

BEST PRACTICES IN DRUG TESTING

2018 AADCP Problem Solving Courts Conference



ASU Center for Applied
Behavioral Health Policy
Arizona State University



OVERVIEW

JUSTICE POPULATIONS

- Diversion
 - Pretrial
 - Family Courts
 - CPS
 - Jails
 - Probation
 - Prisons
 - Parole
- Juveniles
 - Adults
 - Transferred Youth
 - Therapeutic Courts
 - Drug
 - Alcohol
 - Co-occurring disorders
 - Veterans
 - Domestic Violence



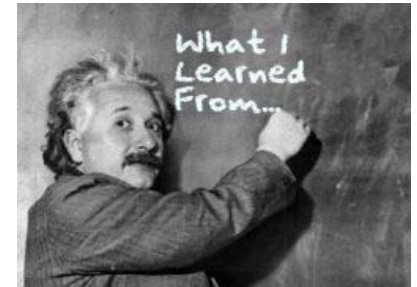
INEFFECTIVE DRUG POLICIES

- WAR on DRUGS
- Mass Incarceration
- Family Devastation
- Increased Racial Inequality
- Jails and Prisons used to treat mental illness



WHAT HAS BEEN LEARNED?

- Therapeutic approaches are proven to work when implemented according to design.
- Case management is informed by assessments and should be tailored to personal needs. (RNR)
- Drug testing encourages drug abstinence.
- Regular drug testing coupled with treatment improves outcomes and lessens risk.
- Don't mix low and low-medium risk offenders with higher risk offenders.



EVIDENCE BASED KNOWLEDGE FOR TESTING OFFENDER POPULATIONS

- National Association of Drug Court Professionals
 - Adult Drug Court Best Practice Standards Vol II 2015
 - 10 Principles of a Good Testing Program
- Michigan Association of Treatment Court Professionals
 - Standards, Best Practices, Promising Practices
 - March 2017



NATIONAL ASSOCIATION OF DRUG COURT PROFESSIONALS (NADCP)

- Frequent Testing
- Random Testing
- Duration of Testing
- Breadth of Testing
- Witnessed Collection
- Valid Specimens
- Accurate and Reliable Methodology
- Rapid Results and Consequences
- Participant Contract



MICHIGAN ASSOCIATION OF TREATMENT COURT PROFESSIONALS (MATCP)

- Detailed manual for court, officer and donor
- Client contract expectations & responsibilities
- Scientific, Valid testing Methodology
- Collection witnessed, random & unannounced
- Confirmed testing unless admits to use
- Validity testing/ diluted, adulterated, tampered
- Rigid interpretation guidelines
- Eliminate interpretation of urine levels
- Behavior change intervention strategies
- Caveat – drug detection is one dimension

STANDARDS, BEST AND PROMISING PRACTICES

Michigan speaks to best practices (supported by research, and of Promising Practices which are logical and ideal, but not yet studied.

- Same ideals: Also mentions
 - adhering to CLIA established cut-off levels
 - not interpreting concentration levels
 - importance of treatment
- Both publications deal extensively with all these topics
- Both consider failure to report for testing; failure to leave a sample; diluted or adulterated samples to be violations.

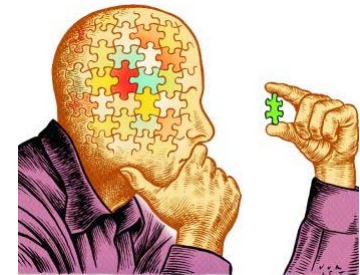
DRUG COURT SELECTION PROCESS

- High needs for drug treatment
- Seriously addicted individuals
- Preadmission screening and evaluation assessment
- Multi-discipline team case management
- Approved by the prosecutor
- Voice given to the victim



WHAT OF LOWER RISK POPULATIONS?

