

Controversies in ED-Based Public Health Interventions:

SBIRT: Has the enthusiasm outpaced the evidence?

YES

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Does universal SBI for unhealthy substance use in the ED meet criteria?*

- Significant morbidity/mortality?
 - Yes
- High prevalence?
 - Yes (alcohol>drug)
- Asymptomatic period during which detection can occur (that wouldn't come to light w/o test)?
 - Yes

*of USPSTF (AHRQ) for recommending a preventive intervention

Does universal SBI for unhealthy substance use in the ED meet criteria?*

- Valid, feasible screening test?
 - Alcohol: yes
 - Drug: no (ASSIST, NIDA tool, single item, DAST)
 - screen for what? any use/severity? All drugs?
Rx drugs?
- Early intervention better (than later)?
 - Alcohol-maybe
 - Drugs-unknown

*of USPSTF (AHRQ) for recommending a preventive service

What do we know?

- Valid, feasible alcohol screening tools
- BI has efficacy for nondependent unhealthy alcohol use *identified by screening* in primary care settings
 - 69% vs. 57% drinking risky amounts
 - Decrease of 38 grams/wk
- USPSTF agrees and recommends

This is a grade B recommendation (at least fair evidence of improved health outcomes and that benefits outweigh harm). USPSTF. *Ann Intern Med* 2004; 140: 554-6. Beich BMJ 2003. Bertholet Arch Intern Med 2005.

What don't we know?

- Feasibility, predictive value, clinical utility of drug screening tests in ED (or primary care, or for pregnant women*)
- Efficacy of BI for unhealthy alcohol or drug use identified by screening in ED
- Anywhere: Efficacy for dependent alcohol use, adolescents, morbidity & mortality, drug SBI**

*USPSTF (AHRQ) 2008 systematic review.

**USPSTF (AHRQ) 2008 systematic review (primary care). Most studies among treatment-seeking—not likely applicable.

Preventive care is different from treatment:

Highest levels of evidence are required

- Universal
- Different from pursuit of diagnosis when symptoms and signs present
 - difficult to improve when no symptoms

