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The Changing Geography of Outpatient Procedures

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Editor's note: Since the early 80s, many surgical procedures have moved from the inpatient to outpatient setting. Outpatient surgical visits now account for about two-thirds of all surgical visits in the U.S. Over the same period, freestanding ambulatory surgery centers (ASCs) have arisen as alternatives to traditional hospital-based outpatient surgical departments. The number of ASCs grew from 240 in 1983 to 5,174 in 2008. The growth of ASCs raises safety concerns about the risk of complications and adequate access to emergency care. This Issue Brief summarizes evidence from one state about the changing geography of outpatient procedures and the possible risks associated with these changes.

ASCs now have about 40% market share of all outpatient surgeries

Improvements in anesthesia and simpler, safer procedures have led to more surgeries performed on a same-day, outpatient basis. As the demand for outpatient procedures increased, ambulatory surgery centers (ASCs), many of them owned by physicians, have emerged as competitors to hospital outpatient departments (HOPDs). It is estimated that about 40% of all outpatient surgeries are now performed in ASCs.

- In contrast to HOPDs, ASCs lack immediate access to emergency care in the event of a procedural complication. Prior research suggests that such complications result in a transfer to hospital care in one of every 180 outpatient procedures. However, little is known about the distance ASC patients must travel if a hospital transfer is needed.
- Proponents of ASCs cite cost-effectiveness and patient convenience as two advantages of ASCs over HOPDs. Opponents cite safety and quality concerns as well as concerns about the effects on hospitals, "bottom line" and their ability to provide the necessary back-up care.
- Since 1982, Medicare has paid for many procedures performed in certified ASCs. In 2003, Medicare payments to ASCs were 86.5% of rates paid to HOPDs. Changes in 2008 reduced payments to about 59% of HOPD rates, causing some industry experts to forecast that payment reductions would halt or slow the growth of ASCs in the future.

Study investigates geographic distance to hospital care for patients in ASCs

To measure changes over time in the accessibility of hospital care services in patients undergoing outpatient procedures, Neuman, David and colleagues used publically available data from Florida for the years 2005-2007. They examined three-year trends in the physical distance separating the site of procedural care from the nearest available site for emergency care for individual outpatients.

- Average distance to an emergency department (ED) might increase for three reasons: [1] an increasing percentage of procedures might be performed in ASCs rather than in HOPDs; [2] ASCs near EDs might close or ASCs far from EDs might open; [3] EDs might close.
- The investigators measured point-to-point distances between ASCs and the nearest active ED. By definition, since HOPDs are located in hospitals, the distance between HOPDs and emergency care was zero.
- The study included outpatients undergoing one of seven common procedures performed at ASCs and HOPDs: spinal canal injection, lens and cataract procedures, upper gastrointestinal (GI) endoscopy and biopsy; colonoscopy with biopsy; knee cartilage excision; other muscle and tendon procedures; and other procedures of the breast and skin.

Patient care at ASCs is moving farther away from emergency care over time

The study found changes over time in the volume of procedures, the share of procedures performed at ASCs, and the average distance to an ED.

- The study included nearly 4.4 million outpatient procedures. The three most common procedures (colonoscopy, lens and cataract procedures, and upper GI endoscopy) together accounted for 75% of all visits. Overall, the volume of procedures increased by 5.4% from 2005 to 2007. Colonoscopy and upper GI endoscopy increased by 12.9% and 9.8% each year.
- Over the study period, the share of all procedures performed at ASCs rose from 71.5% to 74.9%. This shift in market share, favoring ASCs, occurred for each procedure.
- At the beginning of the study, the average distance of an ASC patient from ED care was 2.1 km (1.3 miles), increasing progressively over time due to the opening of new ASCs farther away from hospitals. On average, new ASCs were 0.82 km (0.5 miles) farther from an ED than the ones that closed in that year.
- The lowest-risk procedures (lens and cataract surgeries) were performed at the greatest average distance from ED care. However, the distance from hospital care increased almost exclusively among ASC patients undergoing higher risk, noncataract procedures.