- Agencies and officers need guidance
 - Lower risk offenders
 - Substance abuse treatment needs
 - Court ordered testing
 - How to apply EBP to case management
 - Drug testing training guides for officers



JUSTICE CLIENTS SUMMARY

- Purpose
- Research
- Policies
- Educate
- Fidelity



TESTING STANDARDS

CURRENT STANDARDS AND PRACTICES

- National Association of Drug Court Professionals (NADCP)
 - *NADCP Adult Drug Court Best Practice Standards, Vol II, (2015)*
- Michigan Association of Treatment Court Professionals (MATCP)
 - *MATCP Drug Testing Manual, 2nd Edition, (2017)*

CURRENT STANDARDS AND PRACTICES

Best Practice Commonalities:

- Participant Understanding / Client Contract
- Testing Standards
 - Frequency, Random, Duration, Comprehensive, Methodology
- Specimen Collection Standards
 - ID, Site Prep, Witnessed, Validity
- Lab Testing and Results
 - Reliable and Rapid
 - Qualitative interpretation of results

ESTABLISH A WRITTEN POLICY

BEST PRACTICE

Design an effective drug detection program, establish written policies and procedures of said program, and communicate the details of the drug detection program to court and treatment staff, and the clients alike.

Outcomes are significantly better when policies and procedures are specified clearly in a participant manual or handbook.

PARTICIPANT CONTRACT

BEST PRACTICE

Develop a client contract that clearly enumerates the responsibilities and expectations associated with your drug testing program.

Participants are significantly more likely to react favorably to a sanction if they were given advance notice about how such sanctions will be made

PARTICIPANT UNDERSTANDING

- Process is clear, understood, and agreed upon by participant
 - Written and signed contract encouraged
 - Outline expectations for Program Compliance:
 - ✓ Sobriety
 - ✓ Random testing compliance
 - ✓ Rules for the testing program
 - ✓ Consequences for non-compliance

NON-COMPLIANCE

A participant is considered non-compliant with the drug testing program if he/she:

- Misses a random test
- Fails to call in to IVR/Scheduler for random testing instructions
- Shows up late or is unable to provide a sample
- Provides a diluted sample
- Provides a positive sample
- Attempts to substitute, tamper or adulterate sample
 - May be grounds for termination of program

POSITIVE VS. NON-COMPLIANCE

Avoid calling *all* Non-Compliant events as “dirty” or “positive”, even if the consequences of such are the same!

A participant may be anticipated to produce a positive test if he/she is forthcoming about a relapse event. If this individual is actively participating in treatment and otherwise doing well, the consequences *may* be treated differently than other reasons of non-compliance.

SAMPLE MEDIA TYPES

Sample types used in drug detection monitoring:

Most Common	Least common
Urine	Blood
Oral Fluid	Sweat
Hair	

URINE

Detection window is 24-72 hours for most drugs

- **Pros**
 - Ability to split the sample for additional testing
 - Industry standard – **BEST PRACTICE**
 - Broad cost effective menu
- **Cons**
 - Requires visually observed collection to avoid adulteration/substitution
 - Potential for specimen dilution/adulteration *in vivo* and *in vitro*



ORAL FLUID

Detection window is 12-36 hours/ 6-8 hours for THC

■ Pros

- Samples may be collected in the field and does not require same gender collection.
- If collected correctly, it is difficult to adulterate
- Is recommended for clients that may be on certain medications or for medical reasons (dialysis/catheter)

■ Cons

- Short detection period
- Ineffective for THC detection/monitoring
- Moderate cost



HAIR FOLLICLE

Detection window for head hair: 14-90 days prior
Detection window for body hair: 30-365 days prior

- **Pros**
 - Effective baseline test – Unknown drug use history
 - Adulteration difficult
- **Cons**
 - Not useful for routine monitoring
 - Limited test menu
 - Head hair may not be available
 - May not pick up a single drug use



