care.

A large part of the growth in the outpatient surgery market has occurred in ambulatory surgery centers (ASCs). Whereas hospitals provide a wide range of services in addition to outpatient surgery, including inpatient and emergency care, ASCs exclusively provide outpatient procedures. The share of all outpatient procedures that occurred in ASCs grew from 4% in 1981 to almost 40% in 2005 (American Hospital Association, 2008). Over 90% of ASCs are wholly or partly physician-owned, and 96% are for-profit (Ambulatory Surgery Center Association, 2011; MedPAC, 2010a,b).² Since surgeons often have operating privileges in both freestanding ASCs and hospitals, they may choose to refer patients to either type of outpatient setting.

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* Corresponding author at: Department of Economics, University of Louisville, Louisville, KY 40292, United States.

E-mail address: beth.munnich@louisville.edu (E.L. Munnich).

¹ Author calculations based on American Hospital Association (2008, 2013).

² Only 18% of U.S. general hospitals are for-profit and less than one percent are physician-owned (American Hospital Association, 2013; Silva, 2010). Due to the federal “Stark Law,” physicians are prohibited from referring Medicare or Medicaid patients to hospitals with which they have a financial relationship (e.g., investment or ownership), limiting physician ownership of general hospitals. However, the law exempts physicians who have an ownership stake in an entire hospital, such as an ASC or specialty hospital. For more details on this law, see Casalino (2008).

ASCs have been praised for their potential to provide outpatient care that is less expensive, faster, and more convenient for both patients and physicians than services provided in hospitals (Munnich and Parente, 2014; Hair et al., 2012; Paquette et al., 2008; Grisel and Arjmand, 2009). However, to date little is known about the quality of care provided in ASCs relative to more traditional settings like HOPDs. In this paper, we examine health outcomes associated with treating patients in surgery centers by focusing on two quality of care measures: inpatient admission and ER visits on the same day, 7, or 30 days after an outpatient procedure. These metrics have been used in the medical literature to measure quality differences in outpatient settings (Fox et al., 2014; Hollingsworth et al., 2012; Fleisher et al., 2004). In addition to their use by researchers, Medicare-certified ASCs have been required to report direct hospital transfers and hospital admissions since October 2012. Beginning in 2016, ASCs with high rates of hospital visits that occur within 7 days of a colonoscopy received reduced payment rates for Medicare patients (Centers for Medicare and Medicaid Services, 2014).

Identifying the causal effect of facility specialization on patient outcomes is made difficult because holding quality of care constant, healthier patients have better surgical outcomes than riskier patients and healthier patients are also more likely to choose or be referred to low intensity settings.³ Consequently, surgeons who choose to operate in ASCs have a different patient mix than those who only operate in hospitals. These differences could reflect physician preferences for different types of patients (or vice versa), facility preferences, differences in patient mix across hospital systems, or sorting within physician practices, e.g., if older physicians have more leverage in a practice and therefore more ability to choose settings and patients. If physicians who operate in ASCs have a healthier patient base than those who do not, any estimation of the relationship between patient health and ASC treatment that does not account for differences in case mix would be biased.

Because we are concerned that observed differences in patient outcomes could reflect differences in underlying health rather than quality of care, we use changes in federally set Medicare facility payment rates as an exogenous source of variation in ASC utilization to estimate the effect of location of treatment on patient outcomes. Specifically, we exploit a 2008 policy change that mandated that the Medicare facility payment rate for a procedure in an ASC could be no greater than 59% of Medicare's payment rate for that same procedure at a hospital. We use this policy change to predict ASC payment rates for 2008 and 2009, and find that predicted Medicare facility payment rates are an important determinant of whether a patient was treated at an ASC or a hospital. As predicted ASC payment rates increase, patients are more likely to undergo treatment in an ASC, holding patient risk, physician, and procedure group constant. We use the predicted ASC payment rate for each outpatient procedure, by year, as an instrument for ASC treatment to examine differences in patient outcomes across outpatient facility settings. We find that ASC treatment reduces the probability of same day, 7-day, and 30-day inpatient admissions and ER visits.

