Public Health Interventions in the Emergency Department

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Two cultures?

- EM: assessment and stabilization of individuals with acute illness and injury

- Public Health: study and practice of managing threats to the health of a community
How to reconcile the population- and prevention-based foci of public health with the individual-based focus of emergency medicine?
Public health paradigm of EM practice: I

- Clinical practice
- Public education, advocacy
- Medical education
- Research, surveillance

SPECIAL CONTRIBUTION

A Public Health Approach to Emergency Medicine: Preparing for the Twenty-first Century


ABSTRACT

This paper focuses on the implications of an inadequate public health/preventive health care system for emergency medicine (EM), the role that

Bernstein et al., Acad Emerg Med 1994;1:277-286
What contribution do risky health behaviors make to the epidemiology of ED visits?
Numbers of U.S. Deaths from Behavioral Causes, 2000

Determinants of Health and Their Contribution to Premature Death

Competing messages in underserved communities
Prevalence of risky health behaviors in ED patients

- Substance use
- Violence
- STD/HIV
- Mental Health Disorders
Alcohol

• >75,000 deaths, 2.3 million years of potential life lost attributable to unhealthy alcohol use
• ED visits: 68.8 million or 7.9% (1992-2000)
• ED patients 1.5-3.0 times more likely to report heavy drinking or negative consequences than those in primary care settings

Cherpitel CJ. Substance Abuse 1999;20:85-95
Tobacco

• Leading cause of preventable illness, mortality in US: 435,000 deaths annually

• 19.8% of adult Americans smoke

• Tobacco use in ED patients:
  – prevalence rates <= 48% in urban, underserved areas
  – 4.9% of adult visits, 6.8% of admissions, 10% of charges smoking-attributable

2 CDC. Cigarette Smoking Among Adults--US 2007. MMWR 2008; 57:1221-1226
Screening, Brief Intervention, Referral to Treatment (SBIRT)

- Employs principles of motivational interviewing
- Endorsed by SAMHSA, Committee on Trauma of American College of Surgeons, ACEP
- Joint Commission and CMS mandates
- Billable: CPT codes, Medicare G and H codes, Medicaid codes
Prevention paradigm

Tetanus vaccination

SBIRT HIV testing

Antibiotics for STD

Stiffler & Gerson, Emerg Med Clin North Am 2006;24:849-869
Teachable moment

- ED visit as an opportunity to deliver an effective health behavior intervention
- Sentinel Events model
  
  E Bernstein, Drug Alcohol Dep, 2005
Who can do SBIRT?

- Physicians
- Nurses
- Social workers
- Health promotion advocates/peer educators
- Respiratory therapists
- Pharmacists
"Daddy works in a magical, faraway land called Academia."
Components of SBIRT

1. Raise the Subject
2. Provide Feedback
3. Enhance Motivation
4. Negotiate and Advise

Miller, Rollnick, Motivational Interviewing, 2002
Alcohol SBIRT

- Early trials: mixed results
- D’Onofrio 2010: 900 adults in Yale ED
- 3 arms: Standard Care, Brief Negotiated Interview, BNI + Booster (RN call at 30 days)
- 2005-2008
- +NIAAA at-risk drinkers
- BNI performed by emergency physician (8 mins.)
Mean Number Drinks Past 7 Days

Follow-up Rates

<table>
<thead>
<tr>
<th>Time</th>
<th>Rate</th>
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<tbody>
<tr>
<td>6 months</td>
<td>89%</td>
</tr>
<tr>
<td>12 months</td>
<td>88%</td>
</tr>
</tbody>
</table>

Time effect: $p<.001$; Treatment effect: $p=.045$
Mean Number Binge Episodes Past 28 Days

- Time effect: p<.001
- Treatment effect: p=.031

N=740
The Spectrum of Alcohol Use…
Universal Screening Widens The Net

Ask Current Drinkers

• On average, how many days per week do you drink alcohol?
• On a typical day when you drink, how many drinks do you have?
• What’s the maximum number of drinks you had on a given occasion in the last month?
### Screening Methods

