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Approaches to Field Impairment Testing

Third International Symposium on Drug-Impaired Driving

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Canadian Centre on Substance Use and Addiction, Ottawa, Canada**

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About CCSA

- Vision: A healthier Canadian society where evidence transforms approaches to substance use

- Mission: To address issues of substance use in Canada by providing national leadership and harnessing the power of evidence to generate coordinated action

- National non-profit organization

- Pan-Canadian and international role

CCSA's National Priorities and Areas of Action

Children & Youth

Problematic Substance Use & Co-occurring Issues

Cannabis

Canada's Indigenous People

Canada's National Framework for Action

Prescription Drugs

Monitoring & Surveillance

Alcohol

Workforce Development

Treatment & Recovery

Impaired Driving

National Framework for Action (2005): *Collective action for collective impact*

In 2016: Consultations to inform the refresh of the National Framework for Action

Introduction

- Driving while impaired by alcohol or drugs is the most prominent factor contributing to serious road crashes in Canada

- Field impairment testing provides evidence of behavioural and cognitive impairment from drugs and alcohol to assist police in making arrests

- This presentation summarizes evidence of the effectiveness of field testing in detecting drug impairment in drivers

Approaches to Field Impairment Testing

- **Standardized Field Sobriety Test (SFST)**

- **New Zealand: Compulsory Impairment Test**

- **Norway: Clinical Tests of Impairment**

- **United Kingdom: Field Impairment Test**

- **Observations of subject**

- **Standardized tests (WAT, OLS, HGN)**

- **Administered by Police officer or physician**

What Is the SFST?

- A standardized test battery to detect impairment due to alcohol

- Widely implemented across Canada, the United States and parts of Australia

- Can correctly classify more than 80% of individuals who have a blood alcohol concentration (BAC) above 80 mg/dL

- Consists of three tests:
  1. One-Leg Stand Test
  2. Horizontal Gaze Nystagmus Test
  3. Walk and Turn Test

- Currently used by police to detect drug impairment

Components of the SFST

One Leg Stand   **Horizontal Gaze Nystagmus**   **Walk and Turn**

Validating the SFST for Drugs

- SFST developed to detect alcohol impairment

- Drug impairment can be very different

- Sensitivity of SFST for cannabis 0.41

- Database of more than 5,000 DRE evaluations

- Includes three tests of the SFST plus others

- Supplementing SFST with Finger to Nose test and observations of eyelid tremors increased sensitivity for cannabis > 0.9

Drug Evaluation and Classification Program

- Systematic, standardized 12-step procedure to document an individual's impairment and identify the category of drug or drugs responsible

- Seven drug categories:

  - cannabis, stimulants, depressants, inhalants, narcotic analgesics, dissociative anesthetics, hallucinogens

- Involves observations, psychophysical tests and clinical indicators

- Concludes with a demand for a sample of urine, oral fluid or blood to be tested for drugs

Statistics on DEC Program

- Drug Evaluation and Classification Program implemented in Canada, 50 U.S. states and District of Columbia

- About 600 active Drug Recognition Experts (DREs) in Canada

- In 2015, 1,889 enforcement evaluations completed in Canada

- In 2015, there were >8,000 DREs in the U.S. who completed 28,295 enforcement evaluations
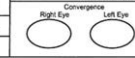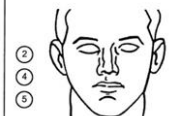
DEC Program Effectiveness

- A study of 1,349 DEC evaluations completed by DREs in Canada documented an overall accuracy rate of 95%

- DREs reviewing the same case came to the same conclusion about drug category 71% of the time

Beirness, D.J., Beasley, E.E., & LeCavalier, J. (2009). The accuracy of evaluations by Drug Recognition Experts in Canada. *Canadian Society of Forensic Sciences Journal*, 42(1), 75–79.

Prediction of Drug Category/Combinations

- **More than 100 different elements in numerical, narrative and pictorial form are documented**

- **Challenging to consider all information when forming an opinion**

- **Can DREs focus on a core set of indicators without compromising accuracy?**

Core Predictors of Drug Category

- **Examined the signs and symptoms from the DEC protocol that best predicted four categories of drugs most commonly used by suspected drug-impaired drivers:**
  - Cannabis
  - Stimulants
  - Depressants
  - Narcotic analgesics

Core Predictors of Drug Category (cont.)

- 81% of drug cases were correctly classified from nine indicators:
  - Mean pulse rate
  - Condition of eyes
  - Eyelids
  - Lack of convergence
  - Pupillary unrest
  - Reaction to light
  - Rebound dilation
  - Blood pressure
  - Presence of injection sites

Core Predictors of Drug Combinations

- Examined the signs and symptoms from the DEC protocol that best predicted common two-drug combinations:

  - Stimulants and cannabis

  - Stimulants and narcotic analgesics

  - Cannabis and alcohol

Core Predictors of Drug Combinations (cont.)

