


CHA Division on Addiction
Cambridge Health Alliance

HARVARD MEDICAL SCHOOL
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NE ADCP: Drug Courts
Where Justice and Treatment Meet
September 24th, 2015

The Computerized Assessment & Referral System (CARS): Identifying Mental Health Disorders among DUI Offenders



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Sources of Support

- The Foundation for Advancing Alcohol Responsibility (FAAR) is providing five years of support for the development and testing of CARS.
- The National Institute of Alcohol Abuse and Alcoholism provided support for the study of repeat DUI offenders through the grant, *Toward Evidence Based Treatments to Reduce DUI Relapse (R01 AA014710-01A1)*.

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Objectives

- Mental health and DUI
- Barriers to screening
- Computerized Assessment & Referral System (CARS)
 - CARS Demo
 - CARS Usability and Implementation Trials
- Future directions
- Questions & Discussion

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On Driving

- 1904: *Quarterly Journal of Inebriety*

“Twenty-five fatal accidents occurring to automobile wagons...in nineteen of these accidents the drivers had used spirits within an hour...of the disaster.”

- 76% rate of alcohol-related fatalities

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DUI-related Costs



- DUI is the second most common type of crime in the US. (FBI, 2014)
- In 2013, 10,076 people died in alcohol-related motor-vehicle accidents, in which the driver had a BAC of .08 or higher. (NHTSA, 2014)
 - 31% of total motor vehicle fatalities in the US
- Annual economic cost of \$49.8 billion (NHTSA, 2014)

Legal Initiatives to Reduce DUI

- Licensing Sanctions
- Vehicle Sanctions
- Ignition Interlock
- Mandatory Sentencing



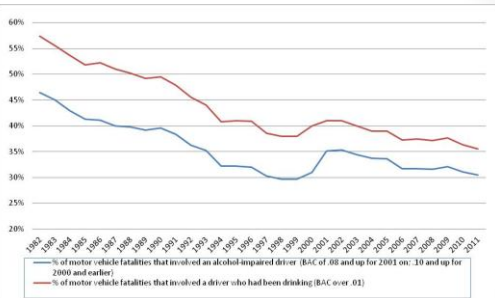
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Repeat DUI Offenders

During 2008, the NHTSA reported that reoffenders represent **33%** of those who are arrested for DUI (NHTSA, 2008).

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Percent of Total Traffic Fatalities that are Alcohol-Related



Adapted from NHTSA, 1993-2012

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Repeat DUI Offenders



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Mental Health and DUI

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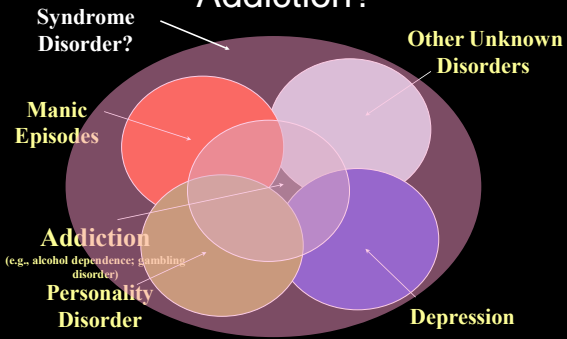
Alcohol & Other Problems

“Treatment programs focusing exclusively on changing alcohol consumption behavior are not likely to reduce accident risk for some of the offender groups” (p. 443).

Wells-Parker, E., Cosby, P., & Landrum, J. (1986). A Typology for Drinking Driving Offenders: Methods for Classification and Policy Implications. *Accident Analysis and Prevention*, 18(6), 443-453.

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When is Addiction Addiction?



