Impact of Hemoglobin A1c Screening and Brief Intervention in a Medicare Population

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The Diabetes Crisis

• 1 in 3 Adults has prediabetes with 88% unaware
• 70% will develop Type 2 diabetes at a rate of 4-11% annually
• 1 in 3 Medicare dollars are spent on diabetes related care
• Prediabetes intensive lifestyle modification programs associated with 58% risk reduction for development of diabetes
• Recommended 3 year screening interval
Purpose: Evaluate the impact of annual hemoglobin A1c (HbA1c) screening

Setting: HouseCalls Medicare Advantage preventative home visit program

Design: Retrospective observational design comparing:
(a) Pre- and post-intervention HbA1c in the treatment group by baseline A1c group
(b) BMI of those who had a HouseCalls visit with HbA1c screening to those who did not have HbA1c screening

Methods: Approved by the University of Florida IRB and Optum Privacy
• Demographic variables were analyzed using Chi-Square (categorical) or independent t-tests (continuous).
• Difference in post-test BMI between the treatment and comparison groups after controlling for baseline BMI was analyzed using ANCOVA.
• A1c change from 2016 to 2017 among baseline A1c groups within the treatment group was analyzed using paired t-test.
Convenience Sample

Health Plan’s Participants in HouseCalls Program
n=34,348

10,979 excluded due to diabetes

105 excluded due to missing state or gender

Treatment Group
HouseCalls visit with 2016 HbA1c screening
n=4,422

HbA1c < 5.7
n=2,454

HbA1c 5.7 - 6.4
n=1,776

HbA1c > 6.4
n=192

Comparison Group
HouseCalls visit without 2016 HbA1c screening
n=18,842
<table>
<thead>
<tr>
<th>Variable</th>
<th>Treatment Group Frequency (%) or Mean ± SD</th>
<th>Comparison Group Frequency (%) or Mean ± SD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of residence</td>
<td></td>
<td></td>
<td>.054</td>
</tr>
<tr>
<td>Florida</td>
<td>2,224 (50.3%)</td>
<td>9,779 (51.9%)</td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td>2,198 (49.7%)</td>
<td>9,063 (48.1%)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>.240</td>
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<tr>
<td>Female</td>
<td>2,563 (58.0%)</td>
<td>11,103 (58.9%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,859 (42.0%)</td>
<td>7,739 (41.1%)</td>
<td></td>
</tr>
<tr>
<td>Age Mean</td>
<td>72.76 ± 9.05</td>
<td>73.06 ± 10.24</td>
<td>.054</td>
</tr>
<tr>
<td>2017 BMI mean</td>
<td>27.98 ± 6.02</td>
<td>28.02 ± 6.30</td>
<td></td>
</tr>
<tr>
<td>2016 HbA1c mean</td>
<td>5.61% ± 0.54</td>
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<tr>
<td>2017 HbA1c mean</td>
<td>5.67% ± 0.62</td>
<td>5.63% ± 0.59</td>
<td></td>
</tr>
</tbody>
</table>
Results

Hemoglobin A1c Means in the Treatment Group by Year

A1c change in each group p ≤ .001. Significant at the p < 0.05 level.
Results

After controlling for baseline log BMI, the difference between mean log 2017 BMI in the treatment group and comparison group was similar.

Conclusions

• May be a benefit to annual HbA1c screening
• Only 3.8% of those with prediabetes in 2016 were diagnosed with diabetes at the 2017 HouseCalls visit
• 1 in 4 of those with A1c levels above 6.4 in both 2016 and 2017 had not yet been formally diagnosed with diabetes
Limitations

- Potential that diabetics were not excluded
- Ethnicity and income data lacking
- Sampling timeframe
- Sample may not be representative of population

Future Directions

- Compare WellMed’s diabetes progression rates to general Medicare Advantage
- Pilot prediabetes program that promote lifestyle changes
- Track PCP follow up of those identified with HbA1c > 6.4


