IT’S NOT JUST WHAT YOU DO, IT’S HOW YOU DO IT:

VARIATION IN SUBSTANCE USE SCREENING OUTCOMES WITH COMMONLY USED SCREENING APPROACHES IN PRIMARY CARE CLINICS

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Background

- Tobacco, alcohol, and drug use are leading causes of preventable death in the US.
- Screening for alcohol and drug use in primary care is recommended.
- Yet screening has not become part of routine health care.
- Substance use information is not systematically collected in electronic health records.

Mokdad AH, et al. *JAMA* 2004
USPSTF draft recommendation, Aug 2019
D’Amico EJ, et al., *Medical Care* 2005
Friedmann PD, et al., *Arch Intern Med* 2001
- Curated set of validated screening tools
- Appropriate for use in medical settings
- Recommended for incorporation into electronic health records (EHRs)

https://cde.drugabuse.gov/
CTN-0062 Study

- **Objective**: Study the feasibility of implementing EHR-integrated screening in primary care clinics
- **Study Design**: 4-phase implementation study
- **Setting**: Primary care clinics in academic health systems
  - **Group A** sites (New York City): 2 clinics
  - **Group B** sites (Boston): 4 clinics
Study Phases

**Phase 1** - Identify optimal screening and intervention approaches  
- Build CDEs into the EHR

**Phase 2** - Usability testing of screening and CDS tools

**Phase 3** - Implementation  
- Measure implementation outcomes after 1 year

**Phase 4** - Ongoing screening  
- Measure impact at patient, provider, and clinic level after 1-2 years
Screening program components

- Alcohol and drug screening tools
  - Single-item screening questions
  - AUDIT-C, DAST-10

- EHR integration:
  - Screening results, best practice alerts
  - Clinical decision support
  - Self-administered questionnaires (paper, tablet, kiosk)

- Practice facilitation
Implementation outcomes

1. Screening rate

2. Detection of unhealthy use:
   - low-risk, moderate-risk, high-risk

3. Provider adoption of clinical decision support
Summary of Screening Approaches

Self-administered  or  Staff-administered
Any visit  or  Annual visit
Robust practice facilitation  or  Usual facilitation
## Screening rates across all sites

Number of patients screened ÷ all patients with primary care visits

<table>
<thead>
<tr>
<th></th>
<th>A-1</th>
<th>A-2</th>
<th>B-1</th>
<th>B-2</th>
<th>B-3</th>
<th>B-4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alcohol</strong></td>
<td>(15,687/17,373)</td>
<td>(24,270/25,632)</td>
<td>(3,016/7,139)</td>
<td>(2,648/10,932)</td>
<td>(18,214/25,311)</td>
<td>(2,331/6,207)</td>
</tr>
<tr>
<td></td>
<td>90.3%</td>
<td>94.7%</td>
<td>42.2%</td>
<td>24.2%</td>
<td>72.0%</td>
<td>37.6%</td>
</tr>
<tr>
<td><strong>Drug</strong></td>
<td>(15,558/17,373)</td>
<td>(24,064/25,632)</td>
<td>(2,708/7,139)</td>
<td>(2,689/10,932)</td>
<td>(17,670/25,311)</td>
<td>(2,324/6,207)</td>
</tr>
<tr>
<td></td>
<td>89.6%</td>
<td>93.9%</td>
<td>37.9%</td>
<td>24.6%</td>
<td>69.8%</td>
<td>37.4%</td>
</tr>
</tbody>
</table>
Screening rates with annual visit vs. any visit strategy

