LOS ANGELES POLICE DEPARTMENT
D.R.E. Pre School
1850-22170

Instructional Goal: Increase deterrence of DWI violations; reducing the number of crashes, deaths, and injuries caused by impaired drivers.

Performance Objectives: Using Instructor-Led Presentations, Participant-Led Presentations Knowledge Examination, Reading Assignments, Alcohol Correlation Study's students will:

- Acquire the knowledge and skills needed to distinguish individuals under the influence of: Alcohol, Drugs, Combinations of alcohol and other drugs, or who are suffering from an injury or illness
- Define the term "drug" in the context of DWI (Driving While Intoxicated) enforcement
- Identify the broad category or categories of drugs and introducing the observable signs of impairment manifested by an individual
- Learn what Drugs are common in Society and how they affect Vehicle Operation
- Describe the three phases of detection and describe the tasks and key decision of each phase
- Discuss the uses of a standard note taking guide
- Eye Examinations (a major component of the DEC (Drug Evaluation Classification) Program procedures)
- Development and validity of the research and the standardized elements, clues and interpretation of the three standardized field sobriety tests.
- Properly interpret the subject's performance though two alcohol correlation study's
- Physiology and Drugs
- Vital Signs Examinations (a major component of the DEC Program procedures)
- The Seven Categories of Drugs
- Drug reference sources
- Interviewing Suspects (a major component of the DEC Program procedures)
- CV (Curriculum Vitae) Preparation and Maintenance
- Case Preparation and Testimony
- Classifying a Suspect (interpreting and documenting the results of an evaluation)
- Qualify police officers to progress to DRE (Drug Recognition Expert) Training
- By the conclusion or the training, students will understand how the application of this training is in keeping with IACP Standards and what is required for DRE certification

References: Instructors, facilitators and training supervisors shall ensure that current references are utilized

DAY 1

I. Vital Signs Examination & Practice[1] (2 hrs.)

A. Learning Objectives
   1. List the vital signs that are utilized in the Drug Recognition Expert (DRE) examinations
   2. Define basic terms relevant to pulse rate and blood pressure measurements
   3. Measure pulse rate
   4. Measure blood pressure

[1] Preliminary Training for Drug Evaluation and Classification Program, Section VI, HS172 R5/13

5. Relate the expected results of vital sign examinations to the various drug categories of drugs

B. Purposes of the Vital Sign examination
   1. A DRE will measure the following vital signs:
      a. Pulse rate
      b. Blood pressure
      c. Temperature
   2. The vital signs are affected differently by different drugs
   3. Certain drugs speed up the body and elevate the vital signs
      a. pulse may quicken
      b. blood pressure may rise
      c. temperature may rise
   4. Certain Drugs slow down the body and lower the vital signs
      a. Pulse may slow
      b. Blood pressure may drop
      c. Temperature may fall
   5. For purposes of standardization, the pulse and blood pressure readings will be obtained using the left arm if at all possible

C. Definitions concerning "Pulse"
   1. Pulse – The expansion and contraction of an artery generated by the pumping action of the heart
   2. Pulse Rate – The number of pulsations in an artery per minute
   3. Artery – A strong, elastic blood vessel that carries blood from the heart to the body tissues
   4. Vein – A blood vessel that carries blood back to the heart from the body tissues

D. Procedures and Cues
   1. Measurement of Pulse Rate
      a. Point out that pulse rate is equal to the number of contractions of the heart per minute
      b. By placing your fingers on the skin next to an artery and pressing down, you can feel the artery expand as the blood surges through
      c. The "surge" can be felt as the blood is squeezed through an artery. The pulse cannot be felt in a vein
   2. Demonstrate this, by holding your fingers on your own radial artery

E. Radial Artery
   1. The radial artery can be located in or near the natural crease of the wrist, on the side of the wrist next to the thumb
   2. Point to the radial artery pulse point on your own wrist
      1) Hold your left hand out, with the palm up
      2) Demonstrate this
      3) Place the tips of your right hand's index finger and middle finger into the crease of your left wrist, and exert a slight pressure. This is on the thumb side of the left hand
      4) Demonstrate this
   3. **Ask** students whether they can feel their pulses. Coach any students who have difficulty in locating the pulse

F. Brachial Artery
   1. Point to the brachial artery pulse point in your own arm
   2. The brachial artery can be located in the crook of the arm, halfway between the center of the arm and the side of the arm closest to the body
   3. Instruct students to roll up their sleeves, if necessary, to expose their brachial artery pulse points
      a. Hold your left hand out, with the palm up
      b. Demonstrate this
      c. Place the tips of your right hand's index and middle fingers into the crook of your left arm, close to the body, and exert a slight pressure
      d. Demonstrate this
   4. **Ask** students whether they can feel their pulses. Coach any student who has difficulty locating the pulse

G. Carotid Artery
   1. Point out the carotid artery pulse point on your own neck
   2. The carotid artery can be located in the neck, on either side of the Adam's Apple
   3. Place the tips of your right hand's index and middle fingers alongside the right side of your "Adam's Apple
   4. You should be able to feel the pulse in your carotid artery
   5. **Ask** students whether they can feel their pulses
   6. Coach any student who has difficulty locating the pulse

H. Dos and don'ts of measuring a pulse
   1. Don't use your thumb
      a. There is an artery located in the thumb.
      b. If you use your thumb to measure, you may be measuring your own pulse rate
   2. If you use the carotid artery pulse point, don't apply pressure to both sides of the Adam's Apple: this can cut off the supply of blood to the brain
   3. When measuring the pulse rate, use 30 seconds as the standard time interval. Count the pulse rate for 30 seconds and multiply by two to get "Beats Per Minute" (BPM)
   4. The pulse reading should not be an odd number

I. Students' practice at measuring pulse rate
   1. Instruct students to work in pairs, taking turns measuring each other's pulse.
   2. Tell students to record on paper their partner's pulse rates
   3. Monitor, coach and critique the students' practice. Allow the practice to continue for only about 5 minutes
   4. Write the pulse rate on the dry erase/flip chart
   5. Tabulate the numbers of students whose pulse rates were in each of the listed intervals
   6. Point out that the "normal range" of pulse rate is 60-90 beats per minute (BPM)

J. Review recorded pulses of students

   1. On the dry board/chalk board write out the pulse ranges as below:
      a. 50 or less _____
      b. 52-54 _____
      c. 56-58 _____
      d. 58-60 _____
      e. 60-62 _____
      f. 64-66 _____
      g. 66-68 _____
      h. 68-70 _____

i. 70-72 _____
j. 72-74 _____
k. 74-76 _____
l. 76-78 _____
m. 78-80 _____
n. 80-82 _____
o. 82-84 _____
p. 84-86 _____
q. 86-88 _____
r. 88-90 _____
s. 90-92 _____
t. 92-94 _____
u. 94-96 _____
v. 96-98 _____
w. 98-100_____
x. 100+ _____

2. Tabulate the number of participants whose pulse rates were in each listed intervals
3. Point out the average range of the pulse rate, for DRE purposes, is 60 – 90 BPM.

K. Definitions concerning "Blood Pressure"
1. Blood Pressure is the force that the circulating blood exerts on the walls of the arteries
2. Systolic Pressure, the maximum blood pressure, reached as the hear contracts
3. Diastolic Pressure, the minimum pressure, reached when the heart is fully expanded

L. Blood Pressure info
1. Blood pressure changes constantly as the heart contracts and relaxes
2. It is always necessary to measure and record both the systolic and diastolic blood pressure
3. Blood pressure is measured in Millimeters (mm) of Mercury (Hg) or mmHg

M. Memory Aid
1. Systolic: "S" for "Superior", "San"
2. Diastolic: "D" for "Down", "Diego"
   a. Remind students that "systolic" is the higher number
   b. "Diastolic" is the lower number

N. The device used for measuring blood pressure is called a sphygmomanometer
1. Exhibit a sphygmomanometer
2. Write "SPHYGMOMANOMETER" (pronounced sfig-mo-man-oh-meter) on the dry erase board or flip-chart
3. The sphygmomanometer has a special cuff that can be wrapped around the subject's arm and inflated with air pressure
4. Select a student to come before the class
5. Have the student sit in a chair facing the class and roll up a sleeve, if necessary, to expose the left bicep
6. Wrap the cuff around the student-volunteer's arm and inflate it
   a. As the pressure in the cuff increases
   b. The cuff squeezes tightly on the arm
7. **Ask** the student whether they can feel the pressure of the cuff.
   a. When the pressure gets high enough, it will squeeze the artery completely shut
   b. Thus, stopping the blood flow to the extremity
8. Release the pressure in the cuff on the student arm
9. If we slowly release the air in the cuff, the pressure on the arm and on the artery will start to drop
   a. Eventually, the pressure will drop enough so that blood will once again start to flow through the artery
   b. This will happen when the pressure of the heart forcing the blood through the artery is equal to the pressure in the cuff

10. **Ask** students: "How far must the pressure in the cuff drop before the blood can start to squeeze through the artery?"
11. **Ask** students: "What would happen if we allowed the pressure in the cuff to drop down to the systolic level, and held the air pressure at that level?"
    a. The two pressures will become equal when the air pressure in the cuff drops down to the systolic pressure
    b. Point out that the blood would spurt through the artery each time the heart contracted, but would cease flowing when the heart expanded
12. **Ask** students: "How far down must the air pressure in the cuff drop before the blood will flow through the artery continuously?"
    a. When that happens, blood will spurt through the artery each time the heart contracts
    b. Once the air pressure in the cuff drops down to the diastolic level, the blood will flow continuously through the artery

O. Overview of Procedures for Measuring Blood Pressure
1. Apply enough air pressure to the cuff to cut off the flow of blood through the artery (approximately 180 mmHg)
2. Demonstrate, using the student-volunteer (apply pressure to the cuff). As DREs we usually inflate the cuff until the manometer shows a reading of approximately 180 mmHg
3. Slowly release the air pressure until the blood just begins to spurt through the artery: that level will be the systolic pressure
4. Slowly release the pressure in the cuff
5. Emphasize that the pressure should drop at approximately two mmHg per second (five sec for each 10 mm drop)
6. Continue to release the air pressure until the blood flows continuously through the artery: that level will be the diastolic pressure
7. **Ask** students: "How can we tell when the blood starts to spurt through the artery?" and "How can we tell when the blood is flowing continuously through the artery?"
    a. We can listen to the spurting blood, using a stethoscope
    b. Exhibit a stethoscope
8. Apply the stethoscope to the skin directly above the artery
9. Demonstrate using the student-volunteer
10. Apply pressure to the cuff, enough to cut off the flow of blood.
11. Inflate the cuff on the student-volunteer's arm.
12. When no blood is flowing through the artery, we hear nothing through the stethoscope
13. Slowly release the air from the cuff, letting the pressure start to drop
14. Release the air in the cuff
15. When we drop to the systolic pressure, we start to hear a spurting sound
    a. **Note:** This begins as a clear, tapping sound
    b. The first phase in the Korotkoff Sounds
16. As we continue to allow the air pressure to drop, the surges of blood become steadily longer
    a. Note: The sounds take on a swishing quality and become fainter
    b. The second phase in the Korotkoff Sounds
17. When we drop to the diastolic pressure, the blood slows steadily and all sounds cease
18. Excuse the student-volunteer and thank him or her for participating

P. Korotkoff Sounds
   1. The sounds that we listen to are called Korotkoff Sounds
   2. Dr. Nikolai Korotkoff, a Russian physician who introduced the method of determining blood pressure in 1905
   3. Phase 1: the first appearance of clear tapping sounds
      a. This sound gradually increase in intensity
      b. Point out that the beginning of Phase 1 corresponds to the systolic pressure
   4. Phase 2: the sounds change to a murmur and take on a swishing quality
   5. Phase 3: the sounds develop a loud, knocking quality (not quite as clear as Phase 1)
   6. Phase 4: the sounds suddenly become muffled and again have a faint swishing quality
   7. Phase 5: the sounds cease
   8. Point out that the beginning of Phase 5 corresponds to the diastolic pressure
   9. Hand out stethoscopes and sphygmomanometers (one per each student is desirable; at minimum, there should be one for every four students)

Q. Familiarization with the Sphygmomanometer
   1. The compression cuff contains an inflatable rubber bladder
      a. Point out the components of the sphygmomanometer
      b. Use both power point and actual sphygmomanometer
   2. A tube connects the bladder to the manometer, or pressure gauge
      a. Clarification: The manometer displays the air pressure inside the bladder
      b. This is an analog display utilizing measurements of mmHg, millimeters of mercury
   3. Another tube connects the bladder to the pressure bulb, which can be squeezed to inflate the bladder
   4. The pressure control valve permits inflation of the bladder and regulates the rate at which the bladder is deflated
   5. To inflate the bladder, the pressure control valve must be twisted all the way to the right
   6. When the valve is twisted all the way to the right, air can be pumped into the bladder, but no air can escape from the bladder
   7. To deflate the bladder, twist the valve to the left
   8. The more the valve is twisted to the left, the faster the bladder will deflate

R. Details of Blood Pressure Measurement
   1. Select a student to serve as a blood pressure subject and demonstrate the
   2. procedures using the student
      a. Position the cuff on the left bicep so that the tubes extend down the middle of the arm
      b. Wrap the cuff snugly around the bicep.
      c. Clip the manometer (pressure gauge) on the subject's sleeve or cuff, so that it is readily viewable
      d. Twist the pressure control valve all the way to the right
      e. Put the stethoscope earpieces in your ears
      f. Make sure the earpieces are turned forward, i.e., toward the nose
      g. Place the diaphragm or bell of the stethoscope over the brachial artery
      h. Rapidly inflate the bladder to approximately 180mmHg
      i. Twist the pressure control valve slightly to the left to release the pressure slowly

j. Emphasize the need to release the pressure slowly. If the pressure drops too fast, the needle will sweep down the gauge too quickly to be read accurately
   1) The pressure should be released at a speed that takes one second for the needle to move a single gradation
   2) One second for every 2 millimeters of mercury on the gauge
k. Keep your eyes on the gauge and listen for the Korotkoff sounds
l. Point out that the needle on the pressure gauge generally will "bounce" slightly when blood starts to spurt through the artery
m. Excuse the student and thank him or her for participating
n. Solicit students' questions concerning these procedures

3. Normal Blood Pressure Values
   a. Point out that "normal" values of blood pressure are
      1) Systolic: 120-140 mmHg
      2) Diastolic: 70-90 mmHg
   b. Note: "Normal" people can have significantly different blood pressures: there is a wide variation in human blood pressure. The ranges used in the DRE program are a bit wider than those used in the medical profession
4. Do's and Don'ts of Blood Pressure Measurement
   a. If you inflate the bladder and then need to repeat the measurement, wait at least three minutes to allow the subject's artery to return to normal
      1) Point out that if difficulty is encountered in hearing the Korotkoff sounds
      2) Try having the subject raise his or her arm and clench the fist to allow blood flow back to the heart
   b. Hold the bell of the stethoscope with your fingers; don't slide it under the cuff – that will distort the measurement
5. Students Initial Practice at Measuring Blood Pressure
   a. If at least one sphygmomanometer and stethoscope are available for every two students, instruct students to practice in pairs.
   b. Otherwise, assign students to practice in teams of 3 or 4 members

S. Measurement of Temperature
1. Point out that the "normal" range for body temperature taken orally is 98.6 degrees + / - 1-degree Fahrenheit
2. Temperature is measured orally (under the tongue) using a thermometer
3. Exhibit the thermometer
4. Make sure that a fresh disposable mouthpiece cover is used each time
5. Ensure that the subject does not take any hot or cold liquids by mouth prior to taking the temperature
6. Point out that hot and cold liquids immediately prior to the temperature examination may affect the result
7. Always wear gloves when you remove and discard the mouthpiece after completing the measurement
8. Solicit students' comments and questions concerning this overview of procedures and cues

T. Normal Ranges of Vital Signs
   a. Normal human vital signs vary between individuals
      1) Factors that can affect this are:
         a) A person's physical fitness, or lack of
         b) Heredity

c) Illness
d) Anxiety and many other factors

2) Never the less, there are ranges within which in most peoples' vital signs will fall, most of the time

b. However, the DEC program has identified a set of "normal" ranges for each of the three vital sign examinations used in the drug influence evaluation process. The ranges used in the DEC program are normally a bit wider than those used by the medical profession. Remind students that the "normal" ranges identified for the DEC program have been established through years of research and with medical input

2. DEC Program normal ranges
   a. Pulse rate: 60 to 90 BPM
   b. Blood pressure: Systolic: 120-140 mmHg and Diastolic: 70-90 mmHg
   c. Body temperature: 98.6 degrees, plus or minus 1 degree

U. Relationship of Drug Categories to the Vital Signs Examinations
   1. Draw the matrix on the dry erase board or flip-chart at the outset of this session
      a. Write the seven drug categories across the top of the dry erase board or flip chart
         1) CNS Depressants
         2) Inhalants
         3) Dissociative Anesthetics
         4) Cannabis
         5) CNS Stimulants
         6) Hallucinogens
         7) Narcotic Analgesics
      b. Write the below fields along the side of the dry erase board or flip-chart
         1) Pulse Rate
         2) Blood Pressure
         3) Body Temperature
         4) Muscle Tone
            a) All seven categories of drugs ordinarily will affect pulse rate and blood pressure
            b) Most of the seven categories will affect the body temperature and muscle tone
            c) **Note:** though muscle tone is not considered a "Vital Sign" it is documented in the DRE exam and on the DRE matrix
   2. Some categories usually will lower pulse and blood pressure
      a. Question: Ask the students which categories will lower pulse rate and blood pressure
      b. Answer: CNS Depressants and Narcotic Analgesics usually lower pulse and blood pressure
         1) Write "DOWN" on the pulse and blood pressure lines under the columns for Depressants and Narcotics
         2) Note, point out the exception is that some Quaaludes, ETOH and some anti-depressants may cause the pulse to increase
   3. Most of the drug categories that elevate pulse rate also elevate blood pressure
      a. Question: **Ask** the students which categories will elevate the pulse rate and blood pressure
         1) Answers:
         2) CNS Stimulants

3) Hallucinogens
4) Dissociative Anesthetics
5) Cannabis
6) All usually cause the pulse rate and blood pressure to rise

b. Write "UP" on the pulse and blood pressure lines for those four categories

4. Question: Ask the students what effect Inhalants will have on the blood pressure and pulse
   a. Answer: All Inhalants will increase the pulse rate, however, only some will elevate the blood pressure
      1) The vast majority of Inhalants, namely, the volatile solvents and the aerosols, also elevate blood pressure
      2) But the remaining small group of Inhalants, the anesthetic gases, actually lower the blood pressure
   b. Remind students that the anesthetic gases include such things as nitrous oxide, amyl nitrate and ether
      1) Write "UP/DOWN" on the blood pressure line under the column for Inhalants with the footnote –
      2) down with anesthetic gases
      3) up with volatile solvents and aerosols
      4) All inhalants, including anesthetic gases, usually elevate pulse rate
      5) Write "UP" under pulse rate line under the column for Inhalants
5. Three of the seven categories usually will cause the body temperature to rise
   a. Question: Ask students which categories usually cause an elevation in body temperature
      1) Answer:
      2) Dissociative Anesthetics, CNS Stimulants and Hallucinogens will cause an elevation in body temperature.
      3) Write "UP" on the temperature line under the Dissociative Anesthetics, CNS Stimulants and Hallucinogens columns
6. The effect of Inhalants on body temperature depends on the specific substance that is inhaled
   a. Some Inhalants may cause temperature to increase or decrease
   b. But other Inhalants may leave the temperature near normal
   c. Write "UP/DOWN/or NORMAL" on the temperature line under the Inhalants column
7. One category usually causes body temperature to be lowered.
   a. Question: **Ask** students which category usually lowers temperature
      1) Answer: Narcotic Analgesics usually lower body temperature
      2) Write "DOWN" on the temperature line under the Narcotic Analgesics column
8. The remaining two categories usually do not affect temperature
   a. Write "NORMAL" on the temperature line under the CNS Depressant:
   b. Also, Cannabis column
9. Three of the drug categories usually will cause the muscle tone to be rigid
   a. Question: **Ask** students which categories will cause the muscle tone to be rigid
   b. Answer:
      1) CNS Stimulants, Hallucinogens and Dissociative Anesthetics will usually cause a rigid muscle tone
      2) Write "RIGID" on the Muscle Tone line under the Stimulants, Dissociative Anesthetics columns
      3) Also goes in Hallucinogens columns

10. Two categories usually cause muscle tone to be flaccid
    a. Question: **Ask** students which categories cause flaccid muscle tone
    b. Answer:
        1) CNS Depressants and Narcotic Analgesics usually cause a flaccid muscle tone
        2) Write "FLACCID" on the Muscle Tone line under the CNS Depressants
        3) Also goes in Narcotic Analgesics columns
11. One category usually causes normal muscle tone
    a. Question: **Ask** students which category causes a normal muscle tone
    b. Answer:
        1) Cannabis usually causes normal muscle tone
        2) Write "NORMAL" on the Muscle Tone line under the Cannabis column
12. One category will usually cause either normal or flaccid muscle tone
    a. Question: **Ask** students which categories usually cause either normal or flaccid muscle tone
    b. Answer:
        1) Inhalants usually cause either normal or flaccid muscle tone
        2) Write "NORMAL or FLACCID" on the muscle tone line under the Inhalants column

V. Solicit students' questions and comments from the students
    1. **Ask** students what specific drug types within some of the drug categories would cause the rise in the pulse rate, blood pressure and body temperature
        a. Some examples may be: Methamphetamine under the CNS Stimulant category will cause a rise in pulse rate, blood pressure and body temperature
        b. PCP under the Dissociative Anesthetic category will also cause a rise in the pulse rate, blood pressure and body temperature
    2. **Ask** students what specific drug types within some of the drug categories would cause a decrease in the pulse rate, blood pressure and body temperature
        a. There is only one drug category that causes a decrease in pulse rate, blood pressure and body temperature
        b. An example would be heroin under the Narcotic Analgesic category

W. Practice
    1. Assignments and Procedures
        a. Team Assignments
            1) Group the students into teams of two (2) or three (3) members each
            2) Each team must have at least one blood pressure kit
        b. Explanation of Practice
            1) Teammates will take turns measuring each other's pulse rate and blood pressure
            2) Each student will write down every measurement he or she makes and the time at which the measurement was made
            3) Whichever member of the team is not engaged in taking the measurement or serving as the "suspect" will act as a coach and offer appropriate constructive criticism to his or her teammate
            4) Practice will continue until each student has taken at least three complete pulse and blood pressure measurements on both teammates
        c. Solicit questions about the practice procedures
        d. Testing (students testing students)

1) Monitor the practice to ensure compliance with the procedures
2) Offer coaching and constructive criticism as appropriate

X. Review Topics for Study Sheet with Students
   1. Have students complete the review questions as a form of review
   2. Review questions with students

II. Eye Examinations, Pupil size[2] (1hr.)

A. Learning objectives
   1. Describe how to estimate the subjects pupil size in three lighting conditions
   2. Describe what the average pupil size is un-impaired person
   3. Describe the lighting conditions for the pupil size estimation
   4. Describe how to relate the pupil size to the drug matrix