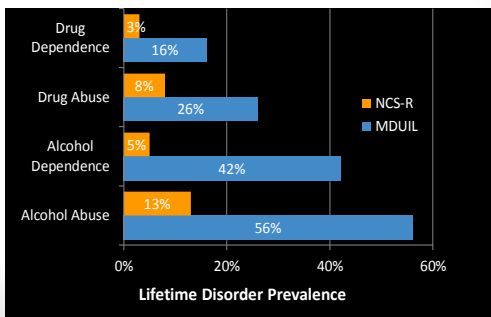
Repeat DUI & Psychiatric Comorbidity

Research at the Middlesex Driving Under the Influence of Liquor (MDUIL) Program

(Shaffer, Nelson, et al., 2007)

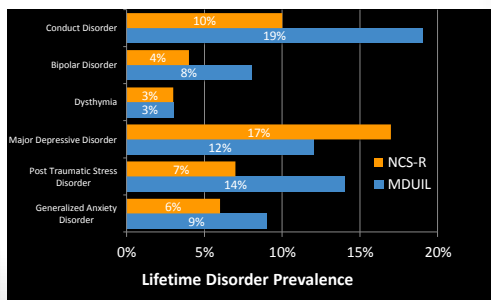
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Lifetime Addiction Prevalence in MDUIL Sample & NCS-R (Kessler et al., 2005)



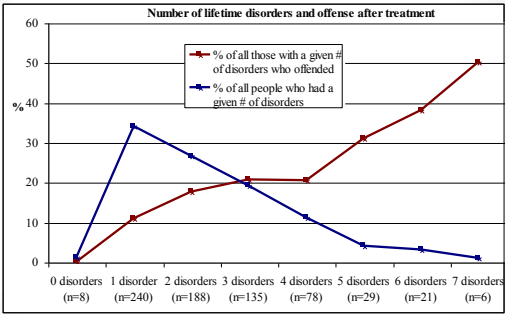
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Lifetime Prevalence of Psychiatric Disorder among MDUIL Sample & NCS-R (Kessler et al., 2005)



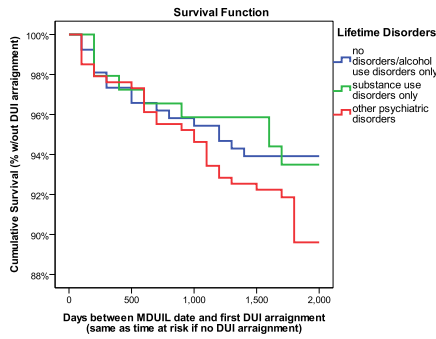
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Comorbidity & Criminal Offense



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Comorbidity & DUI Recidivism



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Barriers to Mental Health Screening

- Awareness
- Training
- Time / Resources
- Lack of Immediate Output

DUI treatment providers don't always have the training or resources to identify and address mental health issues in their clients.

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A Comparison of Alcohol Treatment Program Diagnoses and CIDI Mental Health Diagnoses

Diagnoses obtained through CIDI (composite international diagnostic interview) compared to diagnoses obtained at any time during mandatory alcohol treatment among 233 repeat DUI offenders.

- Bipolar Disorder
 - Provider Estimate: 0.9%
 - CIDI: 6.0%
- Depression
 - Provider Estimate: 10.3%
 - CIDI: 24.5%
- OCD
 - Provider Estimate: 0.0%
 - CIDI: 2.6%
- Drug Use Disorder
 - Provider Estimate: 27.0%
 - CIDI: 10.7%

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McMillan, G. P., Timken, D. S., Lapidus, J., C'ede Baca, J. Lapham, S. C., & McNeal, M. (2008). Underdiagnosis of comorbid mental illness in repeat DUI offenders mandated to treatment. *Journal of Substance Abuse Treatment, 34*, 320-325.

