Medicines Optimisation & Respiratory Case Management of COPD Patients

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BACKGROUND

In the recent 2015 update of the GOLD global strategy for the diagnosis, management and prevention of COPD, it was recognised that COPD has multiple symptomatic effects and for this reason, a combined assessment of symptoms, exacerbation risk and comorbidities is recommended. Figure 1 represents the GOLD combined assessment of COPD using symptoms, breathlessness, spirometric classification and risk of exacerbations.1

A recent workshop report by the American Thoracic Society on the ‘Integrated care of the COPD Patient’ stated that optimal management requires provision of the right treatment at the right time, and in the right place.2

American Thoracic Society Documents


Lyle Hsi and Roger Matthews, on behalf of the American Thoracic Society, Interprofessional Care of the COPD Patient

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PROCESS MAPPING

Prior to project initiation, a multidisciplinary process mapping event (figure 2) was held, attended by the Head of Pharmacy and Medicines Management, respiratory pharmacist, respiratory consultant, registrar, community respiratory team, clinical pharmacists and the project manager. This established the current pathways of care for COPD patients and helped to inform the best place for the respiratory pharmacist to be based.

AIMS & OBJECTIVES

In line with the Transforming Your Care strategy, the team aimed to address the following issues:

• Frequency of presentation to acute care
• Therapeutic over-treatment of patients
• Implementation of GOLD standards in primary care to ensure accurate COPD diagnosis and appropriate management
• The enablement of patients to self-manage their disease

RESULTS

Data was collected over a period of six months; the respiratory pharmacist held clinics with 658 patients (326 male, 332 female, aged 66-111.0 years (Range 30-92 years).

REFERENCES


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Figure 1: GOLD combined assessment of COPD

Figure 2: Results from the Multidisciplinary Process Mapping Event

Figure 3: Model of Care for COPD Patients Attending a Medicines Optimisation GP-Based Clinic

Figure 4: A statistically significant increase in the MMSE Breathlessness Score between baseline (prior to pharmacist review and case management) and follow-up (Wilcoxon Rank Signed Test, p<0.001)

Table 2: COPD Assessment Test (CAT) scores for patients at baseline and 30 days post case management and review

<table>
<thead>
<tr>
<th>Baseline (prior to pharmacist review &amp; case management)</th>
<th>30 days post pharmacist review &amp; case management</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Patients (%)</td>
<td>No. of Patients (%)</td>
</tr>
<tr>
<td>CAT &lt;10</td>
<td>314 (47.7)</td>
</tr>
<tr>
<td>10 or more</td>
<td>372 (57.6)</td>
</tr>
</tbody>
</table>

Table 3: Medication Adherence Scores (MMAS-4) for patients taking one or more COPD medications at baseline (prior to pharmacist review)

<table>
<thead>
<tr>
<th>MMAS Score</th>
<th>No. of Patients (Baseline: prior to review &amp; pharmacist interventions)</th>
<th>No. of Patients (30 days post pharmacist review and case management)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>43</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>96</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>122</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>321</td>
<td>55 (4)</td>
</tr>
</tbody>
</table>

Table 1: Total MAI scores for COPD medications as determined by the pharmacist prior to, immediately after and 30 days post review

<table>
<thead>
<tr>
<th>Total MAI score for COPD medications</th>
<th>Baseline (prior to pharmacist review)</th>
<th>Immediately post pharmacist review</th>
<th>30 days post review</th>
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<tbody>
<tr>
<td></td>
<td>7.8 ±6.8 (n=658)</td>
<td>10.1 ±3.9 (n=658)</td>
<td>4.4 ±1.4 (n=646)</td>
</tr>
</tbody>
</table>

CLINICAL INTERVENTIONS AND GRADING

1. A total of 1875 clinical interventions were made by the respiratory pharmacist (an average of 2.8 interventions per patient) with all interventions being Eason graded as 4 or above (Grade 4 represents a significant intervention with resultant improvements in the standard of patient care). Two hundred and seventy-five interventions were graded as a 5 with none being graded at level 6.

2. Ten drug interventions graded by the respiratory pharmacist were presented to the respiratory consultant, consultant pharmacist and five clinical pharmacists to independently grade and check for consistency of agreement. A Reliability Analysis confirmed the validity of the pharmacist’s self-grading within acceptable parameters.

Drug Cost Savings

Drugs stopped and started, as well as additional interventions, acted upon, resulted in a net drug cost saving of £122,013.51 over the six month data collection period. Therefore the projected annual saving within the primary care drug budget following COPD medication review and case management by a respiratory specialist pharmacist is £2444 per annum, an approximate £4.44 return per £1 invested (based on an annual investment of £55 per annum).

Exacerbations & Antibiotic Prescribing

In the 12 months prior to the respiratory pharmacist review, two-thirds of all patients had experienced ≥1 COPD exacerbations. As of September 2015, 6-month follow-up data showed that 8.4% have had ≥1 exacerbations, with only nine patients (1.4%) having been admitted to hospital non-electively (n=375).

Sputum sampling has increased substantially with appropriateness of antibiotic prescribing increasing from 78.7% prior to the baseline clinic to 95.8% post pharmacist review.

SUMMARY

This project demonstrates that respiratory pharmacist case management of COPD patients in line with GOLD, leads to improved patient outcomes, more appropriate prescribing and cost savings (drug costs and reduced healthcare resource usage).