Adding **automated, in-depth, self-report assessment** overcomes the cost, burden and **poor effectiveness** of simple screens like the PHQ-9.

### Effective Integration Using Electronic Detection and Assessment

**Alan D. Malik, Ph.D.**

#### Introduction

Depression screening with the PHQ-2 or PHQ-9 does not yield clinically-actionable information. Due to high false positives, providers either ignore results or spend unreasonable time conducting evaluations patients do not require. Due to high false negatives, patients who require treatment often fall through the cracks. Use of the PHQ-2 or PHQ-9 alone is therefore costly and inefficient. As a viable solution to this problem, we use CJ Peek’s three-world view model of medical settings to evaluate the effectiveness of using the PHQ-9 or PHQ-2 as a prescreen to an electronic, in-depth, self-report psychiatric assessment such as the QPD Panel, that easily integrates with the local EMR and clinical decision support.

#### Methods

- Analyze a dataset of 2495 automated administrations of the PHQ-9 combined with a QPD from a FQHC primary care setting.
- Evaluate the effectiveness of the PHQ as a prescreen to the QPD.
  - Clinical - meets needs and is actionable
  - Operational - minimal impact on staff and work flow
  - Financial – minimize cost, both labor and materials
- Evaluate the results of using the PHQ-9 and PHQ-2 for prescreen detection over a range of cut-scores.
- Compute estimates of total time and cost using a range of configurations of automated PHQ detection and in-depth QPD assessment.

#### Results

<table>
<thead>
<tr>
<th>Cut Score</th>
<th>N=2495</th>
<th>PHQ9 &gt; 9</th>
<th>Percent</th>
<th>PHQ2 &gt; 4</th>
<th>Percent</th>
<th>PHQ2 &gt; 3</th>
<th>Percent</th>
<th>PHQ2 &gt; 2</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=2495</td>
<td>2495</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ9 &gt; 9</td>
<td>782</td>
<td>31.3%</td>
<td>1101</td>
<td>44.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ2 &gt; 4</td>
<td>763</td>
<td>30.6%</td>
<td>158</td>
<td>6.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ2 &gt; 3</td>
<td>1241</td>
<td>49.7%</td>
<td>378</td>
<td>15.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ2 &gt; 2</td>
<td>1625</td>
<td>65.1%</td>
<td>624</td>
<td>25.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Discussion

While the rate of positive results may be high compared to your practice, they are not uncommon. It is easy to see there is a significant savings of time and cost using electronic detection and assessment. However, you need to also consider the cost associated with the “QPD(+), PHQ(-)” column in the False Results Created table, which shows a significant cohort of patients that are being missed using just a PHQ prescreen. Expanding the prescreen to include say a GAD-2, would go a long way toward detection of these missed patients.

Other considerations are that electronic assessment enables detailed clinical findings to be automatically loaded in the EMR in a format easily understood by medical providers. Last, in a recent study, providers prescreening with the PHQ-2 did not refer on, 95% of the time, primarily because they did not think there was useful information to be found.