The Science of Addiction: Implications for Drug Courts

MAUREEN BOYLE, PH.D.
CHIEF SCIENTIFIC OFFICER, ADDICTION POLICY FORUM
MAY 30, 2018
The Addiction Policy Forum is a diverse partnership of organizations, policymakers and stakeholders committed to working together to elevate awareness around addiction and to improve national policy through a comprehensive response that includes prevention, treatment, recovery and criminal justice reform.

We envision a world where fewer lives are lost and help exists for the millions of Americans affected by addiction every day.
Scope of the Crisis
The Scope of the Epidemic

Substance use has devastating impacts on families across the United States.

- More than **21 million Americans** are struggling with a substance use disorder
- **63,632 people** died from drug overdoses in 2016 – 21 percent more than 2015
- Approximately **88,000 Americans** die each year from Alcohol-related illnesses
  - Alcohol directly caused 30,722 deaths – due to alcohol poisonings and cirrhosis of the liver
- Tobacco, alcohol, and illicit drug use cost our Nation more than **$700 billion** annually in costs related to crime, lost work productivity and health care.

[https://www.174aday.org/](https://www.174aday.org/)
What is Addiction?
Addiction is a Pediatric Disease

- 90 percent of adults with any substance use disorder initiated use as teens
- Early adverse experiences strongly influence risk for substance use disorder
  - Child neglect and maltreatment
  - Drug use and addiction among parents

Brain Development Continues Until the Early to Mid 20’s
Experiences
Drive Brain Development
LIFE TRAJECTORY

Age

Critical Period

POTENTIAL
Addiction is a Pediatric Disease

9 out of 10 people with a substance use disorder started using in adolescence.

Those who use addictive substances before age 15 are 6.5 times more likely to develop an addiction as those who delay use until age 21 or older.

11% of adolescents develop a substance use disorder before they reach 18.

Earlier onset of substance use predicts greater addiction severity.

Delaying Initiation is Key to Prevention.

Addiction Change the Reward Circuit
Limbic system

Basic instincts and survival
The Reward Circuit Reinforces Behaviors that are Essential for Survival
What makes substances addictive?
Hijacking the Survival Center
Your Brain Likes to Stay Balanced

Dopamine Transporter

Dopamine Receptor

Dopamine

Dopamine Receptors

No SUD

With SUD
Decreased Dopamine Receptors

Decreased Activity in the Prefrontal Cortex

Poor Impulse Control and Decision Making

“I NEED it to SURVIVE”

“But I want to get healthy”
Addiction Changes Your Stress Response

In a healthy brain:
• the stress response is activated
• cortisol is released and spreads through the body
• when cortisol reaches the brain it turns off the stress response

In an addicted brain:
• The brain circuits that normally turn off the stress response don’t work very well
• Their stress response stays on high for longer
“I NEED it to SURVIVE”
Key Elements of a Comprehensive Response

**Criminal Justice Reform**
Provide evidence-based treatment in the jails and prisons and expand alternatives to incarceration to treat individuals in communities.

**Prevention**
Expand prevention and education efforts aimed at teens, parents, other caretakers.

**Law Enforcement**
Improve coordination between law enforcement and the treatment community so police can better connect individuals with substance use disorders to drug treatment.

**Treatment**
Expand evidence-based treatment nationwide including medication-assisted treatment (MAT).

**Recovery Support**
Expand recovery services to support individuals in recovery, including resources in high schools, institutions of higher learning, and nonprofit organizations.

**Overdose Reversal**
Expand the availability of naloxone to law enforcement agencies, first responses and families to help in the reversal of overdoses to save lives.

**Research**
Expand funding to develop and test effective strategies to prevent, treat, and support recovery from substance use disorders.
Why not everyone?

Why doesn’t everyone who uses alcohol or drugs become addicted?

**Individual Factors**
- Lack of parental monitoring/unstable home
- Lack of attachment to community or school
- Exposure to trauma or violence
- Early onset of use of alcohol or drugs

**Environment**
- High drug availability
- Community culture around alcohol and drugs
- Poverty

**Genetic Factors**
- About half of a person’s risk of becoming addicted to nicotine, alcohol, or other drugs depends on his or her genetic makeup.
Understanding Risk and Protection

**Risk Factors**
- Genetic disposition
- Prenatal alcohol and/or drug exposure
- Parents who use drugs and/or alcohol or who suffer from mental illness
- Child abuse and maltreatment
- Inadequate supervision
- Neighborhood poverty and violence
- Norms and laws favorable to substance use
- Adverse Childhood Experiences

**Protective Factors**
- Parental involvement
- Health peer involvement
- Availability of faith-based resources
- After-school activities
- Policies limiting the availability of alcohol
- Attachment to community
- Pro-social engagement
- Connectedness to adults outside of family
Drug Use and Addiction are Preventable

**MODIFIABLE RISKS**
- Early aggression
- Social skills deficit
- Academic problem
- Misperceived drug use norms
- Association with deviant peers
- Neighborhood availability
- Media glamorization

**INTERVENTIONS**
- Parent skills training
- Social skills training
- Self-regulation
- Impulse Control
- Tutoring
- Norms training
- Refusal skills
- Community policing
- Health Literacy
TREATMENT

- **Criminal Justice Reform**: Provide evidence-based treatment in the jails and prisons and expand alternatives to incarceration to treat individuals in communities.

