Brief Intervention (BI) for Adolescents

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What is BI?

• Conversation between professional and patient
• Occurs in general medical setting
• Typically incorporated into a routine visit
• Includes negotiation and/or planning
• Aims to reduce substance use and/or increase acceptance of a referral to more specialized treatment
Use validated screening tool to identify risk level and appropriate intervention

- Abstinence
  - Positive Reinforcement
- Substance use without a disorder
  - Brief Health Advice
- Mild/moderate substance use disorder
  - Brief Intervention
- Severe substance use disorder
  - Referral to Treatment

Levy & Williams (in press).
AAP SBIRT Guidelines

Use validated screening tool to identify risk level and appropriate intervention

Abstinence
  Positive Reinforcement

Substance use without a disorder
  Brief Health Advice

Mild/moderate substance use disorder
  Brief Intervention

Severe substance use disorder
  Referral to Treatment

Levy & Williams (in press).
What is not included in BI?

• Anticipatory Guidance and Brief Advice
• Interventions delivered in subspecialty SUD treatment
• Interventions delivered in outpatient psychiatric care
Electronic interventions are considered separately from BI
BI Models

Brief Negotiated Interview

5 A’s

Project CHAT
Brief Negotiated Interview (BNI)

• Structured intervention comprised of 5 steps
• Based on Motivational Interviewing
• Also includes sharing information and offering advice

# ED BNI

<table>
<thead>
<tr>
<th>Components</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish rapport</td>
<td>Use open-ended questions</td>
</tr>
<tr>
<td></td>
<td>Demonstrate concern</td>
</tr>
<tr>
<td>Raise subject</td>
<td>Ask permission to discuss problem behaviors</td>
</tr>
<tr>
<td>Assess readiness to change</td>
<td>Use assessment tool (&quot;readiness ruler&quot;)</td>
</tr>
<tr>
<td></td>
<td>Discuss results</td>
</tr>
<tr>
<td>Provide feedback</td>
<td>Use objective data to show concerns</td>
</tr>
<tr>
<td></td>
<td>Elicit reactions from patient</td>
</tr>
<tr>
<td>Offer further support</td>
<td>Target patient’s readiness for change</td>
</tr>
</tbody>
</table>

Bernstein BNI: “Chillers” vs. “Copers”

Study design

Eligibility

- Youth ages 14-21 in PED
- Engaged in high-risk alcohol use and/or
- Had experienced consequences related to drinking and/or
- Received a high Alcohol Use Disorders Identification Test (AUDIT) score

n = 60

Received an intervention – 30 minute BNI

Participated in 60-minute follow-up interview

Bernstein BNI: “Chillers” vs. “Copers”

Interviewees were divided into two groups:

**Chillers:** drinking has social motives, enjoyment-seeking

**Copers:** drinking to relieve stress, lacking other sources of resilience, less goal-oriented
Bernstein BNI: Reaching Adolescents for Prevention (RAP)

Study design

Eligibility

• Youth ages 14-21 in PED
• Reported binge drinking and/or
• Reported high-risk behaviors in conjunction with alcohol use and/or
• Received a high Alcohol Use Disorders Identification Test (AUDIT) score

n = 858

Randomized into one of 3 groups

• Minimal assessment control
• Standard assessment
• Intervention – 20-30 minute BNI

Bernstein J et al. A brief motivational interview in a pediatric emergency department, plus 10-day telephone follow-up, increases attempts to quit drinking among youth and young adults who screen positive for problematic drinking. Acad Emer Med 2010, 17(8), 890–902.
Bernstein BNI: Reaching Adolescents for Prevention (RAP)

<table>
<thead>
<tr>
<th>Question</th>
<th>Follow-up visit</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you tried to cut back on drinking?</td>
<td>3 months</td>
<td>2.82 (1.79-4.44)*</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>1.48 (0.98-2.26)</td>
</tr>
<tr>
<td>Have you tried to quit drinking?</td>
<td>3 months</td>
<td>2.01 (1.32-3.05)*</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>1.77 (1.17-2.67)*</td>
</tr>
<tr>
<td>Have you tried to be careful about situations you got into when drinking?</td>
<td>3 months</td>
<td>1.72 (1.07-2.78)*</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>1.66 (1.05-2.62)*</td>
</tr>
</tbody>
</table>

* Indicates statistical significance.