B. Purpose of the Eye Examination, Pupil size
   1. The principal purpose of all the eye examinations is to obtain articulable facts indicating the presence or absence of specific categories of drugs
      a. Certain drug categories usually cause the eyes to react in specific ways
      b. Other drug categories usually do not cause those reactions
   2. Some drug categories cause the pupil size to get larger (dilate), some drug categories have no effect on the pupil size and one drug category causes the pupil size to get smaller (constrict).
      a. Later in the course we will go into further detail on this
      b. See “M” of this section titled “Basic Concepts Relative to Interpreting Pupil Sizes”

C. Estimation of pupil size
   1. We use a device called a pupilometer to estimate the size of the subject’s pupil
   2. Estimations are made in millimeters (mm)
   3. The DRE pupillometer has a series of circles or semi-circles, with diameters ranging from 1.0 mm to 10.0 mm, in half millimeter increments
   4. Exhibit a pupillometer
      a. Point out that our eyes continually adjust to accommodate different lighting conditions
         1) When in a darkened environment, the pupils expand, or “dilate” to allow the eyes to capture as much light as possible
         2) When in a bright environment, the pupils shrink, or “constrict”, to keep they eyes from being overloaded.
      b. This process of constriction and dilation normally occurs within limits
      c. Emphasize that we “estimate” the pupil size and do not measure it
      d. Select a student and demonstrate pupil size estimation using the student
      e. Point out to begin by testing the subject’s left eye first
   5. The pupillometer is held alongside the subject’s eye, and moved up and down until the circle or semi-circle closest in size to the pupil is located
      a. You do this by comparing or “estimating” the size of the pupil to the size of the circles or semi-circles on the pupilometer

[32] Preliminary Training for Drug Evaluation and Classification Program, Section IV, HS172 R5/13

b. The pupil size estimations are recorded as the numeric value that corresponds to the diameter of the circle or semi-circle closest in size to the subject's pupil in each lighting condition

D. Students' Initial Practice of Pupil Size Estimation
   1. Select a student from the class and demonstrate how the pupil size is estimated.
   2. Upon completion, excuse the student-volunteer and thank him or her for participating
      1) Instruct students to work in pairs, taking turns estimating each other's pupils
      2) Have students record on a paper the pupil size of their partners
   3. Monitor, coach and critique the students' practice
   4. Allow this practice to continue for only about 2 minutes
   5. Ask the students how many found partners with different sized pupils (i.e., one pupil larger or smaller than the right)
   6. Point out that it is not too uncommon to find people whose pupils differ by as much as one-half millimeter, but the larger differences are more unusual
   7. Tabulate the pupil size estimates made by the students on the dry erase board or flip-chart using the following sizes:
      a. 8.5 or larger_____
      b. 8.0_____
      c. 7.5_____
      d. 7.0_____
      e. 6.5_____
      f. 6.0_____
      g. 5.5_____
      h. 5.0_____
      i. 4.5_____
      j. 4.0_____
      k. 3.5_____
      l. 3.0_____
      m. 2.5 or smaller_____
   8. Point out that the "normal" range of pupil size in room light is 2.5 to 5.0 mm

E. Three Lighting Conditions
   1. We estimate pupil size under three (3) different lighting conditions
      a. Room Light
      b. Near Total Darkness
      c. Direct Light
   2. Instructor Note: The In-Direct Light estimation was removed from the DRE protocol in 2003.This was after research determined it no direct correlation to impairment

F. Three Testing Conditions
   1. Different testing conditions create different demands on the autonomic nervous system, including the pupil
   2. Examining the pupils in three different lighting conditions is similar to examining other clinical indicators, i.e., pulse or blood pressure in different conditions
   3. Point out that the human pulse and blood pressure can vary depending on whether the person is standing, resting, or running
   4. In the DRE program we use the terms; "Normal", "Average", "Average Range" or "DRE Average Range"

a. "Normal" and "Average" means a range of values that represents the "middle" or "typical" values that the majority of healthy, non-impaired people would be expected to exhibit to have in a specific test
b. "Average Range" and "DRE Average Range" means the value that represents a wider set of number to allow for slight differences in peoples. i.e. age, ethnic background, eye color etc

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G. Estimation of Pupil Size under Room Light
   1. Pupils are examined in Room Light prior to darkening the room
   2. Since room lighting condition can vary considerable and often cannot be controlled, the range of pupil sizes may also vary

H. Procedures and demonstration of Room Light
   1. This exam is conducted prior to conducting the Dark Light exam
   2. The pupillometer is held alongside the subject's eye, and moved up and down until the circle or semi-circle closest in size to the pupil is located
      a. You do this by comparing or "estimating" the size of the pupil to the size of the circles or semi-circles on the pupilometer
      b. The pupil size estimations are recorded as the numeric value that corresponds to the diameter of the circle or semi-circle closest in size to the subject's pupil in each lighting condition
   3. Document the diameter of the pupil in millimeters

I. Estimation of Pupil Size under Near Total Darkness and Direct Light
   1. The final two pupil size estimations are made with the use of a penlight in a near totally darkened room
   2. Prior to estimating the pupil sizes, we darken the room and wait 90 seconds to allow the subject's eyes and our own to adapt to the dark

J. Procedures and demonstration
   1. For the estimation under near total darkness, completely cover the tip of the penlight with your finger or thumb, so that only a reddish glow and no white emerges
   2. Bring the glowing red tip up toward the subject's left eye until you can distinguish the pupil from the colored portion of the eye (iris)
   3. Position the pupillometer alongside the pupil (left eye first) and locate the circle or semi-circle that is closest in size to the pupil.
   4. Repeat the procedure for the subject's right eye

K. Select a student to participate in demonstrations of darkroom pupil measurements
   1. For the estimation under direct light, bring the uncovered light from the side of the subject's face directly into his or her left eye and hold it there for approximately 15 seconds
   2. During the direct lighting check, we watch the pupil to see how it initially reacts to light, meaning does it constrict within one (1) second, is there any reaction to light and so on
   3. We also watch to see if there is any Rebound dilation or Pupillary unrest
   4. Demonstrate this
   5. Emphasize that the penlight should be positioned so that the beam just "fits" or approximately fills the eye socket

6. Bring the pupilometer up alongside the left eye, and find the circle or semicircle that is closest in size to the pupil
7. Repeat the procedure for the right eye

L. Normal Sizes for the Pupil
   1. Since we estimate pupil size under three different lighting conditions (Room Light, Near Total Darkness, and Direct Light) the range of pupil sizes will vary
   2. For most non-impaired people, even under very bright light, the pupils won't constrict much below a diameter of 2.5 millimeters (mm); and even under near total dark conditions, they pupils usually will only dilate to a diameter of not more than 8.5mm
   3. Results of studies[3] indicated there are significant differences between the average pupil sizes in these three test conditions.
   4. Consequently, the use of three distinct pupil size ranges for each of the three different testing conditions may be considered more useful in the evaluation to determine impairment verses non-impairment
   5. Due to these variations in pupil size, we use a range for each lighting condition and there is the average within each range
      a. Room lighting range: 2.5mm to 5.0mm, average of 4.0mm
      b. Near Total Darkness range: 5.0mm to 8.5mm, average of 6.5mm
      c. Direct Lighting range: 2.0mm to 4.5mm, average of 3.0mm

M. Basic Concepts Relative to Interpreting Pupil Sizes
   1. It is important to understand a few basic concepts relative to interpreting pupil sizes
   2. Mean values and average ranges: scientifically validated studies[4] were conducted to determine normative values for pupil size in non-impaired persons
      a. Point out that when all of the study subjects were tested, the majority (approximately 88%) of the "normal" non-impaired people fell within the "average ranges"
      b. DREs make decisions of impairment based on clinical, psychophysical, and behavioral indicators. This includes using pupil sizes as one of the factors in determining that impairment
      c. With many people, even under very bright light, the pupils won't constrict much below a diameter of 2.0 mm, and even under near total dark conditions, the pupils usually only dilate to a diameter of not more than 8.5 mm
   3. Point out that although there are several studies that indicate the pupil sizes are "for the majority of normal, non-impaired people," there is one study in particular that specifies the average size and ranges[5]

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[3] Clinical Research, "An evaluation of pupil size standards used by police officers for detecting drug impairment", by Richman, McAndrew, Decker, and Mullaney, Optometry, March 2004. Available at http://www.decp.org/pdfs/jaoapupilsizepaperrichman2.pdf

[4] Clinical Research, "An evaluation of pupil size standards used by police officers for detecting drug impairment", by Richman, McAndrew, Decker, and Mullaney, Optometry, March 2004. Available at http://www.decp.org/pdfs/jaoapupilsizepaperrichman2.pdf

[5] "An Evaluation of Pupil Size Standards Used By Police Officers for Detecting Drug Impairment" JAOA, March 2004, Richman, McAndrew, Decker & Mullaney

4. Many drugs, however, will affect the dilation or constriction of the pupils and many causes the pupil size to go outside these normal ranges
    a. CNS Stimulants, Hallucinogens will induce pupil dilation
    b. Cannabis and some Inhalants may induce dilation
        1) Note, with the increasing THC content in Cannabis, it is more common to see pupil dilation than to not see dilation
        2) Today's Cannabis is ever evolving with legalization standards for sale in certain states
    c. Narcotic Analgesics will cause pupil constriction
    d. Most Dissociative Anesthetics and the majority of CNS Depressants do not affect the pupils
        1) Dextromethorphan which is a Dissociative Anesthetic, causes pupil dilation
        2) Soma, Quaaludes and some anti-depressants which are CNS Depressants, usually cause pupil dilation
    e. Point out that specific drug categories and their relationship to pupil sizes will be covered later
5. The check of the pupil's reaction to light takes place at the same time as the test of pupil size under direct light
    a. Observe the subject's pupil size as the penlight is aimed at the orbit (the eye socket) of the subject's face.
    b. The white light should only fill the subject orbit and not cover their entire face
6. Demonstrate this using a participant-volunteer
    a. As you bring the beam of light directly into the subject's eye, note how the pupil reacts.
    b. The normal/un-impaired pupil will react to the light within 1 second
7. Demonstrate this
    a. Under ordinary conditions, the pupil should react very quickly, and constrict noticeably when the light beam strikes the eye
    b. Under the influence of certain categories of drugs, the pupil's reaction may be very sluggish, or there may be no constriction at all
8. Excuse the student-volunteer and thank him or her for participating

N. Student Practice
1. Students' initial practice in measuring the pupil's reaction to light
    a. Instruct the students to work in pairs, taking turns shining the light into each other's eye and observing the pupil's reaction
    b. Remind students to position the penlight so that the beam exactly "fits" the eye socket when the beam is brought directly into the eye
    c. Monitor, coach and critique the students' practice
    d. Allow the practice to continue for only about 2 minutes
2. Solicit students' comments and questions concerning the eye examinations

O. Demonstrations
1. Demonstration of Pupil Size Estimation and Test for Reaction to Light
2. Select two other students to come before the class and instruct one student to estimate the other's pupils under room light
    a. Pupil size estimation under room light

   b. Coach and critique the student-administrator's performance
   c. Darkroom estimations of pupil size
   d. Instruct the second student to demonstrate how to perform the dark room estimations of pupil size
   e. Coach and critique the student-administrator's performance
   f. Point out that assessment of the pupil's reaction to light takes place in conjunction with the direct-light estimation
3. Excuse the two students and thank them for participating

P. Normal Pupil Size Ranges Recap
1. Review, the normal ranges for non-impaired people
   a. Room lighting range: 2.5mm to 5.0mm, average of 4.0mm
   b. Near Total Darkness range: 5.0mm to 8.5mm, average of 6.5mm
   c. Direct Lighting range: 2.0mm to 4.5mm, average of 3.0mm
2. Solicit students' comments and questions concerning the demonstrations of the eye examinations and the pupil size ranges

Q. Relationship of Drug Categories to the Eye Examinations
1. Draw the matrix on the dry erase board or flip-chart
   a. Write the seven drug categories across the top of the dry erase board or flip chart
      1) CNS Depressants
      2) Inhalants
      3) Dissociative Anesthetics
      4) Cannabis
      5) CNS Stimulants
      6) Hallucinogens
      7) Narcotic Analgesics
   b. Write the below fields along the side of the dry erase board or flip-chart
      1) Pupil Size
      2) Reaction to Light
2. CNS Stimulants and Hallucinogens usually cause the pupils to become larger or "dilated"
   a. Matrix completion
   b. Write "DILATED" along the PUPIL SIZE line under the columns for CNS Stimulants and Hallucinogens
3. Cannabis may cause the pupils to dilate
   a. Matrix completion
   b. Write "DILATED" under the CANNABIS column; however, explain they may also be "NORMAL" as per Exception #6
4. Narcotic Analgesics usually cause the pupils to become smaller or "constricted"
   a. Matrix completion
   b. Write "CONSTRICTED" under the NARCOTICS column
5. Dissociative Anesthetics and most Inhalants tend to leave pupil size in the normal ranges
   a. Matrix completion
   b. Write "NORMAL" under the columns for Dissociative Anesthetics and Inhalants.
      1) Note that some inhalants may cause pupil dilation as per Exception #4
      2) Note that Dextromethorphan (a Dissociative Anesthetic) will cause pupil dilation as per Exception #7
6. CNS Depressants also usually leave the pupils near normal

a. Matrix completion
b. Write "NORMAL" under the DEPRESSANT column
    1) However, there are some exceptions
    2) Soma, Quaaludes and some anti-depressants usually dilate the pupils as per Exception #1

7. Solicit students' questions and comments
8. Generally, the pupillary reaction to light is either slowed by the effect of the drug or the pupil reacts normally
9. The most significant exception is the effect caused by Narcotic Analgesics
    a. Though there is always some reaction to light, in live subjects, the constricted pupil caused by narcotics makes it difficult to perceive a change in the pupil size
    b. As a result, we list reaction to light for Narcotic Analgesics as "little or none visible"
        1) Matrix Completion
        2) Write "LITTLE OR NONE VISIBLE" under Narcotic Analgesics
10. CNS Depressants, CNS Stimulants, and Inhalants usually cause a slowed reaction to light
    a. Matrix Completion
    b. Write "SLOW" under the columns for CNS Stimulants, CNS Depressants and Inhalants
11. With Hallucinogens, Dissociative Anesthetics and Cannabis the pupillary reaction to light is usually normal
    a. Matrix Completion
    b. Write "NORMAL" under the columns for Hallucinogens, Dissociative Anesthetics and Cannabis
    c. Note, certain psychedelic amphetamines in the Hallucinogens category cause slowing of the pupils, as per Exception #3
12. Debrief: Solicit students' questions and comments
    a. Review Topics for Study Sheet with Students
    b. Have students complete the review questions as a form of review
    c. Review questions with students

III. Overview of Drug Evaluation and Classification Procedures[6] (1 hr.)

A. Learning objectives
1. Define what a Drug is
2. Name the components of the Drug Evaluation and Classification program drug influence evaluation
3. State the purpose of each component
4. Describe the activities preformed during each component
5. Correctly answer the "topics for study" questions at the end of this session

B. What is a Drug?
1. There are many definitions for the word drug, however, it should be noted that NHTSA's impaired driving training programs require a more specific definition since the ultimate goal is to decrease impaired driving incidents, serious injury, and fatal crashes

[6] Preliminary Training for Drug Evaluation and Classification Program, Section II, HS172 R5/13

2. For the purposes of this course; a Drug is defined as any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely

C. Components of the Drug Evaluation and Classification program drug influence evaluation
   1. The Drug Influence Evaluation
      a. The Drug Evaluation and Classification Process is a systematic and standardized method of examining a subject to determine:
         1) Whether the subject is impaired; and if so,
         2) Whether the impairment is caused by drugs or a medical condition; and if drugs,
         3) The category or combination of categories of drugs that are likely cause of the subject's impairment
      b. The process is systematic in that it is based on a careful assessment of a variety of observable signs and symptoms that are known to be reliable indicators of drug impairment
   2. Write on dry erase board or flip-chart: "A SYSTEMATIC PROCESS"
      a. Some of these observable signs and symptoms relate to the subject's appearance
      b. Write "appearance" on dry erase board or flip-chart
      c. Some of the signs and symptoms relate to the subject's behavior
      d. Write "behavior" on dry erase board or flip-chart
      e. Some relate to the subject's performance of carefully administered psychophysical tests
      f. Write 'psychophysical testing" on dry erase board or flip-chart
   3. **Ask** students: "What does 'psychophysical' mean?"
      a. Drugs impair the subject's ability to control his or her mind and body
      b. Psychophysical tests can disclose that the subject's ability to control mind and body is impaired
      c. Point out that "psychophysical relates to the subject's mind (psyche) and body (physique)
      d. The specific manner in which the subject performs the psychophysical tests may indicate the type of impairment from which the subject is suffering. In turn, this may indicate the category or categories of drugs causing the impairment
      e. Write "autonomic responses of the body" on the dry erase board or flip-chart
      f. All of these reliable indicators are examined and carefully considered before a judgment is made concerning what categories of drugs are affecting the subject
   4. The process is standardized in that it is administered the same way, to every subject, by every drug recognition expert
      a. Standardization helps to ensure that no mistakes are made
      b. **Ask** students: "Why is it so important to perform the drug evaluation and classification examination in exactly the same way, every time?"
         1) You will always conduct these diagnostic evaluations in a controlled environment. You will not conduct the examination at the roadside, because the measurements and observations you need to make cannot accurately performed under roadside conditions
         2) Note, there may be an exception to this if you have a controlled environment at the roadside, such as a Driving Under the Influence trailer commonly used at sobriety checkpoints

3) If the evaluation is conducted in a trailer, at roadside, this should be noted in your report
4) DRE should always try to conduct the 12-step process in the same manner each time. However, there may be times when that is not possible, i.e., uncooperative subject, equipment failure, refusals, or duration of effect of the suspected drug
    a) If unable to complete all of the steps of the evaluation, you must explain the reasons for this in your narrative report
    b) If you are able to form an opinion, you must document what evidence and observations support that opinion
        (1) In such cases, the DRE may still be able to form an opinion based upon the evidence obtained.
        (2) State v. Cammack, 1997 WL 104913 (Minnesota Ct. Appeals, 1997) ruled that a DRE need not complete the entire 12-step evaluation for an opinion to be admissible so long as there is sufficient admissible evidence

5. Probe to draw out all major reasons for standardization
    a. Standardizations helps ensure that no mistakes are made
    b. No examinations are left out
    c. No extraneous or unreliable "indicators" are included
    d. Standardization helps to promote professionalism among drug recognition experts
    e. Standardization helps to secure acceptance in court

D. Twelve Step Process
1. The Drug Evaluation and Classification process has twelve components or steps
    a. Breath Alcohol Test
    b. Interview of Arresting Officer
    c. Preliminary Examination "Fork in the Road"
    d. Examination of the Eyes
    e. Divided Attention Psychophysical Test
    f. Vital Signs
    g. Dark Room Examination
    h. Check of Muscle Tone
    i. Check for Injection Sites
    j. Subjects statements and other Observations
    k. Opinion of Evaluator
    l. Toxicological Examination

E. Breath Alcohol Test
1. Breath Alcohol Test to determine BAC
    a. The purpose of the breath test is to determine whether the specific drug, alcohol, may be contributing to the impairment observable in the subject
    b. Obtaining an accurate measurement of BAC enables the DRE to assess whether alcohol may be the sole cause of the observable impairment, or whether it is likely that some other drug or drugs, or other complicating factors are contributing to the impairment
    c. Remind students that many subjects who are under the influence of drugs other than alcohol, also have alcohol in their bodies

2. If the arresting officer determines that the impairment is not consistent with the BAC, a DRE may be called to conduct an evaluation.

F. Interview of the Arresting Officer
   1. In some cases, the subject(s) you will examine may not be people that you have arrested
   2. The arresting officer may have seen or heard things that would be valuable indicators of the kinds of drugs the subject has ingested
   3. The arresting officer, in searching the subject, may have uncovered drug related paraphernalia, or even drugs themselves
   4. The arresting officer also may be able to alert you to important information about the subject's behavior that could be very valuable for your own safety

G. Preliminary Examination
   1. The preliminary examination is your first opportunity to observe the subject closely and directly
   2. Point out that the preliminary examination begins the "hands on" with the subject. Use of protective gloves is imperative
   3. A major purpose of the preliminary examination is to determine if the subject may be suffering from an injury or some other medical condition not necessarily related to drugs
      a. Analogy: The preliminary examination is a "fork in the road"
      b. It can help you decide whether to continue with the drug influence evaluation, to pursue a possible medical complication, or to proceed with a DWI (alcohol) case
   4. Another major purpose of the preliminary examination is to begin systematically assessing the subject's appearance, behavior and automatic bodily responses for signs of drug-induced impairment
      a. Emphasize that the term "preliminary" does not imply "unimportant."
      b. Very valuable evidence often comes to light during the preliminary examination
   5. The preliminary examination consists of a series of questions dealing with possible injuries or medical problems; observations of the subject's face, speech and breath; initial checks of the subject's eyes; and, an initial examination of the subject's pulse
   6. Students must comply with the Department's policies as to whether they should advise subjects of their Miranda rights before asking these questions
   7. The initial examination of the eyes may reveal signs of injury or illness. A difference in pupil size of greater than 0.5 mm may indicate an injury or existing medical condition

H. Examinations of the Eyes
   1. Ask students: "What do we look for, in a subject's eyes, to determine if he or she may be under the influence of alcohol?"
   2. Answer, "Nystagmus" more specifically, Horizontal Gaze Nystagmus (HGN), Vertical Gaze Nystagmus (VGN) and Lack of Convergence (LOC).
   3. Ask students: "Define Nystagmus"
   4. Answer, "An involuntary jerking of the eyes as the eyes gaze to the side or as they are elevated."
   5. The presence of nystagmus, and the point at which it becomes observable, can shed light on the possible presence of those the drugs that cause nystagmus and the extent to which they may be affecting the subject
   6. Alcohol is not the only drug that causes nystagmus

7. The inability of the eyes to converge toward the bridge of the nose (LOC) may also give evidence of the possible presence of those certain drugs that cause LOC.
8. Point out that the examinations of the eyes will be covered in much greater depth subsequently

I. Divided Attention Psychophysical Tests
   1. Ask students: "What does 'divided attention' mean?"
   2. Answer, "concentrating on more than one thing or task at a time"
   3. Relate this concept of multi-tasking to driving
   4. All drugs that impair driving ability will also impair the subject's ability to perform certain carefully designed divided attention tests
   5. These tests are familiar to you in the context of examining alcohol impaired subjects
      a. Point out that students will have opportunities to practice administering these tests subsequently in the course
      b. The same tests are very valuable for disclosing evidence of impairment due to drugs other than alcohol
   6. The divided attention tests used in the DRE examination include:
      a. The Modified Romberg Balance
      b. The Walk and Turn
      c. The One Leg Stand
      d. And, the Finger to Nose

J. Examination of Vital Signs
   1. This is a systematic check of the subject's blood pressure, pulse rate and body temperature
   2. Many categories of drugs affect the operation of the heart, lungs and other major organs of the body
   3. These effects show up during examination of the subject's vital signs
   4. Certain categories of drugs may elevate blood pressure, pulse rate and raise the body temperature. Other drugs would have precisely the opposite effects
   5. Point out those examinations of vital signs will be covered in depth subsequently, and that students will have ample opportunity to practice measuring vital signs.
   6. Point out that the students will learn to use medical instruments, including a stethoscope, a sphygmomanometer and an oral thermometer

