THE 5As MODEL FOR SMOKING CESSATION: ENGAGNG HEALTH CARE PROVIDERS AND OVERCOMING BARRIERS TO CHANGE

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Background
Tobacco Use Statistics

- According to the World Health Organization (WHO, 2011), 1.3 billion people currently smoke cigarettes worldwide.
- Tobacco related deaths occur every six seconds (WHO, 2011).
- The Center for Disease Control (CDC, 2014) estimates 40 million people in the United States smoke and approximately 480,000 adult deaths per year are related to cigarette use and secondhand smoke.
Tobacco Use Statistics

- More than 16 million Americans suffer from a disease caused by smoking
- Estimated economic costs are nearly $300 billion annually, with direct medical costs at least $130 billion and loss of productivity costs of greater than $150 billion
- In the United States, smoking causes 87% of lung cancer deaths, 32% of coronary heart disease deaths and 79% of COPD

CDC, 2014
The Health Consequences of Smoking: 50 Years of Progress
A Report of the Surgeon General

1964

2014
What We Know

- We have made progress in 50 years! Adult smoking rates have decreased from 42.4% (1965) to 16.8% (2014). Healthy People 2020 goal 12%.
- Smoking is still the leading cause of preventable disease and death in the United States.
- The use of e-cigarettes has more than doubled between 2011 and 2012.
- From 1964-2014 more than 20 million Americans have died due to smoking related causes: including more than 100,000 babies and Approximately 2.5 million nonsmokers.

www.cdc.gov
NOT JUST AN ADULT PROBLEM
It is estimated that approximately 3 million MIDDLE and HIGH SCHOOL students smoke

CDC, 2014
LOCAL PROBLEM
Local Problem

Libertyville, Illinois
Population 20,431
Setting
Associated Physicians of Libertyville
1850 Winchester Road
Libertyville, IL
A Family Practice Clinic
## Local Problem

**Lake County, Illinois**

### Health Behaviors

<table>
<thead>
<tr>
<th>Health Behavior</th>
<th>Lake County</th>
<th>Top US Performers</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Smoking</td>
<td>14%</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>Adult Obesity</td>
<td>29%</td>
<td>25%</td>
<td>27%</td>
</tr>
<tr>
<td>Physical Inactivity</td>
<td>20%</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>Excessive Drinking</td>
<td>20%</td>
<td>12%</td>
<td>21%</td>
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</tbody>
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Source: [www.countyhealthrankings.org](http://www.countyhealthrankings.org)
State Highlights Adult

Illinois

Tobacco Use - Adult

Percent of Adults (18+) Who Smoke by Population Group†
2014

- Overall
- Male
- Female
- African American
- American Indian/Alaska Native
- Asian/Pacific Islander
- Hispanic
- White
- 18 to 24 Years
- 25 to 44 Years
- 45 to 64 Years
- 65 Years and Older
- < 12th Grade
- 12th Grade
- > 12th Grade

† Estimates for education are based on adults aged 20 years and older. Estimates for racial/ethnic groups are based on combined data for two years.

Source: Behavioral Risk Factor Surveillance System
State Highlights Adult

Source: Behavioral Risk Factor Surveillance System
Intended Improvement

- Identify provider barriers in practice to assess smoking status at each patient encounter

- Utilize this information to develop a practice protocol and smoking cessation program using the 5As model
Intended Improvement

- Utilization of technology with modification and integration of the 5As into the current EMR system
- Improved provider utilization of the 5As model
- Improved smoking cessation rates for the patient population in the clinic
Project Questions

- Does the implementation of an evidence-based protocol and EMR program modification using the 5As model facilitate provider assessment of smoking status, smoking cessation education, and interventions at every patient encounter?

- Does implementation of an evidence-based protocol and EMR program modification using the 5As model increase patient smoking cessation or statement of intention to quit?
Conceptual Framework
The 5As Model

- **ASK** about tobacco use
- **ADVISE** tobacco users to quit
- **ASSESS** readiness to quit
- **ASSIST** with quit attempt
- **ARRANGE** for follow up
Methods
Use of Technology

- PowerPoint presentations for smoking cessation were added to iPads located in each patient room

- “QuitMedKit” application for iPhone with the 5As

- Apple TV was added to patient waiting room with plans to stream patient education

- Apple TV was set up in lunch room for staff and provider education, ongoing education modules and PowerPoint presentations
Practice Improvement Project

Interventions Included:

- Provider meetings prior to project implementation to discuss project overview, the 5As model for smoking cessation, perceived barriers, and proposed EMR changes

- Provider and staff education, PowerPoint presentation on smoking cessation and the 5As model

- Provider feedback assessed prior to intervention, during implementation and post-intervention
Interventions Continued

- EMR system modification which required consultation and collaboration with software designer, practice owner, IT employee and providers

- Smoking status (Ask) was added to the vitals screen and the remaining 4As were added to the plan section with provider prompts for documentation

- Morning “huddles” with medical assistants twice a week during implementation phase
Interventions Continued

- ICD 10 codes for diagnosis and counseling were added as pop up screens to link the diagnosis with smoking cessation counseling for billing

- Patient referral forms were added to drop box for easy referral process and electronic faxing
Provider Barriers to 5As Utilization

Perceived Lack of Reimbursement

Lack of Provider Prompts in EMR

Belief Patient Is Unwilling To Quit

Time Constraints
EMR Modification
5As Model

- **Ask**
- **Advise**
- **Assess**
- **Assist**
- **Arrange**

- **Added to Patient Vital Sign Screen**

- **Advise, Assess, Assist, and Arrange added to Patient Plan with Provider Prompts.**

- **Unwilling to Quit: 5Rs**
  - Relevance, Risks, Rewards,
  - Roadblocks, Repetition
ASK: Do you smoke? (Vitals)
Have you ever used tobacco?
Encourage continued cessation & re-evaluate next visit
Encourage continued cessation & re-evaluate next visit
Re-evaluate next visit
Advise patient to quit
Assess readiness to quit
Is patient willing to quit?
Assist
Schedule next appointment, Referrals for counseling, quit lines, community resources, patient packet
Followup next visit
No
Yes
Yes
No
Yes
No
Yes
No
No
Yes
Patient Education Quit Kits and Referral Packets

Collaboration with Community Resources

• Tobacco Free Lake County Quit Services
• Local Hospital Nurse Navigator
• Local High School Health Teachers and Nurses
• Local Pharmacists
Participants

- One Physician and Two Nurse Practitioners (N=3)
Study of the Intervention
Outcome Objectives
Study of the Intervention

- The intended goal of this project was to implement a practice improvement program utilizing the 5As model to achieve improved provider compliance in asking, advising, assessing, assisting and arranging for follow up with every patient at every patient encounter.

- Long-term outcome to improve smoking cessation rates for the patient population at the clinic
Outcome Objectives

- 100% of health care providers will verbally report reduced barriers to tobacco use screening and counseling following implementation of an evidence-based protocol and EMR program.

- Health care providers will increase tobacco use screening and counseling 25% from baseline in the three months following implementation of an evidence-based protocol and EMR program.

- In the three months following implementation of the evidence-based protocol and EMR program, smoking cessation or statement of intention to quit in patients receiving counseling will increase 25% from baseline.
Evaluation
Analysis of Data Results
Chart Audit Results

Three month chart audit from all providers performed pre- and post-intervention to identify smoking patients

Pre-Intervention Charts N=65 Smokers
Post-Intervention Charts N=67 Smokers
Gender

Pre-Intervention
- Male: 54%
- Female: 46%

Post-Intervention
- Male: 49%
- Female: 51%

AGE
Mean Age Pre-Intervention was 48.63 years old (SD=14.60)
Mean Age Post-Intervention was 44.72 years old (SD=13.42)
Type of Visit Pre-Intervention

- AP
- CD/Sched
- Pre-OP
- Same Day
- Walk-in

Pre-Intervention
Type of Visit Post-Intervention
Pre-Intervention Chart Results

N=65

Ask n=65; Advise n=47; Assess n=2; Assist n=2; Arrange n=2
Ask n=67; Advise n=39; Assess n=39 (29 unwilling); Assist n=10; Arrange n=10
Unwilling to quit = 5Rs documented in EMR
Statistical Results

- The resulting chi-square test analysis showed utilization of the 5As model:
  * ASK was constant all were confirmed smokers
  * ADVISE: no significant statistical improvement

ASSESSING: \( p < 0.001 \)
ASSISTING: \( p < 0.001 \)
ARRANGING: for follow up \( p < 0.001 \)

There was a significant difference between the pre- and post-intervention with \( p \)-values less than the level of significance of 0.05
Outcomes

- There was a significant increase in the utilization of the 5As in the number of patients Assessed for willingness to quit, post-intervention (n=39; 58.2%) compared to the pre-intervention (n=2; 3.1%).