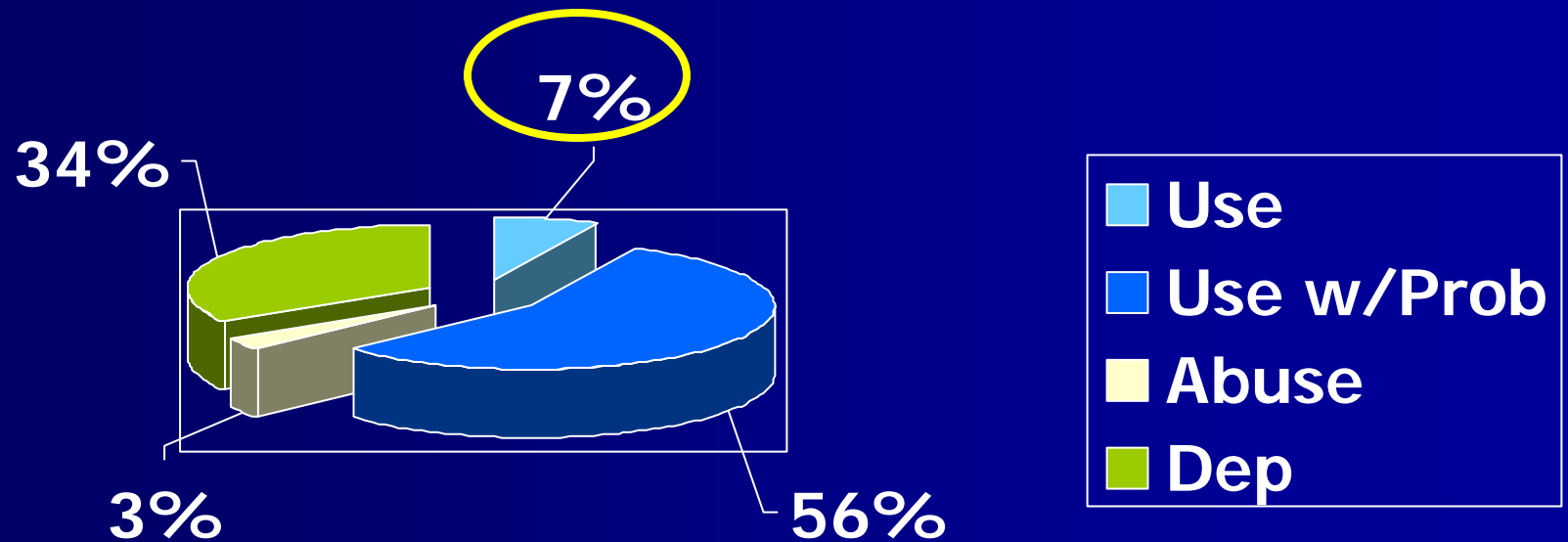
Why else we should require RCT evidence

- *Post hoc ergo propter hoc*
 - ‘After this therefore because of this’
 - Error of assuming that because one thing follows another, that this thing was *caused* by the other
 - Many if not most heroin users used marijuana first
 - Just about all heroin users drank milk as children

Why we should we require RCT evidence for SBI

- BI after screening (many not seeking help) is different from BI in a treatment seeker (cannot apply that evidence to this case)
- Mixed results from studies in hospital, ED
 - Severity
 - 20% of those who screen alcohol + in PC have dependence
 - 77% in hosp (usually excluded from SBI RCTs)
 - Setting
 - ED is *different* from primary care (of course...)
 - Hectic, interruptions, discontinuity

Severity of drug screen + in primary care



THUS, 93% of drug screen + have consequences

Why we should require RCT evidence

- Other drugs more complicated than alcohol (many substances, illegal, prescription drug abuse)
- To see effect on clinical outcomes beyond use
 - Need to characterize benefit of any universal practice
- Non-randomized studies overestimate effects

Before-after evaluation of large 6-site SBI implementation (>\$180 million)

- 50% or larger decreases in drug and alcohol use 6 months after identification by screening

Meta-analysis: injury, alcohol, ED

- 11 controlled trials, consumption outcomes
 - 6 studies—no difference in drinking
 - 5 studies—decrease in consumption
- Effects on other outcomes variable (e.g. use of alcohol rx, injury)

Pre-D'Onofrio et al. 2008

Nilsen P et al. J Subst Abuse Treat. 2008; 35:184-201

RCT: injury, alcohol, ED negative high quality study

- 5136 screened, 29% positive (NIAAA risky use)
- 81% of eligible enrolled, 78% 12-mo. F/U
- Groups: BI (10-15"), assessment only, neither
- Approx. 1/3rd no longer drinking risky amounts;
- No differences between groups in drinking or consequences

Meta-analysis: alcohol, ED

- 11 controlled studies (10 RCTs)(n=1174)
 - no difference in drinking
- 3 studies (n=785)
 - decrease in injury (OR 0.59)

Pre-D'Onofrio et al. 2008

Havard A et al. Addiction 2008; 103:368-76

RCT: alcohol, ED negative high quality study

- 16,182 assessed; 500 randomized (88% of eligible)
- Risky use or alcohol-related injury (exclusion: likely dependence)
- BI vs. discharge instructions
- 92% 12-month follow-up
- Drinking decreased in both groups

What about landmark study that led to trauma center requirements (for alcohol SBI)?

RCT: Alcohol SBI in trauma admissions

- 12 mo. F/U in 54% of those randomized
- drinking decreased (BI vs. control: 7 vs. 22 drinks per week)
- NS reduction in readmissions/reinjury
 - emergency or trauma admission to same center for injury, HR 0.52, 95% CI 0.26-1.07
 - admission for injury statewide, HR 0.52, 95% CI 0.21-1.29

NS=non-significant

Gentilello LM et al. Ann Surg 1999;230:473

Concerns about negative studies re: alcohol SBI in ED

- Samples not severe enough, or too severe
 - Effects greater in less severe*
 - D'Onofrio et al. sample low severity yet negative
- Sample sizes too small
 - Larger studies might detect effects but ?clinical significance

*Daeppen et al. *Addiction* 2007-greater severity associated with greater decreases—but **not** intervention effects. Likely regression to mean. ED Collab. Study; Gentilello; PC studies.