K. Dark Room Examinations
   1. This is a systematic check of the size of the pupils of the subject's eyes, the reaction of the pupils to light, and evidence of ingestion of drugs by nose or mouth
   2. Many categories of drugs affect how the pupils of the eyes will appear, and how they respond to light
      a. Certain kinds of drugs will cause the pupils to grow larger than normal, or dilate
      b. Some other drugs cause the pupils to be smaller than normal, or constrict
   3. By systematically changing the amount of light entering the subject's eyes, we can observe the pupils' appearance and reaction under controlled conditions
      a. We carry out these examinations in a dark room, using a penlight to control the amount of illumination entering the subject's eyes
      b. For Officer Safety there should always be another officer present when this is conducted in the field
      c. Exhibit a penlight
      d. We use a device called a pupillometer to estimate the size of the subject's pupils

   e. Exhibit a pupillometer
   f. Point out that the pupillometer has a series of circles or semi-circles of various sizes. By lining up the circles or semi-circles alongside the subject's pupil, the pupil's size can be determined
4. Select a student to step forward and demonstrate the measurement of the student's pupils
5. Shine the penlight directly into the student's eye, and again demonstrate the measurement of the pupils
   a. Demonstrate that the two eyes "work together"; i.e., shine the penlight into one eye, and demonstrate that the pupil of the other eye also constricts
   b. Demonstrate the examination of the student's nasal area and oral cavity
6. Excuse the student and thank him or her for participating
   a. Other examinations are also conducted in the darkroom, using the penlight: i.e.; examination of the nasal area and mouth for signs of drug use and for concealed contraband
   b. Point out that students will have several opportunities to practice conducting dark room examinations subsequently in the course
   c. Display Slide II-12: Step 8 Examination for Muscle Tone

L. Examination for Muscle Tone
1. Certain categories of drugs can cause the user's muscles to become markedly tense, and rigid, while others can cause the muscles to be very flaccid, or loose and "rubbery-like"
2. Evidence of muscle tone may come to light when the subject attempts to perform the divided attention test
3. Evidence of muscle tone can also be observed when taking the subject's pulse and blood pressure
4. Point out that examination for muscle tone will be covered in greater depth later in the course

M. Examination for Injection Sites
1. Certain drugs are commonly injected by their users via hypodermic needles
2. Ask students: "What drug is most often associated with injection via hypodermic needle?"
   a. Answer, Heroin is probably most commonly associated with injection, but several other types of drugs also are injected by many users
   b. Uncovering injection sites on a subject provides powerful evidence that he or she may be under the influence of specific types of drugs
   c. This is also when the DRE obtains the third pulse

N. Suspect's Statements and Other Observations
1. At this point in the evaluation, the trained DRE should have reasonable grounds to believe that the subject is under the influence of a drug or drugs
   a. Point out that though the interview of the subject is the formal process of soliciting information about the subject's drug usage, any voluntary statements previously made during the evaluation should be noted and recorded
   b. Emphasize that any such interview can proceed only in conformance with formal admonition and strict observance of the subject's Constitutional Rights
2. The DRE should also have at least an articulable suspicion as to the category or categories of drugs causing the impairment

3. The DRE should proceed to interview the subject to confirm his or her suspicion/opinions concerning the drug or drugs involved
4. The DRE must carefully record the subject's statements and any other observations that may constitute relevant evidence of drug induced impairment
5. Point out that the appropriate procedures for interviewing subjects vary with the probable category or categories of drugs involved
6. Display Slide II-15: Step Opinion of the Evaluator

O. Opinion of the Evaluator
1. Based on all of the evidence and observations gleaned from the preceding ten steps, the DRE must reach an informed conclusion as to:
   a. Whether the subject is under the influence of a drug or drugs
   b. If so, the probable category or categories of drugs causing the impairment
2. The DRE must record a narrative summary of the facts forming the basis for his or her conclusions
3. Point out that the DRE should refer to drug categories and not to specific drugs
4. If you wish to get an additional charge of 11550 H&S and the drug category is CNS Stimulant, you must state whether the impairment it consistent with Methamphetamine or Cocaine

P. Toxicological Examination
1. The toxicological examination is a chemical test or tests designed to obtain scientific, admissible evidence to substantiate the DRE's conclusions
2. Departmental policy and procedures must be carefully and completely followed in requesting, obtaining and handling the chemical sample
3. Point out in some cases, the arresting officer may have already obtained the specimen prior to the DRE's arrival
4. Point out that just because the subject refuses to provide a specimen for analysis does not affect the evaluation or the DREs ability to form an opinion
5. For Driving Under the Influence of a Drug, blood is the required sample by DMV

Q. Solicit students' comments and questions concerning this preview of the Drug Evaluation and Classification procedures
1. Review of Drug Influence Checklist
2. Instruct students to turn to the Drug Influence Evaluation Checklist in their Student Manual.

Y. Review Topics for Study Sheet with Students
1. Have students complete the review questions as a form of review
2. Review questions with students

IV. Drugs in the Human Body[7] (1 hr.)

A. Learning Objectives
1. Describe, in general terms, the basic purpose and functions of selected major systems in the human body as they relate to observable signs
2. Identify methods of ingestion and general effects of drugs

[7] Advanced Roadside Impaired Driving Enforcement, Section IV, HS 172B R5/13

3. Identify medical conditions which may mimic alcohol and drug impairment
4. Identify the seven drug categories as referenced in the DECP and the basis for dividing drugs into these specific groups

B. Identifying the effects of drugs on the human body
   1. This process is dependent, in part, on:
      a. Recognizing changes in behavior
      b. Recognizing observable signs and symptoms related to an impaired individual
   2. In order to gain a better understanding of how alcohol and/or drugs affect bodily
   3. functions, it is helpful to be familiar with some of the processes of the human body

C. Pharmacokinetics
   1. Pharmacokinetics accounts for how a chemical substance is transported through the body in terms of absorption, distribution, metabolism, and elimination
   2. A number of different body systems can have impact on, or be affected by, the introduction of drugs

D. What is a Drug?
   1. A drug is any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely
   2. This is the same definition used the Drug Evaluation and Classification Program (DECP) or Drug Recognition Expert Program (DRE)

E. Psychoactive
   1. A psychoactive dug or substance is a chemical that alters function, resulting in temporary changes in:
      a. Perception
      b. Mood
      c. Consciousness
      d. Behavior
   2. Psychoactive drugs are often used for:
      a. Recreational purposes
      b. Spiritual purposes
      c. Medical purposes, especially for treating neurological problems
      d. Psychological illnesses and deficiencies

F. Major systems of the human body
   1. What are the systems of the human body?
      a. Muscular
      b. Urinary
      c. Respiratory
      d. Digestive
      e. Endocrine
      f. Reproductive
      g. Skeletal
      h. Integumentary (Skin)
      i. Nervous
      j. Circulatory
   2. Instructors Note: a pneumonic for this that can be taught is “M.U.R.D.E.R.S - I.N.C”

3. In order to illustrate the impact of drugs , alcohol or a combination of substances, it is helpful to think of them in terms of:
    a. Ingestion
    b. Onset
    c. Duration of effects
    d. Elimination
4. When a drug is ingested, the various systems of the human body provide the most predominate observable signs and symptoms related to the influence
5. We will review some of the most important systems as it relates to alcohol/drug ingestion

G. Muscular System
1. The body has three types of muscles:
    a. Heart
    b. Smooth Muscle
        1) "Involuntary"
        2) Control involuntary movements. i.e., breathing, blinking, etc.
    c. Striated Muscles
        1) "Voluntary"
        2) Control voluntary movements. i.e., movement of arms, legs, fine motor skills, etc.
2. The brain controls the operation of all these muscles through the nervous system
3. The impact of drugs and alcohol on the muscular system often be observed during the Modified Romberg Balance Test, Walk and Turn, One-Leg Stand, as well as during general observations
4. Question: "What types of signs, related to the muscular system, could an individual display while under the influence of alcohol and/or drugs?"
    a. Answer: Some examples are
    b. body or leg tremors, gait ataxia, lack of muscle control, lack of coordination, and unable to retrieve license from wallet (fine motor skills)

H. Urinary System
1. The urinary system is responsible for the elimination of waste from the body
2. This system consists of:
    a. Two kidneys
        1) Connects to the bladder through two long tubes called urethras
        2) The kidneys filter out waste products as blood passes through them
    b. Urethra
        1) This tube carries urine from the bladder out of the body
        2) This is the third tube in the urinary system
    c. Bladder
        1) Connected to the kidneys through two long tubes called urethras
        2) The bladders stores urine
3. Since drugs are removed from the blood in the kidneys and passes out of the body in the urine, the urinary system plays a key role in producing evidence of drug use
4. Question: "How do you think alcohol and/or drugs might affect an individual's urinary system?"
    a. Answer: example
    b. Fine evidence of drug use in the urine itself and the loss of bladder control

I. Respiratory System

1. The respiratory system is responsible for originating the blood and removing carbon dioxide and other waste from the blood
2. The primary organs of the respiratory system are:
   a. Diaphragm
   b. Lungs
3. Diaphragm is a muscular sheet that separates the thoracic (upper) cavity from the abdominal (lower) cavity, and draws fresh air into the lungs and forces used air out
4. The lungs are the organs responsible for transferring oxygen from the air (breathed in) to the blood, and for removing carbon dioxide from the blood (already circulated) to the atmosphere
5. Oxygen must be supplied to all the body cells, and carbon dioxide must be removed from them in order for life to exist
   a. Instructor Note: The air we breathe is roughly composed of 78.04% nitrogen, 21% oxygen, and 0.96% argon
   b. The typical human consumes from 5-7% of the oxygen breathed in during each breath
6. Question: "What types of signs, related to the respiratory system, could an individual display while under the influence of alcohol and/or drugs?"
   a. Answer:
   b. You may see rapid breathing, slow breathing, shallow respirations, etc.

J. Digestive System
   1. The digestive system breaks down food and/or chemicals, metabolizes and eliminates waste products
   2. The digestive system is made of up of:
      a. Stomach
      b. Pyloric Valve
      c. Intestines (large and small)
      d. Liver/pancreas
   3. The digestive system plays a major role in the absorption of alcohol and some drugs
      a. About 20% of alcohol is absorbed through the stomach walls
      b. About 80% of alcohol is absorbed through the small intestine
   4. Question: "How does the body break down chemicals, such as alcohol to its basic elements for elimination?
   5. Answer: Alcohol dehydrogenase breaks down alcohol into carbon dioxide and water

K. Nervous System
   1. The nervous system serves as the control center for the human body
   2. The nervous system consists of:
      a. Brain
      b. Spinal cord
      c. Nerves
   3. Each of these components is made up of nerve cells called neurons and supporting tissues
   4. The nervous system keeps the body appraised of changes in the environment by enabling:
      a. Sight
      b. Hearing
      c. Smell
      d. Taste

   e. Touch
      1) All this is done though sensations of:
      2) Temperature, pressure, pleasure and pain
5. The nervous system also enables reasoning, memory and emotions
6. The Central Nervous System sends impulses that cause muscles to contract and glands to secrete. This works with all the body systems to integrate all physiological processes so that normal function can be maintained
   a. Much of the activity of the nervous system is involuntary and therefore it is carried out below the level of consciousness
   b. The CNS is one of the body's major control systems and the brain is the center of that system

L. Circulatory System
1. The circulatory system moves blood, oxygen and nutrients throughout the body
2. The circulatory system consists of:
   a. Heart
   b. Blood Vessels
   c. Blood
3. The heart pumps blood throughout the body by transporting:
   a. Food
   b. Water
   c. Hormones
   d. Antibodies
   e. Oxygen
   f. Carbon Dioxide
   g. Other substances to and from the body cells as required
4. Body temperature regulation is a partial responsibility of the circulatory system, since warm blood is constantly moved throughout the body
5. The circulatory system plays a key role in transporting drugs to the brain, where most of the drugs' effects are exerted
6. The circulatory system also transports the drugs to the liver and other organs, where the drugs are metabolized

M. The Brain
1. The brain is made of billions of nerve cells, also known as neurons. Nerve cells communicate by transferring chemical substance between each other
2. When a message is sent from one neuron (transmitter), it triggers the release of neurotransmitters and sends the message to another nerve cell which is called the receptor
3. This is the way nerve cells share information
4. There are many different types of neurotransmitters and each one has a specific role to play in how the brain and the CNS functions
5. Some drugs affect the brain because their chemical makeup is similar to the neurotransmitters which occur in the body naturally
   a. In the appropriate dose amount, drugs have a positive influence on how the neurons function
   b. However, in some cases, drugs can cause the release of large amounts of a similar neurotransmitter while others can block the receptors
6. All drugs of abuse, such as nicotine, cocaine, and marijuana impacts the limbic system of the brain. The limbic system generates:

a. Our feelings
b. Emotions
c. Motivations
d. Supports memory and learning
    1) The limbic system responds to pleasurable experiences by releasing the neurotransmitter dopamine
    2) The effect which a subject experience when dopamine is 'dumped' in the CNS, creates a euphoric sensation which makes some drugs of abuse so appealing to the user

N. Homeostasis
1. Defined as, dynamic balance, or steady state, involving levels of salts, water, sugars and other material in the body's fluids
    a. This is a self-regulating process by which a biological or mechanical system maintains stability while adjusting to changing conditions
    b. Point out that "homeo" means similar or the same elements and "stasis" means balance
        1) Instructor Note: The rhythm of the heart, breathing, constancy of body temperature, and the steady level of blood pressure under specific circumstances or conditions are all manifestations of homeostatic mechanisms at work within the body
        2) The body is made up of systems, they are all in a dynamic equilibrium
    c. Under normal circumstances, systems seek a balance in which internal change continuously compensates for external change in a feedback control process to keep conditions relatively level
2. Examples of homeostasis:
    a. Temperature regulation controlled by a complex system controlled by the hypothalamus in the brain
    b. Maintaining supplies of bodily fluids, controlled by the circulatory system
    c. Bringing in oxygen and eliminating carbon dioxide, controlled by the respiratory system
    d. Eliminating waste, controlled by the digestive and urinary system
    e. Integrating the functions of the various body systems

O. The resulting interaction of drugs and alcohol
1. When alcohol and/or drugs are introduced into the body, the resulting interactions can cause the body to:
    a. Speed up
    b. Slow down
    c. Become confused
2. The observations and examination of the selected bodily functions help to indicate whether a subject is impaired by alcohol and/or other drugs

P. Methods of ingestion and general effects of drugs
1. In general terms, ingestion is: the act of taking food or another substance into the body through the mouth
2. For the purpose of this course: ingestion is used to describe any manner by which a drug or alcohol enters the human body whether it be orally or otherwise
3. Methods of ingestions:
    a. Oral

1) Oral ingestion is administered through the mouth
2) Example would be drinking alcohol, swallowing a pill, etc.

b. Injection
   1) Injection is administered intravenously
   2) Examples would be injecting a narcotic analgesic, stimulant, hallucinogen, dissociative anesthetic, etc.
      a) Instructor Note: CNS depressants can also be injected
      b) However, it is not common due to the size of the needle required to deliver the substance
   3) Ask students: "Give some physical characteristics of injection sites."
   4) Answer: The injection sites should be described as either "fresh" or "old"
      a) "Fresh" would be considered between 0-8 hours old and could be described as; Over the Vein (O/V), red and raised, with clear/red fluid oozing from it
      b) "old" would be considered over 8 hours old and may be scabbed over
   5) Instructor note: Talk about "trap dooring," the method of injecting under a scab to avoid police detection

c. Insufflation
   1) Insufflations is the act of introducing a substance by inhaling through the nose for the purpose of intranasal absorption through the mucous membrane
      a) For a substance to be effective when insufflated it must be in a water-soluble powder, so it can be readily absorbed through the mucous membrane
      b) This method is commonly referred to as "snorting"
   2) Drugs that are commonly insufflated:
      a) CNS stimulants
      b) Hallucinogens
      c) Dissociative anesthetics
      d) Narcotic analgesics

d. Inhalation
   1) The act of introducing a substance directly into the respiratory system through the nose and mouth for the purpose of absorbing the substance through the alveoli in the lungs
   2) This is a very rapid method of absorption (the fastest method of ingestion). It is often referred to as huffing, sniffing, or smoking
   3) Drugs that are commonly inhaled:
      a) Cannabis – smoking
      b) Narcotic analgesics – smoking
      c) Dissociative anesthetics – smoking
      d) Hallucinogens – smoking
      e) Stimulants – smoking
      f) Inhalants – inhaling

e. Transdermal
   1) Transdermal is the act of introducing a substance to the body through absorption through the skin
   2) This is a less common method of administration
   3) Officer safety: Note that dissociative anesthetics such as PCP is transdermal and protective gloves should be worn
   4) Drugs which are able to be administered transdermal can be administered accidentally though direct skin contact

5) Drugs that are transdermal:
   a) Birth control
   b) Nicotine patch
   c) PCP
   d) Pain patches such as Fentanyl or Buprenorphine

Q. Medical conditions which may mimic drug impairment
1. There are various medical conditions and injuries that may cause individuals to appear to be impaired by alcohol and/or other drugs
2. Some of the more common medical conditions that may mimic drug impairment include:
   a. Head trauma
   b. Stroke
   c. Diabetes
   d. Conjunctivitis
   e. Shock
   f. Multiple sclerosis
   g. Other conditions
3. Head trauma
   a. A severe blow or bump to the head may injure the brain and create:
      1) Disorientation
      2) Confusion
      3) Lack of coordination
      4) Slowed responses
      5) Speech impairment
      6) Other gross indicators of alcohol and drug influence
   b. Because the injury usually affects one side of the brain more than the other, disparities usually will be evident in the subject's eyes
      1) Sometimes the pupils will be noticeably different in size or one eyelid may droop while the other appears normal
      2) They eyes may not be able to track equally while focusing on a stimulus
4. Stroke
   a. A stroke will usually produce many of the same effects and indicators associated with head trauma
   b. Stroke victims often will have:
      1) Noticeably different pupil size. One pupil may remain fixed and exhibit no visible reaction to light, while the other reacts normally
      2) Paralysis, or weakness on one side of the body
      3) Individuals suffering from a stroke will often have a dazed appearance and be confused and/or scared
5. Diabetes
   a. A diabetic is most likely to be mistaken for a person impaired by alcohol and/or drugs when they have too much insulin, causing the blood sugar level to become dangerously low (Hypoglycemia)
   b. This condition is referred to as insulin shock
   c. A diabetic experiencing insulin shock may:
      1) Appear very confused
      2) Be non-responsive
      3) Sweat profusely
      4) Exhibit elevated pulse rate

5) Elevated blood pressure

d. A second diabetic condition that may mimic alcohol and/or drug impairment is when their sugar levels are too high (Hyperglycemia) and their insulin levels are too low
e. This condition is referred to as insulin resistant diabetes
f. A Diabetic suffering from hyperglycemia may:
   1) Have headaches
   2) Difficulty concentrating
   3) Blurred vision
   4) Fatigue or weakness
   5) Ketoacidosis
      a) A “kenotic” odor is present, often described as a “fruity” breath
      b) This has been confused with the odor of an alcoholic beverage

6. Conjunctivitis
   a. This is an inflammation of the mucous membrane that lines the inner surface of the eyelids giving red bloodshot appearance to the conjunctiva of the eyes
   b. At first glance, this may appear similar to the bloodshot conditions associated with impairment by alcohol or cannabis
   c. This condition may occur in one or both eyes and is often referred to as “pink eye”
7. Shock
   a. This is a life-threatening condition that occurs when the body is not getting enough blood flow
   b. This can damage multiple organs and lead to death
   c. Shock requires immediate medical treatment and can get worse very rapidly
   d. Individuals with shot will:
      1) Have cold clammy skin
      2) Appear weak and/or lethargic
      3) Have a rapid and weak pulse
      4) Appear dazed, uncoordinated, and possibly non-responsive
8. Multiple sclerosis
   a. This is a degenerative muscular disorder.
   b. Victims of Multiple Sclerosis (MS) may:
      1) Lack coordination or exhibit gait ataxia
      2) Display tremors
      3) Have slurred or garbled speech
      4) Unlike subjects impaired by alcohol/drugs, MS sufferers usually appear alert
9. Some other medical conditions that may cause signs and symptoms similar to drug impairment include:
      1) Carbon monoxide poisoning
      2) Seizures
      3) Endocrine disorders
      4) Neurological conditions
      5) Psychiatric conditions
      6) Infections
10. There are some behavioral conditions that may affect a person’s vital signs:
    a. Exercise
    b. Excitement
    c. Fear

d. Anxiety
e. Depression

R. Introduction to the seven drug categories
1. What is a drug?
a. Any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely
b. Based on this definition of a "drug," the DEC Program divided drugs into seven categories. These drug categories are based on observable signs and symptoms they produce. The following is a brief description of each category:
c. **CNS Depressants** include a large number of different drugs. The common drug in this category is alcohol. CNS depressants slow down the operation of the brain and other parts of the central nervous system. An example is Xanax
d. **Inhalants,** these are breathable chemicals, which are contained in familiar household items. An example is gold spray-paint
e. **Dissociative Anesthetics,** these are powerful drugs that act like depressants in some ways, but also cause the body to respond similarly to a stimulant or a hallucinogen. An example is PCP
f. **Cannabis,** the most popular and widely used and abused illegal drug and is most commonly referred to as marijuana. An example is marijuana or honey oil
g. **CNS Stimulants** influence the human body by speeding it up, or over stimulating the brain. An example is cocaine
h. **Hallucinogens,** all hallucinogens impair the subject's ability to perceive reality. This includes some natural, organic substance as well as some synthetic chemicals. An example is LSD
i. **Narcotic Analgesics,** relieve pain, produce addiction, and withdrawal symptoms. An example is heroin and oxycontin

V. CNS Depressants[8] [9] (1hr.)

A. Learning Objectives
1. Identify common drug names and terms associated with this category
2. Identify the common methods of administration for this category
3. Describe the indicators of impairment associated with this category
4. Describe conditions which may mimic the signs and symptoms associated with this category
5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)

B. What is a CNS Depressant?
1. In order for a drug to be classified as a depressant according to the DRE program, it must depress the activity of a subject's brain and CNS
2. Instructor Note: The CNS is composed of the brain, brain stem, and spinal cord

C. Overview of Central Nervous System Depressants

[8] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[9] Drug Evaluation and Classification Training "The Drug Recognition Expert School", Section IX, HS 172 R5/13

1. Depressants first affect those areas of the brain that control a person's conscious, voluntary actions
   a. Speech
   b. Coordination
   c. Mobility
2. As the dose is increased, depressants begin to affect the parts of the brain that control the body's automatic processes
   a. Heartbeat
   b. Respiration
   c. Blood Pressure
3. The CNS depressant category includes the single most commonly abused drug in America
   a. Alcohol has been used and abused since prehistoric times
   b. Alcohol and its effects are familiar to most people
   c. Alcohol is a model for the CNS depressant category with some exceptions, all depressants produce effects that are quite similar to the effects of alcohol
      1) Non-Alcohol CNS depressants have been around for more than 150 years
      2) The first non-alcohol CNS depressant was Chloral Hydrate
         a) It was developed in 1832
         b) It is commonly referred to as "Mickey Finn" or "Knockout drops" because of its fast-acting effects
         c) Chloral Hydrate is still produced and prescribed today
4. The six major subcategories of CNS depressants other than alcohol
   a. Barbiturates
   b. Non-Barbiturates
   c. Anti-Anxiety Tranquilizers
   d. Anti-Depressants
   e. Anti-Psychotic Tranquilizers
   f. Combinations of the other five subcategories
   a. Examples of specific common CNS Depressants
      1) Valium
      2) Prozac
      3) Xanax
      4) Soma
      5) Alcohol
      6) Chloral Hydrate (known as “Mikey Finn” or “Knockout drops”)
   b. Examples of specific illicit CNS Depressants
      1) Rohypnol (Flunitrazepam)
      2) Gamma Hydroxy Butyrate (GHB)
         a) These drugs have been implicated in an alarming number of sexual assaults and overdose deaths
         b) Rohypnol is most commonly found in pill form (1 or 2 mg) and is still smuggled across the US/Mexico border

