Supplemental online content for:

**Geographic Variation in Postoperative Imaging for Low-Risk Breast Cancer**

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epTable 1. Rates of Mammography Among Patients Aged ≥40 Years by Data Source

<table>
<thead>
<tr>
<th>State</th>
<th>N (Study)</th>
<th>Patients Receiving Mammography</th>
<th>Patients Receiving Mammography</th>
<th>Difference</th>
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<td>73.7</td>
<td>2.8</td>
</tr>
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</table>

Average difference: 1.71 [SD=7.30].

*t-test P=.11.

*The analysis of mammographic rate did not include Hawaii, because the number of patients (n=7) enrolled in employer-based plans included in the MarketScan data for Hawaii were insufficient for meaningful analysis.
<table>
<thead>
<tr>
<th>Imaging Modality</th>
<th>Without RT</th>
<th>Lumpectomy w/ RT</th>
<th>Mastectomy w/ RT</th>
<th>Mean Imaging/Imaged Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>West (n=1,170)</td>
<td>82%</td>
<td>5%</td>
<td>1%</td>
<td>1.5 (0.8)</td>
</tr>
<tr>
<td>South (n=512)</td>
<td>25%</td>
<td>5%</td>
<td>55%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=3,061)</td>
<td>58%</td>
<td>13%</td>
<td>80%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>West (n=512)</td>
<td>20%</td>
<td>1%</td>
<td>3%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>South (n=512)</td>
<td>10%</td>
<td>1%</td>
<td>4%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=3,061)</td>
<td>44%</td>
<td>10%</td>
<td>49%</td>
<td>1.5 (0.7)</td>
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</tbody>
</table>

**Table 2. Proportions of Imaged Patients and Mean Imaging per Imaged Patient**

<table>
<thead>
<tr>
<th>Imaging Modality</th>
<th>Without RT</th>
<th>Lumpectomy w/ RT</th>
<th>Mastectomy w/ RT</th>
<th>Mean Imaging/Imaged Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>West (n=219)</td>
<td>96%</td>
<td>4%</td>
<td>0%</td>
<td>1.5 (0.8)</td>
</tr>
<tr>
<td>South (n=439)</td>
<td>88%</td>
<td>3%</td>
<td>5%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=3,285)</td>
<td>73%</td>
<td>18%</td>
<td>15%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>West (n=439)</td>
<td>83%</td>
<td>4%</td>
<td>3%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>South (n=439)</td>
<td>41%</td>
<td>12%</td>
<td>46%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=3,285)</td>
<td>57%</td>
<td>22%</td>
<td>21%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>West (n=439)</td>
<td>55%</td>
<td>6%</td>
<td>39%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>South (n=439)</td>
<td>46%</td>
<td>15%</td>
<td>40%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=3,285)</td>
<td>57%</td>
<td>22%</td>
<td>21%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>West (n=439)</td>
<td>55%</td>
<td>6%</td>
<td>39%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>South (n=439)</td>
<td>46%</td>
<td>15%</td>
<td>40%</td>
<td>1.5 (0.7)</td>
</tr>
</tbody>
</table>

**Table 2. Proportions of Imaged Patients and Mean Imaging per Imaged Patient**

<table>
<thead>
<tr>
<th>Imaging Modality</th>
<th>Without RT</th>
<th>Lumpectomy w/ RT</th>
<th>Mastectomy w/ RT</th>
<th>Mean Imaging/Imaged Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>West (n=689)</td>
<td>16%</td>
<td>10%</td>
<td>50%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>South (n=1,408)</td>
<td>57%</td>
<td>25%</td>
<td>58%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=789)</td>
<td>76%</td>
<td>25%</td>
<td>58%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>South (n=1,408)</td>
<td>57%</td>
<td>25%</td>
<td>58%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=789)</td>
<td>76%</td>
<td>25%</td>
<td>58%</td>
<td>1.5 (0.7)</td>
</tr>
</tbody>
</table>

**Table 2. Proportions of Imaged Patients and Mean Imaging per Imaged Patient**

<table>
<thead>
<tr>
<th>Imaging Modality</th>
<th>Without RT</th>
<th>Lumpectomy w/ RT</th>
<th>Mastectomy w/ RT</th>
<th>Mean Imaging/Imaged Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>West (n=551)</td>
<td>66%</td>
<td>14%</td>
<td>18%</td>
<td>1.5 (0.7)</td>
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<tr>
<td>South (n=1,468)</td>
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<td>22%</td>
<td>54%</td>
<td>1.5 (0.7)</td>
</tr>
<tr>
<td>Northeast (n=426)</td>
<td>58%</td>
<td>13%</td>
<td>55%</td>
<td>1.5 (0.7)</td>
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<tr>
<td>West (n=551)</td>
<td>66%</td>
<td>14%</td>
<td>18%</td>
<td>1.5 (0.7)</td>
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<tr>
<td>South (n=1,468)</td>
<td>64%</td>
<td>22%</td>
<td>54%</td>
<td>1.5 (0.7)</td>
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<tr>
<td>Northeast (n=426)</td>
<td>58%</td>
<td>13%</td>
<td>55%</td>
<td>1.5 (0.7)</td>
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**Table 2. Proportions of Imaged Patients and Mean Imaging per Imaged Patient**

<table>
<thead>
<tr>
<th>Imaging Modality</th>
<th>Without RT</th>
<th>Lumpectomy w/ RT</th>
<th>Mastectomy w/ RT</th>
<th>Mean Imaging/Imaged Patient</th>
</tr>
</thead>
<tbody>
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<td>62%</td>
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<td>South (n=4,512)</td>
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<td>13%</td>
<td>58%</td>
<td>1.5 (0.7)</td>
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<tr>
<td>Northeast (n=2,886)</td>
<td>33%</td>
<td>13%</td>
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<td>1.5 (0.7)</td>
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<tr>
<td>West (n=2,097)</td>
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<td>13%</td>
<td>58%</td>
<td>1.5 (0.7)</td>
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</table>
eAppendix 1. CPT Codes

To confirm diagnosis, only patients with postsurgical claims indicating breast cancer (ICD-9 codes 174.0–174.9) were included in the study.

Procedure identification (CPT codes):

- **Breast biopsy**: 10021, 10022, 19000, 19001, 19081–19086, 19281–19288, 19100–19103, 19110–19126, 20206, 21550, 38505, 38525, 88172, 88173, 88305, 88307
- **Breast surgery**: 19301–19307
eAppendix 2. Pharmaceutical Identification (Generic Names)

**Chemotherapeutics:** capecitabine, carboplatin, cisplatin, cyclophosphamide, docetaxel, doxorubicin, liposome, epirubicin, fluorouracil, gemcitabine, methotrexate, paclitaxel, vinorelbine, eribulin, ixabepilone

**Hormonal therapies:** tamoxifen, anastrozole, letrozole, exemestane, goserelin, leuprolide
eAppendix 3. Imaging CPT Codes

**Body CT**: 74150, 74160, 74170, 74176–74178, 71250, 71260, 71270, 72192–72194

**Brain CT**: 70450, 70460, 70470

**PET**: 78811–78816

**Body MRI**: 71550, 71552, 72195, 72197, 74181, 74183

**Breast MRI**: 77059

**Brain MRI**: 70551, 70553

**Mammography**: G0202, G0204, G0206, G0279, 77051, 77052, 77063

**Whole-body bone scan**: 78306, 78320
eAppendix 4. Regional Distribution of States

**Northeast region:** Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, Pennsylvania

**North Central region:** Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

**South region:** Washington DC, Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, Texas

**West region:** Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, Washington