Consumption Patterns of Cough and Cold Symptomatic Treatments Correlate with Respiratory Symptom Incidence

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Abstract

Background/Objectives: The objective of this study was to examine the consumption patterns of multi-symptom CCF (cough, cold, and flu) products and determine which were most effective in informing overall reports of symptom incidence, including reports of influenza-like illness (ILI). In the past, the Centers for Disease Control and Prevention (CDC) has attempted to estimate the needs of patients with influenza in order to help pharmacy managers order adequate quantities of selected influenza-related products. The CDC has provided similar information for the past 7 years for the retail chains to base their plans on previous seasons. The Centers for Disease Control (CDC) and other public health agencies have stated that demand for these products correlates with influenza activity in the US. We hypothesized that demand for multi-symptom CCF products would correspond with reports of symptom incidence.

Methods: Four CCF categories were used to group over-the-counter symptomatic treatments for which sales data were available (Alka-Seltzer; DayQuil, Children's, and Sinus; Vicks; and Mucinex). Aggregate sales data were collected by IQVIA from January 1, 2014 to December 31, 2014. Four-month moving averages were calculated to determine the linear dependence of the two sets of data. monthly incidences were computed for the total adult and child population. The correlation between the consumption of the individual multi-symptom CCF products used for this indication (Alka-Seltzer, DayQuil, Children's, and Sinus; Vicks, and Mucinex) were plotted for the same time period. These multi-ingredient products contain the active ingredients acetaminophen, Hydrobromide 10 mg, and Phenylephrine Hydrochloride 5 mg.

Results: Total incidence and product demand were highly correlated (r=0.92). The correlation between the consumption of the individual multi-symptom CCF products and total symptom incidence likely carries over to other medications in this category.

Discussion: This study was funded by GlaxoSmithKline Consumer Healthcare. The findings indicate that demand for multi-symptom CCF products could be used by pharmacy staff to indicate overall reports of symptom incidence, including reports of influenza-like illness (ILI). These POS data have several advantages over CDC data, including availability in real time and during peak times. Consequently, the finding that demand for these products correlates with influenza activity in the US could foster a range of approaches to treating patients with influenza beyond simply seeking treatment so that adequate pharmacy stocks can be maintained.

Conclusions: Ensuring adequate stocks of CCF treatment during the peak of the influenza season is critical to maintaining adequate treatment levels during the following winter months (Figure 5). These POS data could be used by pharmacy staff to estimate the needs of patients with influenza in order to help pharmacy managers order adequate quantities of selected influenza-related products.


Table 1. Total Incidence and Product Demand

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Incidence</th>
<th>Product Demand</th>
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<tbody>
<tr>
<td>2014</td>
<td>5,000,000</td>
<td>5,000,000</td>
</tr>
<tr>
<td>2015</td>
<td>6,000,000</td>
<td>6,000,000</td>
</tr>
<tr>
<td>2016</td>
<td>7,000,000</td>
<td>7,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>8,000,000</td>
<td>8,000,000</td>
</tr>
</tbody>
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Figure 1. Total Incidence and Product Demand

Figure 2. Total Individual CCF Product Demand

Figure 3. Total Incidence and Product Demand by Month

Figure 4. Total Incidence and Product Demand by Season

Figure 5. Total Incidence and Product Demand by Year

Disclosures: This study was funded by GlaxoSmithKline Consumer Healthcare. The findings indicate that demand for multi-symptom CCF products could be used by pharmacy staff to indicate overall reports of symptom incidence, including reports of influenza-like illness (ILI). These POS data could be used by pharmacy staff to estimate the needs of patients with influenza in order to help pharmacy managers order adequate quantities of selected influenza-related products.