B. Methods of ingestion of CNS Depressants
   1) Orally
      a) Generally, CNS depressants will be found in pill or liquid form
      b) The most common method for using depressants is to take them orally
   2) Insufflation
      a) This means snorting the drug

b) Pills may be crushed and insufflated

3) Intravenous
   a) Some abusers experience a "flash" or "rush" from intravenous injection of barbiturates, that they do not experience from oral ingestion
   b) The injection paraphernalia used for barbiturates are very similar to those used for heroin
   c) However, the barbiturate abuser will use a larger hypodermic needle, because the barbiturate solution is thicker than the heroin solution
   d) The injection sites on the skin of a barbiturate abuser appear quite different from those of a heroin addict
   e) A large swelling, about the size of a quarter or fifty cent pieces frequently will appear at the barbiturate injection site
   f) Necrosis may occur: i.e., a decaying of the body's tissue at the injection site
   g) The dead tissue may begin to separate from the living tissue, producing ulcerations
   h) The barbiturate user who injects the drug usually will not display the same type of track marks as the heroin addict who uses repeated injections along the same vein
   i) Barbiturate abusers often will inject in parts of the body other than the forearm, and will commonly exhibit the characteristic swellings at random locations on the extremities

E. Possible Effects
   1. A person under the influence of a CNS depressant will look like a drunk, talk like a drunk, walk like a drunk, but they may not smell like a drunk
   2. Therapeutic doses (amounts typically prescribed by a physician) may not exhibit observable effects if they are ingested as prescribed
   3. Combinations of Depressants can be risky. Especially if they are combined with Alcohol
      a. This increases the effects of the depressant and could magnify the effects and observable signs and symptoms
      b. This is the synergistic or additive effect

F. General Indicators
   1. **Ask** students: “How would a Depressant possibly impair a subject’s ability to operate a vehicle safely?”
      a. Answer: Slowed reflexes may cause a delay in applying brakes in a timely manner
      b. Vision problems could lead to the inability to maintain lane position
   2. Other Indicators
      a. Reduced ability to divide attention
      b. Reduced social inhibitions
      c. Disoriented
      d. Sluggish /slowed reflexes
      e. Impaired judgment and concentration
      f. Drowsiness
      g. Gait ataxia (impaired walking)
      h. Droopy eyelids
      i. Slurred, mumbled, or incoherent speech

j. Produce a variety of emotional effects, such as euphoria, depression, suicidal tendencies, laughing or crying without provocation, etc

3. Generally speaking, a person under the influence of CNS Depressants will look and act drunk

G. Eye Indicators
1. Review matrix with student.
   a. HGN – Present
   b. VGN – May be present in high dose
   c. LOC – Present
   d. Pupil Size – Normal (meaning with in the average range established by the DRE Program)

H. Onset and Duration of Effects
1. Depressant drugs can be grouped loosely into four classes, based on how quickly they take effect and how long their effects last
   a. Ultra-short
      1) Onset – Within seconds
      2) Duration - Few minutes
   b. Short
      1) Onset – 10 to 15 minutes
      2) Duration is up to 4 hours
   c. Intermediate
      1) Onset – 30 minutes
      2) Duration is 4 to 6 hours
   d. Long Acting
      1) Onset – One hour
      2) Duration is 6 or more hours
2. Variables affecting duration of effects
   a. The duration of effects of CNS depressants can vary depending upon:
      1) Dosage Amounts
      2) Age
      3) Weight
      4) Tolerance level
   b. Other variables may dictate the length of actual impairment
      1) Potency of drug
      2) Consumption of food
3. Specific Duration of effects
   a. Barbiturates – 1 to 16 hours
   b. Tranquilizers – 4 to 8 hours
   c. GHB – 3 to 5 hours
   d. Rohypnol – Peak 1-2 hours and Duration 8-12 hours

I. Overdose Signs and Symptoms
1. Overdoses of CNS depressants produce symptoms essentially identical to those of alcohol overdoses
   a. Subject will become extremely drowsy and may pass out
   b. The heartbeat (pulse) will slow
   c. Respiration will become shallow
   d. Dilated pupils

e. Cold/clammy skin

2. One major danger with CNS depressant overdoses is death from respiratory failure
   a. A sufficiently high dose of a CNS depressant will suppress the portions of the brain that control respiration
   b. This situation only rarely occurs from alcohol intoxication: usually, a drinker will pass out before he or she consumes enough alcohol to suppress respiration completely
   c. With other depressants, it is relatively easy to take a fatal overdose
3. Another major danger with CNS depressants occurs when they are combined with alcohol
   a. There is an additive effect when alcohol and another depressant are taken together
   b. Coroners have reported a number of cases in which neither the alcohol level nor the depressant level independently, would have been close to a fatal dose
   c. It is not possible to predict how great an effect will occur when alcohol is mixed with another depressant
   d. However, it is clear that the combination is always risky

J. Medical conditions that may mimic drug impairment
   1. Extreme fatigue
   2. Very recent head injuries
   3. Diabetic reactions
   4. Hypotension (low blood pressure)
   5. Inner ear disorders
   6. Severe depression

K. Expected Results of the Evaluation
   1. Observable evidence of impairment
   2. HGN Present
   3. VGN may be present
   4. Performance on Modified Romberg Balance Test, Walk and Turn, One Leg Stand, and Finger to Nose tests will be similar to that of suspects impaired by alcohol
   5. Blood pressure will be down
   6. Pulse will be down
   7. Body temperature generally will be normal
   8. Pupil size generally will be normal
   9. Pupillary reaction to light will be slowed

L. Complete the Matrix chart or display matrix chart with CNS Depressants
   1. Review Topics for Study Sheet with Students
   3. Have students complete the review questions as a form of review
   4. Review questions with students

VI. Inhalants[10] [11] (30min.)

A. Learning Objectives

[10] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[11] Drug Evaluation and Classification Training "The Drug Recognition Expert School," Section XIX, HS 172 R5/13

1. Identify common drug names and terms associated with this category
2. Identify the common methods of administration for this category
3. Describe the indicators of impairment associated with this category
4. Describe conditions which may mimic the signs and symptoms associated with this category
5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)

B. What is an Inhalant?
   1. Inhalants vary widely in terms of chemicals involved and the specific effects they produce
   2. Inhalants are one of the most accessible and inexpensive substances of abuse due to their legitimate applications
   3. Inhalants are relatively inexpensive as well as readily available in the home, school, or work environments

C. Overview of Inhalants
   1. Inhalants are breathable chemicals that produce mind altering results
      a. Depending on the nature of the particular Inhalant, the effects produced may be similar to those of CNS Stimulants, Depressants, or Hallucinogens
      b. Due to the abundance of Inhalants in the household, this category is commonly abused by teenagers
   2. There are three major subcategories of Inhalants
      a. Volatile Solvents
      b. Aerosols
      c. Anesthetic Gases
   3. Volatile Solvents
      a. Include a large number of readily available substances, none of which are intended by their manufacturers to be used as drugs
      b. One widely abused Volatile Solvent is plastic cement, or "model airplane glue"
      c. Plastic cement includes the following volatile chemicals
         1) Toluene
         2) Acetone
         3) Naphtha
         4) Aliphatic Acetates (straight-chained hydrocarbons)
         5) Hexane
         6) Cyclohexane
         7) Benzene
      d. Other frequently abused Volatile Solvents
         1) Gasoline
         2) Kerosene
         3) Lighter fluid
         4) Household cements and glues
         5) Fingernail polish remover
         6) Paint thinners
         7) Engine degreasers
         8) Typewriter correction fluid (liquid paper)
         9) Paints (particularly oil or solvent based)
         10) Dry cleaning fluids
         11) Spray paints

4. Aerosols
   a. Aerosols are chemicals discharged from a pressurized container by the propellant force of a compressed gas
      1) Commonly abused Aerosols include
         a) Hair sprays
         b) Deodorants
         c) Insecticides
         d) Vegetable frying pan lubricants
         e) Spray paint
      2) All of these abused Aerosols contain various hydrocarbon gases that produce drug effects
   b. The overwhelming majority of abusers of Volatile Solvents and Aerosols are:
      1) Pre-teens and teenagers
      2) Male Inhalant abusers outnumber females
   c. Aerosols are usually inhaled from a secondary source such as:
      1) Soaked rag
      2) Paper bag
      3) Plastic bag
5. Anesthetic gases
   a. Anesthetic gases are drugs that abolish pain
      1) Anesthetic gases are drugs which allow the user to disassociate pain and are generally used for medical procedures involving surgery
      2) This category is the least of the abused inhalants. Mainly due to the expense and unavailability
      3) Most commonly abused Anesthetic gases are:
         a) Ether
         b) Nitrous Oxide (Whipped cream gas, whippets)
      4) Other common Inhalants in this subcategory that do not relieve pain
         a) Amyl Nitrite
         b) Butyl Nitrite
         c) Isobutyl nitrite and Butyl nitrite have essentially identical effects to Amyl nitrite
      5) Inhalants obviously are ingested by breathing, or inhaling, their fumes
         a) Some are ingested directly from the source
         b) Some are soaked into rags, handkerchiefs or tissue papers for repeated inhalation
         c) Some are placed in paper or plastic bags which the user places over the face or head
         d) Some are sprayed into a balloon and inhaled
   b. Some common street names.
      1) huffing
      2) hacking
      3) ballooning
      4) gliding (peach glade air freshener is a commonly abused inhalant)
6. Methods and signs of ingestion
   a. Inhalants are inhaled through the mouth and nose
   b. Persons abusing inhalants will frequently have the abused substance on their:
      1) Hands
      2) Face
      3) Mouth

D. Possible Effects
   1. The effects of Inhalants vary widely depending on the substance inhaled
   2. Typically, the inhalant abuser will generally appear to be intoxicated on alcohol
   3. Inhalant abusers can be detected and distinguished from other drug abusers because they will usually carry a chemical odor of the inhaled substance about their breath and persons
   4. Common effects of Inhalants
      a. Altered shapes and colors
      b. Antagonistic behavior
      c. Bizarre thoughts
      d. Distorted perceptions of time and distance
      e. Dizziness and numbness
      f. Drowsiness and weakness
      g. Euphoria and grandiosity
      h. Floating sensations
      i. Inebriation similar to alcohol intoxication
      j. Intense headaches
      k. Light headedness
      l. Nausea and excessive salivation
      m. Possible hallucinations
   5. Persons under the influence of Inhalants generally will appear confused and disoriented, and their speech will be slurred

E. General Indicators
   1. **Ask** Students: “How would an Inhalant possibly impair a subject’s ability to operate a vehicle safely?”
      a. Answer: Distorted perception of time and distance could cause someone not to apply the brakes in a timely manner
      b. Vision problems could lead to the inability to maintain lane position
   2. Other indicators
      a. Confusion
      b. Flushed Face
      c. Intense headaches
      d. Bloodshot, watery eyes
      e. Drooling
      f. Lack of muscle control
      g. Odor of substance
      h. Non-communicative
      i. Disoriented
      j. Slurred speech
      k. Possible nausea
      l. Residue of substance around mouth and nose

F. Eye Indicators
   1. Review matric with student
      a. HGN – Present
      b. VGN – Present (at high doses)
      c. LOC – Present
      d. Pupil Size – Normal (or may be dilated)

1) Instructor note: This is exception number four
2) Exception number four states that pupils may be dilated from certain specific inhalants, and anesthetic gases

G. On-Set and Duration of Effects
   1. Inhalants' effects are felt virtually immediately
   2. Duration very much depends on the particular substance
      a. Anesthetic Gases have a very short duration of effect
         1) The effects of nitrous oxide last 5 minutes or less
         2) Amyl Nitrite, Isobutyl Nitrite, and Butyl Nitrite produce effects that last a few seconds up to 20 minutes
      b. Volatile Solvents such as; glue, paint, gasoline and other commonly abused Inhalants produce effects that last 6-8 hours depending on exposure

H. Overdose Signs and Symptoms
   1. The primary overdose signs for inhalants are:
      a. Coma
      b. Sudden Sniffing Death
         1) Instructor note: Also known as SSD
         2) Used to describe a death resulting from a physical exertion and the breathing of Inhalants in an enclosed poorly ventilated space. This may occur during the first experience with an Inhalant
   2. There is a risk of death due to overdose of Inhalants
      a. Some Inhalants will depress the Central Nervous System to the point where respiration ceases
      b. Others can produce instant death from heart failure
      c. Overdoses of Inhalants frequently induce severe nausea and vomiting: If the user vomits while he or she is unconscious, death can result from aspiration of the vomitus
   3. Death can also result indirectly, if a person places a plastic bag over the head, loses consciousness and suffocates
   4. Long term abuse of Inhalants can cause permanent damage to the Central Nervous System, and greatly reduced mental and physical abilities
   5. Evidence also exists of liver, kidney, bone and bone marrow damage resulting from long term Inhalant abuse
   6. There are no well-defined withdrawal symptoms for these substances. Physical dependence has not been documented, although habituation is common

I. Medical conditions that may mimic drug impairment

   1. There are two condition that may mimic inhalant impairment:
      a. Severe head injuries
      b. Inner ear disorders/Equilibrium

J. Expected Results of the Evaluation
   1. Observable evidence of impairment
      a. Horizontal Gaze Nystagmus will generally be present
      b. Vertical Gaze Nystagmus may be present
      c. Lack of Convergence will be present
      d. Performance on the Modified Romberg Balance Test, Walk and Turn, One Leg Stand, and Finger to Nose tests will be impaired

e. Pulse will be up
f. Blood pressure will be up or down
    1) Instructor Note: This is exception number 5
    2) Exception number 5 states, Down with Anesthetic gases, up with Volatile solvents and Aerosols
g. Effect on body temperature may be up, down or normal
h. Pupil size will be normal, but may be dilated (Exception number 4)
i. Reaction to light will be slowed

K. Review Topics for Study Sheet with Students
    1. Have students complete the review questions as a form of review
    2. Review questions with students

VII. Dissociative Anesthetics [12] [13] (30 min)

A. Learning Objectives
    1. Identify common drug names and terms associated with this category
    2. Identify the common methods of administration for this category
    3. Describe the indicators of impairment associated with this category
    4. Describe conditions which may mimic the signs and symptoms associated with this category
    5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)
B. Overview of the Drug Category
    1. Dissociative Anesthetics include drugs that inhibit pain by cutting off or disassociating the brain's perception of pain. The drugs within this category normally will induce a state of sedation, immobility, amnesia and marked analgesia
    2. Some examples of Dissociative Anesthetics are; Phencyclidine (PCP), analogs of PCP, Ketamine, and Dextromethorphan (DXM)
    3. Dissociative Anesthetics symptoms may be confused with individuals under the influence of hallucinogens, stimulants, and depressants
        a. Give examples of categories that mimic Dissociative Anesthetics
        b. Examples are: High temperature with Stimulants, HGN with Depressants, Blank stare mimicking hallucinogens
    4. Identification of Dissociative Anesthetics
        a. PCP was originally manufactured as an intravenous anesthetic under the trade name Sernyl. Although the drug proved to be a very effective anesthetic, it was discontinued for human use in 1967 because of very undesirable side effects
        b. Ketamine (Ketalar) is an analog of PCP and is still used in pediatric and animal surgery
        c. DXM is found in over-the-counter anti-tussive medicines like Robitussin, Coricidin Cough and Cold and Dimetapp
    5. History of Phencyclidine (PCP)
        a. Phencyclidine was first developed in the late 1950s

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[12] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[13] Drug Evaluation and Classification Training "The Drug Recognition Expert School," Section XVI, HS 172 R5/13

1) The developers were searching for a drug that would serve as an efficient intravenous anesthetic
2) PCP proved to be a very effective anesthetic
3) It was patented and marketed in 1963 under the trade name Sernyl
4) It was used in the treatment of mental and psychological disorders, including schizophrenia and alcoholism
5) Many adverse side effects were experienced by persons who had been treated with PCP
6) In 1967, use of Phencyclidine as an anesthetic for humans was discontinued
7) In 1968, Parke-Davis patented PCP under the trade name Sernylan, which was restricted to use as a veterinary anesthetic
8) However, Sernylan was often illicitly diverted to "street use," so most legitimate manufacturing of PCP was stopped in 1978

b. PCP is relatively easy to manufacture
   1) The chemicals required to produce it are readily available commercially
   2) The formula for producing PCP has been widely publicized
   3) The hardware needed to combine the chemicals is very basic

6. Street Names
   a. “angel dust”
   b. “crystal”
   c. “sherms”
   d. “elephant
   e. “tranquilizer”
   f. “water”
7. Methods of ingestion of PCP
   a. Many users ingest PCP by smoking
      1) PCP can be applied in either powder or liquid form to a variety of vegetable or leafy substances, which can then be smoked in a pipe or homemade cigarette
      2) Popular substances include mint leaves, parsley, oregano, tobacco or marijuana
      3) Commercially prepared cigarettes can also be dipped in liquid PCP, allowed to dry and then smoked
      4) Some users prefer to dip a string in liquid PCP, and then insert the string into a tobacco cigarette
   b. PCP can also be insufflated or "snorted"
   c. It can also be taken orally, in capsule or tablet form
   d. Some users inject liquid PCP, either directly into a vein, under the skin or into a muscle
   e. Some users have administered PCP to themselves by dropping liquid PCP onto their eyes, using an eyedropper
   f. Transdermal absorption of PCP has also been reported (i.e. when applied to the skin, especially as a liquid, PCP can penetrate directly into the body and bloodstream)
   g. Instructor Note: Officer Safety. Numerous incidents have been documented where officers have been exposed to the side effects of the drug due to transdermal exposure. Students should be reminded to wear protective gloves (latex, not leather)
8. Ketamine

a. Ketamine is used as a rapid surgical anesthetic, both for animals and humans, especially children
b. Ketamine is also used for burn victims
c. Street names
    1) "K"
    2) "Special K"
    3) "Vitamin K"
    4) "Jet"
    5) "Super Acid"

9. Methods of ingestion of Ketamine
    a. Smoking
        1) Ketamine can be applied in either powder or liquid form to a variety of vegetable or leafy substances, which can then be smoked in a pipe or homemade cigarette
        2) Popular substances include mint leaves, parsley, oregano, tobacco or Marijuana
        3) Commercially prepared cigarettes can also be dipped in liquid Ketamine, allowed to dry and then smoked
        4) Some users prefer to dip a string in liquid Ketamine, and then insert the string into a tobacco cigarette
    b. Intravenous
    c. Insufflation
10. Dextromethorphan
    a. DXM is a synthetically produced substance that is chemically related to codeine, although it is not an opiate
    b. When ingested in recommended dosage levels, DXM generally is a safe and highly effective cough suppressant, however, when ingested in large amounts, it produces negative physiological effects
    c. Street names for Dextromethorphan
        1) "DXM"
        2) "Robo Tripping"
        3) "Skittles"
        4) "Triple C"
        5) "Robo Dosing"
        6) "DM"
        7) "Robo"
11. Methods of ingestion of DXM
    a. Orally
    b. Insufflation

C. Possible Effects
1. The predominant effect of Dissociative Anesthetics is as a Dissociative Anesthetic. This means Dissociative Anesthetic has the ability to cut off the brain's perception of the rest of the body's senses
2. This effect is so strong, that many users feel their head is actually separated/dissociated from their body
3. Another, more dangerous, effect of PCP is the user's increased pain threshold
    a. The user is impervious to the same pain sensations that would typically render a non-impaired person incapacitated

   b. One should be extremely cautious when dealing with an individual under the influence of PCP
4. Continuing research demonstrated that PCP consistently produced adverse side effects:
   a. delirium
   b. agitation, anxiety
   c. rigid muscle tone
   d. elevated blood pressure
   e. convulsions
   f. difficulty in speech
   g. hallucinations
   h. violent reactions
5. Lingering and long-term effects were also noted
   a. Dizziness for several hours after their attention and consciousness appeared to be cleared of PCP's effects
   b. Some patients reported memory disorders and other psychological disorders resembling schizophrenia for several months and even years afterwards
6. Cases of terribly bizarre, self-destructive behavior have been reported with persons under the influence of PCP
7. Abusers will also ingest various amounts of DXM depending on their body weight and the effect or “plateau” that they are attempting to achieve. Plateau’s include
   a. 1st Plateau: Mild inebriation
   b. 2nd Plateau: An effect similar to alcohol intoxication with mild hallucinations
   c. 3rd Plateau: An altered state of consciousness where the abuser’s senses, particularly vision, can become impaired
   d. 4th Plateau: Mind and body dissociation or an “out of body” experience
   e. Other effects include: blurred vision, body itching, rash, sweating, fever, hypertension, shallow respiration, diarrhea, toxic psychosis, and an increased heart rate and blood pressure

D. On-set and Duration of Effects
1. PCP
   a. When PCP is smoked or injected, onset occurs within 1-5 minutes
   b. When inhaled ("snorted") onset occurs in 2-3 minutes
   c. Onset is considerably slower when PCP is taken orally: 30-60 minutes
   d. The effects reach their peak in about 15-30 minutes, assuming the PCP was smoked, injected or snorted
   e. The effects generally last 4-6 hours, but they can go somewhat longer
   f. The user usually, but not always returns to normal within 24-48 hours
2. Ketamine
   a. Within seconds if smoked; duration varies
   b. 1-5 minutes if injected; lasting 30-45 minutes
   c. 5-10 minutes if snorted; lasting 45-60 minutes
   d. 15-20 minutes if orally; lasting 1-2 hours
3. Dextromethorphan (DXM)
   a. Rapidly absorbed from the gastrointestinal tract and peak plasma concentrations are reached in approximately 2.5 hours
   b. DXM is widely distributed, and is rapidly and extensively metabolized by the liver
   c. DXM exerts its anti-tussive effects within 15-30 minutes of oral administration. The duration of action is approximately 3-6 hours with conventional dosage forms

E. General indicators
   1. Perspiring
   2. Blank stare
   3. Cyclic behavior (PCP)
   4. Chemical odor (PCP)
   5. Increased pain threshold (PCP)
   6. Incomplete verbal responses
   7. Perspiring (PCP)
   8. Repetitive speech
   9. Hallucinations
   10. Possibly violent and combative
   11. “Moonwalking” (PCP)
   12. Confused
   13. Disoriented
   14. Early HGN angle of onset
   15. Loss of memory
   16. Non-communicative
   17. Rigid muscle tone (PCP)