- **Law Enforcement**: Improve coordination between law enforcement and the treatment community so police can better connect individuals with substance use disorders to drug treatment.

- **Recovery Support**: Expand recovery services to support individuals in recovery, including resources in high schools, institutions of higher learning, and nonprofit organizations.

- **Prevention**: Expand prevention and education efforts aimed at teens, parents, other caretakers.

- **Treatment**: Expand evidence-based treatment nationwide including medication-assisted treatment (MAT).

- **Overdose Reversal**: Expand the availability of naloxone to law enforcement agencies, first responders and families to help in the reversal of overdoses to save lives.

- **Research**: Expand funding to develop and test effective strategies to prevent, treat, and support recovery from substance use disorders.
Screening and Early Intervention

- **Primary Care Based Screening**
  - Intervene for risky use
  - Identify those with a SUD
  - Link to appropriate treatment
Addiction is Progressive

Higher Severity = Higher Risk

As substance use problems escalate

Mental health problems
Physical health problems
Life and relationship problems
Risk of Death
Do NOT Wait for Rock Bottom

The sooner treatment starts the better the chances of long term recovery
Medications for Opioid Addiction

- Full Agonist (Methadone)
- Partial Agonist (Buprenorphine)
- Antagonist (Naltrexone)
Medications Are Effective and Save Lives

OUD Medications DECREASE:
• Opioid use
• Opioid-related overdose deaths
• Criminal activity
• Infectious disease transmission

And INCREASES
• Social functioning
• Retention in treatment

Treatment Gap for OUD

Williams AR, Nunes E, Olfson M. Health Affairs Blog, 2017
Efficacy of Medications

After buprenorphine became available in Baltimore, heroin overdose deaths decreased by 37%.

But Medications Remain Underused

In 2014, the proportion of opioid admissions with treatment plans that included receiving medications was 25%.

Sources: Schwartz et al, 2013.
Addressing Misconceptions

Methadone and buprenorphine **DO NOT** produce a high in someone with an opioid addiction

- Dosage used helps to reduce opioid cravings and withdrawal
- These medications restore balance to the brain circuits affected by addiction, allowing the patient’s brain to heal while they work towards recovery.
Study Comparing Buprenorphine with Extended-Release Naltrexone

*Two studies found that they were able to initiate less patients on naltrexone but *once started* on medication outcomes were similar to buprenorphine.*

Sustained Recovery Requires **Sustained Care**

Opioid addiction is a chronic brain disorder that requires sustained medical treatment.
LAW ENFORCEMENT & CRIMINAL JUSTICE REFORM

Criminal Justice Reform
Provide evidence-based treatment in the jails and prisons and expand alternatives to incarceration to treat individuals in communities.

Law Enforcement
Improve coordination between law enforcement and the treatment community so police can better connect individuals with substance use disorders to drug treatment.

Recovery Support
Expand recovery services to support individuals in recovery, including resources in high schools, institutions of higher learning, and nonprofit organizations.

Prevention
Expand prevention and education efforts aimed at teens, parents, other caretakers.

Treatment
Expand evidence-based treatment nationwide including medication-assisted treatment (MAT).

Overdose Reversal
Expand the availability of naloxone to law enforcement agencies, first responders and families to help in the reversal of overdoses to save lives.

Research
Expand funding to develop and test effective strategies to prevent, treat, and support recovery from substance use disorders.
Drugs & Crime

Substance Use

Adults
- 71% regularly use drugs
- 66% regularly use alcohol
- 58% meet criteria for SUD

Juveniles
- 70% prior drug use
- 40% regularly use Alcohol
- 37% meet criteria for SUD

Justice Populations aren’t getting treatment

Need Treatment
- 5,613,739 adults
- 253,034 juveniles

Any Treatment
- 15% adults
- 21.5% juveniles

Medication
- 0.4% adults
- NA

Justice System Responses to the Opioid Crisis
Missed Opportunities to Improve Public Health & Public Safety

- Most people in the justice system meet the criteria for SUD, but only 15% receive any treatment while detained (Bronson & Stroop, 2017)
  - Fewer than 1% receive medications
- Involuntary cessation of medications during incarceration leads to later aversion to treatment (Maradiaga et al, 2016)
- 129x risk of dying of a drug overdose during re-entry (Bingswanger et al; 2007)
- Agonist medications during incarceration cuts mortality by 75% (Marsden et al, 2017) and doubles treatment engagement (e.g., Gordon et al, 2014; Rich et al., 2015; Wagner et al. 2015)
- Justice-referred patients are ~1/10 as likely to receive agonist medications as other patients (Krwaczk et al, 2017)
- Many drug courts prohibit agonist medications (Matusow et al., 2013) or express strong preference for naltrexone (Festinger et al., 2017)
High Drug Overdose Risk Among Criminal Justice Involved

Death Among Recent Inmates of the Washington State Corrections Compared to Other State Residents

Drug possession arrests linked with **5 fold** increased risk for overdose over next 6 months

Addiction Treatment in Prison Saves Lives

Treatment in prison reduces mortality

Two studies in Australia and England found treatment with medication while in prison reduced mortality by 75% in the first 4 weeks after release.