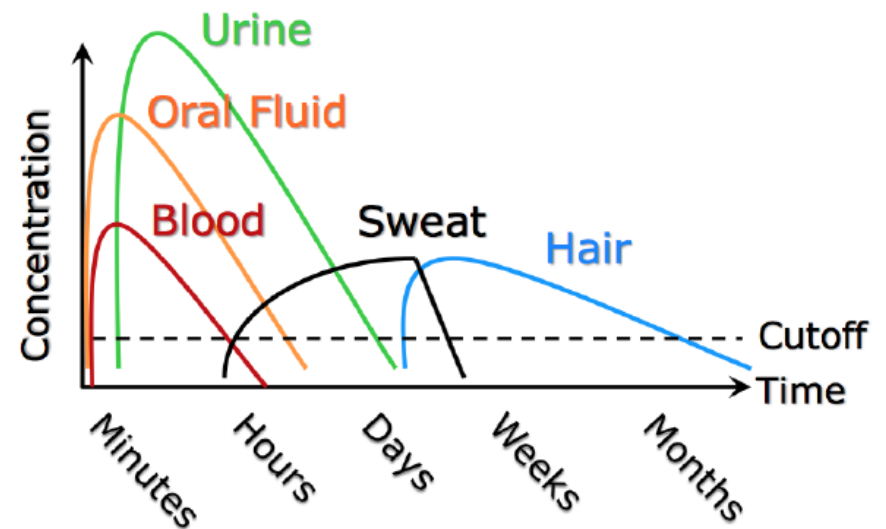
DETECTION PERIODS FOR EACH MEDIA

Media	Approximate Detection Window
Urine	24-72 hours / 1-21 days for THC
Oral Fluid	12-36 hours / 6-8 hours THC
Hair	Head hair: 14-90 days <u>prior</u> Body hair: 30-365 days <u>prior</u>

MEDIA COMPARISON

- Urine most effective media type overall, in terms of availability and detection window
- Oral Fluid detection window shorter, ineffective for detecting THC
- Blood detection window shorter, collection invasive
- Hair OK for baseline, ineffective for continuous monitoring

Drug Detection Times in Different Matrices



McKenzie, B., Wallace, D. (2017), Michigan Association of Treatment Court Professionals, Drug Testing Manual 2nd Ed., p. 25.

TESTING FREQUENCY

BEST PRACTICE

Drug and alcohol testing is performed frequently enough to ensure substance use is detected quickly and reliably.

- Urine testing is performed at least 2 times per week until participants are in the last phase of the program.
- Oral fluid testing is performed at least 3-4 times per week.

RANDOM TESTING / NOTIFICATION

BEST PRACTICE

The schedule of drug and alcohol testing is random and unpredictable.

- Best if testing schedule includes weekends and holidays, at the same probability as other days
- Urine specimens should be provided within 8 hours of notification (oral fluid specimens within 4 hours)

TESTING DURATION

BEST PRACTICE

Drug and alcohol testing continues uninterrupted to determine whether relapse occurs, as other treatment and supervision services are adjusted.

- Drug testing should start upon entry into the program and continue with no interruptions until program completion
- Participants state that long-term testing helps keep themselves drug free

SAMPLE COLLECTION

- Most important element of a drug test
- Key to admissibility and specimen validity
- Standardize the process
 - ID: Require a government or agency issued photo ID
 - Site: Policies that control specimen handling & evidence
 - Visually Observed: Gender appropriate (not same as monitored)
 - Chain of Custody is maintained
 - Validity: Test for dilution and adulteration.