F. Eye Indicators
   1. HGN – Present
   2. VGN – Present
   3. Pupil Size – Normal
   4. LOC – Present

G. Onset and Duration of Effects
   1. PCP
      a. Onset – Within seconds to minutes depending on how administered
      b. Duration – 4 to 6 hours
   2. Ketamine
      a. Onset – Within seconds to minutes depending on how administered
      b. Duration – Injected – 30 to 45 minutes, Snorted – 45 to 60 minutes, Orally – 1 to 2 hours
   3. DXM
      a. Onset - within seconds to minutes depending on how administered
      b. Duration – 3 to 6 hours
   4. The duration of effects may vary according to dose and whether the drug is injected, snorted, smoked or taken orally
   5. There is often a prolonged recovery period following the dissipation of the general effects

H. Overdose Signs and Symptoms
   1. In addition to the bizarre, violent and self-destructive behavior discussed previously, persons severely intoxicated by Dissociative Anesthetics may exhibit definite and extreme symptoms signifying a medically dangerous condition
      a. A deep coma, lasting up to 12 hours
      b. Seizures and convulsions
      c. A danger associated with severe PCP intoxication is that the person may die due to respiratory depression

   d. Magnification of pre-existing cardiac conditions
   e. Possible psychosis
   f. Eyes generally open with a blank stare
2. There is also some evidence that prolonged use of PCP can lead to psychosis, which can be permanent
3. One of the primary overdose symptoms for Dissociative Anesthetics is a long and intense "trip"
4. Mental illness may mimic impairment by Dissociative Anesthetics

I. Expected Results of the Evaluation
1. Horizontal Gaze Nystagmus generally will be present with a very early angle of onset
2. Vertical Gaze Nystagmus usually will be present
3. Lack of convergence will generally be present
4. Performance on Romberg will be impaired: Internal clock may be slowed
5. Performance on Walk and Turn, One Leg Stand, and Finger to Nose will be impaired: muscle tone will usually be rigid
6. Blood pressure will generally be elevated
7. Pulse rate will generally be elevated
8. Body temperature will generally be up
9. Pupil size will be normal
10. Reaction to light will be normal

J. Review Topics for Study Sheet with Students
1. Have students complete the review questions as a form of review
2. Review questions with students

VIII. SFST School Review (1hr.)

A. Learning Objectives
1. Review SFST focus points for exam
2. Answer any questions related to SFSTs

B. Utilizing a power point slide show, show the below listed questions along with the multiple-choice answers
1. Illicit students to discuss and come up with an appropriate answer
2. Instructors may guide students as needed
3. Provide the answer
4. **Ask** the following questions:
5. Questions: "The Modified Romberg Balance is the _____ psychophysical test to be given during the SFSTs."
   a. First
   b. Second
   c. Third
   d. Fourth
6. Answer: (a) First
7. Question: "The "Illegal per se" law makes it an offense to operate a vehicle while ____."
   a. Having a statutorily prohibited blood alcohol content
   b. Under the influence of alcohol and/or drugs
   c. Impaired by alcohol or drugs to the slightest degree
   d. Having consumed any alcohol (if the operator is a minor)

   e. Incapable of safely operating, regardless of cause
8. Answer: (a) Having a statutorily prohibited blood alcohol content
9. Question: “The average DWI violator commits that offense about ____ times a year.”
   a. 20
   b. 35
   c. 50
   d. 65
   e. 80
10. Answer: (e) 80
11. Question: “A good, structured field sobriety test is simple and _____.”
   a. Focuses on the subject’s attention
   b. Interrupts the subject’s attention
   c. Captures the subject’s attention
   d. Divides the subject’s attention
   e. Multiplies the subject’s attention
12. Answer: (d) Divides the subject’s attention
13. List the Standardized Field Sobriety Tests:_____
   (Open question)
14. Answer: HGN, Walk and Turn, One Leg Stand
15. Question: “There are a total of _____ observable clues in the OLS test.”
   a. 1
   b. 2
   c. 4
   d. 6
   e. 8
16. Answer: (c) 4
17. Question: “The police officer’s principal decision during the Detection Phase Two usually is _____.”
   a. Do I have sufficient grounds to request a chemical test?
   b. Should I arrest the operator for DWI?
   c. Is this person the operator of the vehicle?
   d. Should I instruct the drive to exit the vehicle?
   e. Is the impairment due to alcohol or drugs?
18. Answer: (d) Should I instruct the driver to exit the vehicle?
19. Question: “The word “Nystagmus” means _____.”
   a. Eyes unable to move independently of the head.
   b. Impaired pupillary contraction (“Alcohol dilation effect”)
   c. Gaze fixation ability
   d. Vision impairment due to central nervous system depression
   e. Involuntary jerking of the eyes.
20. Answer: (e) Involuntary jerking of the eyes.
21. Question: “During the one leg stand, the subject must count up to what number?
   (Open question)
22. Answer: Until you tell them to stop
23. Question: “There are a total of _____ observable clues in the WAT test.”
   a. 1
   b. 2
   c. 4
   d. 6
   e. 8

24. Answer: (e) 8
25. Question: "The three phases of DWI detection are _____."
    a. Vehicle in motion, personal contact, pre-arrest screening
    b. Investigation, arrest, chemical test
    c. Driver identification, vehicle identification, probable cause
    d. The stop, the field test, the chemical test
26. Answer: (a) Vehicle in motion, personal contact, pre-arrest screening
27. Question: "How many clues are assessed in a subject who displays 1) lack of smooth pursuit in both eyes; 2) distinct and sustained Nystagmus in both eyes at maximum deviation; 3) no onset of Nystagmus prior to 45 degrees in either eye."
    a. 2
    b. 4
    c. 6
    d. 0
28. Answer: (b) 4
29. Question: "When checking for Nystagmus hold the stimulus 12-15 inches from the subject's____."
    a. Forehead
    b. Eyes
    c. Bridge of their nose
    d. Chin
30. Answer: (c) Bridge of their nose
31. Question: "Which one of the following is one of the validated clues for the Walk and Turn test:"
    a. Starting to soon
    b. Hopping
    c. Putting foot down
    d. Failing to count out loud
32. Answer: (a) Starting to soon
33. Question: "When checking for distinct and sustained Nystagmus at maximum deviation, the eye is held out for a minimum of _____seconds."
    a. 1
    b. 2
    c. 4
    d. 6
    e. 8
34. Answer: (c) 4
35. Question: "Name the two stages of the One Leg Stand, divided attention test." (Open question)
36. Answer: 1. Instruction Stage 2. Balance and counting stage
37. **Debrief**
    a. Instruct students to review the "topics for study" questions at the end of each section
    b. Use the Review questions as a supplemental study material

DAY 2

IX. SFST Final Examination (30 min)

A. Administer Test
   1. Purpose of Post-Test: to compare with pretest, and determine extent of knowledge gained by participants
   2. Distribute Post-Tests located at end of DWI SFST Instructor Manual
      a. Advise students this a closed book test
      b. Allow 20 minutes for students to complete the tests
      c. Do not review the test with the students as a large group
   3. Collect Completed Post-Tests
   4. Instructors will grade the test using the answer key located in DWI SFST Instructor Manual

B. Review of Test
   1. If passing score is not achieved, student(s) will be allowed to take "make-up" exam
   2. Instructors score the tests
   3. Passing score is 80%
   4. Inform students of their score by allowing them to review their test

X. Cannabis[14] [15] (30 min)

A. Learning Objectives
   1. Identify common drug names and terms associated with this category
   2. Identify the common methods of administration for this category
   3. Describe the indicators of impairment associated with this category
   4. Describe conditions which may mimic the signs and symptoms associated with this category
   5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)

B. What is Cannabis?
   1. Cannabis is a category of drug derived primarily from various species of places, such as:
      a. Cannabis Sativa
      b. Cannabis Indica
   2. This category has the most widely abuse illicit drugs
   3. These drugs can be extremely impairing even though they are often believed to be fairly benign
   4. The primary psychoactive ingredient in cannabis is Detla-9 Tetrahydrocannabinol (∆-9 THC)
   5. The THC is primarily found in the leaves and flower rather than in the stem or branches of the marijuana plant
   6. Different varieties of cannabis contain various concentrations of THC

C. Overview of Cannabis

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[14] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[15] [15] Drug Evaluation and Classification Training "The Drug Recognition Expert School," Section XXI, HS 172 R5/13

1. This stout, aromatic plant originated in Central Asia
2. Cannabis grows readily throughout the temperate zones of the world
3. It has been cultivated for centuries
   a. Example: At the first permanent English settlement in America, Jamestown, VA,
   b. It was grown to produce hemp
4. Cannabis has been used for its euphoric effects for over 4,000 years
   a. Instructor Note: Medicinal properties of the plant were recognized in China 2,700 years ago for the relief of pain, muscle spasms, convulsions, epilepsy, asthma and rheumatism
   b. An Irish surgeon (by the name of O'Shaughnessy) introduced it to Europe in 1842 after he observed its use in India
5. One variety that has a relatively high concentration of THC is Sinsemilla, which is the unfertilized female Cannabis Sativa plant
6. Instructor note: "Sinsemilla" is a Spanish expression meaning "without seeds"
7. This cannabis category includes the following drugs:
   a. Marijuana – the dried leaves of the plant
   b. Hashish – a form of Cannabis made from the dried and pressed resin of a marijuana plant
   c. Hash Oil (Honey Oil) – sometimes referred to as "marijuana oil," it is a highly concentrated syrup-like oil extracted from marijuana. It is normally produced by soaking marijuana in a container of solvent, such as acetone or alcohol for several hours after the solvent has evaporated. A thick syrup-like oil is produced with a high THC content
   d. Synthetic drugs, such as Dronabinol, Marinol or numerous other synthetic cannabinoids
8. Marinol, a synthetic form of cannabis, has a legitimate medicinal use as an anti-vomiting agent, commonly associated with cancer chemotherapy
9. Other uses for Marinol include treatment for glaucoma or as an appetite enhance for anorexia disorders
10. The effects of cannabis depend on the strength of the TCH in the dose consumed
    a. THC concentrations decades ago, peaked at relatively low levels (3-6% THC)
    b. Current levels are being reported at more than 30% THC. In Los Angeles the FDA tested a confiscated batch of marijuana and it tested at 39% THC
11. The increase in THC levels is due to hybridization and better cultivation techniques used by producers
12. There are multiple chemicals in marijuana smoke
    a. There are over 421 different chemical compounds, including 61 cannabinoids[16]. During smoking, more than 2,000 compounds may be produced
    b. A study published in 2008[17] identified over 30 chemicals that are in marijuana smoke. All these chemicals identified were also found in tobacco smoke

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[16] Cannabis (Marijuana)-Effects on Human Behavior and Performance, Huestis MA. Published by Forensic Science Review in January 2002. Available online at http://www.flugmedizin.at/Infos/Cannabis_Effects_on_behavior_and_performance.pdf

[17] A Comparison of Mainstream and Sidestream Marijuana and Tobacco Cigarette Smoke produced under two machine smoking Conditions. David Moir, William S. Rickert, et al. Published by the American Chemical Society in 2008. Available online at: http://pubs.acs.org/doi/pdf/10.1021/tx700275p

c. Some of those chemicals were:
    1) Ammonia
    2) Hydrogen cyanide
    3) Mercury
    4) Lead
    5) Arsenic
    6) Tar
    7) Nitrogen
    8) Formaldehyde
d. Some of the chemicals found in marijuana are water soluble (meaning they combine with the water) and some are not (THC)
e. THC bonds to fat molecules and may be in the urine toxicology reports for up to 30 days

13. Cannabis principally is eliminated from the body in feces and urine
14. Cannabis is a fat soluble (i.e. it dissolves easily into fatty tissue); therefore, it can remain for long periods in the brain tissue, which is about one-third fat
15. A 2013-2014 NHTSA Drug and Alcohol Crash Risk Study showed marijuana users were about 25% more likely to be involved in a crash than drivers with no evidence of marijuana use[18]

D. In urine toxicology, the primary psychoactive drug (Detla-9 THC) is not present. This parent drug is metabolized by the body and breaks down. In the urine we test for two main metabolites:
    1. Hydroxy THC (11-OH-THC)
        a. Hydroxy THC, which causes the user to feel euphoric
        b. Hydroxy THC usually is eliminated from the blood plasma within six hours
    2. Carboxy THC (THCCOOH)
        a. Carboxy THC, there is no evidence at this time that it is psychoactive
        b. Carboxy THC may be found in the blood plasma for several days following
    3. Due to these metabolites not being the primary psychoactive drug, we need to test the blood, so we can see the primary psychoactive drug (Delta-9 THC). This was a reason why the California Department of Motor Vehicle (DMV) made it that a blood sample is mandatory for DUI-Drugs
    4. Urine tests may indicate the presence of metabolites of THC for a month or more
    5. Point out that it can take as long as four hours for THC to appear in the urine at concentrations sufficient to trigger a positive drug screen (50 ng/ml) following smoking

E. In Blood/Plasma Toxicology[19]
    1. Instructor note: Blood to plasma concentrations ratio is 0.55

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[18] NTHSA, Drug and Alcohol Crash Risk, Released in February 2015 (Report No. DOT HS 812 117) U.S. Department of Transportation and National Highway Traffic Safety Administration, Washington DC. Available online at http://www.nhtsa.gov/Driving+Safety/Research+&+Evaluation/Alcohol+and+Drug+Use+By+Drivers

[19] Cannabis (Marijuana)-Effects on Human Behavior and Performance, Huestis MA. Published by Forensic Science Review in January 2002. Available online at http://www.flugmedizin.at/Infos/Cannabis_Effects_on_behavior_and_performance.pdf

   a. This means if there is 5ng of THC in the plasma there would be 2.75ng of THC in the blood
   b. This is an important concept to understand when reading further studies
2. Unlike alcohol, we cannot establish a direct correlation between the amount of THC in the blood or plasma with the level of impairment
   a. With alcohol we can presume that a subject with a BAC of a 0.08% is impaired
   b. We cannot presume that a person with THC level in blood of 5ng is or is not impaired
3. THC reaches peak plasma concentrations when inhaled within 15 to 30 min
4. THC levels in plasma drop within two hours
5. The detection time in plasma varies between 3-27 hours after ingestion
6. This varies based on lab detection limits, dose of THC, length of exposure and many other variables

F. Medical Applications
   1. Cannabis has some limited medical applications
      a. It lowers intraocular pressure (pressure within the eye), which can be helpful for glaucoma patients
      b. Cannabis lowers the intraocular pressure by dilating in size the blood vessels of the eyes (more size – less pressure)
      c. It suppresses nausea, and sometimes is recommended for cancer patients to relieve the nausea accompanying chemotherapy
   2. Cannabidiol (CBD), a non-psychoactive ingredient found in Cannabis, is used in treating Epilepsy; it helps to inhibit seizures
   3. Cannabis has also had some limited medical application as
      a. An appetite enhancer for victims of Anorexia Nervosa
      b. A muscle relaxant
      c. A tumor growth retardant
   4. Point out that marijuana has been legalized for medical treatment in many states

G. Methods and Signs of ingestion of Cannabis
   1. Marijuana is usually rolled into a cigarette and smoked
      a. Since these cigarettes lack a filter, small bits and pieces of marijuana debris may be found stuck between the teeth of the user
      b. Burn marks may be found on the thumb and index finger
   2. The user may also use a “water pipe” or “bong” to smoke marijuana
   3. By passing the marijuana smoke through the water, the smoke becomes more pure and cooler
   4. Edibles are becoming more common as well. Edibles are made from preparing food with the THC oil (Honey Oil) or THC butter
      a. Instructor Note: THC Butter is known as "Cannbutter" or "Bud Butter"
      b. Due to the THC being fat soluble, not water soluble, the THC must be transferred to a fat such as oil, butter or milk prior to cooking with it
   5. Another increasing common form of ingestion is through the use of an electronic cigarette or e-cigarette
      a. This is a battery powered device
      b. This converts the liquid THC (“Honey Oil”) to a mist or vapor that the user inhales
   6. It is important to note that through the use of edibles and e-cigarette’s there may be little or no odor of the marijuana

H. Possible Effects
   1. A person under the influence of cannabis may display:
      a. Brief attention span (not able to pay attention)
      b. Divided attention impairment
      c. Impaired reaction time
   2. The subjective effects can vary considerably but they will exhibit divided attention impairment
   3. In particular, they do not divide their attention very successfully
      a. Clarification
      b. They have a difficult time dealing with more than one or two tasks at once
   4. This can make them very unsafe drivers, since driving requires the ability to divide attention among many simultaneous tasks
   5. **Ask** students: "What are some of the things that drivers have to do simultaneously?"
      a. Answers
      b. Steering
      c. Operating the accelerator
      d. Signaling
      e. Observing other traffic
      f. Recognizing traffic control devices
      g. Shifting
   6. Loss of depth perception would be demonstrated by stopping improperly. Short attention span would be indicated by erratic speeds, failing to maintain a single lane and stopping for a red light then continuing on
   7. People under the influence of marijuana may attend to one or a few of these driving tasks, but simply ignore the other tasks
   8. Because Marijuana impairs attention, SFST tests like Walk and Turn and One Leg Stand are excellent tools for recognizing people under the influence of marijuana
   9. Instructor Note: Remind students that WAT and OLS are divided attention SFSTs

I. General Indicators
   1. Ask students: "How would the use of cannabis possibly impair a subject's ability to operate a vehicle safely?"
      a. Answer: The inability to pay attention may lead to missing a turn or turning late and causing a traffic collision
      b. Vision problems (such as perception issues) and impaired reaction time may lead to a collision with another vehicle, object or pedestrian
   2. Other Indicators
      a. Marked reddening of the conjunctiva
         1) Point out that conjunctiva is the clear membrane of the sclera (white portion of the eye) and lines the inside of the eyelids and is made of lymphoid tissue
         2) Conjunctivae refer to both eyes. Conjunctiva is singular
      b. Odor of marijuana
      c. Marijuana debris in the mouth
      d. Body/eyelid tremors
      e. Increased appetite
      f. Relaxed inhibitions
      g. Disoriented
      h. Possible paranoia
      i. Impaired perception of time and distance
      j. Dry mouth and throat

J. Eye Indicators
   1. Review matrix with student
   2. HGN – Not Present
   3. VGN – Not Present
   4. LOC – Present
   5. Pupil Size – Dilated (or may be normal)

K. Onset and duration of Effects
   1. Marijuana
      a. Onset, 8 to 9 seconds
      b. Peak effects within 10–30 minutes
      c. Duration of effects, 2-3 hrs., depending on the amount smoked and on the concentration of THC in the marijuana
         1) A 1985 Stanford University[20] study showed that pilots had difficulty in holding patterns and in lining up with runways for up to 24 hours after using marijuana
         2) In 1990, a second Stanford University[21] study showed: marijuana impaired performance at .25, 4, 8, and 24 hours after smoking. While 7 of the 9 pilots showed some degree of impairment at 24 hours after smoking cannabis, only one reported any awareness of the drug's effects
      d. Generally, the person will feel "normal" within 3–5 hours after smoking marijuana
      e. The user may be impaired long after the euphoric feelings have ceased
   2. Dronabinol/Marinol
      a. Onset – 30-60 minutes
      b. Peak effects within 2-4 hours
      c. Duration of effects – up to 24 hours
   3. Variables affecting duration of effects
      a. Dosage amounts
      b. Tolerance
      c. Weight
      d. Potency of drug

L. Overdose signs and symptoms
   1. Overdose signs and symptoms of cannabis may include, but are not limited to:
      a. Paranoia
      b. Fatigue
   2. Generally speaking, cannabis impairment will not be confused with any other medical condition as noted in the other drug categories

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[20] Carry-Over Effects of Marijuana Intoxication on Aircraft Pilot Performance: A Preliminary Report. Jerome A. Yesavage, M.D., Von Otto Leirer, Ph.D., Lt. Cdr. Mark Denari, and Leo E. Hollister, M.D., Published in American Journal of Psychiatry, 142:1325-1329, 1985. Available on line at: http://dviaviation.com/files/45944260.pdf

[21] Marijuana carry-over effects on aircraft pilot performance. VO Leirer et al. Published by Aviation, Space, and Environmental Medicine 1991 62: 221-227

3. However, a person diagnosed with an attention deficit disorder may mimic a cannabis user's inability or unwillingness to pay attention

M. Overdose Signs and Symptoms
   1. Excessive or long-term use of Marijuana can have very undesirable consequences
   2. **Ask** students: "Is there danger of death from Cannabis overdose?"
      a. Answer: It is not likely that there is a direct risk of death from overdose;
      b. However, persons impaired by Cannabis may behave in foolishly dangerous ways and become injured or killed as a result
   3. Marijuana has been observed to produce sharp personality changes, especially in adolescent users
   4. It can create paranoia and possible psychosis
   5. Long term effects include
      a. Lung damage
      b. Chronic Bronchitis
      c. Lowering of Testosterone (male sex hormone)
      d. Possible birth defects still birth and infant deaths
      e. Acute anxiety attacks
      f. Chronic reduction of attention span
      g. Research indicates that life threatening overdoses rarely if ever occur
      h. Withdrawal – is similar to alcohol dependence withdrawal
      i. Physical dependence can occur with chronic use
   6. Solicit students' questions concerning signs and symptoms of Cannabis overdose

N. Expected Results of the Evaluation
   1. Observable Evidence of Impairment
      a. No HGN or VGN
      b. LOC Present
      c. Impaired performance will be evident on the Modified Romberg Balance Test, the Walk and Turn, the One Leg Stand and the Finger to Nose test
         1) Remind students to be especially alert for evidence of the subject's distorted perception of time when performing the Romberg Balance test
         2) Point out that, with subjects under the influence of marijuana, poor performance on these tests usually will result principally from their inability to divide attention, and less so from impaired coordination or balance
      d. Pulse generally will be up
      e. Blood pressure generally will be up
      f. Body temperature will be normal
      g. Muscle tone will be normal
   2. Pupil size generally will be dilated or possibly normal
      a. The content and potency could affect pupil size. The higher THC content will increase the likelihood of pupil dilation. However, cannabis does not cause pupil constriction
      b. Government grown cannabis has low THC levels. Studies using it tends to show a normal range for pupil size
   3. Pupil reaction to light will be normal
   4. DREs report a phenomenon termed "Rebound Dilation" in subjects under the influence of marijuana

a. Clarification: "Rebound Dilation" is a period of pupillary constriction followed by a period of pupillary dilation where the pupil steadily increases in size and does not return to its original constricted size
   1) Note: This revised definition was approved by the IACP Technical Advisory Panel (TAP), November 2008
b. Note: However, that this phenomenon has not been scientifically investigated in a controlled research study
c. Draw an eye on the balloon and squeeze it to demonstrate Rebound Dilation
d. Remind the students that the final size determination being estimated is at the end of the 15 second time period when the light from the pen-light is directed into the eye
e. Caution should be used by the DRE so as not to move the light beam or allow the bulb to change in light intensity

5. Solicit students' comments and questions concerning expected results of the evaluation
6. **Ask** Students, "Why are the Walk and Turn and One Leg Stand tests excellent tools for recognizing persons under the influence of marijuana?"
7. Answer: Cannabis appears to interfere with a person's ability or willingness to pay attention. People under the influence of Marijuana do not divide their attention very well. Walk and Turn and the One Leg Stand tests are divided attention tests

O. Complete the Matrix chart or display matrix chart for Cannabis
   1. Review the Topics for Study with Students
   5. Have students complete the review questions as a form of review
   6. Review questions with students

XI. Central Nervous System Stimulants[22] [23] (1hr.)

A. Learning Objectives
   1. Identify common drug names and terms associated with this category
   2. Identify the common methods of administration for this category
   3. Describe the indicators of impairment associated with this category
   4. Describe conditions which may mimic the signs and symptoms associated with this category
   5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)