New Study: Decreased Fatal Overdoses After Providing Access to Medications in RI Statewide Correctional System

A similar study in England study found an 85% reduction in drug overdose deaths.

Degenhardt, 2014; Marsden et al. 2017; Green et al., JAMA Psych 2018
Addiction Treatment in Prison

Methadone Experiment: 6 Mo Post Release (N=201)

Gordon et al, 2008
Sequential intercept is a different framework for the criminal justice system’s handling of substance use disorders through implementation of criminal justice diversion policies, medication assisted treatment and other treatment programs and practices that intervene at the earliest point in the system to divert into community treatment, improve consumer outcomes and reduce costs.
Summary

- Addiction is a pediatric brain disorder
- The criminal justice system has a critical role to play in preventing and treating addiction
- Complex biological, developmental, and social aspects of addiction require multipronged responses
- We have solutions but we need to implement them broadly
WHAT REALLY WORKS IN TREATING ADDICTION: EVIDENCE-BASED BEHAVIORAL THERAPIES

FAYE S. TAXMAN, PH.D.
CENTER FOR ADVANCING CORRECTIONAL EXCELLENCE!
GEORGE MASON UNIVERSITY
FTAXMAN@GMU.EDU
WWW.GMUACE.ORG
TODAY’S PRESENTATION

- Cognitive behavioral interventions
  - Behavioral Therapy
  - Mindfulness
  - Trauma-Informed Care, & Responsivity
  - Relapse prevention
- Problem Solving Courts & Individual Reinforcements
- Fidelity and Continuous Quality Improvement
- Technology

Goal: inspire you to advance the practice of behavioral interventions in problem solving courts including address socio-cultural issues
EVIDENCED BASED PRACTICES LEADS TO BETTER (POSITIVE) OUTCOMES

- Education (Psycho-Social)
- Non-Directive Counseling
- Directive Counseling
- Motivational Interviewing
- Moral Reasoning
- Emotional Skill Development
- 12 Step with Curriculum
- Mindfulness
- Cognitive Processing
- Cognitive Behavioral (Social Skills, Behavioral Management, etc.)
- Therapeutic Communities
- Medically Assisted Treatments

- Intensive Supervision
- Boot Camp
- Case Management
- Incarceration
- TASC
- DTAP (Prosecutor Diversion, Diversion to TX, 12 Month Residential)
- Tx with Sanctions (e.g. Break the Cycle, Seamless System, etc.)

- Drug Courts
- RNR Supervision
- In-Prison Tx (TC) with Aftercare
- Contingency Management
Cognitive behavioral interventions
- Behavioral Therapy
- Mindfulness
- Trauma-Informed Care, & Responsivity
- Relapse prevention

Problem Solving Courts & Individual Reinforcements
Fidelity and Continuous Quality Improvement
Technology
✓ Consistent Meta-Analysis Findings

✓ 20-25% reduction in recidivism with professional staff

✓ Skill building, not just talk therapy

COMPONENTS OF GOOD CBT

- Individual Counseling—one-on-one
- Group—8 to 10 people with skilled facilitator
- Coping/Stress Management—Ability to manage daily life; mindfulness
- Homework/Exercises---Practice, Practice, Practice (role play)
  + Peer Mentors (Support)

Works and reinforced via various mediums

- Individual Counseling—one-on-one
- Group—8 to 10 people with skilled facilitator
- Coping/Stress Management—Ability to manage daily life; mindfulness
- Homework/Exercises---Practice, Practice, Practice (role play)
  + Peer Mentors (Support)
MINDFULNESS—EXTENSION OF COPING/STRESS MANAGEMENT

- Regulation Control
- Focus on Inner Strength
- Use of breath and mind control
- Yoga, meditation
- Part of traditional CBT (but not typically in criminal justice-involved CBT)
- Evidence-informed—building knowledge base about importance of mindfulness
Landenberger & Lipsey (2006) meta-analysis of 58 programs found effective CBT programs when:

- Researcher involved
- Solid implementation
- Target higher risk (need) individuals
- Includes anger management or cognitive restructuring component
- Provide supplementary individual sessions
- Sufficient duration
- Community treatment programs (not in prison)
- Core treatment elements are important such as interpersonal problem solving, anger control, victim impact and behavior modification as long as they are central to the intervention
- Use some manual but it does not have to be a "branded" manual
MAJOR THREATS TO ACHIEVING CBT EFFECTIVENESS