SAMPLE COLLECTION

- Photo ID is verified
- Client signature and collection acknowledgements on Chain of Custody
- Client signature on sample seal and/or label
- May be necessary to verify ID a second time at restroom



PROPER CLIENT IDENTIFICATION

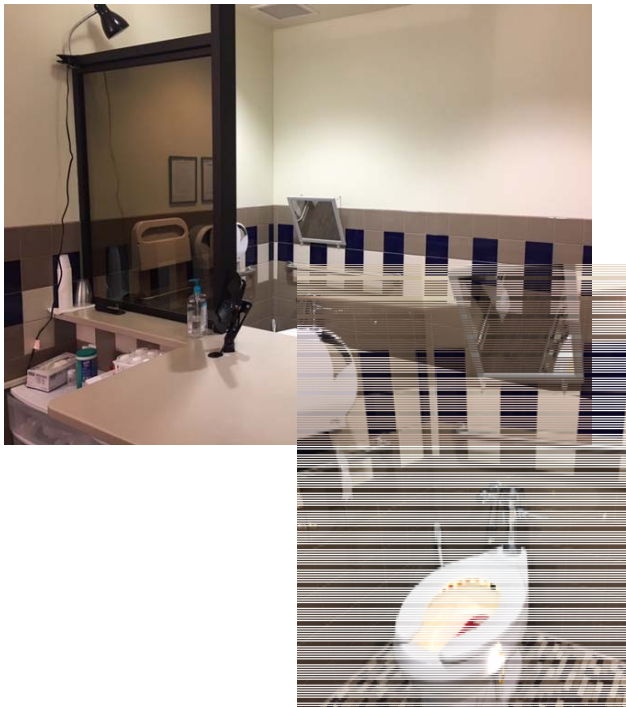
BEST PRACTICE

Ensuring that the participant is the person providing the specimen is critical to proper collection.

- Photo identification is a must – a government issued ID is *strongly* encouraged
- Avoid opportunity to allow a “stunt double” to slip into testing area

VISUAL MONITORING COLLECTION \ SITE PREP

Female Restroom

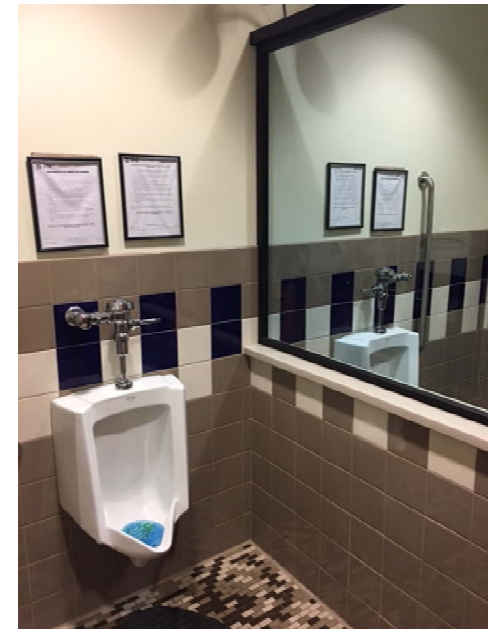


BEST PRACTICE

Maintain proper control of the collection site and procedures

- Full view of urine stream
- Strategically placed mirrors
- Bluing agent in toilets
- No hot water
- No chemicals in area
- Remove excessive clothing
- No personal items allowed

Male Restroom



VISUALLY OBSERVED COLLECTIONS

BEST PRACTICE

Collection of test specimens is witnessed directly by staff person who has been trained to prevent tampering and substitution of fraudulent specimens.