- 75% of drug combination cases correctly classified from 11 indicators:

  - Mean pulse rate
  - Condition of eyes
  - Lack of convergence
  - Reaction to light
  - Rebound dilation

  - Presence of injection sites
  - Pupil size in dark light
  - Muscle tone
  - Performance on HGN, OLS and WAT tests

Summary and Implications

- DREs can initially focus on a core set of drug-related signs and symptoms to help determine the categories of drugs taken by suspected drug-impaired drivers

  - Other signs, symptoms and observations can be considered to capture the totality of the case

- Findings can be integrated into DEC program training

- Results could help in developing an automated system to assist DREs in determining categories of drugs involved on a case-by-case basis

ARIDE

- Advanced Roadside Impaired Driving Enforcement (ARIDE)
- Enhanced roadside drug influence detection
- Two-day course (also online) to teach common signs and symptoms associated with various categories of drugs
- Intermediate step between SFST and DEC program
- Provides officers with ability to recognize potential drug influence
- Identify suspects for more thorough evaluation by a DRE

Gaps and Challenges

- Detection of drug-impairment in drivers
  - Need more research to validate the use of the SFST as a screening tool to detect drug impairment
- Limited enforcement capacity in Canada
  - Need more police officers to receive DEC program training
  - Need to train frontline officers to recognize signs of drug impairment
- Courts' acceptance of DEC and SFST for establishing drug impairment

Drug-Impaired Driving Resources

- Policy briefs: key considerations for addressing drug-impaired driving in Canada:

  - Drug *Per Se* Laws

  - Drug Evaluation and Classification Program

  - Oral Fluid Drug Screening

  - Short-term Administrative Sanctions for Alcohol and Drug Use by Drivers

- Clearing the Smoke on Cannabis: Cannabis Use and Driving — An Update (NEW)

- The Effects of Psychoactive Prescription Drugs on Driving
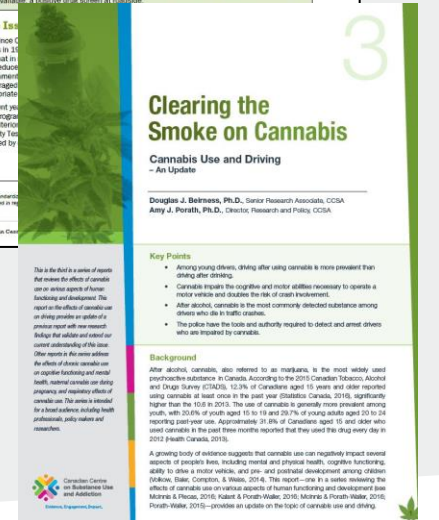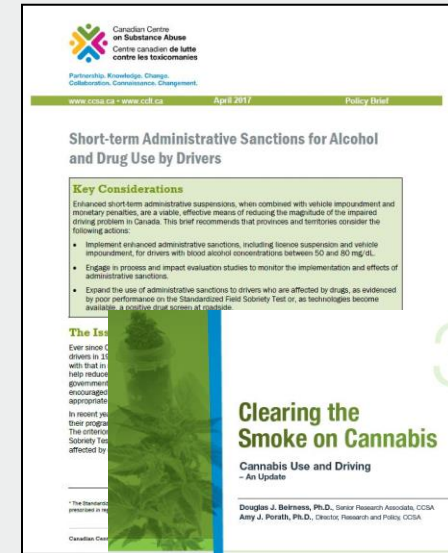
Mobilization of Knowledge, Tools and Resources

- Communication guide to speak with youth about cannabis (Coming in Winter 2018)

- Drug-impaired driving toolkit for educators

- Online learning module

- Toolkit for hosting live learning events related to cannabis and youth

Parents: Help your teen understand what's fact and fiction about marijuana

The following facts might be surprising

- Yout
- Up to 10% of Grade 12

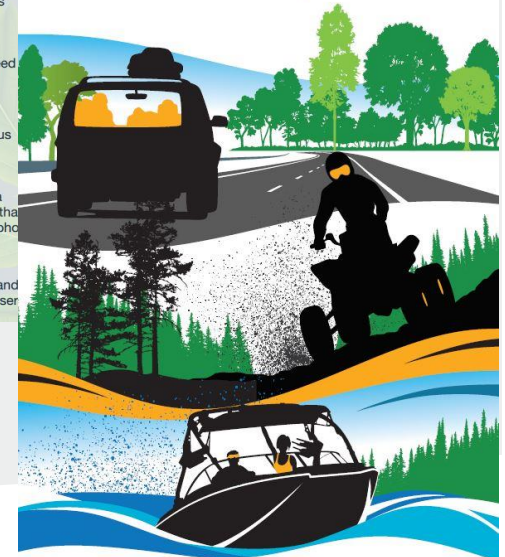**TEENS SAY, "IT'S JUST WEED"**

Weed is natural and so it's harmless

Everyone is using weed

Weed helps you focus

Weed makes you a better driver; it's safer tha driving after using alcoho

Weed isn't addictive and does not "consume" user

Impaired *is* Impaired
No matter what your ride.

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