- Variability in adherence to program design by programs, sites, and research contexts (i.e. efficacy, effectiveness, program evaluations) (Hallgren, Dembe, Pace, Imel, Lee, Atkins, 2018)

- Overemphasis on Manualized Treatments (and Workbooks) ✔✔✔
  - Few Manuals Experimentally Tested (limited RCTs)—Thinking for A Change (favored) has 1 quasi-experimental study; MRT has a few but the population is limited (white males)
  - Little evidence to suggest that staff adhere to the treatment curriculum or manual
  - Little staff “processing” of key cognitive processes of thoughts, feelings, consequences, and alternative options

- Staff poorly trained to facilitate the *processing* component of CBT therapy

- Lack of program quality, and inconsistency among problem solving court components
CBT INTERVENTIONS & PROGRAMMING

- Most interventions were originally developed in the 1980s-1990s with few modifications.
- Most interventions were originally developed for white males (and mostly alcoholics).
- Most programs are generic, and tend to be deficit based.
- Most programs rely upon the skill of staff to handle the multitude of challenging “life” issues.
- Most programs do not tailor the program to the clients (responsivity), or address common special needs.
- Few specialized problem solving courts can not articulate a theory of change.

A good CBT program needs to have a theory of change—what mechanism(s) is the program working on the advance change in an individual.
Impaired Control (Criterion 1-4)
- Diminished control over their substance use.

Social Impairment (Criterion 5-7)
- Disruption to an individual’s regular social interactions as a result of their substance use.

Risky Use (Criterion 8-9)
- Dangerous or harmful actions and situations as a result of an individual’s substance use.

Pharmacological Criteria (Criterion 10-11)
- Physical symptoms experienced by an individual as a result of their substance use.

2-3 symptoms: Mild
4-5 symptoms: Moderate
6+ symptoms: Severe
Reconceptualizing the Concepts

Criminal Thinking
- Criminal Attitudes
- Thinking Errors

Offender Schema
- Criminogenic Cognitions
- Cognitive Distortions
- Criminal Beliefs

Developmental Lifestyle Cognitions Schema
Ideal Citizen

“...this process is an attempt by correctional staff to produce an ideal of White middle-class citizenship. This “ideal” runs directly counter to the young people’s identities...the programs push young people to reject those positions and demanding that they embrace a sanitized version of selfhood”

Reformed Self

“written assignments, contracts, journals, and other forms of therapeutic work are intended to...reflect on the past self and to work toward a new law-abiding, moral self....The CBT programs used in the facilities are devoid of language about the role of social structure in shaping young people’s lives...these programs force youth to hold themselves accountable for things beyond their control“ (pg 12)

Skills  Skills taught contradict with survival skills needed outside of the facilities.

Program viewed as punishment, not as helpful guidance or skill building
MAJOR GAPS IN CURRENT CBT PROGRAMMING

- Failure to Address:
  - Desistance approaches that assist individuals develop and use *redemption* scripts (Maruno, 2001) (future orientation)
  - Strengths based approaches to reduce offending
  - Ethnic-racial socialization factors that reduce offending (Gaston & Doherty, 2017)
  - Genderized versions of “criminal selves” (Wyse, 2013)
  - Integration of developmental science (Mulvey, 2014)
  - Justice involvement/coerced mobility as Post-Traumatic Stress Syndrome
Young Adulthood is characterized by:

- Psychosocial development
- Rapid transitions
- Greater freedom
- Fewer social controls

**Learning/Doing**: Learning and practical experiences to be a community leader and responsible adult. Builds character to alter thinking and behavior

**Attaching/Belonging**: Increasing engagement in school, church, or civic activities forms a pathway for connections to the community and others that can be role models. Provides a strong social network for support.

Through—Work; Education; Relationships; Community; Health; and Creativity.

Less deficit-based

Use of incentives to reinforce positive behaviors
HOMELESSNESS

- Intractable problem, chronic
- Various forms of homelessness including evictions

- Conducting assertive, community-based outreach
- Nurturing trusting, caring relationships with clients
- Respecting client autonomy
- Prioritizing client self-determined needs
- Providing clients with active assistance to obtain needed resources
- Access to “Housing First” models which are not judgmental about behaviors and promote permanent housing
Women
- Internalizing: self-harm, eating disorders, addiction, avoidance
- Likely to seek mental health but not SUD treatment
- Need for empowerment, emotional regulation, safety

Men
- Externalizing: violence, substance abuse, crime and hyper-arousal
- Likely to seek SUD but not mental health care
- Need to emphasize feelings, relationships, empathy
SAMSHA’S TRAUMA-INFORMED PRINCIPLES