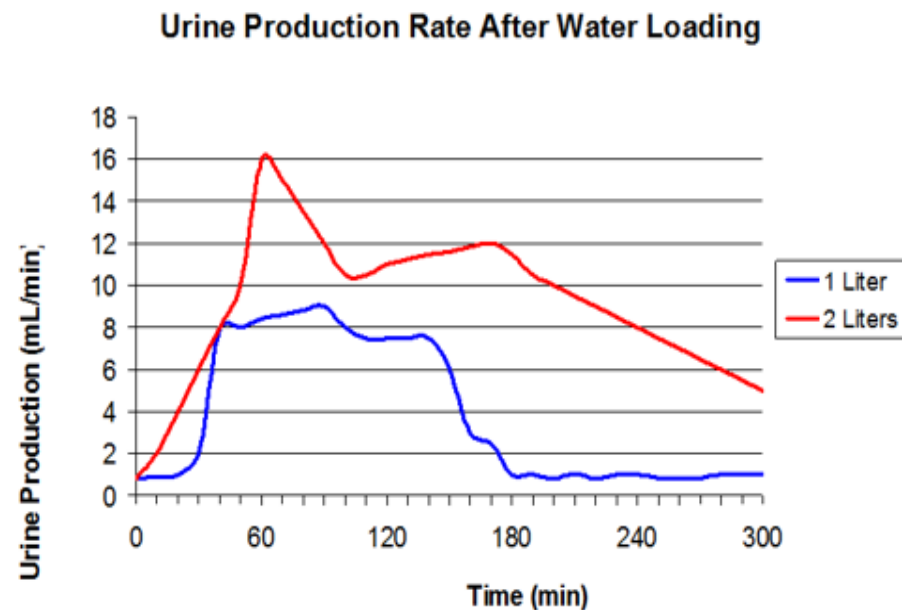
- Samples that are not visually witnessed are of little or no value
- Witnessed collections must be conducted in a gender appropriate manner
- Exercise trauma informed care

SPECIMEN VALIDITY

- Specimen Validity
 - Temperature between 90°-100° F
 - Urine Creatinine
 - Measures sample dilution (*in vivo*)
 - 20 mg/dL or above is acceptable
 - Specific Gravity
 - Measures sample dilution
 - A measure of dissolved solids
 - 1.0030 – 1.0300 normal range; (1.0000 water)

SPECIMEN DILUTION

- Intentional ingestion of excessive amounts of fluids
- Lowers concentration of all substances in urine
- May affect urine samples for many hours
- Urine creatinine **must** be measured on all samples
- Address in the Client Contract



Adapted from : Kadehjian, L. (2013), Baldes and Smirk, (1934); Macallum and Benson, (1909)

SAMPLE TAMPERING

Adulteration

Adulterants may destroy the drug or drug metabolites in the urine sample, or interfere with the screening or confirmation test

- Caustic & corrosive chemicals, some sold commercially specifically for the purpose of adulterating urine samples
- Four common categories: Acids, Surfactants, Fixatives, Oxidants

Detectable by the lab using specialized tests (pH, Nitrites, Oxidants, etc.)

SAMPLE TAMPERING

Substitution

Replacing urine sample with some other fluid or other persons urine

- Client may sneak in container substance beneath clothing – pour into specimen collection container
- May “palm” stolen sample containers and switching during collection
- May utilize sophisticated devices to deliver sample (eg. Whizzinator)

Non-urine samples are discovered by specimen validity tests

SPECIMEN VALIDITY TESTING

BEST PRACTICE

Test specimens are examined routinely for evidence of dilution and adulteration.

- Specimen validity testing backs up proper collection procedures
- Non-compliance by failure to follow testing protocol must be enforced

TESTING

- Accuracy and Reliability
- Testing methods must be scientifically valid and reliable, and forensically defensible
- Laboratory-based (instrumented) testing
 - Testing by trained laboratorians preferable
 - POC kits give “instant” results, but are subjective

LAB CERTIFICATION

- CLIA
 - Clinical Laboratory Improvement Amendments - Center for Medicare & Medicaid Services (CMS)
- CAP-FDT
 - College of American Pathologists -Forensic Drug Testing
- SAMHSA
 - Substance Abuse and Mental Health Services Administration

TESTING METHODOLOGIES

- Screening by Immunoassay (IA)
 - Enzyme Immunoassay (EIA)
 - EMIT™, CEDIA™, SEFRIA™, KIMS™, FPIA, RIA
 - ELISA
- Confirm by more sensitive and accurate methodology
- GC, GC-MS, LC-MS/MS are industry standard



ACCURATE & RELIABLE TESTING

BEST PRACTICE

To be admissible in a court proceeding, the tests must use scientifically valid and reliable methods.