The Need for CARS

- Psychiatric comorbidity in DUI populations
- Mental health issues linked to recidivism
- Screening for mental health issues beyond alcohol-use disorders is rare within DUI treatment programs
- DUI treatment providers rarely have the training or experience to identify mental health issues among their clients

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Generalized Anxiety Disorder Major Depressive Disorder Dysthymia Bipolar I Disorder Bipolar II Disorder Panic Disorder Alcohol Abuse Alcohol Dependence Post Traumatic Stress Disorder Substance Abuse Substance Dependence Personality Eating Disorders Tobacco Use DUI Behavior Oppositional Intermittent Disorder Defiant Disorder Explosive Disorder Conduct Disorder DUI Behavior Criminal History Personality Disorder Psychosocial Risks Peer Networks Psychosis Gambling Disorder Obsessive Compulsive Disorder Attention Deficit Hyperactivity Disorder... and more

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CARS

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CARS: The Computerized Assessment and Referral System

- Standardized mental health assessment adapted from the Composite International Diagnostic Interview (CIDI)
- Diagnostic report generator that gives providers and clients:
 - Immediate diagnostic information for up to 20 DSM-IV Axis I disorders (onset, recency, persistence)
 - Geographically and individually targeted referrals based on individual diagnostic information and zip code

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What Is the purpose of CARS?

- CARS' primary purpose is to identify mental health issues in addition to substance use disorders that influence DUI behavior.
- Identification of these issues is a first step toward intervening to reduce their impact on DUI and improve offenders' chance of rehabilitation.