- *Safety* that promotes an awareness of interpersonal interactions and provides a safe physical setting.
- *Trustworthiness* and *transparency* with the goal of building and maintaining trust by the clients (and families) it serves.
- *Collaboration* and *mutuality* between staff and clients and within the organization itself.
- *Empowering* clients by recognizing and validating client’s strengths, while developing new skills when necessary.
- *Voice* and *choice*, with a recognition of the importance of an individualized approach.
- *Peer support* and *mutual self-help* are important elements and are essential for building trust, establishing safety and empowering clients.
- A *resilience* and *strengths-based* approach focuses on a belief in the client’s ability to recover from their trauma and heal and builds off of what they have, or their strengths.
- *Inclusiveness* and *shared purpose* are important elements the organization should encompass, as there are many possible roles for individuals to play in a trauma-informed approach.
- The organization takes into consideration *cultural, historical, and gender issues*.
What changes would you make to your CBT curriculum and therapy based on our research evidence?
JUSTICE ACTORS USE OF CBT

- Cognitive behavioral interventions
  - Behavioral Therapy
  - Mindfulness
  - Trauma-Informed Care, & Responsivity
  - Relapse prevention

- Problem Solving Courts & Individual Reinforcements

- Fidelity

- Continuous Quality Improvement
JUSTICE ACTORS

- CBT is a process, not just an event
- CBT should be practiced in the courtroom and probation office, not just in group therapy or the clinic
- Justice actors should be trained in:
  - Whatever CBT curriculum, exercises that are used in the program
  - CBT to accomplish cognitive restructuring
  - Motivational enhancements
  - Positive psychology
  - Trauma-informed care of empathy, compassionate care, grounding, and de-escalation
REINFORCEMENTS

- Social Justice
  - Racial, ethnic, gender neutral
  - Social capital
  - Trust & Fairness

- Citizenship
  - Role in Society
  - Community Engagement
  - Member of the Community

- Acknowledge Experiences
  - Prior Justice Involvement
  - Family History

- Exercises & Practice, Practice, Practice (role play)
FIDELITY TO THE MODEL

- Cognitive behavioral interventions
  - Behavioral Therapy
  - Mindfulness
  - Trauma-Informed Care, & Responsivity
  - Relapse prevention
- Problem Solving Courts & Individual Reinforcements
- Fidelity and Continuous Quality Improvement
- Technology
PROGRAM QUALITY MATTERS

Lowenkamp, et al., 2006; see also Nesovic, 2003
RNR SIMULATION TOOL

www.gmuace.org/tools

RNR SIMULATION TOOL

BJA: 2009-DG-BX-K026, PI Taxman

DECISION SUPPORT FOR TREATMENT AND JUSTICE (PRETRIAL, IN-CUSTODY, COMMUNITY SUPERVISION, ANY JUSTICE POINT) PROFESSIONALS
Evidence based treatments consist of:

- Solid theoretical foundation with clear mechanisms of action
- Well qualified staff
- Well designed curriculum that addresses clear behavioral targets
- Sufficient dosage to advance recovery goals
- Supports for recovery
- Swift, certain responses
- Supports “hope”—an identity of a changed person
PROGRAM QUALITY

- 60-90 minute On-line survey of program structure and features
- Uses criteria from research literature
- Includes CPC+ASAM+LOCUS; behavioral health
- Identifies major areas of strengths and weaknesses
- Focuses on quality improvement
- Provides feedback for strategic plans and TA
## Applications of CBT

<table>
<thead>
<tr>
<th>Severe Substance Use Disorders</th>
<th>Includes severe substance use disorder, mild or moderate substance use disorder, alcohol dependence, and alcohol abuse.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Making</td>
<td>Includes the &quot;Big 4&quot; criminogenic needs of history of antisocial behavior, antisocial personality pattern, antisocial associates, and antisocial cognitions.</td>
</tr>
<tr>
<td>Self-Improvement and Management</td>
<td>Building skills for functioning appropriately and productively in society, including developing problem-solving skills, learning to manage mental health symptoms and SUD.</td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>Building skills for relating to others and developing close relationships</td>
</tr>
<tr>
<td>Life Skills</td>
<td>Building skills needed to maintain independence and facilitate interpersonal and social skills, including financial stability, etc.</td>
</tr>
<tr>
<td>Other (justice &amp; non-justice services)</td>
<td>Non-clinical interventions, such as restorative justice interventions and requirements serving only as punishment for offending (e.g., fines, community service).</td>
</tr>
<tr>
<td>Case Management</td>
<td>Conducting assessments and providing referrals to services</td>
</tr>
<tr>
<td>Housing</td>
<td>Temporary/supportive housing services with referrals to other programming and services.</td>
</tr>
</tbody>
</table>
## PROGRAM GROUP: Interventions Targeting Severe Substance Use Disorders (A)

### RISK

100%

### NEED

67%

### IMPROVEMENT

83%

**Implementation**

Programs scoring high on the Implementation domain of the RRQ Program Tool for Adults in Level A have specific completion criteria requiring participants to successfully complete all program requirements. Treatment and supervision/correctional staff communicate at least monthly about individual’s progress, have been evaluated by an external entity, use an evidence-based treatment manual, use coaching model for staff development, assess quality using external audits, and are operated by all clinical staff with advanced degrees (e.g., MA, PhD, LCSW, etc.).