Bernstein J et al. A brief motivational interview in a pediatric emergency department, plus 10-day telephone follow-up, increases attempts to quit drinking among youth and young adults who screen positive for problematic drinking. Acad Emer Med 2010, 17(8), 890–902.
Adapted ED BNI

- 5-10 minutes (cut from 30 minutes)
- Adjusted for context based on risk for drinking or current drinking habits

# Adapted ED BNI

<table>
<thead>
<tr>
<th>Components</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess</td>
<td>3-question 2-minute NIAAA screen</td>
</tr>
<tr>
<td>Review screening results</td>
<td>NIAAA guidelines for low-risk drinking</td>
</tr>
<tr>
<td>Connect alcohol use to reason for ED visit/health concerns</td>
<td></td>
</tr>
<tr>
<td>Enhance motivation</td>
<td></td>
</tr>
<tr>
<td>Assess readiness to change</td>
<td>Readiness ruler</td>
</tr>
<tr>
<td>Negotiate specific action plan to reduce risks and consequences related to drinking</td>
<td>Prescription for change</td>
</tr>
</tbody>
</table>

ED BNI and Cannabis

Study design

Eligibility

- Youth ages 14-21 in PED
- No reports of “at risk” alcohol use, and
- Reported smoking marijuana at least 3 times in the past 30 days, or
- Reported risky behavior temporally associated with marijuana use

n = 149

Randomized into intervention, assessed control, or non-assessed control groups

Surveyed at baseline and at 3- and 12-month follow-ups
## ED BNI and Cannabis: Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention (n)</th>
<th>Control (n)</th>
<th>OR (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>After 3 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstinent</td>
<td>6</td>
<td>7</td>
<td>1.15 (0.36-3.73)</td>
<td>0.814</td>
</tr>
<tr>
<td>Not abstinent</td>
<td>35</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>After 12 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstinent</td>
<td>21</td>
<td>12</td>
<td>2.89 (1.22-6.84)</td>
<td>0.014*</td>
</tr>
<tr>
<td>Not abstinent</td>
<td>26</td>
<td>43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicates statistical significance.

Bernstein E et al. Screening and Brief Intervention to Reduce Marijuana Use Among Youth and Young Adults in a Pediatric Emergency Department. *Acad Emer Med* 2009, 16(11):1174-1185.
ED BNI and Cannabis: Results

Outcomes by randomization group: Days per month using marijuana using timeline follow-back

Change baseline to 3 months
Decline in marijuana use greater in intervention group by −4.2 days/month (95% CI -8.1 to -0.3).

Change baseline to 12 months
Decline in marijuana use greater in intervention group by -5.3 days/month (95% CI -10 to -0.6).
5 A’s

- Structured intervention comprised of 5 steps
- Initially developed for addressing tobacco use
- Educational component is minimized

5 A’s

ASK: Identify/document substance use status

ADVISE: In a clear, strong, and personalized manner, urge user to quit

ASSESS: Is the substance user willing to make a quit attempt at this time?

ASSIST: For the patient willing to make a quit attempt, redirect to resources to help them quit

ARRANGE: Schedule follow-up contact, in person or by telephone, preferably within the first week after the quit date
5 A’s: High School Nurses

Study design

Cluster design with 35 high schools

Eligibility

• Adolescents in grades 9-12
• Reported past 30-day smoking and interest in quitting

n = 1068

Randomly assigned to 5 A’s or information-attention control (4 nurse visits each)

Completed surveys at baseline, 3 months, and 12 months

## 5 A’s: High School Nurses

### After 3 months

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence from tobacco</td>
<td>1.90 (1.12-3.24)*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted mean (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking amount (cigarettes/past week)</td>
<td>−5.4 (−9.8 to −1.1)*</td>
</tr>
<tr>
<td>Smoking frequency (days/past week)</td>
<td>−0.48 (−0.75 to −0.20)*</td>
</tr>
</tbody>
</table>

* Indicates statistical significance.