<table>
<thead>
<tr>
<th></th>
<th>Per week</th>
<th>Per occasion</th>
</tr>
</thead>
<tbody>
<tr>
<td>males</td>
<td>&gt;14 drinks</td>
<td>&gt; 4 drinks</td>
</tr>
<tr>
<td>females</td>
<td>&gt; 7 drinks</td>
<td>&gt;3 drinks</td>
</tr>
<tr>
<td>&gt;65 yo</td>
<td>&gt;7 drinks</td>
<td>&gt;3 drinks</td>
</tr>
</tbody>
</table>

**Standard Drink = 12 g EtOH**

- 1.5 oz liquor
- 5 oz wine
- 12 oz beer

Specific screening instruments: Quantity/frequency questions, CAGE, CRAFFT
Methods: Brief intervention

• **Raise subject**
  – “Would you mind if we took a few minutes to discuss your alcohol intake?”

• **Provide feedback and make connection**
  – “What connection do you see, if any, between the amount of alcohol you are drinking and your acid reflux?”

• **Enhance motivation**
  – “On a scale of 1-10, with 1 being not at all ready and 10 being totally ready, how ready are you to make a change in your alcohol intake?”
  – “Why not a lower number?”

• **Negotiate, advise, and summarize**
  – Consider drinking/drug use agreement
SBIRT Training in Yale Residency Programs

Principal Investigator: Gail D’Onofrio MD, MS
Program structure

• 5 residencies: EM, IM, Peds, Psych, Ob-Gyn
• Lectures, role plays, standardized patients, e-learning
• Electronic procedure log
• 254 residents trained, 460 BNIs done (1.5 years)
Web-based Alcohol SBIRT Training

SBIRT Screening Brief Intervention & Referral to Treatment

Screening Brief Intervention & Referral to Treatment

Substance abuse is a major preventable and treatable public health problem affecting all racial, cultural, and socioeconomic groups with the total annual economic costs to the United States estimated at over $414 billion. The consequences of substance abuse affect not only individuals, but the workplace, society and the healthcare system. Although treatment does work, physicians often fail to detect patients with alcohol and other drug problems or initiate referral to treatment. This fact is apparent from the data collected from the National Survey of Drug Use and Health (NSDUH). Of the 23.6 million people over the age of 12 in the U.S. who need substance abuse treatment, only 2.5 million, or 11% actually receive specialized treatment.

www.yale.edu/sbirt
Elements of Success

• Scripted Laminated Cards

• Standardized Patient Encounter - Feedback
Integration into Clinical Practice: EMR

- BNI log and alcohol/drug screens incorporated into EMR Medicine, Pediatrics, and Emergency Medicine
- CRAFFT screen
- Log of BNI performed
Tobacco SBIRT in the ED

An adaptation of the model used in alcohol SBIRT
Presenting Problems and Diagnoses that Could Be Smoking-Related

**Respiratory**
- Asthma
- COPD
- Pneumonia
- Bronchitis
- Upper respiratory infection

**Vascular**
- ACS
- CVA
- CHF
- Peripheral vascular disease

**Trauma**
- Laceration healing
- Bone healing

**Other**
- GERD
- Diabetes
  - Wound healing
  - Heart disease
- Cancer
- Dental pain/caries
- Pregnancy
- Peds: OM

*Reducing the Health Consequences of Smoking, Surgeon General report 1989*
Evidence-based therapies

Nicotine replacement products
- Varenicline (Chantix)
- Bupropion (Zyban, Wellbutrin)

Counseling
- Group counseling
- Individual
  - In-person
  - Telephone (quitline)

Fiore et al., 2008, PHS guideline
What are the simple interventions that emergency physicians can do?
Tobacco SBIRT treatment paradigm: Quitlines

- Ask
- Advise
- Refer
- (Prescribe)

1-800-QUIT NOW
www.naquitline.com
National Quitline: 1-800-QUIT NOW

- Quitline: available to all Americans with telephones
- Provide: free cessation services, counseling, printed materials
- Effective: 12-month abstinence rate 9.1% vs. 6.9% in California study (P < 0.001)
Telephone counseling: what and why?