Concerns about negative studies re: alcohol SBI in ED

- Control groups contaminated
 - MD behavior change difficult
 - Most ED patients don't understand discharge instructions*
- Assessments are leading to change in drinking
 - Daepfen et al neg. study even with more lower severity patients in 'no assessment' group (biasing to finding assessment effects)
 - Numerous RCTs in primary care show efficacy; why would these methodological limitations apply only to ED setting?

*Engel KG et al 2008 *AEM*

US Preventive Services Task Force recommendation re: Drug SBI

- "The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening adolescents, adults, and pregnant women for illicit drug use." (Jan 2008)

Polen MR. Evidence Synthesis No. 58, Part 1. AHRQ Publication No. 08-05108-EF-s. Rockville, MD, Agency for Healthcare Research and Quality, January 2008.

4 controlled studies of Drug BI *in people identified by screening*

- N=59 adolescents, primary care (Brazil)
 - decreased ecstasy, MJ use & drug problems
- Bernstein et al, in outpatients
- WHO ASSIST trial (international)
- Rx drug abuse, hospital

Drug SBI in outpatients - RCT

- 1,175 with risky heroin or cocaine use (DAST ≥ 3) randomized to brief negotiated interview (BNI) or referral list/written advice
- 82% completed 6-month follow-up
- 6-month abstinence (hair)
 - Opiates: 40% of BNI, 31% of control (risk diff. 9%)
 - Cocaine: 22% of BNI, 17% of control (risk diff. 5%)
- About 38% of subjects in both randomized groups reported a contact with drug treatment (no difference)

Drug SBI in Primary Care: RCT, n=731 outpatients, international

- Low and high risk scores excluded
- BI (vs. no BI) associated with a 3-point greater decrease in a substance use score (max score 336).
- Cannabis and stimulant scores also decreased more for BI subjects (by about 2–3 points on scales with a maximum of 39 points); opioid scores did not.
- Substance use was not significantly impacted by BI at the US site.

Humeniuk R, et al. *Technical Report of Phase III Findings of the WHO ASSIST Randomized Controlled Trial*. Geneva, Switzerland: WHO, 2008.

RCT of BI for addictive rx drug use (>60/90 days)(?indications) or abuse in inpatients

Differences in Control Group (CG) and Intervention Group (IG) Prescription Drug use at 3-Month Follow-up

	CG	IG	p value
Difference in defined daily dosage* (SD**)	0.12 (1.4)	0.42 (2.7)	0.08
Discontinued use (%)***	6 (8.6)	10 (17.9)	0.17
Reduced use by >25% (%)	21 (30)	29 (51.8)	0.02†

N=126 screen positive of 10,900 patients. *Follow-up minus baseline; **standard deviation; †significant (p<0.05). ***primary outcome

Zahradnik A, et al. *Addiction*. 2009;104(1):109–117

Drug SBI efficacy is unknown

- NIDA/SAMHSA RFA (and awards for studies) to test efficacy of drug SBI
- Approval from at least 5 IRBs

“Much of what we do (and should do) isn’t evidence-based”

- There are reasons beyond evidence
 - Need to know substance use to prescribe, or if symptoms
 - Patient expectations, laying on of hands
- Still, must choose what to do in limited time (and much competes for that time)

Summary:

The enthusiasm has outpaced the evidence for SBI in the ED

- Feasible and valid alcohol but not drug screening tools available
- Alcohol SBI probably works in the ED—sometimes/for some (e.g. for nondependent, ?others—need research)
- No evidence for drugs, and good reasons to question efficacy

Scientific Evidence and Medical Practice: The "Drunkard's Walk"

- Describes how "humans are notoriously bad at, and often even averse to, the straightforward use of data and probability in making daily judgments...not restricted to certain educational levels...or professions.
- Despite its image of being scientifically based, the actual application of evidence in medicine is, like a drunkard's walk, quite haphazard and inconsistent.
- Social scientists have long documented that new medical products and practices disseminate into health care more because of power and money than scientific evidence."