B. What is a CNS Stimulating?
   1. A stimulant influence the human body by speeding up, or over stimulating the Central Nervous System (CNS)
   2. Instructor Note, The CNS is composed of the brain, brain stem, and spinal cord

C. Overview of the Drug Category
   1. CNS Stimulants speed up the operation of the Central Nervous System

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[22] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[23] [23] Drug Evaluation and Classification Training "The Drug Recognition Expert School," Section X, HS 172 R5/13

   a. "Speed Up" does not mean "improve"
   b. The "speeding up" results in increased heartbeat, pulse, respiration, blood pressure and temperature
   c. The "speeding up" also produces nervousness, irritability and an inability to concentrate or think clearly
2. Central Nervous System stimulants all:
   a. Relieve fatigue
   b. Aid in weight reduction
   c. Reduce the need for sleep
   d. Increase energy and confidence levels
3. In general, it brings about both a psychological and physical exhilaration
4. CNS Stimulants are commonly known as “uppers” and their effects are similar to the body’s fight or flight responses
5. As stimulants “wear off”, the individual can exhibit signs and symptoms similar to those associated with depressants since some of the body’s systems may experience a “crash”
6. There are three major subcategories of CNS Stimulants:
   a. Cocaine
   b. Amphetamines
      1) Methamphetamine
      2) Amphetamine Sulfate
      3) Desoxyn
   c. Others
      1) Ritalin (methylphenidate hydrochloride)
      2) Preludin (Phenmetrazine hydrochloride)
      3) Cylert (pemoline)
      4) Ephedrine
      5) Caffeine
7. Widely abused CNS Stimulants are:
   a. Cocaine
   b. Amphetamines
   c. Methamphetamines

D. Cocaine derives from the coca plant
   1. The plant is native to South America
   2. Cocaine is made from the leaves of the coca plant
   3. Archaeological evidence indicates that natives of Peru chewed coca leaves 5,000 years ago
   4. Sigmund Freud personally experimented with Cocaine for approximately 3 years
   5. Small quantities of cocaine originally were included in the formula for Coca Cola
   6. Crack cocaine is made by mixing:
      a. Baking soda
      b. Cocaine
      c. Water
      d. Then heat it
   7. The appearance is as small white or off-white chunks

E. Amphetamines were first synthesized near the end of the 19th Century
   1. The first use of amphetamines for medical purposes began in the 1920's
   2. Initial medical application was to treat colds

1) Amphetamines cause the nasal membranes to shrink
2) This gives temporary relief from stuffy nasal passages

3. Present day medical purposes for amphetamines include
   1) Control symptoms of narcolepsy
   2) Control certain hyperactive behavioral disorders
   3) Relieve or prevent fatigue to allow persons to perform essential tasks of long duration
   4) Treat mild depression
   5) Control appetite
   6) Antagonize the effects of Depressant drugs
   7) Prevent and treat surgical shock
   8) Maintain blood pressure during surgery
      Treat Parkinson's disease
   9) Enhance the action of certain analgesic (pain killer) drugs
4. Numerous pharmaceutical companies manufacture amphetamines for these purposes
5. Amphetamines are usually found in pill form and are legally manufactured for medical use
6. Methamphetamine usually has the appearance of a white or off white crystalline substance. It can appear like brown sugar and the color can vary. It is primarily produced illegally
7. Examples of common pharmaceutical Amphetamines
   a. Dexedrine (dextroamphetamine sulfate) used to treat narcolepsy and hyperkinetic behavior, and for weight control. (Street names "Dexies", "Hearts")
   b. Benzedrine (Amphetamine sulfate) used to treat narcolepsy, hyperkinetic behavior and weight problems. (Street names "Bennies", "Whites", "Cartwheels")
   c. Desoxyn (Methamphetamine hydrochloride, also known as desoxyephedrine) used in weight reduction
   d. Adderall (Combination of dextroamphetamine and amphetamine)
8. Large quantities of Amphetamines are also illegally manufactured in this country
   a. The most commonly abused illicit Amphetamine is Methamphetamine
   b. Methamphetamine hydrochloride is a white to light brown crystalline powder, or clear chunky crystals resembling ice. Methamphetamine base is a liquid
   c. The majority of street methamphetamine is produced in clandestine laboratories
   d. Medicinally, methamphetamine is used in the treatment of narcolepsy, ADD and ADHD
   e. Methamphetamine is also known as methedrine or methamphetamine hydrochloride
   f. Its more common "street names" are "speed"; "crank"; "ice"; "crystal"; "meth"; and, "water"
9. There are some other CNS Stimulants, apart from Cocaine or the Amphetamines
   a. Preludin is a licitly manufactured CNS Stimulant that is not an Amphetamine
      1) generic name phenmetrazine hydrochloride
      2) used in weight control
      3) has all of the basic effects of amphetamine
   b. Ritalin is another licitly manufactured, non-amphetamine CNS Stimulant:
      1) generic name methylphenidate hydrochloride
      2) used to treat mild depression, hyperkinetic behavior, narcolepsy and drug induced lethargy produced by CNS depressants
      3) has many of the basic clinical effects of amphetamine

c. Cylert is a third licitly manufactured, non-Cocaine and non-amphetamine CNS Stimulant
    1) generic name Pemoline
    2) used to treat Attention Deficit Disorder (ADD), also known as "hyperactivity"
    3) has many of the basic clinical effects of amphetamine
d. Ephedrine is a licitly manufactured stimulant used in diet aides, body building supplements. It can also be found in herbal teas and preparations
e. Cathine and Cathinone are the two psychoactive chemicals derived from the Khat plant. It originates from the sub-Sahara regions of Africa
f. Methcathinone is illicitly manufactured from common household chemicals. Effects are very similar to methamphetamine

10. Legal CNS Stimulants
    a. Ephedrine is often advertised as a diet supplement
        1) Diet Max
        2) Diet Now
        3) Diet Pep
        4) Mahuang
        5) Anti-insomnia aids (Mini-tabs, 157 Magnum, Ephedrine)
    b. “Natural versions of illegal drugs” (Herbal Ecstasy and Herbal Bliss). Pseudoephedrine can be found in a variety of over-the-counter antihistamines, decongestants and cold products, thus making them more accessible
    c. When taken in excess, they have the ability to impair
11. Prescribed CNS Stimulants
    a. Ritalin, Adderall, and Dexedrine are classified as CNS Stimulants
    b. These medications allow an individual with attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADND) to focus their attention
    c. These medications have recently become common targets for abuse for patients and professionals who want to obtain a temporary increase in their ability to focus and process information

F. Methods of ingestion of CNS Stimulants
    1. There are a variety of ways in which the different CNS Stimulants may be ingested
    2. Cocaine is commonly insufflated (snorted), smoked, injected and taken orally
        a. In order to be smoked, a pure form of Cocaine is required
            1) Much of the Cocaine sold in this country is mixed with other materials, or chemically bonded to other elements
            2) Various chemical processes can be used to "free" the cocaine from other elements and impurities
            3) One such process produces pure cocaine in the form of small chunks
            4) These chunks are known as "Crack" or "Rock Cocaine"
        b. To be injected, cocaine must be converted to a liquid form. Users will heat the powder in distilled water. The chemicals will combine to form the injectable liquid
        c. Crack cocaine is smoked. Crack cocaine burns very hot. Due to this, there may be signs of ingestion in the mouth by means of burnt lips
    3. Methamphetamine most commonly is injected or smoked but sometimes may be snorted or taken orally
        a. Epehrine, Pseudoephedrine, Ritalin (pill), Adderall (pill), and Dexedrine (pill and capsule) are primarily taken orally
        b. There have been reports of some subjects crushing the Ritalin and snorting it

   c. The smoke-able forms of methamphetamine are known as “Crystal Meth” or “Ice”. They contain the same active chemical compound as powdered methamphetamine, but undergo a recrystallization process in which some impurities are removed
4. Illicitly manufactured amphetamines are taken orally, in the form of tablets, capsules and liquid elixirs
5. Illicitly manufactured amphetamine sulfate usually is produced in tablet form (called "Mini bennies") and is taken orally

G. Signs of Ingestion
   1. When a CNS stimulant is taken orally, signs of ingestion may be very limited
   2. When they are insufflated (snorted as a powder) the septum bay be perforated
   3. When they are insufflated (snorted as a powder) the nasal tissue may be irritated or inflamed
   4. When they are smoked, the intense heat of the smoke may cause the taste buds to rise, burn marks on the fingers (where the pipe was held), and burn marks on the lips (where the pipe touched the mouth)
   5. Injection marks may be observed as a fresh puncture mark with blood oozing, bruising of the vein (caused by damage to the vein itself), or older marks, which may have dried blood covering the mark

H. Possible Effects
   1. Both Cocaine and the amphetamines produce euphoria, a feeling that there are no problems and an extremely pleasurable sensation
   2. This euphoric feeling is only felt while the drug is psychoactive
   3. A feeling of super strength and absolute self-confidence may also be present
   4. With cocaine, but not with amphetamines, there is an anesthetic effect, and the dulling of pain may contribute to the euphoria
   5. Stimulant users tend to become hyperactive, indicated by a nervousness, extreme talkativeness, and an inability to sit still
   6. CNS Stimulants tend to release inhibitions, allowing users to commit acts that they normally would avoid
   7. Stimulant users misperceive time and distance
   8. Persons under the influence of CNS Stimulants become easily confused, and lose the ability to concentrate or to think clearly for any length of time
   9. While the drug is psychoactive, the user may seem like their system is sped up or in fast forward. However, as the drug leave their system (known as “crashing”); this person may appear as though they are under the influence of a CNS depressant or a Narcotic Analgesic. This occurs due to the body trying to return itself to its normal balance, or homeostasis

I. General indicators
   1. Ask students, “How would a stimulant possibly impart a subject’s ability to operate a vehicle safely?”
      a. Answer: The excited behavior could lead to poor decision making when driving
      b. The dilated pupils could lead to vision problems causing a collision
   2. Other indicators
      a. Restlessness
      b. Body tremors
      c. Excited

d. Euphoria
e. Exaggerated reflexes
f. Anxiety
g. Grinding teeth (bruxism)
h. Redness to nasal area
i. Runny nose
j. Loss of appetite
k. Dry mouth
l. Increased alertness
m. Irritability
n. Eyelid tremors
o. Insomnia
p. Rigid muscle tone
q. Talkative

J. Eye Indicators
1. Review matrix with student
2. HGN – Not present
3. VGN – Not present
4. LOC – Not present
5. Pupil Size – Dilated

K. Onset and duration of Effects
1. The onset and duration of effects are quite different for cocaine as compared to the amphetamines
2. Cocaine
a. Generally speaking, cocaine's effects are much briefer than are amphetamine's
b. The time parameters of cocaine vary with the method of ingestion Methods of ingestion
c. When cocaine is smoked, or "freebased", the drug goes immediately to the lungs, and is absorbed into the blood stream very rapidly
1) The smoker begins to feel the effects of the cocaine virtually immediately.
2) The "rush", or euphoria, is reported to be very intense
3) However, the euphoric effects only last 5-10 minutes after the cocaine is smoked
d. When cocaine is injected, the drug is passed directly to the blood stream, where it is carried swiftly to the brain
1) The effects are felt within seconds
2) The onset of effects is very intense
3) The effects usually continue to be felt for 5-15 minutes, some have reported feeling the effect for 45-90 minutes
e. When cocaine is snorted (insufflated), the onset of effects is not quite as rapid as with smoking or injecting
1) The user typically feels the onset of effects within 30 seconds after snorting the drug
2) Although the "rush" occurs, it is not quite as intense as it is when the cocaine is smoked or injected
3) The effects from snorting usually last from 30-90 minutes

f. Oral ingestion of cocaine usually is the least preferred method[24]
   1) The user generally does not begin to feel the effects for 3-5 minutes and possibly up to an hour after ingestion
   2) The effects are not as intense as they are with other methods of ingestion
   3) However, the effects may last 1-2 hours depending on the dose and late phase effects. Binge use may create signs lasting several days

3. With all methods of ingestion, the duration of cocaine's effects tend to be briefer than the effects of most other drugs
4. Methamphetamine
   a. When methamphetamine is injected, the initial effects are very similar to the injection of cocaine
      1) The user begins to feel the effects within a few seconds
      2) The "rush" is very intense, and lasts at a high level of intensity for 5-30 seconds
      3) Unlike cocaine, methamphetamine's effects are longer and may last up to 12 hours after injection
   b. When methamphetamine is smoked
      1) The rush is very intense, and the effects are long lasting
      2) The user stays “high” for 4-8 hours
      3) Residual effects lasting up to 12 hours
   c. When methamphetamine is snorted or taken orally
      1) The onset takes longer
      2) The rush is much less intense
      3) The effects are much briefer
5. Amphetamines
   a. Generally taken orally
      1) The rush is not as intense
      2) The effects can last between 4-8 hours
6. Prescription Stimulants
   a. Ritalin, Adderall, and Dexedrine
   b. The time duration and time of onset varies

L. Overdose Signs and Symptoms
   1. Overdoses of cocaine or amphetamines can cause the pleasurable effects to turn into panic and often violent behavior. If the overdose is caused by cocaine, it is commonly referred to as “Cocaine Psychosis” or “Cocaine Delirium”
      a. Subject may become very confused and aggressive
      b. Subject may suffer convulsions and faint or pass into a coma
      c. Heartbeat (pulse) will increase, possibly dramatically
      d. Hallucinations may occur
   2. Death can occur from sudden respiratory failure, or from heart arrhythmia, leading to cardiac arrest
   3. Another danger is that subjects may attempt to treat CNS Stimulant overdose with Barbiturates, possibly leading to overdose of CNS Depressants

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[24] Drugs and Human Performance Fact Sheet, National Highway Traffic Safety Administration (NHTSA, Report Number: DOT HS 809 725), Published April 2004. Available online at: http://www.nhtsa.gov/staticfiles/nti/pdf/809725-DrugsHumanPerformFS.pdf

4. Other sign and symptoms are:
   a. Convulsions
   b. Increased body temperature
   c. Hallucinations

M. Medical Conditions that may mimic drug impairment
   1. Hyperactivity
   2. Nervousness
   3. Stress
   4. Fear
   5. Hypertension
   6. Psychological disorders

N. Expected Results of the Evaluation
   1. Observable evidence of impairment
   2. HGN will not be present
   3. VGN will not be present
   4. LOC will not be present
   5. Performance on Modified Romberg Balance Test will be impaired
   6. Performance on Walk and Turn may be impaired due to the suspect's hyperactivity and inability to concentrate
   7. Performance on One Leg Stand may be impaired due to the suspect's hyperactivity
   8. Performance on Finger to Nose tests will be impaired
   9. Blood pressure will be elevated
   10. Pulse will be increased
   11. Body temperature will be elevated
   12. Pupils generally will be dilated
   13. Pupil reaction to light generally will be slow

O. Complete the matrix chart or display matrix chart with CNS Depressants
   2. Review Topics for Study Sheet with Students
   7. Have students complete the review questions as a form of review
   8. Review questions with students

XII. Hallucinogens[25] [26] (1hr.)

A. Learning Objectives
   1. Identify common drug names and terms associated with this category
   2. Identify the common methods of administration for this category
   3. Describe the indicators of impairment associated with this category
   4. Describe conditions which may mimic the signs and symptoms associated with this category
   5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)

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[25] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[26] [26] Drug Evaluation and Classification Training "The Drug Recognition Expert School," Section XIV, HS 172 R5/13

B. What is a hallucinogen?
   1. In order for a drug to be classified as a hallucinogen it must impair the subject's ability to perceive reality
   2. Hallucinogens also cause hallucinations

C. Overview of Hallucinogens
   1. Hallucinogens are drugs that affect a person's perceptions, sensations, thinking, self-awareness and emotions
      a. The word "Hallucinogen" means something that causes hallucinations
      b. A hallucination is a sensory experience of something that does not exist outside the mind
         1) Seeing, hearing, smelling, tasting or feeling something that isn't really there
         2) Having distorted sensory perceptions, so that things look, sound, smell, etc. differently than they really are
      c. Hallucinogenic drugs usually produce what are called pseudo-hallucinations: i.e. the user typically is aware that what he or she is seeing, hearing, smelling, etc. isn't real, but is a product of the drug
      d. One common type of hallucination produced by these drugs is called synesthesia, which means a transposing of sensory modes
         1) Sounds for example, may be transposed into sights
         2) Sights may be transposed into odors
      e. The illusions and distorted perceptions produced by hallucinogenic drugs may be very alarming, even terrifying
         1) They may produce panic and uncontrolled excitement
         2) The user may be unable to cope with the terror, and may attempt to flee wildly
         3) A user who is emotionally or mentally unstable may become psychotic in response to this frightening experience
      f. Remember that hallucinogens produce illusions, delusions or both
         1) An illusion is a false perception, i.e. a miss-representation of what the senses are receiving
         2) A delusion is a false belief
      g. Because they often make the user appear to be insane, hallucinogens sometimes are called psychotomimetic drugs
   2. Identification of Hallucinogens
      a. Some hallucinogens come from natural sources, while others are synthetically manufactured
         1) Peyote and Psilocybin are examples of naturally occurring hallucinogens
            a) Peyote is a species of cactus containing mescaline
            b) There are numerous mushroom's (psilocybin) capable of inducing hallucinations
            c) Other examples of naturally occurring hallucinogens are:
               (1) Jimson Weed and morning glory seeds
               (2) Toads (Bufo Alvarius) release a hallucinogenic secretion when threatened. This is a defense mechanism of the toad
      b. Synthetic manufactured Hallucinogens
         1) LSD, MDA, MDMA, DMT, STP, TMA and 2CB
            a) MDMA is an abbreviation for 3, 4-Methylenedioxy-Methamphetamine and is commonly referred to as "Ecstasy". It is an hallucinogen that also acts

as a stimulant. It produces and energizing effect, as well as distortions in time and perception and enhanced enjoyment from tactile experiences
   b) MDA is an abbreviation for 3,4-Methylenedioxy- Amphetamine. It is normally produced as a clear liquid, or as a white powder in capsule or tablet form
   c) Both can be found as a pill or as a powder
   d) A pill press can be used to compress the powder into a pill, which may contain a variety of different shapes or figures
   e) The use and abuse of Ecstasy has received wide spread attention because of its popularity in the “rave scene” and overdose deaths
3. Peyote is a small, spineless cactus
   a. The active, hallucinogenic ingredient in peyote is mescaline
   b. Peyote use by certain Indian tribes for religious rituals pre-dates Columbus' discovery of America by many centuries
   c. Peyote is used legally in religious ceremonies of the Native American Church
4. Psilocybin is a drug found in a number of different species of mushrooms of the genus Psilocybe.
   a. These mushrooms also have been used in Indian religious ceremonies for thousands of years
   b. An unstable derivative of Psilocybin, called Psilocin, is also found in these mushrooms and also has hallucinogenic properties
5. LSD is perhaps the most famous of the synthetically manufactured Hallucinogens
   a. "LSD" is an abbreviation of Lysergic Acid Diethylamide
   b. It was first produced in 1938, although its hallucinogenic properties were not discovered until 1943
   c. LSD was used in psychotherapy during the 1940's and early '50's
   d. Although LSD is a synthetic drug, it was first derived from Ergot, a fungus that grows on rye and other grains
   e. In the Middle Ages, when people accidentally ate this fungus, their resulting bizarre behavior was thought to stem from possession by the Devil
   f. The trials and subsequent burning of "witches" in Salem, Massachusetts in 1692 probably was due to accidental Ergot consumption by those women
   g. Ergot is still used medically to treat migraine headaches
6. 2CB (4-Bromo-2, 5-dimethoxyphenethylamine) is a popular drug first synthesized in 1974
   a. 2CB is considered both a psychedelic and an entactogen
   b. 2CB is a white powder usually found in pressed tablets or gel caps
   c. 2CB is sometimes referred to as “Venus”, “Nexus”, and “bromo-mescaline”
7. MDA, STP and TMA are synthetically manufactured hallucinogens that sometimes are called "Psychedelic Amphetamines"
   a. They are chemically related to amphetamines and produce many effects similar to those of CNS Stimulants
   b. They are also chemically related to mescaline
   c. MDA is an abbreviation for 3, 4-Methylenedioxy- Amphetamine
   d. Among users, MDA sometimes is referred to as the "Mellow Drug of America"
   e. STP is also called DOM, an abbreviation of 2 Methyl-2,5 Dimethoxylamphetamine
   f. Users have popularized the abbreviation STP, representing "Serenity, Tranquility and Peace"
   g. TMA is an abbreviation for 3,4,5-Trimethoxyamphetamine

8. An important fact about hallucinogens is that they are not addictive, in the sense that cessation of use does not produce withdrawal signs or symptoms; however, regular users do develop tolerance to these drugs

D. Methods of Ingestion of Hallucinogens
   a. Orally
      1) The most common method of ingesting hallucinogens is orally
      2) LSD is placed on bits of paper, gelatin squares, or sugar cubes and eaten
      3) The small "buttons" or crowns of the Peyote Cactus are dried and eaten, or may be brewed into a beverage for drinking
      4) Similarly, the Psilocybin Mushrooms are dried and eaten, or may be brewed into a beverage for drinking
   b. Transdermal
      1) When a substance is adsorbed through the skin, it is called transdermal absorption
      2) LSD can be absorbed this way
      3) Officer Safety: Extreme caution and care should be taken when handling any substance believed to be LSD. It is advised to always wear protective gloves (such as latex, not leather) when handling this substance
   c. Smoked
      1) Some hallucinogens can also be smoked (example: LSD impregnated on marijuana or tobacco cigarettes)
   d. Intravenous
      1) Some users inject LSD
      2) MDMA can also be injected
   e. Insufflation
      1) MDA can also be insufflated, or "snorted"
      2) MDMA can be taken orally

E. Possible Effects
   1. The effects of hallucinogens vary widely, and are affected by the user's personality, mood and expectations, and by the surroundings in which the drug is taken
   2. Generally, hallucinogens intensify whatever mood the user is in at the time the drug is taken
      a. If the user is depressed, the drug will deepen the depression
      b. If the user is feeling pleasant, the drug will heighten that feeling
   3. If the user expects that the drug will help him or her achieve new insights or an expanded consciousness, the "trip" will seem to have that effect
   4. However, hallucinogens also often uncover mental or emotional flaws that the user was unaware of possessing
   5. Therefore, many users who expect a positive experience with the drug will encounter instead the panic of a "bad trip" or a “flashback”
   6. A terrifying "bad trip" sometimes may be re-experienced as a flashback
   7. What is a “bad trip” and a “flashback”?
      a. “Bad trip” is the expression used to refer to the panic filled reactions to hallucinations in simple terms
      b. “Flashbacks” are a vivid recollection of a portion of an hallucinogenic experience
         1) A flashback does not occur because of a residual quantity of drug in the user's body
         2) Instead, a flashback essentially is a very intense daydream

8. There are three types of flashback
    a. Emotional: Feelings of panic, fear, etc.; the sensations of a "bad trip,." the most dangerous type of flashback
    b. Somatic: Altered body sensations, tremors, weakness, dizziness, crawly, tingly feelings on the skin
    c. Perceptual: Distortions of vision, hearing, smell and/or other senses. These distortions are "re-runs" of the original “trip." These are the least harmful, unless driving a motor vehicle