- Conducted 1:1
- Anonymous: counselor and client never meet
- Can be proactive
- Structured counseling protocol: thorough, yet focused

- Convenient; preferred over clinic by 75-85%
- Easy to promote
- Available nationwide
- Often multilingual

Smoking Cessation Leadership Center, 2005
Typical quitline services

- Multiple languages
- Eligible: 18+ years
- No insurance barriers
- Multiple sessions available
- 7 days/week

Services available:
- Live counseling
- Recorded messages
- Mailed materials
- Web-based services
- Specialized materials for pregnant smokers, youth, priority populations

www.naquitline.org
1-800-QUIT NOW
In Short, Quitlines:

- Reduce barriers
- Increase quit attempts
- Increase quitting, and staying quit
- Play important role in comprehensive tobacco control programs
- Offer a single portal for treatment
What We Suggest

- **Ask** if your patient smokes
- **Advise** him/her to quit
- **Refer** the patient to the National Quitline or local program
Ask

- ‘Do you smoke?’
- ‘How many cigarettes/day do you smoke?’
Advise

• ‘As your doctor, I must tell you that the best thing you can do for your health is to quit.’
• Link the medical condition to the smoking
• Health benefits of quitting: short- and long-term
Refer: Quitline

Take Control

1-800-QUIT-NOW

Call. It's free. It works.

1-800-784-8669
www.smokefree.gov

www.naquitline.org
ED education trial

Pre-/post-intervention format: 2006

Intervention had two components:

• Lecture
• Provision of Quitline wallet cards in the ED

Assessment:

• Pre-/post-lecture survey of providers
• Pre-/post-intervention survey of patients
## Results: provider behavior

**Behavior (self-report)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Before</th>
<th>After</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent counseling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>19.7%</td>
<td>3.6%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>&lt;3 minutes</td>
<td>75.8%</td>
<td>90.6%</td>
<td></td>
</tr>
<tr>
<td>&gt;=3 minutes</td>
<td>4.5%</td>
<td>5.8%</td>
<td></td>
</tr>
<tr>
<td>How often provide counseling?</td>
<td>43.8%</td>
<td>74.9%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>always/ usually/ sometimes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Behavior (patient survey)**

| Anybody speak to you about smoking?    | 31% yes   | 43%       | <0.001  |
ED cessation trial: methods

- Randomized trial from 1/06-9/07.
- Adults aged >21 years, smoke at least 10 cigarettes/day and discharged from the ED.
- Randomized to Usual Care, receiving brochure, or Enhanced Care, receiving brochure, brief negotiated interview, 6 weeks of nicotine patches, and phone call at 3 days.
- Interventions performed by peer educator trained in tobacco treatment.
- Telephone follow-up at 3 months by assistant blinded to treatment assignment.

Bernstein et al., Acad Emerg Med, in press
ED trial: results

- 340 patients

- Mean age 40.2 years, 51.8% female, 61% Hispanic, 56.5% self-pay/Medicaid.

- Baseline demographic, clinical, tobacco use variables comparable between groups.

- Enhanced Care (N = 171) and Usual Care arms (N = 169) showed similar cessation rates at 3 months (14.7% v. 13.1%, respectively) (P > 0.05).
ED trial: results 2

- Patients with tobacco-related ICD9 code were more likely to quit than patients without a tobacco-related diagnosis (OR 3.42, 95%CI 1.61, 7.26) (23.1% v. 11.0%, P = 0.009).

- Patients who thought ED visit was related to smoking were more likely to quit (OR 2.47, 95%CI 1.17, 5.21).

- Patients with drug or alcohol disorder more likely to quit with intervention (14.6% vs. 0%, P = 0.015)

- Suggests salience of ‘teachable moment’
ED trial: conclusions

- Primary endpoint negative, reflecting higher-than-expected quit rate in control group.
- May reflect control arm’s assessment and brochure providing stronger intervention than what ED smokers normally receive.
- Suggests that even low-intensity SBIRT may prompt substantial numbers of quit attempts, decreased cigarette use, and quitting, if offered routinely to ED smokers.
- Smokers with drug/alcohol problems receptive to tobacco interventions
In summary

• SBIRT has shown efficacy for at-risk drinkers and certain groups of smokers
• Interventions are simple to learn and perform
• Linkage to local treatment resources (e.g. Quitline) is critical
SBIRT resources

SBIRT:
• www.yale.edu/sbirt

Alcohol:
• www.acep.org (policy statement)

Tobacco:
• www.naquitline.com
• www.acep.org (policy statement)