- There was an improvement in provider utilization of the 5As Assist (n=10; 14.9%) and Arrange (n=10; 14.9%) compared to pre-intervention (n=2; 3.1%).
Outcomes

- There was an increase in the number of patients willing to quit smoking in the post-intervention (n=10) compared to the pre-intervention (n=2).

- The documentation of the 5As with every patient at every patient encounter can be validated with each visit.
Summary

- The purpose of this practice improvement project was to assess provider barriers and to evaluate the effectiveness of the intervention of EMR modification with implementation of the 5As model for smoking cessation.

- The results showed an improvement in provider utilization of the 5As model for smoking cessation in assessing, assisting, and arranging for follow-up for patients who smoke with every patient encounter. Providers verbalized a reduction in barriers post-intervention.
Summary

- There was an increase in the smoking cessation rates in the primary care practice as a result of the implementation of an evidence-based protocol and EMR program using the 5As model.

- Although there was an improvement, out of the 67 identified smokers that were Asked smoking status in the post-intervention phase, only 39 were Advised to stop smoking and Assessed readiness to quit. This leaves 28 missed opportunities and room for improvement.
Caplin et al. (2011) explored barriers to providing smoking cessation services among African-American physicians in private practice and healthcare providers at community health centers. Barriers to smoking cessation services included lack of time; patient lack of readiness to change; inadequate resources available; language and cultural barriers; patient non-compliance; inadequate smoking cessation clinical skills at the provider level.

Holtrop et al. (2008) investigated primary care physicians’ perceptions of barriers for using the 5As model and referring patients to a quit-line for smoking cessation. Barriers included lack of reimbursement, the amount of time required for cessation intervention and other demands on the provider. The authors concluded clinicians may address tobacco with patients more frequently if they are reimbursed for the counseling portion of the visit.
Lucan & Katz (2006) evaluated 10,582 smokers 18 years and older who reported one or more clinical encounters in the prior year. The authors concluded that patient smoking cessation advice may be provided selectively based on patient age, education, medical history, health insurance status, or not provided at all and counseling that was provided occurred in less than a quarter of clinical encounters.

The literature review by Boyle, Solberg, & Fiore (2010) suggested the addition of tobacco use status as a vital sign resulted in an increase in clinical guideline use and overall documentation of smoking status.
Limitations

- Small number of participants/providers
- Limited implementation and project time frame
- Inability to generalize results
- Pre-intervention data difficult to quantify due to EMR system and lack of controls to validate documentation
Interpretation

- Integration of the 5As model into the EMR system was effective in this primary care setting to improve provider utilization and patient smoking cessation rates.

- The primary objectives were met, and there was an improvement in the number of patients willing to quit smoking. HOWEVER, there were still significantly more patients unwilling to quit (n=29; 70.7%) compared to those willing to quit (n=10; 14.9%). We definitely still have more work to do!!!

- The process of change requires assessment and reduction of barriers, communication, defined roles, support, and teamwork.
Conclusions, Implications, Recommendations for Practice

- Evidence-based tobacco control interventions need to be implemented on all levels from practice to policy.

- The risks and adverse effects of smoking are well published. However, smoking cessation interventions and counseling are often not performed with every patient encounter.
Conclusions, Implications, Recommendations for Practice

- Literature supports the addition of smoking status with the vital signs for improved assessment and opportunity for intervention. This proved to be a positive change in the EMR system in this project setting based on provider and staff feedback along with chart audit results.

- Provider and staff barriers must be assessed and addressed for successful implementation of change.
Conclusions, Implications, Recommendations for Practice

- Teamwork on all levels is critical for implementation. Frequent and open communication is necessary to facilitate successful change.

- This project demonstrates how a DNP prepared APN can serve in a leadership role, use information systems to support and improve patient care, and can integrate theory into practice.
Change
Just Ahead
Moving Ahead and Sustaining Change

- Communication
- Teamwork
- Defined Roles, Responsibilities, and Expectations
- Facilitating an environment conducive to change when possible
- Program and Outcomes Reassessment
- Ongoing monitoring of process, outcomes, reimbursement at APL, future chart audits
- Interprofessional Collaboration
- Translation of evidence based research into practice
Questions?
Dr. Bantz, Dr. Kelsey, friends, family and colleagues
For all your support on this Journey!


