Technical Appendix Documenting Sources for Exhibit 2 in
How Nonprofits Matter in American Medicine and What to Do About It

<table>
<thead>
<tr>
<th>Specific Measures of Organizational Performance</th>
<th>Number of Studies With Results Categorized According to Ownership-Related Differences</th>
<th>Studies of Hospitals</th>
<th>Studies of Nursing Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nonprofit Advantage*</td>
<td>No Significant Differences</td>
<td>For-Profit Advantage*</td>
</tr>
<tr>
<td>Administrative Overhead</td>
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<tr>
<td>Costs per Admission</td>
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<tr>
<td>Operating Cost</td>
<td>3 studies ¹</td>
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<tr>
<td>Total Cost</td>
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<tr>
<td>Measures of Technical Efficiency **</td>
<td></td>
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<tr>
<td>Revenues/Charges Per Admission</td>
<td>5 studies ⁹</td>
<td>3 studies ¹⁰</td>
<td>2 studies ¹¹</td>
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<tr>
<td></td>
<td>9 studies ¹⁴</td>
<td>4 studies ¹⁵</td>
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<tr>
<td>Measures of Economic Performance</td>
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<td></td>
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<tr>
<td>Mortality Rates (In facility)</td>
<td>1 study ¹⁷</td>
<td>7 studies ¹⁸</td>
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<tr>
<td>Mortality Rates (Post-discharge)</td>
<td>7 studies ¹⁹</td>
<td>9 studies ²⁰</td>
<td>1 study ²¹</td>
</tr>
<tr>
<td>Adverse Outcomes (other than mortality)</td>
<td>5 studies ²²</td>
<td>3 studies ²³</td>
<td>3 studies ²⁴</td>
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<tr>
<td>Process Measures of Quality</td>
<td>5 studies ²⁸</td>
<td>1 study ²⁹</td>
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<tr>
<td>Regulatory Violations</td>
<td>1 study ³³</td>
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<tr>
<td>Malpractice Suits</td>
<td>--</td>
<td>1 study ³⁶</td>
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<tr>
<td>Functional Improvement During Admission</td>
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<tr>
<td>Consumer Satisfaction</td>
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<tr>
<td>Measures of Quality of Care</td>
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<tr>
<td>Locating in Low-Income Areas</td>
<td>5 studies ⁴⁰</td>
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<tr>
<td>Treating Uninsured Patients</td>
<td>12 studies ⁴¹</td>
<td>6 studies ⁴²</td>
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<tr>
<td>Treating Medicaid Patients</td>
<td>2 studies ⁴³</td>
<td>4 studies ⁴⁴</td>
<td>1 study ⁴⁵</td>
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<tr>
<td>Facility Practices Affecting Indigent Care</td>
<td>4 studies ⁴⁸</td>
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<tr>
<td>Providing Unprofitable Services</td>
<td>6 studies ⁵⁰</td>
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</tbody>
</table>

¹ No studies fell into this category

* An ownership-related advantage is identified with organizational performance that involves lower cost, lower administrative cost, lower revenues/charges, higher levels of technical efficiency, high scores on positive quality outcomes, lower levels of adverse events, more extensive utilization by indigent clients and fewer policies that inhibit admission by indigent clients.

** “Efficiency” in this context refers to the provision of a given set of services or outcomes in a manner that minimizes the expenditure of resources. Studies that compare organizations in terms of efficiency hold constant statistically for variation in output, though the measures of output differ greatly across these studies. Measures of efficiency are calculated against a statistical profile for the resource minimizing production of different combinations of outcomes.
References for Exhibit 2


2. Luksetich et al, “Organizational Form and Nursing Home Behavior”


11. Michael D. Rosko, “Impact of HMO Penetration and Other Environmental Factors on Hospital X-Inefficiency Medical Care Research and Review 2001; 58(4): 430-54; Ferrier and Valdmanis, “Rural Hospital Performance and Its Correlates”


27. Zinn et al., “Variations in the Outcomes of Care Provided in Pennsylvania Nursing Homes: Facility and Environmental Correlates”

29. Keeler et al., “Hospital Characteristics and Quality of Care”;


32. Hughes et al., Influence of Facility Characteristics on Use of Antipsychotic Medications in Nursing Homes

33. Mark, “Psychiatric Hospital Ownership and Performance: Do Nonprofit Organizations Offer Advantages in Markets Characterized by Asymmetric Information?”

35. Weisbrod and Schlesinger, “Ownership Form and Behavior in Regulated Markets with Asymmetric Information”; Riportella-Mueller and Slesinger, “The Relationship of Ownership and Size to Quality of Care in Wisconsin Nursing Homes”

36. Gray, The Profit Motive and Patient Care: The Changing Accountability of Doctors and Hospitals


46. Spector et al, “The Impact of Ownership Type on Nursing Home Outcomes”


49. Marmor et al., Nonprofit Organizations and Health Care