Improvements can be made by:

- Revising completion criteria so it is based on improvement of symptoms or meeting requirements/expectations, rather than attendance or length of program.
- Limiting the treatment team to clinical staff only.
- Having an external evaluator assess your program for quality and fidelity to the model.
- Using a treatment manual developed by an outside entity, such as a proprietary curriculum manual.
- Assessing program quality through an external quality assurance audit.
- Receiving technical assistance.

### DOSAGE

100%

### RESTRICTIVENESS

100%

### OVERALL SCORE

72%
30 Program Results
QUALITY IMPROVEMENT: THE PDSA MODEL

1) **Plan:**
   - What solution will you test?
   - What is the anticipated outcome?

2) **Do:**
   - What steps will you take?
   - When?
   - Who is responsible?

3) **Study:**
   - What are the results?
   - How do they compare to baseline?
   - Was it implemented as planned?

4) **Act:**
   - Adopt
   - Adapt
   - Abandon
ADULT COMMUNITY SUPERVISION GAP ANALYSIS: NEED MORE DECISION MAKING
TECHNOLOGY AS A CLINICAL EXTENDER

- Cognitive behavioral interventions
  - Behavioral Therapy
  - Mindfulness
  - Trauma-Informed Care, & Responsivity
  - Relapse prevention
- Problem Solving Courts & Individual Reinforcements
- Fidelity and Continuous Quality Improvement
- Technology
Technology-based interventions are a viable treatment option and address:

- transportation or scheduling problems that may impede consistent treatment attendance,
- the provision of geographically dispersed treatments, and
- the inherent challenges of providing clinic-based programs that implement evidence-based treatments.
- customizing intervention content
- engaging difficult to treat individuals.
Funded by R01 DA029010-01

Scott Walters, Ph.D.,
University of North Texas

Faye S. Taxman, Ph.D., & Jennifer Lerch, A.B.D.,
George Mason University

RTI Team

Alexander Cowell, Ph.D.

Gary Zarkin, Ph.D.

Brendan Wedehase, BA
ABOUT MAPIT

- Web-based intervention targeting substance abuse and probation success.
- 2-sessions (45 min each), approx. 30 days apart.
- Includes risk assessment, planning, social support, automated reminders.
- Designed to be compatible with existing probation system.
- Evaluated in an RCT, with follow-ups at 2 and 6 months.
## THEORETICAL BACKGROUND

<table>
<thead>
<tr>
<th>Theory</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extended Parallel Process Model</strong></td>
<td>Risk of probation violation based on static and dynamic factors; Future behaviors most likely to reduce risk.</td>
</tr>
<tr>
<td><strong>Social Cognitive Theory</strong></td>
<td>How clients compare to others; Framing suggestions in terms of what other people do; Videos of model responses.</td>
</tr>
<tr>
<td><strong>Motivational Interviewing</strong></td>
<td>Affirmations, Reflections, Summaries; Interactive tone that emphasizes autonomy, collaboration, evocation.</td>
</tr>
</tbody>
</table>
Your Overall Risk → Medium

It doesn't mean that your risk is definitely at this level, or that you will not do well on probation. It’s just a guess by comparing your information to others who have been on probation.

Static Risk → Your Background

- Personal and family history.
- Age of first arrest.
- Past and current charges.
Family
- Family environment can make things more challenging.

- Not having a lot of good role models, or being unhappy with current family relationships.

- Programs can help with communication or parenting skills.
Success Rate

What happens if people: yes no

Change peer group  

Have a stable employment  

Attend substance abuse treatment  

Change Peer Group
Avoiding people who get you in trouble can lower a person's risk by about xx%. This means making a decision to stay away from people who use drugs or alcohol, or who are engaged in criminal behavior.
You reported consuming an average of:

- xx drinks in a typical month

On your heaviest drinking day, you reported:

- consuming xx drinks
You reported consuming an average of:

→ xx drinks in a typical month

On your heaviest drinking day, you reported:

→ consuming xx drinks

This puts you at the xxth percentile of American males.
You reported consuming an average of:
   \( xx \) drinks in a typical month

On your heaviest drinking day, you reported:
   consuming \( xx \) drinks

This puts you at the \( xx \)th percentile of American males.

Your estimated risk of having health or social problems:
is high.

Would you like to know where this information comes from?
☐ Yes  ☐ No
Drug & Alcohol problems usually fall into 5 areas:

- Health Problems
- Relationship Problems
- Personal Problems
- Risky Behavior
- Neglecting Responsibilities
- Legal Problems

**Health Problems**
Health problems can include getting sick, not eating well or forgetting to take care of yourself. Drug use can also increase HIV risk.
Making the Program “Smart”
CUSTOMIZATION

- The narrator can pronounce the person’s name.
- The narrator can read (almost) everything. Even survey questions on demand.
- Tailored reflections based on single-item responses.
- Tailored reflections/information/suggestions based on multi-question response patterns.
- Responses can connect to earlier material, or push a little bit beyond what the person said.
- The program can “dial up” or “dial down” the language based on response strength.
Closed question to gauge reaction to information.
Tailored reflection based on response.
Closed question to gauge reaction to information.
Tailored reflection based on response.
MOTIVATION

Questions target a few underlying constructs.
Thanks for sticking with me. You said that your most important reasons for completing probation had to do with your relationships and the hassle of paying probation fees. Based on this, you are fairly committed to completing probation. One thing you thought you could do in the next week is to get rid of all your drug equipment so that you’re not tempted to use. I’ll make sure to text you, and remind you about your goal.