One economic argument in favor of ASCs is that they may offer equal or higher quality care at lower costs due to specialization. Previous research has documented reduced costs associated with providing services in ASCs relative to outpatient departments in acute care hospitals (Munnich and Parente, 2014; Weber, 2014). An alternative view is that surgery centers offer faster, cheaper services at the expense of quality of care. The findings in this paper indicate

that ASCs provide high quality services, and suggest that promoting greater use of ASCs may lead to health care cost savings and overall welfare gains.

2. Background and previous literature

2.1. The ambulatory surgery center market

The Centers for Medicare and Medicaid Services (CMS) defines an ASC as a "distinct entity that operates exclusively for the purpose of providing surgical services to patients not requiring hospitalization and in which the expected duration of services would not exceed 24 h following an admission" (Ambulatory Surgical Services, 2009). ASCs have been a growing focus of public policy in recent years and have been promoted as a cost-savings tool for Federal health care programs by the U.S. government (U.S. Government Accountability Office, 2006; Office of Inspector General, 1999). For example, the U.S. Office of the Inspector General estimated that Medicare would save \$7 billion between 2012 and 2017 due to the payment differential between ASCs and HOPDs (Office of Inspector General, 2014). CMS has made deliberate efforts to encourage outpatient treatment in one type of facility over another by changing the relative reimbursement rate in ASCs and HOPDs (Scully 3/23/03, p. 46). More recently, CMS began collecting data on ASC quality measures as part of the Ambulatory Surgical Center Quality Reporting (ASCQR) Program; as of 2016, these reported measures impact ASC reimbursements.⁴

Over 90% of ASCs are at least partly owned by physicians (Ambulatory Surgery Center Association, 2011). When a physician treats a patient in an ASC over which they have an ownership stake, that physician captures part of the facility payment from Medicare. Consequently, previous research has found that physicians with financial interests in hospitals have a higher rate of self-referrals, and surgery center volume is higher for physician owners than for non-owners (Yee, 2011; He and Mellor, 2012; Mitchell, 2008, 2010; Casalino, 2008; Lynk and Longley, 2002). Similarly, ASC physician owners are more likely to refer well-insured patients to their ASCs and send Medicaid patients to HOPDs (Gabel et al., 2008).

The share of all outpatient surgeries performed in freestanding ASCs increased from 4% of the market in 1981 to 38% in 2005 (American Hospital Association, 2008). While the share of surgeries performed in physician offices grew over this period as well, ASCs in particular have posed a competitive threat to hospitals. Hospital executives have expressed concern that ASCs have potentially "unfair" cost advantages because they treat healthier patients, are not required to provide unprofitable services, and are less regulated than hospitals (Casalino et al., 2003; Vogt and Romley, 2009).⁵ Representing the American Hospital Association (AHA) at a Federal Trade Commission hearing in 2003, the CEO of the AtlanticCare hospital system noted that, "The rapid growth of specialty care providers threatens community access to basic health services and jeopardizes patient safety and quality of care" (Lynn 3/27/03, p. 27–28).⁶ Accordingly, hospital systems and industry organizations

⁴ Information about the ASCQR Program is available at <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/ASC-Quality-Reporting/>

⁵ All Medicare-certified ASCs must be certified by a state agency, or privately accredited. Although facilities must initially obtain this qualification, the Office of Inspector General has criticized CMS for insufficient oversight of states and accreditors regarding recertification and compliance, leading to very lenient regulation of ASCs. CMS also requires participating hospitals to comply with patients' rights requirements and implement quality improvement programs, which it does not require of ASCs (CMS, 2003; Office of Inspector General, 2002).

⁶ Examples of specialty hospitals, as described by Lynn, include ambulatory surgery centers, children's hospitals, psychiatric hospitals, heart hospitals, cancer hospitals, dialysis clinics, pain centers, imaging centers, and mammography centers.

³ While patient preferences are also a factor in treatment location, coinsurance rates for outpatient procedures did not vary over the period of our study so we do not expect that preferences changed during this time. The variation we exploit comes from facility payments, discussed later.

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