*"The Drunkard's Walk: How Randomness Rules our Lives," Leonard Mlodinow
Jonas WB. Arch Intern Med. 2009;169(7):649-650.*

Should we use large scale healthcare interventions without clear evidence that benefits outweigh costs and harms?

Patients will predictably benefit only when benefits outweigh harms and costs

If net effects uncertain (and intervention costs) then implementation is dubious

Implement...only when it is clear that the benefits outweigh the costs and harms

When implemented prematurely, wishful thinking can replace careful evaluation, and an unproved innovation can become an enduring but possibly harmful standard of care

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Alcohol, Other Drugs, and Health: Current Evidence

Free online newsletter summarizing the latest clinically relevant research on alcohol, illicit drugs, and health, written by physicians.

Supported by NIDA.



Quasi-experimental study: alcohol, ED

- Larger effect seen among those without dependence (CAGE<2) than seen in primary care studies

Drug SBI in outpatients - RCT

- 23,660 patients screened in women's, homeless, and urgent care clinics
- 1,175 with risky heroin or cocaine use (DAST ≥ 3) randomized to brief negotiated interview (BNI) or referral list/written advice; 82% completed 6-month follow-up
- 6-month abstinence (hair)
 - Opiates: 40% of BNI, 31% of control (ARR 9%)
 - Cocaine: 22% of BNI, 17% of control (ARR 5%)
- About 38% of subjects reported a contact with drug treatment (no difference)

Time/resources are limited

- Ambulatory family practice
 - average patient eligible for 25 recommendations for preventive services (13.0 for screening, 10.5 for counseling, and 1.1 for immunizations)
- To fully satisfy USPSTF recommendations for avg. (2500) patient panel (age/sex of adults in US)
 - 7.4 hours of physician time per working day

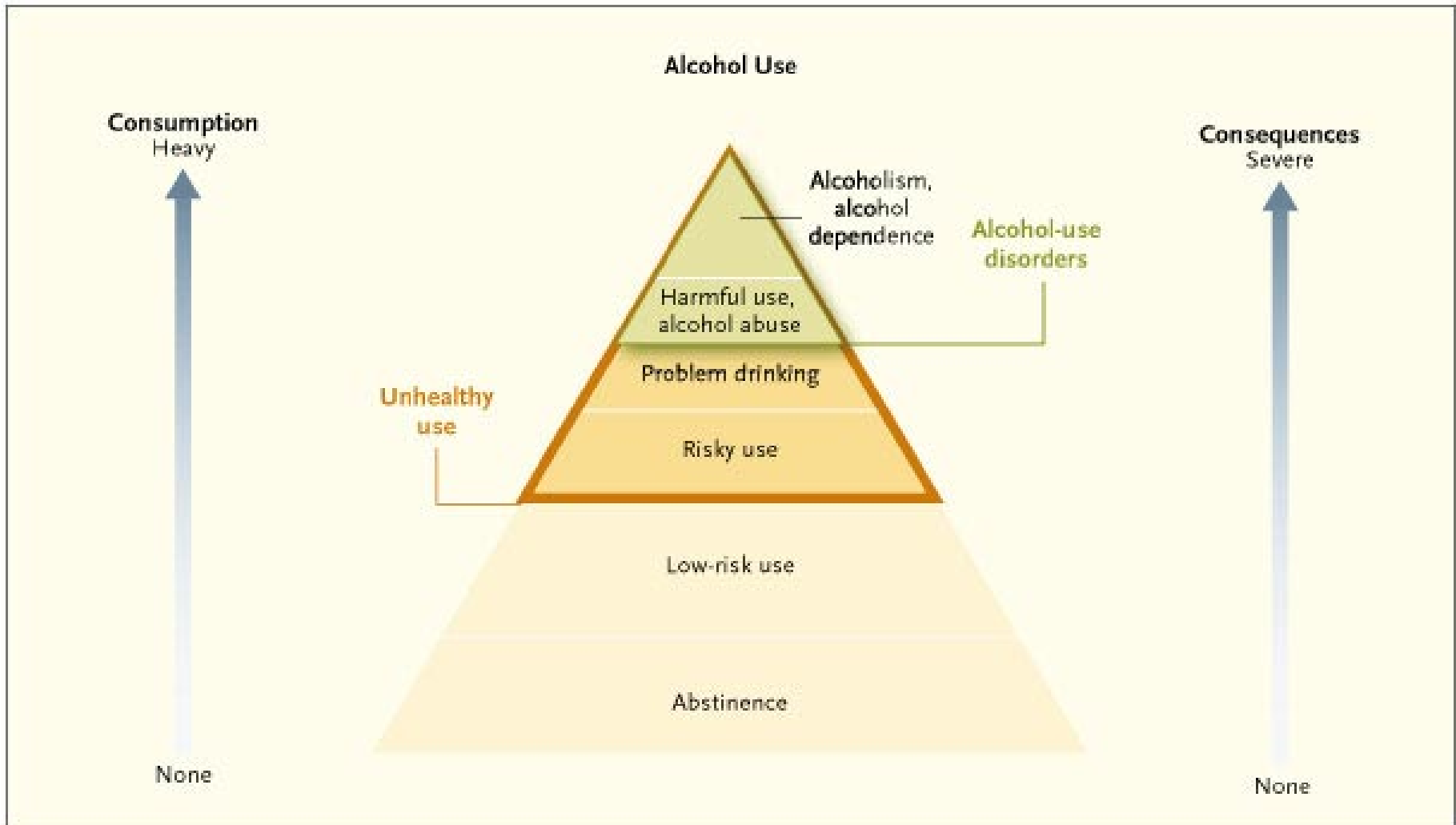
Medder JD et al. Am J Prev Med 1992;8:150-3.