- Helps therapeutically if tests are sound and accurate.
- If a participant denies substance use, confirm positive drug screen(s) by gas chromatography/mass spectrometry (GC-MS) or liquid chromatography/mass spectrometry (LC-MS).

CAST A BROAD NET

- Comprehensive Testing
 - Establish a “Broad Panel” that tests for as many drug classes, synthetics, and novel drugs as economically possible
 - Perform a Broad Panel test upon entering program
 - Perform an occasional Broad Panel test to reveal relapse and change in drug(s) of choice

- Be mindful of drug use trends in the community

COMPREHENSIVE TESTING

BEST PRACTICE

Test for the full range of substances that are most likely to be used by your program participants or in your community.

- Don't get stuck in a rut by testing for the same drugs
- New substances of abuse are being made available all the time that can avoid detection
- Monitor changes in drugs of choice

LAB RESULTS

Laboratory-based testing needs to be fast and reliable

- Testing Turn-around:
 - Screening results within 24 hours upon receipt into laboratory
 - Confirmation results within 48 hours when requested
 - Specialty drugs may require a longer analysis time
- Reliable: Confirm results when an admittance cannot be obtained

TIMELY RESULTS

BEST PRACTICE

Test results need to be reliable and timely, for the highest degree of therapeutic benefits.

The more quickly a program:

- imposes sanctions for a positive test, or
- provides an incentive or reward for a negative test,

the better the participant can maintain sobriety through an ongoing or modified treatment plan.

DRUG LEVELS

BEST PRACTICE

Eliminate the use of urine drug concentration levels for the interpretation of client drug-use behavior.

- Don't fall into the trap of assuming positive or negative drug use behavior based on testing levels
- Qualitative interpretations **only** - Positive or Negative

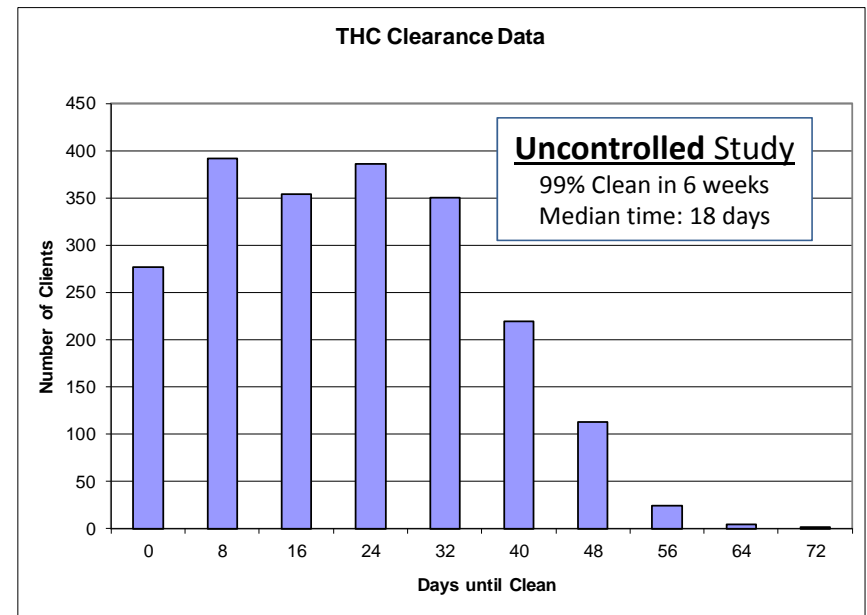
MARIJUANA ELIMINATION

BEST PRACTICE

Allow no more than 30 days from entering program to test negative for marijuana metabolite (THC).

Research indicates 21 days is sufficient.