F. General Indicators
1. Hallucinations
2. Paranoia
3. Nausea
4. Perspiring
5. Dazed appearance
6. Flashbacks
7. Body tremors
8. Uncoordinated
9. Disoriented
10. Memory loss
11. Synesthesia
12. Difficulty with speech
13. Poor perception of time and distance
14. Rigid muscle tone

G. Eye Indicators
1. HGN – Not Present
2. VGN – Not Present
3. LOC – Not Present
4. Pupil Size - Dilated

H. Onset and Duration of Effects
1. The time parameters associated with Hallucinogens vary from drug to drug
2. LSD
    a. Onset, 30-45 minutes; Blood pressure, pulse and temperature rise; pupils dilate; hair starts to stand on end (Piloerection); nausea, dizziness and headache develop
    b. Duration, 10-12 hours with peak effects reached within 4-6 hours
3. Ecstasy (MDMA)
    a. Onset, several minutes to a half hour if taken orally; Psychological effects include confusion, depression, anxiety and paranoia
    b. Duration, 1-12 hours depending on dosage
4. Psilocybin
    a. Onset, 30 minutes; dizziness, light headed feeling, giddiness, lightness or heaviness of extremities
    b. Duration, 2-3 hours with peak effects within 90 minutes to two hours
5. Peyote (Mescaline)
    a. Onset, 30 minutes; Nausea, possibly leading to vomiting; mild rise in blood pressure, pulse, temperature and heart rate; pupils dilate
    b. Duration, up to 12 hours with peak effects reached within 3-4 hours

I. Overdose Signs and Symptoms
   1. Death from overdose of LSD or Mescaline is not common
      a. It is unlikely that other hallucinogens would directly result in death from overdoses
      b. However, an overdose can be extremely dangerous and indirectly result in death
         1) The extreme panic and agitation of a "bad trip" have been known to result in suicide, or in accidental death as the user attempts to flee the hallucinations
         2) Sometimes hallucinogens induce a perception of invulnerability in the user, leading to bizarre and very dangerous behavior, and death
   2. The most common danger of an overdose of hallucinogen is an intense "bad trip", which can result in severe and sometimes permanent psychosis
   3. Some evidence also suggests that prolonged use of LSD may produce organic brain damage, leading to impaired memory, reduced attention span, mental confusion and impaired ability to deal with abstract concepts

J. Medical conditions that may mimic drug impairment
   1. High fever (which may induce hallucinations)
   2. Mental Illnesses

K. Expected Results of the Evaluation
   1. Observable evidence of impairment
      a. HGN not present
      b. VGN not present
      c. LOC not present
      d. Performance on the Modified Romberg Balance Test will be impaired, particularly in the subject's estimation of the passage of 30 seconds
      e. Performance on the Walk and Turn, One Leg Stand and Finger to Nose tests will be markedly impaired due to the subject's severe visual distortion, impaired perception of distance and decreased muscle coordination
      f. Pulse will be up
      g. Blood pressure will be elevated
      h. Body temperature will be up
      i. Pupils will be dilated
      j. Reaction to light will usually be normal
         1) Exception number three (3) on the matrix
         2) Certain Psychedelic Amphetamines usually will slow the pupils' reaction to light

L. Complete the Matrix chart or display matrix chart with Hallucinogens
   1. Review Topics for Study Sheet with Students
   2. Have students complete the review questions as a form of review
   3. Review questions with students

XIII. Narcotic Analgesics[27] [28] (1hr.)

[27] Advanced Roadside Impaired Driving Enforcement, Section VI, HS 172B R5/13

[28] Drug Evaluation and Classification Training "The Drug Recognition Expert School," Section XVII, HS 172 R5/13

A. Learning Objectives
   1. Identify common drug names and terms associated with this category
   2. Identify the common methods of administration for this category
   3. Describe the indicators of impairment associated with this category
   4. Describe conditions which may mimic the signs and symptoms associated with this category
   5. List the indicators which may emerge during the three phases of DWI detection process which may indicate the subject is under the influence of a drug(s)

B. Overview of Narcotic Analgesics
   1. Narcotic Analgesic defined
      a. A medical term, not a legal or police term
      b. An "Analgesic" is a drug that relieves pain. It differs from an anesthetic, in that it lowers one's perception of pain, rather than stopping nerve transmission
      c. Non-Narcotic Analgesics, such as Aspirin, Tylenol, and Motrin, relieve pain, but do NOT produce narcosis, which means numbness or sedation
      d. A Narcotic is a drug derived from Opium, or produced synthetically that relieves pain, but also induces euphoria, alters mood, and produces sedation
   2. What is a Narcotic Analgesic
      a. This category is sometimes called “The Opioids”; the drugs in the class contain or are found in opium, derive chemically from opium, or produce effects similar to those of the opium derivatives
      b. Opiate refers to a drug that contains opium
      c. Opioid refers to the synthetic subcategory of narcotic analgesics
   3. What do Narcotic Analgesics do?
      a. Relive pain
      b. Induce euphoria, alter moods and produce sedation
   4. Known for physically addicting properties and severe withdrawal symptoms
   5. There are two subcategories of Narcotic Analgesics
      1) Opiates: drugs that either contain or are derived from Opium
         a) Natural alkaloids of opium
            (1) Point out that a "natural alkaloid" is a substance that is found in another substance, and that can be isolated from it. Morphine, for example, is a natural alkaloid of opium
            (2) Codeine is another example of a natural alkaloid
         b) Opium derivatives
            (1) The natural alkaloids and the opium derivatives all come from opium, which is sap from the seed pods of a particular type of poppy
            (2) Synthetics, which do not derive from opium at all, but have similar or identical effects as opium alkaloids and derivatives
   6. Narcotic Analgesics all share three characteristics
      a. They will relieve pain
      b. They will produce withdrawal signs and symptoms when the user is physically dependent, and drug use is stopped
      c. They will suppress the withdrawal signs and symptoms of chronic morphine administration
   7. Identification of Narcotic Analgesics
      a. The most familiar narcotic analgesic is heroin
         1) Heroin is normally found in a powder form

2) Heroin's color ranges from white to dark brown (tar colored)

b. Other Narcotic Analgesics include
   1) Hydrocodone
   2) Vicodin
   3) Lortab
   4) Tylenol 3 (with codeine)
   5) Buprenorphine
   6) Morphine
   7) Oxycontin
      a) Typically, these are prescription drugs and are found in a pill form
      b) The shape, size, or scoring can depend on the manufacturer or milligram strength
      c) In most cases, narcotic analgesics are obtained in local pharmacies and sold locally
      d) These drugs are inexpensive and are frequently prescribed, but nevertheless remain a controlled substance

8. Some commonly abused Opiates
   a. Powdered Opium (also known as smoking opium)
   b. Hydrocodone is derived from codeine but is more closely related to morphine in its pharmacological profile
   c. Morphine, the principal natural alkaloid of opium
   d. Codeine is another natural alkaloid of opium
   e. Heroin is the most commonly abused illicit Narcotic Analgesic
   f. Dilaudid is another derivative of morphine
   g. Numorphan
   h. Oxycodone is a semisynthetic narcotic produced by chemically treating Thebaine. It is somewhat less addictive than morphine, but more than codeine
9. Some common Synthetic Opiates
   a. Demerol is a synthetic first produced in 1939
   b. Methadone is a synthetic developed in Germany during World War II and first marketed in America in 1947
   c. The Fentanyls include several hundred "designer drug" analogs of morphine
   d. MPPP is an illegally manufactured analog of demerol
   e. Darvon is a synthetic narcotic of relatively low analgesic potency and relatively low addiction liability

C. Methods of administration of Narcotic Analgesics
   1. The method may vary from one drug to another
      a. Some are commonly taken orally
      b. Some are smoked
      c. Some are intranasal (snorted)
      d. Some are often administered in suppositories
      e. Medically, some Narcotic Analgesics may be administered transdermal or through the skin
      f. Heroin, and some others, usually are taken by injection

D. Possible Effects
   a. Usually very addictive
   b. Addicts who stop using may suffer physical withdrawal symptoms

c. Users may develop a tolerance to the drug (each time the drug is taken, a larger dose is required to achieve the same feeling)

E. Possible Effects
1. The effects produced by heroin or other Narcotic Analgesics depend on the tolerance that the user has developed for the drug
   a. People develop tolerance for Narcotic Analgesics fairly rapidly
   b. "Tolerance" means that the same dose of the drug will produce diminishing effects, or conversely that a steadily larger dose is needed to produce the same effects
2. A Narcotic Analgesic user who has developed tolerance and who is using his or her "normal" dose of the drug may exhibit little or no evidence of intellectual or physical impairment
3. Impairment is more evident with new users, and with tolerant users who exceed their "normal" doses

F. General Indicators
1. **Ask** students: "How would a Narcotic Analgesic possibly impair a subject's ability to operate a vehicle safely?"
   a. Answer: The user could be "on the nod" and be in a semiconscious state and lose control of a vehicle
   b. Delayed reflexes could lead to running a red light, stop sign or rear ending another vehicle
2. Sedation - "On the Nod"
   1) The condition known as "on the nod" is a semiconscious state of deep relaxation.
   2) The user's eyelids become very droopy
   3) Their head will slump forward until the chin rests on the chest
   4) In this condition, the user usually can be aroused easily and will be sufficiently alert to respond to questions
3. Other Indicators
   1) Droopy eyelids
   2) Drowsiness
   3) Depressed Reflexes
   4) Dry mouth
   5) Low, slow and raspy speech
   6) Slow, deliberate movements
   7) Inability to concentrate
   8) Slowed breathing
   9) Skin cool to the touch
   10) Possible vomiting
   11) Itching of the face, arms or body
   12) Euphoria
   13) Fresh puncture marks
   14) Track marks

G. Eye Indicators
1. HGN – Not present
2. VGN – Not present
3. Pupil Size – Constricted

4. LOC – Not present

H. Onset and Duration of Effects
   1. The intensity of the euphoria will depend on a number of factors, one of which is the addict's tolerance. A heavily addicted user who is beginning withdrawl symptoms may experience only mild euphoria
   2. Depending on the method of ingestion, the onset will vary. Injection and smoking are the most common
   3. The psychological effects of Heroin begin immediately after the injection
   4. The observable signs will usually become evident within 5-30 minutes after the user has injected
   5. The effects will usually be observable for up to 4-6 hours
   6. Heroin/Morphine
      a. Onset, seconds for injection and inhalation (if oral – 15-60 min)
      b. Duration, 4-6 hours
   7. Methadone
      a. Onset, 30-60 min after oral administration
      b. Duration, low dose can last 6-8 hours, increasing to 22-48 hours for chronic administration
   8. Hydrocodone
      a. Onset, 15-30 min for oral
      b. Duration, 6-8 hours
   9. Dilaudid
      a. Onset, 15-30 min for oral
      b. Duration, 5 hours
   10. Percodan
      a. Onset, 15-30 Min for oral
      b. Duration, 4-6 hours

I. Withdrawal Sign and Symptoms
   1. As the drug wears off, withdrawal signs and symptoms start to develop until the addicted user injects again
      a. As the effects of Heroin diminish, withdrawal symptoms begin
         1) aches
         2) chills
         3) insomnia
         4) nausea
      b. Withdrawal signs start to become observable 8-12 hours following injection
         1) goose bumps (Piloerection) on the skin
         2) sweating
         3) running nose
         4) tearing
         5) vomiting
         6) yawning
   2. Withdrawal signs and symptoms closely resemble those of Influenza or the common cold
      a. These symptoms begin to intensify from 14-24 hours after injection, and may be accompanied by goose bumps (piloerection), slight tremors, loss of appetite and dilation of the pupils

b. Approximately 24-36 hours after injection, the addicted user experiences insomnia, vomiting, diarrhea, weakness, depression and hot and cold flashes
c. Withdrawal symptoms and signs generally reach their peak 2-3 days after injection
    1) muscular and abdominal cramps
    2) elevated temperature
    3) severe tremors and twitching
d. The addicted user at this point is nauseated, gags, vomits and may lose 10-15 pounds within 24 hours
e. The withdrawal syndrome continues to decrease in intensity over time, and is usually greatly reduced by the fifth day, disappearing in one week to 10 days
f. A common misconception regarding withdrawal from Narcotic Analgesics is that they may be fatal. In reality, however, although Narcotic withdrawal is extremely uncomfortable, it rarely, if ever, proves fatal

J. Overdose Signs and Symptoms
1. Narcotic Analgesics depress respiration
    a. In overdoses, the user's breathing will become slow and shallow
    b. Death can occur from severe respiratory depression
    c. The danger of death is heightened by the fact that the addicted user may not know the strength of the drug he or she is taking
2. Other signs and symptoms of an overdose of a Narcotic Analgesic include:
    a. Clammy skin,
    b. Convulsions
    c. Coma
    d. Blue lips and pale or blue body
    e. Extremely constricted pupils (unless there is brain damage, in which pupils may be dilated)
    f. Recent needle marks, or perhaps a needle still in the user's arm
3. Instructor Note: Narcotic Analgesic overdoses are sometimes treated by the administration of a narcotic antagonist such as Narcan. A narcotic antagonist works at neuron receptor sites, blocking or counteracting the effects of narcotic analgesics. In effect, these substances precipitate withdrawal. The short duration of effects produced by narcotic antagonists, however, require continued medical monitoring of the user

K. Medical conditions that may mimic Narcotic Analgesic impairment
1. Fatigue
2. Very recent head injuries
3. Diabetic reactions
4. Hypotension (low blood pressure)
5. Severe depression

L. Expected Results of the Evaluation
1. Observable evidence of impairment
    a. HGN will not be present
    b. VGN will not be present
    c. LOC will not be present
    d. Performance on Romberg will be impaired. Generally, the subject will appear drowsy, and will have a slow internal clock

e. Performance on Walk and Turn and One Leg Stand will be impaired, and will reflect the slow and deliberate movements caused by this category of drugs
f. Performance on Finger to Nose will also be impaired. Generally, the subject will appear drowsy, possibly "on the nod," and exhibit slow and deliberate movements
g. Blood pressure will be down
h. Pulse will be down
i. Body temperature will be down
j. Pupil size generally will be constricted (below 3.0 mm in diameter)
k. Pupils reaction to light will be little or none visible
l. If the effects of the Narcotic Analgesic are wearing off, hippus may be evident

2. General indicators
   a. Constricted pupils
   b. Depressed reflexes
   c. Drowsiness
   d. Droopy eyelids (Ptosis)
   e. Dry mouth
   f. Euphoria
   g. Facial itching
   h. Flaccid muscle tone
   i. Nausea
   j. On the nod
   k. Puncture marks
   l. Slowed reflexes
   m. Slow, low, raspy speech
   n. Slowed breathing

M. Injection Site Examination
   1. Examination of suspect's injection sites can give many clues to their drug habits
      a. Many drugs can be injected
      b. Injection sites are a sign of drug use which may or may not be recent
      c. May be evidence of habitual use
   2. The trauma to the skin, muscles and the blood is the basic concept of injection sites
   3. Drugs and medication are injected into the body in three ways
      a. Legal injections are usually intramuscular
      b. Subcutaneous, means just under the skin
      c. For medically drawing of blood or emergency medical procedures, the injection is made into a blood vessel (Intravenous). Veins are usually used. Arteries are deep, thus not lending themselves to injection
   4. The primary instrument for injection is the hypodermic syringe
      a. It consists of a hollow needle, a tube and a plunger
      b. Needles vary in size, with the primary variance being the inside diameter of the needle or the gauge
      c. The greater the number the larger the gauge, the smaller the inside diameter of the needle
      d. Most illegal drug users prefer a larger gauge needle
   5. The user's equipment is commonly referred to as a "hype kit" or "works"
      a. The kit contains a "cooker" which is any device such as a bottle cap, a metal spoon or etc. that is used to heat the drug with water to form an injectable solution

   b. A handle to hold the "cooker" over the flame
   c. Matches, lighters (primarily disposable, adjustable flame types) used to heat the substance in the "cooker"
   d. A tourniquet, which can be rubber tubing, a tie, belt, etc. It is tied around the arm, above the injection site, to cause the vein to bulge or rise, thus making it easier to inject
   e. "Cottons" are the cotton balls or cigarette filters used to "purify" the drug. The user places the "cottons" into their cooker and draws the drug up through the cottons
6. You may be asked in court to describe the difference between a legal and an illegal injection site
   a. The legal mark is usually intramuscular. Some exceptions would be in an emergency, blood donation or lab tests
   b. Usually there will be only one mark and it will be larger than the typical illegal injection
   c. Legal injections are made with new, sterile needles
   d. The illegal mark is usually over a vein
   e. There will usually be multiple marks in various stages of healing. It takes approximately two weeks for a "mark" to totally heal
   f. Users frequently use the same needle over and over again. Thus making it become dull or barbed
   g. Since the used needles make it more difficult to pierce the skin and vein, the injections sites may be jagged
   h. Use of old, dirty and shared needles cause the spread of infections and diseases such as AIDS
7. Users may frequently use the same spot to inject, as an attempt to reduce their likelihood of detection
   a. The veins may become hard and thick from continuous injections and makes them difficult to find
   b. After about 10 to 20 injections, a large sore form causing the site to enlarge and bruise. Upon close examination, the site reveals there are numerous puncture wounds in the same area, overlapping each other
8. Basic principles of puncture healing
   a. Any needle that punctures the skin leaves a scab. A scab is simply a crust formed by the drying of the discharge from the puncture
   b. These dried remains fill the gap caused by the puncture of the skin. As the fluids dry, they harden (clot and gel)
   c. There are no exact timetables for wounds to heal, but there are some general guidelines
   d. Scabs develop within about 18 - 24 hours after a puncture
   e. After about 14 days a scab usually starts to peel or flake and then falls off. The skin under the scab is shriveled and is lighter in color than the surrounding tissue
9. There is no exact science to classifying the age of puncture wound. Some general guidelines are
   a. Fresh puncture wounds are defined as under 8-12 hours after injection and will be a red dot and have an oozing appearance or blood crater with no scab formation
   b. Early puncture wound is 12-96 hours (half day to 4 days) after injection. It will have a light scab, light bruise, reddened border and a crater appearance

c. Late puncture wound is 5-14 days old and will have a dark scab, dark bruise and the crater will flatten
d. Healing puncture wound is over 14 days. The scab will be flaking and falling off with shriveled light-colored skin underneath

10. Other indicators of injection sites
    a. In an attempt to hide puncture wounds, users may inject into tattoos or scabs
    b. Tattooing also refers to dark carbon deposits that result from using a flame to "sterilize" a needle. Carbon deposits on the needle are then injected into the skin, causing a tattoo effect
    c. A "track" is a hardened part of a vein where numerous injections have been administered. The entire vein becomes scarred and hardened and with time may no longer be able to inject into. The area becomes silvery-blue in color and raised. This is referred to as "silver streaks"
    d. Injecting under a scab (from a prior injection) is called “trap dooring” and is a common technique used to evade police detection

N. Complete the Matrix chart or display matrix chart with Narcotic Analgesics
   3. Review Topics for Study Sheet with Students
   9. Have students complete the review questions as a form of review
   10. Review questions with students

XIV. Drug Combinations [29] (1 hr.)

A. Learning Objectives
   1. Describe the prevalence of drug and alcohol use (individually and in combination) as well as poly drug use
   2. Define poly drug use
   3. Articulate possible effects of poly drug use related to the general indicators of alcohol and drugs

B. The prevalence of drugs and alcohol use[30] [31]

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[29] Advanced Roadside Impaired Driving Enforcement, Section VII, HS 172B R5/13

[30] Results from the 2010 National Survey on Drug use and Health: Summary of National Findings, prepared by the Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services and by RTI International. Available online at: http://atforum.com/documents/NSDUH2010.pdf

[31] Results from the 2013 National Survey on Drug use and Health: Summary of National Findings, prepared by the Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services and by RTI International. Available online at: http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf

1. In 2010, approximately 7 million people aged 12 years or older used psychotherapeutic drugs for non-medical use.
2. In 2010, an estimated 22.6 million Americans aged 12 or older were current (within the past month) illicit drug users. In 2013, this number increased to an estimated 24.6 million Americans
3. The exact number of prescription drug users in the U.S. is unknown. However, in 2011 a record 4 billion drug prescriptions were written in the U.S.
4. Approximately 6.0 million Americans abuse prescription drugs each year
5. Adults aged 50 to 64, the rate of current illicit drug use increased from 2.7 percent in 2002 to 6.0 percent in 2013. For adults aged 50 to 54, the rate increased from 3.4 percent in 2002 to 7.9 percent in 2013. Among those aged 55 to 59, the rate of current illicit drug use increased from 1.9 percent in 2002 to 5.7 percent in 2013. Among those aged 60 to 64, the rate of current illicit drug use increased from 1.1 percent in 2003 and 2004 to 3.9 percent in 2013
6. In 2010, 10.6 million persons aged 12 or older reported driving under the influence of illicit drugs during the past year. This corresponds to 4.0 percent of the population aged 12 or older. In 2010, the rate was highest among you adults aged 18 to 25 (12.7 percent). In comparison, in 2013 the number of persons aged 12 or older that reported driving under the influence of illicit drugs during the past year was 9.9 million people or 3.8% of adolescent adults
7. Alcohol is the most popular “mixer” with other drugs
8. In 2013, an estimated 28.7 million persons (10.9% of the population) reported driving under the influence of alcohol at least once in the past year
9. Cannabis is the second most popular “mixer”, and frequently shows up in combination with cocaine, PCP, methamphetamine and various other drugs
10. The “speedball”, a combination of cocaine and heroin, remains popular
    a. Law enforcement officers should not be surprised to encounter virtually any possible combination of drugs
    b. Law enforcement officers may find more poly drug users than single drug users
    c. This means that if the law enforcement officer is to do a good job at interpreting the results of observations, they must understand the basic mechanisms of drug interactions in the human body

C. Poly Drug Use
   1. Poly Drug use means ingesting drugs from two or more drug categories
   2. The body will exhibit a combination of these effects
      a. Instructors point out that each drug works independently, and the body may exhibit a combination of these effects
      b. Instructor explain the difference between category and drug
   3. It is actually more common for a DRE to encounter poly drug users than single drug users
      a. In the Los Angeles Field Study (1985), 72% of the suspects had two or more drugs in them
      b. In that study, alcohol was often found in combination with one or more other drugs
      c. But even if we discount alcohol, nearly half (45%) of the Field Study suspects had two or more other drugs in them
      d. Data collected from the national DRE database from DREs throughout the U.S. indicates that approximately 25% of all cases with toxicology resulted in two or more drug categories detected

e. Common combinations of drugs
   1) Cocaine and Cannabis
   2) Cocaine and Heroin
   3) PCP and Cannabis
f. Many of the suspects you examine will be exhibiting the effects of two or more drugs acting together