Study looks at factors that affect how physicians decide where to perform an outpatient procedure

To investigate how distance and level of risk might affect a physician's decision to perform a procedure at an ASC or HOPD, David and Neuman studied adult patients undergoing upper endoscopy and colonoscopy procedures in the Florida data between 2005 and 2007. The two procedures were selected because of their frequency and because they are performed at high rates in both ASCs and HOPDs.

- The study included more than 1.3 million ASC and 464,568 HOPD patient visits. The investigators identified 192 ASCs and 196 HOPDs in the dataset; 57.8% of ASCs were less than a mile away from an acute care hospital. The remaining ASCs were an average of 2.8 miles away from the nearest hospital.
- The investigators used a common measure of medical complexity (the Charlson Comorbidity Index), to quantify the risk of complications for each patient.
- They looked at differences in risk profiles across and between two kinds of physicians: "splitters," who performed procedures at both ASCs and HOPDs, and "non-splitters," those performing more than 99% of their procedures at ASCs. By this definition, 739 physicians were classified as splitters and 47 as non-splitters.

Physicians who work exclusively in ASCs take on more risk in those settings than those who practice in ASCs and HOPDs

The analyses found differences in the medical complexity of patients treated in ASCs, depending on whether the physician also performed procedures in HOPDs. For physicians practicing in both settings, the findings reveal that medical complexity and distance to an ED were associated with the selection of setting.

- The average splitter performed 68% of cases in ASCs and 32% in HOPDs. Splitters and non-splitters performed a similar number of procedures per month.
- Non-splitters tended to take on more risk in ASCs than splitters; patients of non-splitters had comorbidity scores 42% higher than ASC patients of splitters. This difference diminished for patients over 65 and as the ASC's distance from an ED increased. The analytic model predicts that splitters and non-splitters take on the same level of risk when the ASC is 3.4-3.9 miles away from an ED.
- Compared to non-splitters, splitters treated more medically complex patients overall, with the most complex patients being concentrated in HOPDs. This selection of HOPDs was especially pronounced for patients over 65, for whom comorbidity scores were 245% higher in HOPD patients than ASC patients.
- Distance from ED care also affected physicians' decisions on settings. For patients aged 65 and older, an additional mile further away from an ED was associated with a 56% decrease in the average ASC patient's comorbidity score.

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POLICY IMPLICATIONS

These results point to a recent trend toward a greater separation of ASCs from conventional hospital settings, and shed light on the effects of medical risk and distance on the physician's decision of the setting for outpatient procedures.

- These findings underscore the need for outcomes research to determine the risk conferred by subtle changes in ASC distance from an ED. As the growth of ASCs continues to change the geography of outpatient procedural care, such research will better define the implications for individual patients, and the role of policy and regulation in ensuring the safe and efficient delivery of outpatient procedural care.
- The finding that patients of similar medical complexity may be treated in different settings by splitters and non-splitters causes concern. A group of patients with a certain level of medical risk would prompt treatment at an HOPD by a splitter, while a non-splitter would treat these patients at an ASC. Mismatches between patient complexity and facility capabilities can lead to patient harm and excess costs. Further research is needed on how these patients fare in different settings.

This Issue Brief is based on the following articles: M.D. Neuman, G. David, J.H. Silber, J.S. Schwartz, L.A. Fleisher. Changing access to emergency care for patients undergoing outpatient procedures at Ambulatory Surgery Centers: Evidence from Florida. Medical Care Research and Review, doi: 10.1177/1077558710375430, published online July 30, 2010; G. David, M.D. Neuman. Physician division of labor and patient selection for outpatient procedures. Journal of Health Economics, doi:10.1016/j.jhealeco.2010.11.007, published online December 31, 2010.

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