In Part One of the 2010 rural hospital facility replacement study, we examined the make-up of the communities that have successfully completed a facility replacement. In Part Two, we analyze the impact of replacement on hospitals’ volume, financial, and operational performance. Overall, replacement facilities show an average 6.5% median annualized increase in volumes. Yet, not all hospitals are serving more patients, as roughly one in five of the hospitals in the study have lost volumes overall and over one in three have lost inpatient business.

Rural facility replacements are generally driven by the ages and conditions of the bricks and mortar; however, the business case is often less clear. Stroudwater has documented in prior years’ studies that higher quality and more efficiently delivered care are expected results of a replacement. Increased patient volume, necessary to support the debt incurred in construction, cannot be assured. Board members and healthcare leaders’ jobs in assessing whether a facility project can be supported were made even more difficult by the recent recession.

Nationally, from 2004 through 2009, the Centers for Medicare & Medicaid Services (CMS) reported no growth in hospital discharges and declines in patient days in every year except 2008. Data from this study shows new rural hospitals have avoided the volume declines reported throughout the industry.

The experiences of those facilities replaced in the heart of the recession are most instructive to those considering replacement in the near future. With data from 91 rural hospitals reflecting all known replacement facilities with available data, Stroudwater focused the volume analysis on those facilities which experienced their first years of operation during this difficult economic period. The results show that these facilities fared well. Rural facilities replaced during the period between 2006 and 2009 experienced solid growth in patient volumes as measured by patient days, outpatient visits, and adjusted patient days.

Looking more closely at the data, hospitals’ experiences differed based on when in that period the facility was replaced. Those hospitals replaced during 2008 and 2009 showed an annual increase of 7.6% in overall volume in those first two years and 6.9% annual growth in outpatient visits. Those hospitals with five or more years of operations, replaced in 2005 or earlier, showed 2.4% annual growth in inpatient and 8.1% growth in outpatient volume. Those hospitals replaced during 2006 and 2007, showed 4.0% inpatient growth, but significantly lagged the other cohorts in outpatient volume and adjusted patient days, growing annually by 3.8% and 3.3%, respectively. This pattern of results was repeated in performance with regards to staffing, operating costs, and profitability.

The next several years will be telling for those facilities most recently replaced and those with projects just getting underway. The evidence suggests that these facilities may not perform as well as those replaced earlier in the decade, but they will generally experience volume growth in excess of the overall market, which helps support the financial results that make up the business case for facility investment.
All three cohorts experienced growth in both inpatient and outpatient volume on average, but hospitals replaced in 2005 or earlier, with at least two years of operations in new facilities prior to the recession, experienced better results than those hospitals replaced just before or at the beginning of the recession. The newest facilities experienced the largest gains in total volume, but the experience is limited to one or two years of activity.

Those facilities replaced between 2006 and 2009, just before or during the recession, experienced the largest declines in total margin after replacement.
Hospitals generally increased staffing by 3.9% per year after replacement, but adjusting for additional volume, hospitals actually decreased staffing per adjusted patient day by 1.7%. Increases in depreciation and interest offset staffing reductions to increase total operating expense per adjusted patient day by 5.3% per year.

The newest facilities had the largest increases in staffing, but matched the additional staffing well to the increases in volume, resulting in FTEs per adjusted patient day declining by 1.9%.
EBIDA margin shows the results from operations excluding the impact of depreciation and interest expense. This measure is somewhat overstated, as the revenue includes Medicare reimbursement specifically for interest and depreciation, but those costs are excluded from the expenses.
When the study began in 2005, few resources existed for rural hospital leadership, boards, and community leaders to assist them in understanding what a new replacement facility hospital would do to or for their bottom line. The study’s purpose is to gather and present quantitative and qualitative data from communities which have replaced their critical access hospitals and to educate those considering, embarking on, or in the midst of a replacement facility project. The study typically generates discussion around a replacement in three pivotal areas: Driving Factors (why would we replace?); Access to Capital (what can we afford?); and the Role of Leadership (how do we do this?)

This year, additional focus was added to examine the performance of those facilities replaced during the recent recession compared to those replaced in earlier years.

**ELIGIBILITY**

With the assistance of State Office of Rural Health and State Hospital Association representatives, a list of candidates is established. Stroudwater Associates then ensures the study’s eligibility criteria are met:

- Critical Access Hospital designation
- Opened clinical areas between January 1, 1998 and January 1, 2010
- Operations in the community for at least three years prior to the replacement

Validated hospitals are included in the study. From 2005 to 2010 the number of hospitals included in the study has increased from 20 to 91.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Percentile 10th</th>
<th>Percentile 25th</th>
<th>Percentile 50th</th>
<th>Percentile 75th</th>
<th>Percentile 90th</th>
<th>Results  Negative</th>
<th>Results Positive</th>
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<td><strong>VOLUME</strong></td>
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<td></td>
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<td></td>
<td></td>
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<td>-10%</td>
<td>45%</td>
<td>55%</td>
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<td>5%</td>
<td>0%</td>
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<td>9%</td>
<td>17%</td>
<td>22%</td>
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<tr>
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<td>16%</td>
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**STUDY PURPOSE, ELIGIBILITY, PROCESS, AND DESIGN**

**PURPOSE**

The methodology established in 2005 and followed in each subsequent year of the study was developed and vetted by an advisory panel which included governmental, academic, and financial experts as well as a national non-profit entity whose mission is to build capacity in rural hospitals.

The 2010 study uses publicly available cost report data, input from hospital CEOs and CFOs, the AHA Guide and the American Hospital Directory. The quantitative data analyzed for the purposes of the study include: volumes (patient days, outpatient visits, adjusted patient days), operating efficiency (gross FTEs, FTEs per adjusted patient day, operating expense per adjusted patient day) and financial (operating margin, EBIDA). Interviews with a sample of hospital CEOs and CFOs were conducted to further examine the quantitative data.
STROUDWATER ASSOCIATES

Stroudwater Associates is a prominent healthcare advisory firm with a dedicated team that is passionate about the health of rural people and places. With offices in Portland, Maine, Atlanta, Georgia and Phoenix, Arizona, Stroudwater provides strategic, financial, facility planning, and operational consulting services to a national clientele—from academic medical centers to small, rural hospitals, and from integrated health systems to stand-alone community hospitals.

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