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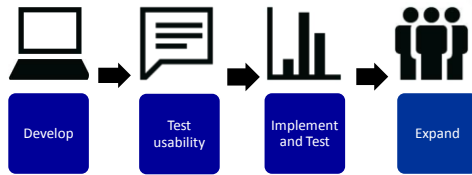
    graph TD
      CARS((CARS)) -- "+" --> MHI((Mental Health Issues))
      CARS -- "+" --> ATH[Additional Treatment or Self-Help]
      MHI -- "+" --> RDUI[Repeated DUI Behavior]
      ATH -- "-" --> RDUI
  
```

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How is CARS unique as a mental health assessment?

- CARS is adapted from an internationally validated diagnostic assessment, the Composite International Diagnostic Interview
- CARS can be used by non-clinicians to identify psychiatric disorders for which a client qualifies or is at risk.
- CARS generates user-friendly reports at the click of a button.
- CARS runs on free open source software.

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Testing Usability



Test usability

Method:

- 5 DUI programs
- 3 months
- Online surveys

Feedback:

- Average time = 1 hour
- Longer than counselors preferred
- Clients rated the report as the most useful part of the experience.

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Screener Enhancement

- Primary issue with CARS has been length
- Original screener could not stand alone
 - "Have you ever in your life had a period of time lasting several days or longer, when most of the day you felt sad, empty or depressed?"
- Used evidence from past study to add questions to the screener to increase diagnostic accuracy.
- Now offer a CARS Screener that takes 20-50 minutes to complete and offers good indication of diagnostic areas that need further assessment.

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Implementing a Computerized Assessment & Referral System:

CARS Demo

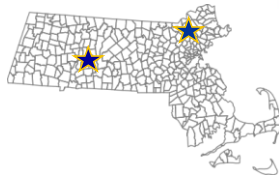


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Implementation Trial



Implement and Test



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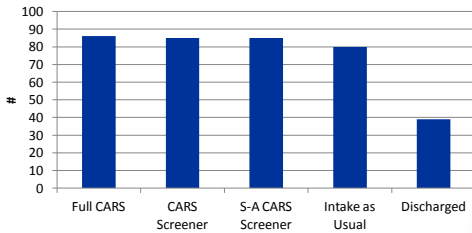
Implementation Trial

- Two MA programs
- Randomization w/in program
- CARS Screener vs. Comprehensive CARS
- Self-administered CARS Screener vs. Interviewer-Administered CARS Screener
- Follow-up Outcomes (6 months+)
 - Criminal record
 - RMV record
 - Ignition interlock data
 - Treatment records
 - Offender interviews

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Implementation Trial: Preliminary Findings

- **375** repeat DUI offenders enrolled (**51.6%** of all)



- CARS data available for **256** offenders

Implementation Trial: Preliminary Findings

- Repeat DUI offenders – Maximum BACs
 - 4.5% less than 0.08
 - 12.1% 0.08-0.09
 - 42.4% 0.10-0.19
 - **40.9% 0.20 or greater**

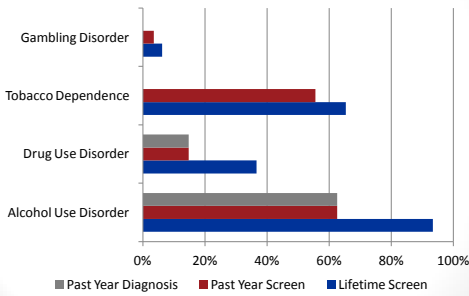
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Implementation Trial: Screener Findings (NOT definitive diagnoses)

- Positive screen indicates that further assessment is required, NOT that the respondent qualifies for the disorder.

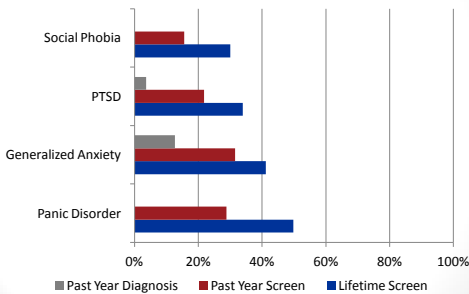
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Implementation Trial: Screener Findings (NOT definitive diagnoses)



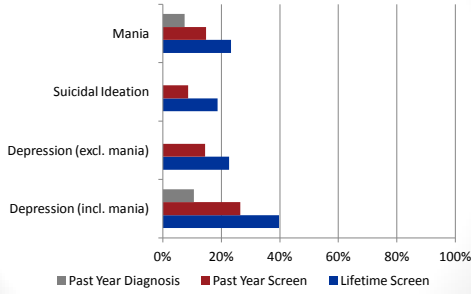
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Implementation Trial: Screener Findings (NOT definitive diagnoses)



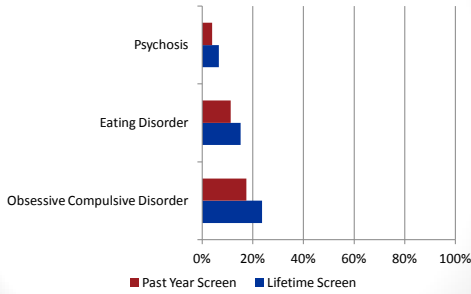
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Implementation Trial: Screener Findings (NOT definitive diagnoses)



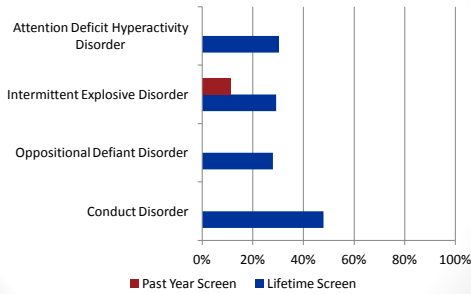
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Implementation Trial: Screener Findings (NOT definitive diagnoses)



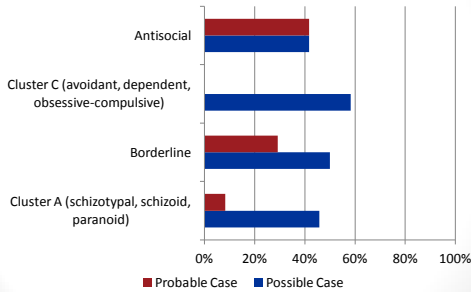
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Implementation Trial: Screener Findings (NOT definitive diagnoses)



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Implementation Trial: Screener Findings (NOT definitive diagnoses)



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MDUIL Implementation Trial: Screener Findings (NOT definitive diagnoses)

- Screening results did not differ significantly by condition, with one exception
 - DUI offenders were more likely to report symptoms qualifying them for **conduct disorder** in the self-administered condition than in other conditions
- Offenders in the self-administered condition tended to have more positive screens than others, but this result only approached significance ($p = .06-.09$)

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CARS: Follow-Up

- Conducting follow-up interviews with MDUIL offenders
- Key measures:
 - Alcohol and drug use