Thanks for sticking with me. You said that your most important reasons for completing probation had to do with the shame of being on probation and wanting to avoid future legal trouble. Based on this, you are very committed to completing probation. You’re willing to do whatever it takes. One thing you thought you could do in the next week is to put a phone number in your phone of someone you could call if you needed to talk. I’ll make sure to text you, and remind you about your goal.
Most people set a couple short-term goals before their next visit. What are some things you would like to accomplish regarding your treatment progress?

Here are some other things that people sometimes say:

- Talk to someone with clean time to see how they did it.
- Look through my house and vehicle and throw out any drugs or drug equipment.
- Put a number in my phone of someone I could call if I needed to talk.
- Make a list of some things I could do to stay sober.

What List? View My List
If you like, you can set up reminders about the things on your list. Reminders might help you complete your goals, boosting your probability of success.

Would you like to take advantage of this resource?

- Yes, send reminders via text message
- Yes, send reminders via email
- No, I do not wish to receive reminders
If you like, you can set up reminders about the things on your list. Reminders might help you complete your goals, boosting your probability of success.

Would you like to take advantage of this resource?

- [ ] Yes, send reminders via text message
- [ ] Yes, send reminders via email
- [ ] No, I do not wish to receive reminders

Great! You selected to receive reminders via text message.

What is your mobile telephone number:

360-527-9111
Create your reminder schedule over the next 30 days.

From the list of goals on the left, drag any item onto the calendar day that you would like to be reminded.

Talk to someone with clean time to see how they did it.

Look through my house and vehicle and throw out any drugs or drug equipment.

Put a number in my phone of someone I could call if I needed to talk.

Make a list of some things I could do to stay sober.
Create your reminder schedule over the next 30 days.

From the list of goals on the left, drag any item onto the calendar day that you would like to be reminded.

<table>
<thead>
<tr>
<th>Talk to someone with clean time to see how they did it.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Look through my house and vehicle and throw out any drugs or drug equipment.</td>
</tr>
<tr>
<td>Put a number in my phone of someone I could call if I needed to talk.</td>
</tr>
<tr>
<td>Make a list of some things I could do to stay sober.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>May/June 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>27</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

Next
Great!

It's fantastic you decided to take advantage of these reminders!

Send reminders to me via:
Text messages to 360-527-9111

- **5/21/2012 (morning)**  Talk to someone with clean time to see how they did it.
- **5/26/2012 (afternoon)**  Look through my house and vehicle and throw out any drugs or drug equipment.
- **6/6/2012 (evening)**  Put a number in my phone of someone I could call if I needed to talk.
- **5/21/2012 (morning)**  Make a list of some things I could do to stay sober.
- **5/26/2012 (afternoon)**  Look through my house and vehicle and throw out any drugs or drug equipment.
358-42 19m ago
Make a list of some things I could do to stay sober. Thanks for participating in MAPIT! Have questions? Call 401-793-2057....

slide to reply
Summary Report for [insert first name]
Printed on [insert date]

Thanks for participating in MAPIT. This is a summary of the information you provided during your first MAPIT visit. The goal of this report is to give you information so that you can make the choices that are right for you.

GETTING THROUGH PROBATION

This section shows the level of risk in different areas. The higher the risk, the harder that people sometimes have to work to do well on probation.

(We use our assessment of risk may be different from your probation department. This is our opinion, but the probation department may have a different approach.)

One part of your risk comes from your background. Things that have happened to you in the past. This includes things like family history, age of first arrest, or number of current charges. Looking only at your background, your overall risk is in the medium range. This means that you are about in the middle range compared to other people on probation.

Another part of your risk comes from current behavior. This includes things like how you spend time, or whether you use alcohol or other substances. In the chart below, your highest risk score right now is related to friends.

**STATIC RISK**

Your

Background

Your overall risk is in the medium range. This means that you are about in the middle range compared to other people on probation.

**DYNAMIC RISK**

- **Friends**: This includes the number of friends who are criminally active or on probation.
- **Alcohol**: When people have been drinking, they can make bad decisions, which can result in social or legal problems.
- **Family**: This includes things like not having a lot of people in your life you can count on, or being unhappy with current family relationships.

This list might help you to identify things you can do to increase your probation success.