Yarnall KSH et al. Am J Pub Health 2003; 93:635-641

Quasi-experimental study: alcohol, ED

- To avoid potential contamination
- 14-site ED collaborative
 - 55% of eligible, enrolled
 - 62% 3-month follow-up
- 3 fewer drinks per week
 - Subset: Risky use 63% v. 81% among CAGE <2
 - larger effect than seen in primary care

The Spectrum of Alcohol Use



Practice Guideline

- The U.S. Preventive Services Task Force (USPSTF) recommends screening and behavioral counseling interventions to reduce alcohol misuse by adults, including pregnant women, in primary care settings.



OFFICE OF NATIONAL DRUG CONTROL POLICY

2008 White House Leadership Summit on
Screening and Brief Intervention (SBI) for Substance Abuse

FRIDAY, SEPTEMBER 5, 2008 • 9:00 AM – 3:00 PM

CLINICAL GUIDELINES

Screening and Behavioral Counseling Interventions in Primary Care To Reduce Alcohol Misuse: Recommendation Statement

U.S. Preventive Services Task Force*

This statement summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on behavioral counseling interventions to reduce alcohol misuse in primary care patients and updates the 1996 recommendations on this topic. The complete information on which this statement is based, including evidence tables and references, is available in the accompanying article in this issue and in the systematic evidence review on this topic. The complete USPSTF recommendation statement (which includes a brief review of the supporting evidence), the accompanying journal article, and the complete systematic evidence review are available through the USPSTF Web site (www.preventiveservices.org). The journal article and the USPSTF recommendation statement are available in print through the Agency for Healthcare Research and Quality Publications Clearinghouse (telephone: 800-358-9256; e-mail: ahqpubs@ahrq.gov).

Ann Intern Med. 2008;140:554-62. www.ama-assn.org

*The 8 full members of the U.S. Preventive Services Task Force, as the Agency.

SUMMARY OF THE RECOMMENDATIONS

The U.S. Preventive Services Task Force (USPSTF) recommends screening and behavioral counseling interventions to reduce alcohol misuse (see Clinical Considerations by slide), including pregnant women, in primary care settings. This is a grade B recommendation. (See Appendix Table 1 for a description of the USPSTF classification of recommendations.)

The USPSTF found good evidence that screening in primary care settings can accurately identify patients whose level

is high enough to warrant screening and behavioral counseling interventions in this population.

CLINICAL CONSIDERATIONS

Alcohol misuse includes "risky/hazardous" and "harmful" drinking that places individuals at risk for future problems. "Risky" or "hazardous" drinking has been defined in the United States as more than 7 drinks per week or more

This is a grade B recommendation (at least fair evidence of improved health outcomes and that benefits outweigh harm). USPSTF. *Ann Intern Med* 2004; 140: 554-6.

