Introduction

• Although it is well known that socioeconomic factors (eg, income, rural/urban practice settings) affect health outcomes, many health service research studies do not adjust for potential socioeconomic confounders, likely because socioeconomic status (SES) indicators are generally not recorded in claims databases.

• A majority of US dialysis patients are covered by the federal Medicare program. Despite this homogenous insurance coverage, significant economic and geographic diversity exists among end-stage renal disease (ESRD) patients.

• Such diversity in the ESRD patient population has been shown to influence outcomes.

• For dialysis and renal transplant patients, SES indicators such as rural/urban geography and poverty have demonstrated negative impact on health outcomes.1

• There is a paucity of epidemiological data examining SES factors for the US dialysis population.

Objectives

• We used geocoding techniques to ascertain the distribution of SES factors among US dialysis provider types, using provider demographic data merged with other data sources.

Methods

• Dialysis Provider Classification: Provider data (ie, Medicare Provider identification, zip code location, chain affiliation, and for-profit/non-profit flags) were obtained from the DaVita Facility Compare file obtained from the Centers for Medicare and Medicaid Services. Chain-level aggregation was used to classify facilities into provider types.2, 3

• Large dialysis organization (LDO) ≥ 10 facilities

• Medium dialysis organization (MDO) 10–1,000 facilities

• Small dialysis organization (SDO) < 10 facilities

• Hospitals/university/government dialysis organization (HUG) 1 facility

• For-profit (FP) dialysis organization

• Non-profit (NP) dialysis organization

• Poverty Classification: Poverty was classified by zip code using poverty data from 2012 US Census Bureau data.

• Average poverty: a 0.07 standard deviations (SD) (approximately 50% of the data)

• High-poverty (HP) poverty ≥ 1.15 SDs (approximately 70% of the data)

• Very high-poverty ≥ 2 SDs (approximately 95% of the data)

• Extreme poverty: > 2 SDs

Results

Table 1. Distribution of Dialysis Provider Type by Poverty and Geography

<table>
<thead>
<tr>
<th>Poverty Classification</th>
<th>Average-Low Poverty</th>
<th>High-Poverty</th>
<th>Extreme Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDO: n (%)</td>
<td>586 (69)</td>
<td>251 (31)</td>
<td>16 (2)</td>
</tr>
<tr>
<td>MDO: n (%)</td>
<td>511 (61)</td>
<td>21 (7)</td>
<td>8 (1)</td>
</tr>
<tr>
<td>SDO: n (%)</td>
<td>32 (35)</td>
<td>6 (7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Total: n</td>
<td>670 (100)</td>
<td>318 (100)</td>
<td>24 (100)</td>
</tr>
</tbody>
</table>

Table 2. Distribution of Dialysis Provider Type by Extreme Poverty

<table>
<thead>
<tr>
<th>Extreme Poverty</th>
<th>NA (%)</th>
<th>Other Poverty</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDO: n (%)</td>
<td>135 (65)</td>
<td>5,221 (94)</td>
<td>5,356 (100)</td>
</tr>
<tr>
<td>MDO: n (%)</td>
<td>61 (28)</td>
<td>1,527 (72)</td>
<td>1,588 (100)</td>
</tr>
<tr>
<td>SDO: n (%)</td>
<td>9 (4)</td>
<td>17 (1)</td>
<td>26 (100)</td>
</tr>
<tr>
<td>Total: n</td>
<td>197 (100)</td>
<td>6,399 (100)</td>
<td>6,596 (100)</td>
</tr>
</tbody>
</table>

Conclusions

• Our analysis suggested that large, FP dialysis providers operate a disproportionate number of clinics in areas with low SES.

• Patient outcome comparisons between US dialysis providers types should be made using adjustments for SES indicators as likely confounders.

References