Set an elimination benchmark, and use this as the baseline for abstinence



Kramer, D., CPS Monitoring, TASC, Inc. (2009)

NEW USE VS. RESIDUAL EXCRETION OF THC METABOLITE

Method 1: Non-Normalized Approach

- Simplest method to administer
- Relies solely on qualitative results (Positive/Negative)
- 2 consecutive negative results 48-72 hours apart indicate donor levels are sufficiently low to be considered “clean”
- Subsequent positive suggests new usage

Method 2: Creatinine Normalized Approach

- More complex
- Requires instrumented THC test, preferably GC-MS confirmation
- Require instrumented Creatinine test (POC cups not effective)
- Must compare consecutive tests
- Not advised when a sample is diluted

NORMALIZED THC:CRE RATIO

THC (ng/mL) & Creatinine (mg/dL)

$$\frac{THC}{Creatinine} \times 100 = THC:Cre \text{ Ratio}$$

(Creatinine is most commonly reported as mg/dL)

THC (ng/mL) & Creatinine (mg/mL)

$$\frac{THC}{Creatinine} = THC:Cre \text{ Ratio}$$

(Less common to report creatinine as mg/mL)

COMPARE CONSECUTIVE RESULTS

$$\frac{\text{Normalized THC: Cre Sample 2}}{\text{Normalized THC: Cre Sample 1}} = \text{Specimen Ratio}$$

Specimen Ratio of 1.5 or more suggests usage – Accurate about 75% of the time

- False Positive rate: 0.1% - Chance of falsely suggesting new usage incorrectly
- False Negative rate: 24% - Chance of not detecting new usage

Manno et al; The Cannabinoids: Chemical, Pharmacologic, Therapeutic Aspects; Academic Press (1984)

C. Paul, L. M.S. The Use of Creatinine-Normalized Cannabinoid Results to Determine Continued Abstinence or to Differentiate between New Marijuana Use and Continuing Drug Excretion from Previous Exposure. *Drug Court Review, Vol. IV,1 (2002)*. National Drug Court Institute.

TEN PRINCIPLES OF A GOOD DRUG TESTING PROGRAM

TEN PRINCIPLES

- Design an effective drug detection program, establish written policies and procedures of said program, and communicate the details of the drug detection program to both the court staff and clients alike.
- Develop a client contract that clearly enumerates the responsibilities and expectations associated with the court's drug detection program.

Adapted from :National Drug Court Institute. (2011), The Fundamentals of Drug Testing. In Carey, p., *The Drug Court Judicial Benchbook*, p.137

TEN PRINCIPLES

- Select a drug testing specimen and testing methodology that provides results that are scientifically valid, forensically defensible, and therapeutically beneficial.
- Ensure that the sample collection process supports effective abstinence monitoring practices including random, unannounced selection of clients and the use of witnessed observation sample collection procedures.

Adapted from :National Drug Court Institute. (2011), The Fundamentals of Drug Testing. In Carey, p., *The Drug Court Judicial Benchbook*, p.137

TEN PRINCIPLES

- Confirm all positive screening results using alternative testing methods, unless participant acknowledges use.
- Determine sample validity to support the collection process. Sanction diluted samples and those that indicate subversion of the collection process.
- Eliminate the use of urine levels for the interpretation of client drug-use behavior.

Adapted from :National Drug Court Institute. (2011), The Fundamentals of Drug Testing. In Carey, p., *The Drug Court Judicial Benchbook*, p.137

TEN PRINCIPLES

- Establish drug testing result interpretation guidelines that have a sound scientific foundation and that meet a strong evidentiary standard.
- In response to drug testing results, develop therapeutic intervention strategies that promote behavior change and support recovery.

Adapted from :National Drug Court Institute. (2011), The Fundamentals of Drug Testing. In Carey, p., *The Drug Court Judicial Benchbook*, p.137

TEN PRINCIPLES

And most importantly...

- Understand that drug tests represent only a single supervision strategy in an overall abstinence-monitoring program.

Adapted from :National Drug Court Institute. (2011), The Fundamentals of Drug Testing. In Carey, p., *The Drug Court Judicial Benchbook*, p.137

THANK YOU

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