FIRST STEPS

Here are a few things that people sometimes do to help with their overall probation progress:

- Write down the date and time of your first FC meeting.
- Write down any questions I have for my first meeting.
- Get a binder or folder to keep all of my probation documents in.
- Make a list of my biggest worries about completing probation, and share with my PO.
- My biggest concern:

Here are a few things that people sometimes do to help with their treatment progress:

- Talk to someone who knows you how they did it.
- People I could talk to:
- Look through my house and make sure there are no drugs or drug equipment.
- Put a number in my phone of someone I could call if I needed to talk.
- People I could call:
- Make a list of things I will do to help me stay sober.
- Things I can do:

These are some examples, but you should choose the goals that you think will be most helpful to you.

If you have questions between your next visit, you can contact your case worker.

Get you in a few weeks!
Write down any questions I have.

Make a list of my biggest worries and share with PO.

Get a binder to keep my probation documents in.

Write down date and time of first visit.

Initial data, n=84
Look through my house and vehicle and throw out drugs and drug equipment.

Ask someone with clean time how they did it.

Put a number in my phone of someone I could call if I needed to talk.

Make a list of things I could do to stay sober.

Initial data, n=84
METHODS & MEASURES

- 2 Sites—Dallas Texas and Baltimore MD
- 2-month=295; 6-month=285
- Outcomes
  - Treatment initiation
  - Substance use
- Methods
  - Effect sizes of outcomes
  - Intent-to-treat (ITT)
  - Instrumental variables (IV)
WHO WAS IN THE STUDY?

- Mean age of 35 (typical probationer age)
- 67% Male
- 80% Non-White
- 78% Stable Housing
- 37% SMI
- 49% Prior SUD Tx
- 33% Use Started Before 16
- 28% Drug Test Requirements
- 39% Treatment Order
OUTCOMES: MAPIT IMPROVED TREATMENT INITIATION

% Increase in Treatment Initiation Compared to Standard Probation

- **2 mo.**
  - MI: 120
  - MAPIT: 160
  - *p* = 0.04

- **6 mo.**
  - MI: 210
  - MAPIT: 270
  - *p* = 0.06

**Improved Tx Initiation at 2 months (significant) and 6 months (approaching)**
**MI approached significance at 2 month**
**No differences in drug use or recidivism rates at 12 months (similar to other SBIRT models)**
UNDERSTANDING THE FINDINGS

- **MI via person** increased counselor empathy and MI spirit scores; predicted 2 month Tx Initiation Rates

- **MAPIT**
  - Better outcomes if Clients indicated that they **want to be successful** on probation at onset
  - Clients that desire a “**Better Life**” had better tx outcomes and reduced days of substance use
  - Clients who had **never been in treatment** had better outcomes than those that had prior tx, especially compared to standard intake
Client setting Goals and Reminders predicted better outcomes by 166% to 231% over not selecting goals or reminders.

Clients who do not select reminders had 56% fewer days in treatment.

Setting short-term goals or reminders might be a clinical indicator of motivation to change or treatment failures.
NEXT STEP: ADVANCE TO MORE THAN 2 SESSIONS
# RESULTS: COST PER PROBATIONER

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>MAPIT</th>
<th>MI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen</td>
<td>$1.18</td>
<td>$1.18</td>
</tr>
<tr>
<td>Assessment</td>
<td>$2.18</td>
<td>$2.18</td>
</tr>
<tr>
<td>Delivery/support of intervention sessions</td>
<td>$24.12</td>
<td>$50.08</td>
</tr>
<tr>
<td>Appointment reminders</td>
<td>$51.89</td>
<td>$51.89</td>
</tr>
<tr>
<td>Clinical supervision</td>
<td>---</td>
<td>$28.93</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$79.37</strong></td>
<td><strong>$134.27</strong></td>
</tr>
</tbody>
</table>

-(values in brackets indicate percentage difference from baseline)
MAPIT costs $6.70 for every 1% point increase in the probability of initiating treatment at 6 months.

MAPIT is cost-effective, so long as the decision-maker is willing to pay ~$15 for a 1% point increase in the probability of initiating treatment at 6 months.
DISCUSSION

- MAPIT cost is ~$3.30 for screen + assessment, $24 for intervention, & $50 for reminders
  - Bray et al. 2012 found the average screen costs to be $6.85 and the average brief intervention cost to be $46.39

- Intervention costs are smaller than expected and appointment reminder costs are larger than expected

- MAPIT seems to be cost-effective at initiating probationers into treatment, even if the decision-maker has a fairly low willingness-to-pay for it
COMPUTERIZED INTERVENTIONS

- Useful for hard-to-treat clients
- Help clients explore their own goals
- Can be useful indicators of clinical issues (readiness to change, difficulty of treating)
- Reminders and goals are viable indicators
- Can be cost effective
- Integrate into own environment, and work with clients on their own goals
COGNITIVE BEHAVIORAL THERAPY

✓ Consistent Meta-Analysis Findings

✓ 20-25% reduction in recidivism

✓ Need to
  ➢ Tailor to CJ populations
  ➢ Invest in research
  ➢ Use technology
  ➢ Integrate natural supports