 - Treatment
 - Lapses and relapses
 - Probation violations
 - Behavioral changes
 - Mental health check-in

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Next Steps



Expand

- Move beyond Massachusetts
 - 5 pilot sites throughout US
- Move beyond 1st offender and 2nd offender programs
 - Pre-sentencing
 - Initial sentencing
 - Probation
 - Aftercare
 - **DWI Courts**
- Continue testing and modification

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- The time between sentencing and DUI treatment represents an opportunity for assessment for at-risk clients.

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Time to Treatment

- In our study, 48% of repeat offenders entered the mandatory inpatient treatment program more than 12 months after their offense
- 33% entered 6-12 months after their offense
- Only 12% entered within 2-6 months of their offense

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Diagnosis and Treatment

Karl Menninger

- *“Treatment depends upon diagnosis, and even the matter of timing is often misunderstood. One does not complete a diagnosis and then begin treatment; the diagnostic process is also the start of treatment. Diagnostic assessment is treatment; it also enables further and more specific treatment.”*

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The Computerized Assessment & Referral System:

Q & A



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Is CARS a risk/needs assessment?

- Not in the traditional sense.
- However, CARS identifies specific mental health disorders for which an offender is at-risk
- These identified mental health issues and the generated report in turn inform the user about the offender's treatment needs.

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Can CARS predict DUI recidivism?

- The primary purpose of CARS is not to predict recidivism, but to identify mental health issues that might contribute to a DUI offender’s DUI behavior and facilitate additional treatment for those issues.
- Currently, CARS identifies DUI risk based on known predictors from the research literature
- However, as we collect data from CARS, we will be able to modify and validate this DUI risk scale using empirical data and linking specific mental health profiles to recidivism risk.



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Do I need to use full CARS or just the CARS screener?

- CARS is adapted from the Composite International Diagnostic Interview (CIDI). To generate full DSM-IV diagnostic level information consistent with the diagnoses generated by the CIDI, full CARS is necessary.
- The CARS screener identifies mental health risk areas and takes less time than full CARS. (The screener takes between 15-50 minutes to complete.)
- We are currently testing how well the screener performs compared to full CARS in identifying mental health risk areas.
- Which you use depends on your resources and goals.
- It is possible to use the screener and then follow-up at a later time or with select clients with further CARS modules.

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How does CARS compare to the APPA Impaired Driving Assessment?

- The primary purpose of the APPA’s tool is to predict DUI recidivism and match this to level of supervision. A secondary use is to identify possible service needs, one of which is mental health.
- The primary purpose of CARS is to identify mental health issues among DUI offenders and facilitate treatment referral for those issues. A secondary use will be to predict DUI recidivism risk from those mental health profiles.
- If resources are available, the two could be used in a complementary fashion.

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- Dr. Ron Kessler
- Nancy Sampson
- Mark McKnight
- CARS Advisory Panel
- Staff and clients of:
 - Massachusetts Driving Under the Influence of Liquor Treatment Program
 - Advocates, Inc.
 - High Point
 - Lowell House
 - Behavioral Health Network

Additional Resources

- www.divisiononaddiction.org
 - Division on Addiction's main website
 - Current projects and publications
- www.basisonline.org
 - Brief science reviews and editorials on current issues in the field of addictions
 - Addiction resources available, including self-help tools
- snelson@hms.harvard.edu
 - Email me if you have any questions
- <https://www.facebook.com/divisiononaddiction>
 - The Division's facebook page
- [@Div Addiction](#)
 - The Division's twitter account

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