Any Visit

Annual Visit

A-1

90.3%  89.6%

A-2

94.7%  93.9%

B-1

42.2%  37.9%

B-2

24.2%  24.6%

B-3

72.0%  69.8%

B-4

37.6%  37.4%

Alcohol  Drug
Screening results across all sites: Alcohol

Results among patients who completed screening

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>A-1</th>
<th>A-2</th>
<th>B-1</th>
<th>B-2</th>
<th>B-3</th>
<th>B-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk</td>
<td>98.4%</td>
<td>85.3%</td>
<td>63.4%</td>
<td>80.6%</td>
<td>66.1%</td>
<td>79.1%</td>
</tr>
<tr>
<td>Mod risk</td>
<td>1.2%</td>
<td>14.1%</td>
<td>34.5%</td>
<td>18.1%</td>
<td>33.2%</td>
<td>20.1%</td>
</tr>
<tr>
<td>High risk</td>
<td>0.4%</td>
<td>0.6%</td>
<td>2.1%</td>
<td>1.2%</td>
<td>0.7%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>
## Screening results across all sites: Drugs

Results among patients who completed screening

<table>
<thead>
<tr>
<th></th>
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<th>B-2</th>
<th>B-3</th>
<th>B-4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low risk</strong></td>
<td>99.5%</td>
<td>99.7%</td>
<td>99.0%</td>
<td>99.0%</td>
<td>99.6%</td>
<td>99.1%</td>
</tr>
<tr>
<td><strong>Mod risk</strong></td>
<td>0.4%</td>
<td>0.2%</td>
<td>0.4%</td>
<td>0.7%</td>
<td>0.3%</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>High risk</strong></td>
<td>0.1%</td>
<td>0.0%</td>
<td>0.6%</td>
<td>0.3%</td>
<td>0.1%</td>
<td>0.3%</td>
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Self- vs. staff-administered screening: Detection of Unhealthy Alcohol Use

<table>
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<tr>
<th></th>
<th>Low Risk</th>
<th>Mod Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>98.4%</td>
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<td></td>
</tr>
<tr>
<td>A-2</td>
<td>85.3%</td>
<td>63.4%</td>
<td>80.6%</td>
</tr>
<tr>
<td>B-1</td>
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<td>66.1%</td>
<td></td>
</tr>
<tr>
<td>B-3</td>
<td>80.6%</td>
<td>63.4%</td>
<td></td>
</tr>
<tr>
<td>B-4</td>
<td>63.4%</td>
<td>85.3%</td>
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</tr>
</tbody>
</table>

Staff-administered

Self-administered
Self- vs. staff-administered screening: Detection of Unhealthy Drug Use

Staff-administered

Self-administered
Adoption of EHR clinical decision support (CDS)

Number of uses of CDS ÷ patients screening positive for unhealthy use

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>A-1</td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
</tr>
<tr>
<td>13.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Drug</td>
<td></td>
</tr>
<tr>
<td>(12/78)</td>
<td>(4/64)</td>
</tr>
<tr>
<td>15.4%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
Adoption of CDS for alcohol: Robust vs. usual practice facilitation

Robust Facilitation

A-1: 13.0%
A-2: 1.3%

Usual Practice Facilitation

B-1: 0.2%
B-2: 1.0%
B-3: 0.1%
B-4: 0.6%
Discussion

- Over 12 months, nearly 50,000 patients were screened.
- Relatively few patients screened positive for unhealthy substance use (moderate-high risk).
- Detection of Alcohol >> Drug use.
- EHR-integrated screening was feasible to implement in busy primary care clinics.
- Conducting screening at routine primary care visits resulted in highest screening rate,
- Self-administered approach detected more unhealthy use.
- Use of clinical decision support was low (though somewhat better at sites with robust practice facilitation)
Limitations

- Not a randomized trial – we were not able to control for differences between sites
- Conducted in urban academic health systems
- Did not capture detailed data on outcomes of screening (counseling, referrals, treatment)
Conclusions

- When screening is integrated into medical care, rates of unhealthy alcohol/drug use are much lower than what is reported in a confidential research setting.
- To maximize the penetration of screening, do not restrict it to annual/preventive care visits.
- To maximize the quality of screening, strongly consider using a patient self-administered approach.
- Utilization of CDS to act on a positive screen was low; a team-based approach may be needed to deliver interventions in primary care.
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