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5 A’s: Provider- and Peer-Delivered Interventions (PPDI)

Study design

Cluster design with 8 pediatric primary care clinics stratified by size

Eligibility

- Adolescents ages 13-17
- Smokers or non-smokers

n = 2690

Randomly assigned to 5 A’s or usual care control

5 A’s delivered by providers and peer counselors

- Provider: Ask, Assess, Assist
- Peer counselor: Advise, Arrange

5 A’s: Provider- and Peer-Delivered Interventions (PPDI)

### Non-smokers

- **Baseline**: 100%
- **6 mo**: 99.2%
- **12 mo**: 98.5%

- **OR** = 2.15; 95% CI 1.12-4.15

### Smokers

- **Baseline**: 5%
- **6 mo**: 36.4%
- **12 mo**: 27.7%

- **OR** = 1.59; 95% CI 1.06-2.40

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Project CHAT

• Structured intervention comprised of 3 steps
• Based on Motivational Interviewing
• Delivered by a health educator after handoff from another clinician
• Community-based participatory research approach, involving all parties in planning phases
  o Clinic staff
  o Parents
  o Adolescents
Project CHAT: Development

I have questions about drug use

She probably already knows about drugs

Having the doctor talk about it with her would be helpful

Project CHAT: Theoretic Model

Theoretical Elements in the Intervention

- Social Learning Theory: Normative feedback
- Influence of social environment

- Decision Making Theory: Discussion of short-term consequences
- Pros and cons of continuing or cutting down

- Self-Efficacy Theory: Strategies to avoid risky situations
- Goal setting

Intervention Delivery

- Motivational interviewing approach

Intervention Topics

- Individual risk factors
- Peer risk factors

Outcomes

- Social functioning & School performance
- AOD use & consequences

Project CHAT

Goals

- Help adolescents make healthier choices
- Minimize PCP burden
- Preserve adolescent, parent, and provider choices

<table>
<thead>
<tr>
<th>Part 1: Assess motivation to change</th>
<th>Part 2: Enhance motivation to change</th>
<th>Part 3: Make a plan</th>
</tr>
</thead>
</table>

Total: 15-20 min

Project CHAT

Study design

Adolescents at a community-based free health care organization

Eligibility

• Adolescents ages 12-18
• Considered high-risk (reported alcohol consumption and drug use and some consequences due to use)

n = 42

Randomized into Project CHAT or usual care control

Assessments

• CRAFFT screening
• Alcohol and Drug Use questionnaire
• Post-intervention feedback interview

Project CHAT: Results


ES: Standardized effect size.
* Indicates statistical significance.
Project CHAT: Results

ES = 0.79*

ES: Standardized effect size.
* Indicates statistical significance.


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Technology-based BI

Study design

Adolescents ages 13-17 in a PED completed a survey regarding baseline technology use, risky behaviors, and interest in and preferred format for interventions.

Results

Adolescents preferred technology-based BI

- Of those who reported risky behaviors, 84.8% (95% CI 77.3-92.2) were interested in a BI
- Of those who reported risky behaviors and were interested in a BI, 51.3% (95% CI 39.9-62.6) were interested in a technology-based intervention

HeadOn

• Interactive substance abuse prevention program for grades 6-8

• 15 sessions during the academic year, each 30-45 minutes

• Control: non-computerized Life Skills Training Program drug abuse prevention intervention

HeadOn: Results

Adjusted p-value = 0.033*

* Indicates statistical significance.

# HeadOn: Results

<table>
<thead>
<tr>
<th>Outcome measure</th>
<th>Pre-test Mean (SEM)</th>
<th>Post-test Mean (SEM)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of cigarette smoking</td>
<td>1.71 (0.18)</td>
<td>1.60 (0.17)</td>
<td>0.164</td>
</tr>
<tr>
<td>Frequency of alcohol use</td>
<td>1.83 (0.15)</td>
<td>1.60 (0.11)</td>
<td>0.004*</td>
</tr>
<tr>
<td>Frequency of marijuana smoking</td>
<td>1.31 (0.10)</td>
<td>1.33 (0.13)</td>
<td>0.611</td>
</tr>
<tr>
<td>How many people your age smoke cigarettes?</td>
<td>2.45 (0.09)</td>
<td>2.28 (0.09)</td>
<td>0.007*</td>
</tr>
<tr>
<td>How many people your age drink alcohol?</td>
<td>2.42 (0.09)</td>
<td>2.16 (0.08)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>How many people your age smoke marijuana?</td>
<td>2.28 (0.10)</td>
<td>2.13 (0.09)</td>
<td>0.040*</td>
</tr>
</tbody>
</table>

* Indicates statistical significance.
Frequencies measured on a 0-9 point scale. Prevalence beliefs measured on a 0-5 point scale.