Are there validated alcohol screening tools?

- Yes
- Including validation in the ED
 - Examples: CAGE, AUDIT, RAPS

What do we know about SBIRT from randomized trials?

- Brief (5-60 minute) multi-contact counseling interventions can decrease alcohol use modestly among nondependent unhealthy drinkers in primary care settings at up to 1 year
- Magnitude of effect:
 - 69% vs. 57% drinking risky amounts
 - Decrease of 38 grams/wk

USPSTF 2004

Beich 2003

Bertholet 2005

Why should we require RCT evidence?

- BI *after* screening
 - Not the same as BI
 - Not the same as BI
 - “works” for non-dependent unhealthy alcohol use
 - Not clear yet for “drugs”
 - What are drugs – a wide spectrum
 - Rx drug abuse
 - Heroin, cocaine, injection
 - Marijuana
 - Etc.

General Hospital Setting Systematic Review

- 8 controlled studies (all not randomized), 1597 adults
 - 2 in outpatient departments
 - 6 in inpatients (orthopedics, medicine, surgery)
- 4/6 studies: decreased alcohol-related problems
- 1/7 studies: decreased consumption (outpatients)
- 2/4 studies: decreased serum GGT levels

Emmen MJ et al. BMJ 2004;328(7435):318

Injured Subjects, Emergency Intervention Effects

- Monti
 - Fewer consequences; All decreased drinking.
- Longabaugh
 - Fewer consequences and alcohol-related injuries with intervention; All decreased drinking.
- Sommers & Dyehouse
 - Two negative studies
- Mello
 - Secondary analysis; MVC injured (but not MVC uninjured) decreased drinking

Emergency Departments aside from injured patients



Illegal drug prevalence in the ED

- 16% past month drug use
- 7% ED visit related to drug use

Drugs

- Prevalence of drug use that wouldn't already be identified by screening
- Spectrum of severity identified by screening

Before-after evaluation of large 6-site SBI implementation (>\$180 million)

- 104,505 screened +; EDs at some sites
- Unhealthy use (including dependence), outcomes at 6 months (25%-82% F/U rate)
- Among those with heavy alcohol use at baseline (100%), 34% did so at F/U
- MJ use decreased from 68% to 34%
- Cocaine 37% to 6%
- Methamphetamine 14% to 3%
- Heroin 15% to 5%

Single Item drug screening

- “How many times in the past year have you used an illegal drug or used a prescription medication for non-medical reasons?”
 - If asked to clarify the meaning of “non-medical reasons”, add “for instance because of the experience or feeling it caused”
 - a response of ≥ 1 is considered positive
 - 100% sensitive, 73.5% specific for drug use disorder, similar to 10-item DAST (n=286)(12.9%)
 - 92.9% and 94.1% for past-year drug use (35.3%)

- 81.8%, 96.1%, respectively, for saliva test or self-report

Smith PC et al. 2009 unpublished. Abstract presented at AMERSA, CPDD & AHSR 2008

Is there a brief validated (in the ED) screening tool for drugs?

No.

- Screen for what—use?
- Most tools: long, not validated in ED, PC or general health settings
- Single item-validated 1 unpublished study, primary care
- NIDA (“modified ASSIST”) tool
 - Not validated (ASSIST is validated in PC)
 - Long and complex

Lanier D, Ko S. Evidence Synthesis No. 58, Part 2. AHRQ Publication No. 08-05108-EF-2. Rockville, Maryland: Agency for Healthcare Research and Quality. January 2008. Smith PC et al. 2009 unpublished. Abstract presented at AMERSA, CPDD & AHSR 2008. Modified ASSIST at NIDA website.

Preventive Services in the ED

- “Evidence is sufficient to support offering these services in the ED setting, assuming sufficient resources are available”
 - alcohol screening and intervention
 - HIV screening and referral (in high-risk, high-prevalence populations)
 - hypertension screening and referral
 - adult pneumococcal immunizations (age ≥ 65 years)
 - referral of children without primary care physicians to a continuing source of care
 - smoking cessation counseling