BACKGROUND

In the United States, the Joint Commission (JC) recommends that all current smokers receive tobacco cessation services as an inpatient and be followed up within one month after hospital discharge. Few hospitals implement JC standards due to extra costs, the voluntary nature of the standards, and the lack of evidence demonstrating financial benefits to the hospital and insurers.

The Medical University of South Carolina (MUSC) recently implemented an inpatient tobacco dependence treatment service (TDTS) which provides a bedside consult with patients and phone follow-up using interactive voice recognition (IVR) technology after discharge consistent with JC standards. A previous study (Nahhas GI, et al, NTR, 2016), found that those exposed to the TDTS had 2-fold higher quit rate 1-month after discharge compared to those not exposed to the program.

OBJECTIVES

This study tests two hypotheses:

H1: Unplanned hospital readmission rates will be higher among current cigarette smokers compared to former and never smokers.

H2: Among current smokers, hospital readmission rates will be lower among those exposed to the TDTS compared to those not exposed to the TDTS.

STUDY POPULATION

- The study population included 17,080 acute care patients admitted and discharged from the MUSC hospital between November 1, 2014 and June 31, 2015.
- Table 1 provides a description of the characteristics of the overall study population, and for current, former and never smokers.
- There were some notable differences in the characteristics of current, former and never smokers. Former smokers were significantly older and had higher Charlson Comorbidity Index scores compared to current and never smokers.
- Current smokers had longer hospitalizations and were more likely to be uninsured compared to former and never smokers.

TOBACCO DEPENDENCE TREATMENT SERVICE

Figure 1 provides a brief overview of the TDTS at MUSC.

APPROACH

The study utilized in-place data capture mechanisms to link patient data across 3 data sets: 1) the MUSC electronic health records (EHR) database; 2) the MUSC-TDTS database, and 3) the South Carolina Inpatient Hospitalization Dataset (i.e., state billing claims data). Initial linkage between the MUSC EHR and TDTS databases was done to identify MUSC inpatients eligible for the study, and this merged database was sent to the South Carolina Revenue and Fiscal Affairs Office (SC-RFAO) to obtain data on subsequent hospital readmissions that occurred in the state.

Secondary data analyses were carried out to compare unplanned readmissions at 30, 90 and 180 days post-discharge from MUSC among current, former and never smokers. In addition, among current smokers we compared hospital readmissions between those exposed to the TDTS and those not exposed to the service. Unplanned readmissions were defined as any procedure that was identified by the Centers for Medicare and Medicaid Services as being “Definitely Planned” and/or coded as an elective admission.

RESULTS

Table 1: Characteristics of the Study Population

<table>
<thead>
<tr>
<th>Age</th>
<th>Total</th>
<th>No Exposure</th>
<th>Exposed</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-34</td>
<td>52.2 (28.6%)</td>
<td>488 (54.2%)</td>
<td>186 (21.0%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>35-54</td>
<td>51.7 (26.8%)</td>
<td>466 (51.0%)</td>
<td>171 (19.5%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>55+</td>
<td>52.1 (25.0%)</td>
<td>488 (54.2%)</td>
<td>173 (19.8%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

The study found that those exposed to the TDTS had lower unplanned hospital readmissions at 30, 90 and 180 days compared to those not exposed to the TDTS.

CONCLUSIONS

- In unadjusted analyses, current smokers had higher rates of unplanned readmissions compared to never smokers, but lower rates compared to former smokers at 30, 90 and 180 days.
- Exposure to the TDTS was associated with a clinically important reductions in unplanned hospital readmissions at 30, 90, and 180 days.
- Next Steps: Future analyses will seek to confirm these results controlling for potential confounders and compare readmission rates in smokers before (2012-2013) and after (2014-2015) the TDTS was implemented.