SafERteens - Computerized BI and Alcohol

Goal
To examine the efficacy of ED-based BIs delivered by computer or therapist, with and without a post-ED session, on alcohol consumption and consequences.

Study Design

Eligibility
• Patients ages 14-20
• Screened positive for risky drinking

n = 836

Randomized to 1 of 3 intervention groups
• Computer BI
• Therapist BI
• Control

(1) Cunningham RM et al. Alcohol Interventions Among Underage Drinkers in the ED: A Randomized Controlled Trial, Pediatrics 2015.
SafERteens - Computerized BI and Alcohol: Results

After 3 months

<table>
<thead>
<tr>
<th>Variable</th>
<th>Computer IRR (95% CI)</th>
<th>Therapist IRR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol consumption index</td>
<td>0.86 (0.75-0.98)*</td>
<td>0.87 (0.76-0.98)*</td>
</tr>
<tr>
<td>Alcohol consequences</td>
<td>0.85 (0.76-0.95)*</td>
<td>0.87 (0.79-0.97)*</td>
</tr>
</tbody>
</table>

After 12 months

<table>
<thead>
<tr>
<th>Variable</th>
<th>Computer IRR (95% CI)</th>
<th>Therapist IRR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol consequences</td>
<td>0.86 (0.75-0.98)*</td>
<td>0.87 (0.76-0.98)*</td>
</tr>
</tbody>
</table>

ES: standardized effect size.
* Indicates statistical significance.

(1) Cunningham RM et al. Alcohol Interventions Among Underage Drinkers in the ED: A Randomized Controlled Trial, *Pediatrics* 2015.
Computerized BI and Cannabis

Study Design

Eligibility

- Patients ages 12-18
- Reported past-year cannabis use

n = 284

Randomized to 1 of 3 groups

- Computer-based intervention
- Therapist-based intervention
- Control

Follow-ups regarding cannabis use and cannabis-related consequences done at 3, 6, and 12 months

## Computerized BI and Cannabis: Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>3-month follow-up (95% CI)</th>
<th>6-month follow-up (95% CI)</th>
<th>12-month follow-up (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cannabis Use Frequency</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td><strong>0.53 (0.29, 0.95)</strong>*</td>
<td><strong>0.61 (0.37, 0.99)</strong>*</td>
<td><strong>0.86 (0.58, 1.27)</strong></td>
</tr>
<tr>
<td>Therapist</td>
<td>0.84 (0.49, 1.42)</td>
<td>0.66 (0.41, 1.06)</td>
<td>0.94 (0.21, 4.18)</td>
</tr>
<tr>
<td><strong>Other Drug Use Frequency</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td><strong>0.52 (0.31, 0.86)</strong>*</td>
<td>0.97 (0.61, 1.55)</td>
<td>0.78 (0.38, 1.58)</td>
</tr>
<tr>
<td>Therapist</td>
<td>0.65 (0.39, 1.08)</td>
<td>0.63 (0.37, 1.07)</td>
<td>0.90 (0.39, 2.04)</td>
</tr>
<tr>
<td><strong>Alcohol Use Severity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td>0.93 (0.52, 1.68)</td>
<td>0.66 (0.42, 1.04)</td>
<td>1.22 (0.75, 1.99)</td>
</tr>
<tr>
<td>Therapist</td>
<td>1.38 (0.78, 2.43)</td>
<td><strong>0.57 (0.36, 0.91)</strong>*</td>
<td>1.36 (0.84, 2.23)</td>
</tr>
</tbody>
</table>

* Indicates statistical significance.

Works in Progress

Marsch
• **Step Up** – targets adolescents with SUD
• **Pop4Teens** – targets prescription opioid misuse prevention

Levy
• **Take Good Care** – targets alcohol use in youth with chronic medical conditions
Summary

• In person:
  o All three models have demonstrated efficacy
  o Reductions in alc/tob/MJ all seen
  o Pragmatic trials, implementation studies and comparative effectiveness needed

• Technology-based:
  o Promising
  o Practical given low demand on provider time
  o Very limited exportation outside of trials