SUPPLEMENTARY MATERIALS

Pharmacists' chronic disease management in chronic obstructive pulmonary disease: Effect on health services utilization

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## SUPPLEMENTARY TABLE 1 Diagnosis Codes for COPD-Related Events and Billing Codes for Pulmonary Function Test

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Diagnosis</th>
<th>ICD-9 code</th>
<th>ICD-10 code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalization</td>
<td>COPD</td>
<td>491, 492, and 496</td>
<td>J41-44</td>
</tr>
<tr>
<td>ER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General practitioner Visit</td>
<td>Asthma</td>
<td>493</td>
<td>J45</td>
</tr>
<tr>
<td>Respirologist/pulmonologist Visit</td>
<td>Bronchitis (not chronic)</td>
<td>466, 490</td>
<td>J209, J210, J218, J40</td>
</tr>
<tr>
<td></td>
<td>Asphyxia</td>
<td>799.0x</td>
<td>R0901, R0902</td>
</tr>
<tr>
<td></td>
<td>Pneumonia or influenza</td>
<td>480, 481, 482, 483, 484, 485, 486, 487</td>
<td>J12, J13, J15, J16, J17, J18, J11</td>
</tr>
<tr>
<td></td>
<td>Respiratory infection</td>
<td>460, 461, 462, 463, 464, 465</td>
<td>J00, J01, J029, J0390, J04, J06</td>
</tr>
<tr>
<td></td>
<td>Respiratory symptoms</td>
<td>786.0x, 786.1x, 786.2x, 786.3x, 786.4x, 786.52</td>
<td>R06, R05, R04, R093, R071, R0781</td>
</tr>
<tr>
<td>Pulmonary function test</td>
<td>Billing code: 03.37A, 03.37B, 03.38A-H, 03.38K, 03.38M, 03.38N, 03.38P, 03.38Q, 03.38R, 03.38S, 03.38T, 03.38X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SUPPLEMENTARY TABLE 2** Interrupted Time Series Analysis of Health Care Utilization Before and After CACP in Patients With COPD (1 Year Pre-CACP and Post-CACP Index Date) Per 10,000 Patients Without 30 Days Before and After The Index Date

<table>
<thead>
<tr>
<th>Variable</th>
<th>COPD Hospitalizations</th>
<th>COPD ED Visits</th>
<th>COPD general practitioner Visits</th>
<th>COPD Specialist Visits</th>
<th>COPD respiratory medicine Visits</th>
<th>Pulmonary Function Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept 12 months before CACP</td>
<td>-161.13 (-198.18 to -124.08)</td>
<td>-220.55 (-248.22 to -192.88)</td>
<td>33.07 (-17.66 to 83.8)</td>
<td>-15.47 (-51.6 to 20.66)</td>
<td>-14.59 (-37.89 to 8.72)</td>
<td>-2.15 (-18.42 to 14.12)</td>
</tr>
<tr>
<td>Pre-incentive trend</td>
<td>2.32 (-2.68 to 7.32)</td>
<td>2.71 (-3.20 to 8.62)</td>
<td>3.05 (-4.90 to 11.00)</td>
<td>1.50 (-2.88 to 5.89)</td>
<td>1.31 (-1.64 to 4.26)</td>
<td>0.97 (-1.26 to 3.19)</td>
</tr>
<tr>
<td>Level change after CACP implementatio n</td>
<td>-27.5 (-82.59 to 27.58)</td>
<td>5.54 (60.78 to 71.87)</td>
<td>53.71 (11.22 to 118.64)</td>
<td>-4.15 (-34.42 to 26.12)</td>
<td>-1.04 (-30.75 to 28.68)</td>
<td>1.78 (-31.33 to 34.90)</td>
</tr>
<tr>
<td>Trend change after CACP implementatio n</td>
<td>4.39 (-2.04 to 10.83)</td>
<td>5.51 (-3.08 to 14.10)</td>
<td>-0.57 (-9.73 to 8.59)</td>
<td>0.04 (-5.02 to 5.10)</td>
<td>-0.92 (-5.28 to 3.43)</td>
<td>2.05 (-1.76 to 5.85)</td>
</tr>
<tr>
<td>Overall CACP effect</td>
<td>25.23 (-70.48 to 120.95)</td>
<td>71.68 (-58.61 to 207.97)</td>
<td>46.87 (-108.57 to 202.31)</td>
<td>-3.67 (-81.52 to 74.18)</td>
<td>-12.12 (-67.24 to 43.01)</td>
<td>26.33 (-18.04 to 70.70)</td>
</tr>
</tbody>
</table>
SUPPLEMENTARY FIGURE 1 Difference and Overall Trend in Mean Monthly COPD-Related ED Visits per 10,000 Patients in CACP Group Compared With Control Group

Difference and overall trend in mean monthly COPD-related ED visits per 10,000 patients in CACP group compared with control group.

Abbreviations: CACP, Comprehensive Annual Care Plan; COPD, Chronic Obstructive Pulmonary Disease; ED, emergency department.
Monthly proportions of patients with COPD-related ED visits per 10,000 patients

- CACP group
- Control group
SUPPLEMENTARY FIGURE 2 Difference and Overall Trend in Mean Monthly COPD-Related General Practitioner Visits per 10,000 Patients In CACP Group Compared With Control Group

![Graph showing the difference and overall trend in mean monthly COPD-related general practitioner visits per 10,000 patients in the CACP group compared with the control group. The graph includes lines for Pre-CACP, Post-CACP, and Counterfactual trends.]

Abbreviations: CACP, Comprehensive Annual Care Plan; COPD, Chronic Obstructive Pulmonary Disease; GP, general practitioner.
Monthly proportions of patients with COPD-related general practitioner visits per 10,000 patients

CACP group
Control group
SUPPLEMENTARY FIGURE 3 Difference and Overall Trend in Mean Monthly COPD-Related Specialist Visits per 10,000 Patients in CACP Group Compared With Control Group

Difference of monthly proportions of patients with COPD-related Specialist visits per 10,000 patients

Abbreviations: CACP, Comprehensive Annual Care Plan; COPD, Chronic Obstructive Pulmonary Disease.
Monthly proportions of patients with COPD-related specialist visits per 10,000 patients

- CACP group
- Control group
SUPPLEMENTARY FIGURE 4 Difference and Overall Trend in Mean Monthly COPD-Related Respiratory Medicine Visits per 10,000 Patients in CACP Group Compared With Control Group

Difference of monthly proportions of patients with COPD-related respiratory medicine visits per 10,000 patients

Months

Pre-CACP trend Post-CACP trend Counterfactual

Abbreviations: CACP, Comprehensive Annual Care Plan; COPD, Chronic Obstructive Pulmonary Disease; RM, respiratory medicine.
Monthly proportions of patients with COPD-related respiratory medicine visits per 10,000 patients

- CACP group
- Control group
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