D. Potential Effects of Poly Drug Use
1. Four types of combined effects can, and generally will, occur when two drug categories are used together
   a. Null Effect
   b. Overlapping Effect
   c. Additive Effect
   d. Antagonistic Effect
2. Null Effect
   a. If neither drug affects some particular indicator of impairment, their combination also will not affect the behavior
      1) The simplest way to explain this is by using the phrase: “zero plus zero equals zero”
      2) When a subject consumes one drug which does not cause HGN and they then ingest another drug which does not cause HGN, the officer should not expect to see HGN
   b. An example of the null effect is the pupil size of a subject who was under the combined influence of a Dissociative Anesthetic and a CNS Depressant
      1) Dissociative Anesthetics do not affect pupil size and neither do CNS Depressants. The combination of these two drugs should not affect the size of the pupils
      2) If neither drug affects some particular indicator, then their combination also will not affect that indicator
   c. Instructor Note: You can also use the example of CNS Stimulants and Narcotic Analgesics not affecting the LOC
3. Overlapping Effect
   a. If one drug affects some particular indicator of impairment and another does not, their combinations will also affect the behavior
      1) The simplest way to explain this is by using the phrase: “Action plus nothing equals action” or “one plus zero equals one”
      2) When a subject consumes one drug which does cause HGN and they ingest another drug which does not cause HGN, the officer should expect to see HGN
   b. An example of Overlapping
      1) Narcotic Analgesic typically cause
         a) HGN – Not present
         b) VGN – Not present
         c) Pupil size – Constricted
         d) LOC – Not present
      2) CNS Depressants typically cause
         a) HGN – Present
         b) VGN – Possibly present (in high dose)
         c) Pupil size – Normal
         d) LOC – Present

3) Expected results
    a) HGN – Present
    b) VGN – Possibly present (in high dose)
    c) Pupil size – Constricted
    d) LOC – Present

4. Additive Effect
    a. If both drugs affect some particular indicator of impairment, their combination will affect the behavior
        1) The simplest way to explain this is by using the phrase: “Action plus action equals greater action” or “one plus one equals two”
        2) In other words, the effects ‘add together’ or reinforce each other to produce a greater effect that one of the drugs could produce alone
    b. An example of Additive
        1) Alcohol typically causes
            a) HGN – Present
            b) VGN – Present (in high doses)
            c) Pupil size – Normal
            d) LOC – Present
        2) CNS Depressants typically cause
            a) HGN – Present
            b) VGN – Present (in high doses)
            c) Pupil size – Normal (may be dilated)
            d) LOC - Present
        3) Expected results
            a) HGN – Present (more noticeable)
            b) VGN – will not be present unless it’s a high dose for that individual. The combination may allow the VGN to be observed at a lower BAC
            c) Pupil size – Normal and possibly dilated
            d) LOC – Present (more noticeable)
5. Antagonistic Effect
    a. When two drugs affect some indicator in exactly the opposite way, their combination will be unknown
        1) The simplest way to explain this is by using the phrase: “Action plus opposite action equals unknown action” or “Action plus opposite action may be unpredictable”
        2) The effects will be dependent on which drug is more dominant in the system at any given time
    b. An example of Antagonistic effect
        1) CNS Stimulants
            a) Pupil size – Dilated
            b) Pulse rate – Up
            c) Blood pressure – Up
            d) Muscle tone – Rigid
        2) Narcotic Analgesic
            a) Pupil size – Constricted
            b) Pulse rate – Down
            c) Blood pressure – Down
            d) Muscle tone – Flaccid
        3) Expected results

a) Pupil size – dilated, constricted, or normal depending on which drug is more dominant at the time or if both drugs are equal
b) Pulse rate – Up, down or normal depending on which drug is more dominant at the time or if both drugs are equal
c) Blood pressure - Up, down or normal depending on which drug is more dominant at the time or if both drugs are equal
d) Muscle tone – Rigid, flaccid or normal depending on which drug is more dominant at the time or if both drugs are equal

6. Summary
   a. The actual effects can depend on a number of factors including, but not limited to:
      1) Dose levels
      2) Time of ingestion
      3) An individual's metabolism
      4) Dose purity

E. Drug combination examples
   1. In order to illustrate the possible effects of drug combinations, we will look at the following examples of common drug combination and compare them to the drug symptomatology in the drug matrix
      a. Cocaine and Cannabis commonly referred to as a "Primo" or "Buda"
      b. Cocaine and Heroin commonly referred to as a "Speedball"
      c. PCP and Cannabis commonly referred to as "Yerba mala" or "Woolies"
      d. Alcohol and practically anything else
   2. Review slides comparing the below combinations
      a. Dissociative Anesthetic and Narcotic Analgesic
      b. Cannabis and CNS Stimulant

F. Review Topics for Study with Students

XV.Pre-School Review (30 min)

A. Learning Objectives
   1. Utilizing the
   2. Review DRE Pre-School focus points for exam
   3. Answer any questions related to DRE Pre-School
B. Utilizing a power point slide show, show the below listed questions along with the multiple choice answers
   1. The students will use a blank piece of paper
   2. Ask the following questions which are fill in the blank:
   3. Question: Define the term "drug" as it is used in the Drug Evaluation and Classification Program
   4. Answer: "Any substance that, when taken into the human body can impair the ability of the persons to operate a vehicle safely."
   5. Question: "On which foot must the suspect stand first when performing the One Leg Stand test during the drug influence evaluation?"
   6. Answer: Left
   7. Question: "What three categories of drugs usually will induce HGN?"
   8. Answer: CNS Depressants, Inhalants and Dissociative Anesthetics
   9. Illicit students to discuss and come up with an appropriate answer

10. Instructors may coach, and guide students as needed
11. Instructor will provide the correct answer
12. Ask the following question giving multiple choice answers:
13. Question: "How many distinct, validated clues have been established for the Finger to Nose test?"
    a. Two
    b. Six
    c. Four
    d. None
14. Answer: (d) None
15. Question: "The Modified Romberg Balance Test is the _____ psychophysical test to be given during the SFSTs."
    a. First
    b. Second
    c. Third
    d. Fourth
16. Answer: (a) First
17. Question: "Chloral Hydrate is a drug within which drug category?"
    a. CNS Stimulant
    b. CNS Depressant
    c. Inhalant
    d. Narcotic Analgesic
18. Answer: (b) CNS Depressant
19. Question: "How many validated clues have been established for the Walk and Turn test?"
    a. Eight
    b. Six
    c. Validated clues have not been established
    d. Four
20. Answer: (a) Eight
21. Question: "What is Ptosis?"
    a. Dilated pupils
    b. Constricted pupils
    c. Droopy eyelids
    d. Slow reaction to light
22. Answer: (c) Droopy eyelids
23. Question: "Which of the following usually do not increase pulse rate?"
    a. Heroin
    b. Cannabis
    c. Ketamine
    d. Methamphetamine
24. Answer: (a) Heroin
25. Question: "Which of the following are common "alcohol" (circle all that apply)?"
    a. Marinol
    b. Methanol
    c. Dronabinol
    d. Butalbital
26. Answer: (b) Methanol
27. Question: "We estimate the pupil size under how many lighting conditions?"
    a. 2

b. 3
c. 4
d. 5

28. Answer: (b) 3
29. Question: "What period of time must the suspect estimate during the Modified Romberg Balance test?"
    a. 90 seconds
    b. 60 seconds
    c. 45 seconds
    d. 30 seconds
30. Answer: (d) 30 seconds
31. Question: "The DRE average range for the higher value of blood pressure is?"
    a. 160-190
    b. 120-140
    c. 90-120
    d. 70-90
32. Answer: (b) 120-140
33. Question: "The formula BAC= 50 – Angel of onset is a _____."
    a. Statistical relationship
    b. Mathematical relationship
    c. Proportional relationship
    d. Integrated relationship
34. Answer: (a) Statistical relationship
35. Question: " Which of the following is not a part of the drug influence evaluation?"
    a. One Leg Stand
    b. Breath test
    c. Finger count
    d. Officer observations
36. Answer: (c) Finger count
37. Question: The drug category that usually causes the pupils of the eyes to constrict is?"
    a. Cannabis
    b. CNS Depressants
    c. Dissociative Anesthetics
    d. Narcotic Analgesics
38. Answer: (d) Narcotic Analgesics
39. Question: "If the suspect's eyes display Nystagmus before they move to the _____ degree mark, we will record that they exhibit immediate onset."
    a. 25
    b. 30
    c. 35
    d. 40
40. Answer: (b) 30
41. Question: "What is the name of the pulse point that is located in the crease of the wrist?"
    a. Brachial
    b. Carotid
    c. Femoral
    d. Radial
42. Answer: (d) Radial

43. Question: "The DRE average range of pupil size in room light is 2.5mm to _____?"
    a. 6.0
    b. 5.0
    c. 7.0
    d. 7.5
44. Answer: (b) 5.0
45. Question: "Suppose you examine a suspect who exhibits HGN, miosis, bradycardia, hypotension and ptosis. What drug combination would best describe these symptoms?"
    a. Secobarbitol and codeine
    b. Librium and alcohol
    c. Ritalin and Demerol
    d. Ketamine and Methaqualone
    e. Cannabis and Heroin
46. Answer: (a) Secobarbitol and codeine
47. Question: "The most abused drug in the United States is?"
    a. Cocaine
    b. Alcohol
    c. Heroin
    d. Marijuana
48. Answer: (b) Alcohol
49. Question: "The active ingredient in cannabis is?"
    a. ETOH
    b. MDMA
    c. THC
    d. STP
50. Answer: (c) THC

C. Instruct students to review the "topics for study" questions at the end of each section

XVI. SFST Practice / Dry Run Practice Session[32] (30 min)

A. Learning Objectives
   1. Demonstrate the appropriate administrative procedures for the Standardized Field Sobriety Testing Battery

B. Procedures and Group Assignments
   1. Students work in teams
   2. Assign students to work in teams of three or four
   3. Each student will conduct a complete series of SFST tests using a fellow team member as a subject. The SFSTs to be practiced are:
      a. Horizontal Gaze Nystagmus (HGN), Vertical Gaze Nystagmus (VGN), Lack of Convergence (LOC)
      b. Modified Romberg Balance Test
      c. Walk-and-Turn (WAT)
      d. One-Leg Stand (OLS)
      e. Finger-to-Nose test

[32] DWI Detection and Standardized Field Sobriety Testing Section X, HS178 R5/13

4. Instruct students how to document the number of clues observed for each validated test
5. Team members who are not immediately participating in a series of tests (either as test administrator or as test subject) are expected to take notes on test administrator's performance, and to offer constructive criticism
6. Once one team member has administered a complete series of tests, other members of the team follow in turn
7. Practice is to continue until every student has administered a complete series of the tests at least once

C. Live Administration of SFST Battery
   1. Instructor to conduct all field sobriety tests on an instructor
   2. Participants to observe technique and the proper scoring only of the NHTSA-3

D. Hands on Practice
   1. Participants carry out "dry run" practice procedures on all field sobriety tests
   2. Instructors circulate among teams to observe and coach participants' performance, as necessary

XVII. Testing Subjects – Second Practice Session [33] (2 hrs.)

A. Learning Objectives
   1. Properly administer the SFSTs
   2. Properly observe and record subject's performance utilizing the standard note taking guide
   3. Properly interpret the subject's performance

B. Procedures
   1. Participants work in the same teams that were constituted for the Dry Run Practice Session
   2. Instruct students to remove "SFST Field Arrest Log" from their participant manual Session XIV (14) and use this to document the following:
      a. Date of training
      b. Name of drinking volunteer
      c. Clues observed in HGN
      d. Clues observed in WAT
      e. Clues observed in OLS
      f. If they believe the volunteer's blood alcohol concentration (BAC) is over or under .08
      g. If they would arrest or not arrest
      h. What the measured BAC of the volunteer was
      i. Any additional remarks
         1) Such as if the volunteer was not able to perform a particular or all SFSTs
         2) If a medical condition was suspected
   3. Each team will test at least as many drinking volunteers as the team has members

[33] DWI Detection and Standardized Field Sobriety Testing Section XIV, HS178 R5/13

4. While one student is administering tests to a volunteer, the other team members will observe and record the volunteer's performance on their “SFST Field Arrest Log”
5. Each team member will administer one complete series of tests to at least one drinking volunteer
    a. Each student conducts a complete test of Horizontal, Vertical Gaze Nystagmus and Lack of Convergence test
    b. Each student administers the verbal instructions and physical demonstrations of the Modified Romberg Balance test
    c. Each student administers the verbal instructions and physical demonstrations of the Walk-and-Turn test
    d. Each student administers the verbal instructions and physical demonstrations of the One-Leg Stand test
    e. Each student administers the verbal instructions and physical demonstrations of the Finger to Nose test
    f. Re-examinations (as necessary)
    g. Participants who have failed to exhibit adequate proficiency in administering the tests will receive additional practice, and a repeat examination. This may be conducted during the lunch hour, or after regular class hours, as appropriate
    h. If time permits, teams will test additional volunteers
    i. While one student is administering tests to a volunteer, the other team members will observe and record the volunteer's performance
    j. As soon as the team has completed the SFSTs on a particular volunteer, the volunteer must be escorted by a monitor to the next scheduled team
    k. Upon termination of practice, monitors will escort the volunteer subject to the Breath Testing Station
6. Though the students are administering the entire SFST battery of test, they will only document the clues observed for the NHTSA-3 (HGN, Walk and Turn, and One Leg Stand) on the “SFST Field Arrest Log”

C. Hands on Practice
    1. Participants carry out the "drinking subjects" practice procedures
    2. Instructors circulate among teams to observe and coach participants' performance, as necessary
    3. Upon completion of practice, teams escort volunteers to the Breath Testing Station
    4. Teams return to classroom to complete any notes on “SFST Field Arrest Log”. An instructor records the BACs of the volunteer

D. Session Wrap-Up
    1. Teams report their observations of volunteers
    2. Record teams results on overhead projector
        a. The actual date the SFSTs were administered
        b. Subject’s name
        c. Results of each SFST test
        d. Classification of BAC as above or below 0.10 BAC. Arrest/Not Arrest
        e. Subject’s measured BAC (if available)
        f. Remarks
    3. Instructors notify participants of volunteers' BACs
    4. Solicit participants comments, questions or observations concerning the relationship between volunteers’ BACs and their performance on the tests

5. Ask instructors to comment on how students did with SFSTs and areas to pay special attention to

Day 3

XVIII. Overview of Signs and Symptoms[34] (1hr.)

A. Learning objectives
   1. Give examples of specific drugs belonging to the seven drug categories
   2. Describe the major signs and symptoms of impairment associated with each category

B. Sign and Symptom Definition
   1. Sign: An observable or detectable indicator of a drug influence (i.e. Dilated pupils, high blood pressure and elevated pulse)
   2. Symptom: A subjective indicator of drug influence that is reported by the drug impaired subject (i.e. “I feel nauseous.”)

C. The Seven Drug Categories
   1. CNS Depressants
   2. Inhalants
   3. Dissociative Anesthetics
   4. Cannabis
   5. CNS Stimulants
   6. Hallucinogens
   7. Narcotic Analgesics

D. CNS Depressants
   1. Prior to the start of this session, draw the matrix found at the end of this session on the dry erase board or flip-chart
   2. Central Nervous System Depressants is a category that includes many different drugs
      a. **Ask** students to name some examples of CNS Depressants. Make sure that the examples given include alcohol, some barbiturates and some tranquilizers
   3. Indicators of CNS Depressant Influence Found in Eye Exams
      a. **Ask** students: “Do depressants cause Horizontal Gaze Nystagmus?”
         1) HGN usually will be present
         2) Write “Present” on the HGN line for Depressants
      b. **Ask** “Do Depressants cause Vertical Gaze Nystagmus?”
         1) Vertical Gaze Nystagmus may be present, especially with high doses (for that individual) of Depressants
         2) Write “Present” on the VERT NYST line for Depressants. Denote in parentheses above “(High Doses)”
      c. **Ask** “Do Depressants cause the eyes to be unable to converge?”
         1) Vertical Gaze Nystagmus may be present, especially with high doses (for that individual) of Depressants

[34] Preliminary Training for Drug Evaluation and Classification Program, Section VII, HS172 R5/13

2) Write “Present” on the VERT NYST line for Depressants. Denote in parentheses above “(High Doses)”

d. **Ask** “Do Depressants cause the eyes to be unable to converge?”
   1) Under the influence of Depressants, Lack of Convergence usually will be present
   2) Write “Present” on the LACK CONV line for Depressants
e. **Ask** “How do Depressants affect pupil size?”
   1) Depressants usually do not affect pupil size; therefore, Depressants usually leave the pupils near normal in size
   2) Write “Normal” on the PUPIL SIZE line for Depressants
f. But some specific Depressant drugs do affect pupil size
g. **Ask** “What are the Depressants that affect pupil size?”
   1) Soma, Methaqualone (Quaaludes) and some anti-depressants usually dilate pupils
   2) Put a (1) next to “Normal” and write “Soma, Quaaludes and some anti-depressants usually dilate”
h. **Ask** “Do Depressants cause a slowing in the pupillary reaction to light?”
   1) Depressants generally will cause pupillary reaction to light to be sluggish
   2) Write “Slow” on the RCTN LIGHT line for Depressants

4. Indicators of CNS Depressant Influence Found in Checks of the Vital Signs
   a. **Ask** “What are the Depressants effects on the pulse rate?”
      1) Depressants usually lower pulse rate
      2) Write “Down” on the PULSE line for Depressants
   b. **Ask** “What are the Depressants that may elevate pulse rate?”
      1) Methaqualone (Quaaludes), alcohol and some anti-depressants may cause elevation in pulse rate
      2) Put a (2) next to “Down” and write “Quaaludes, ETOH and some anti-depressants may elevate” in the Matrix
   c. **Ask** “How do Depressants affect blood pressure?”
      1) Depressants usually lower blood pressure
      2) Write “Down” on the Blood Pressure line for depressants
   d. **Ask** “How do Depressants affect muscle tone?”
      1) Depressants usually cause flaccid muscle tone
      2) Write “Flaccid” on the MUSCLE TONE line for Depressants
   e. **Ask** “How do Depressants affect body temperature?”
      1) Depressants usually leave temperature near normal
      2) Write “Normal” on the TEMP line for Depressants
5. Solicit students’ questions about CNS Depressants

E. CNS Stimulants
1. The category called Central Nervous System Stimulants includes many drugs.
2. Ask students to name some examples of CNS Stimulants. Make sure the examples include cocaine, methamphetamine and some amphetamines.
3. Indicators of CNS Stimulants influence found in the eye exams
   a. **Ask** “Does CNS Stimulants cause HGN?”
      1) HGN will not be present.
      2) Write “None” on the HGN line for CNS Stimulants.
   b. **Ask** “Do CNS Stimulants cause Vertical Gaze Nystagmus?”
      1) Vertical Gaze Nystagmus will not be present.
      2) Write “None” on the VERT NYST line for CNS Stimulants.

c. **Ask** "Do CNS Stimulants cause the eyes to be unable to converge?"
   1) Under the influence of CNS Stimulants, the eyes should still be able to converge; therefore, lack of convergence will not be present
   2) Write "None" on the LACK CONV line for CNS Stimulants
d. **Ask** "How do CNS Stimulants affect pupil size?"
   1) CNS Stimulants usually cause the pupils to dilate
   2) Write "Dilated" on the PUPIL SIZE line for CNS Stimulants

4. Indicators of CNS Stimulant Influence Found in Checks of Vital Signs
   a. **Ask** "How do CNS Stimulants affect pulse rate?"
      1) CNS Stimulants usually increase blood pressure
      2) Write "Up" on the BLOOD PRESS line for CNS Stimulants
   b. **Ask** How do CNS Stimulants effect the body temperature?"
      1) CNS Stimulants usually elevate body temperature
      2) Write "Up" on the TEMP line for CNS Stimulants
   c. **Ask** "How do CNS Stimulants affect muscle tone?"
      1) CNS Stimulants usually cause a rigid muscle tone.
      2) Write "Rigid" on the MUSCLE TONE line for CNS Stimulants
5. Though not directly related to the vital signs, the evaluator may find the subject's muscle tone to be rigid with possible body tremors. A grinding of the teeth, referred to as "bruxism" may also be noticed
6. Point out that, as show on the matrix, the signs of Stimulant influence are almost exactly opposite to the signs of Depressant influence.
7. Solicit students' questions about CNS Stimulants

F. Hallucinogens
   1. Hallucinogens include some naturally occurring substances as well as some synthetic drugs
   2. Ask students to name some hallucinogenic drugs. Make sure the examples include some natural Hallucinogens as well as some synthetics
      a. Examples of natural Hallucinogens; Peyote, psilocybin, nutmeg, and jimson weed
      b. Examples of synthetic Hallucinogens; Lysergic Acid Diethylamide (LSD), MDMA, and MDA
   3. Indicators of Hallucinogen Influence Found in Eye Exams
      a. Ask "Do Hallucinogens cause Horizontal Gaze Nystagmus?"
         1) HGN will not be present
         2) Write "None" on the HGN line for Hallucinogens
      b. **Ask** "Do Hallucinogens cause Vertical Gaze Nystagmus?"
         1) Vertical Gaze Nystagmus will not be present
         2) Write "None" on the VERT NYST line for Hallucinogens
      c. **Ask** "Do Hallucinogens cause the eyes to be unable to converge?"
         1) Under the influence of Hallucinogens, the eyes should still be able to converge; therefore, lack of convergence will not be present
         2) Write "None" on the LACK CONV line for Hallucinogens
      d. **Ask** "How do Hallucinogens affect pupil size?"
         1) Hallucinogens usually cause the pupils to dilate
         2) Write "Dilated" on the PUPIL SIZE line for Hallucinogens
      e. **Ask** "How do Hallucinogens affect the pupillary reaction to light?
         1) Normally, Hallucinogens do not effect pupillary reaction to light
         2) Write "Normal" on the RCTN LIGHT line for Hallucinogens

a) However, certain psychedelic amphetamines may cause a slowing in the pupillary reaction
b) Put a (3) next to "Normal" and write "certain psychedelic amphetamines may cause slowing" in the Matrix

4. Indicators of Hallucinogen Influence Found in Checks of Vital Signs
   a. **Ask** "How do Hallucinogens affect pulse rate?"
      1) Hallucinogens usually increase pulse rate
      2) Write "Up" on the PULSE line for Hallucinogens
   b. **Ask** "How do Hallucinogens affect blood pressure?"
      1) Hallucinogens usually increase blood pressure
      2) Write "Up" on the BLOOD PRESS line for Hallucinogens
   c. **Ask** "How do Hallucinogens affect blood pressure?"
      1) Hallucinogens usually increase blood pressure
      2) Write "Up" on the BLOOD PRESS line for Hallucinogens
   d. **Ask** "How do Hallucinogens affect body temperature?"
      1) Hallucinogens usually elevate body temperature
      2) Write "Up" on the TEMP line for Hallucinogens
   e. **Ask** "How do Hallucinogens affect muscle tone?
      1) Hallucinogens usually cause a rigid muscle tone
      2) Write "Rigid" on the MUSCLE TONE line for Hallucinogens
5. Point out that, as shown on the matrix, the major signs of Hallucinogen influence are identical to the major signs of Stimulant influence
6. Point out that, in the seven-day DRE School, the students will learn of more subtle indicators that help to distinguish Hallucinogen influence from Stimulant influence. But emphasize that it is often difficult to distinguish between these two categories
7. Solicit students' questions about Hallucinogens

G. Dissociative Anesthetics
   1. The category called Dissociative Anesthetics consists of the drug PCP, its various analogs and Dextromethorphan
   2. **Ask** students: "What does 'analog' mean in this context?"
      a. An 'analog' of PCP is a drug that is a 'chemical first cousin' of PCP; that is, it is a drug that has a slightly different molecular structure from that of PCP,
      b. Produces the same effects as PCP
   3. Instructor note: Write "Ketamine: An analog of PCP" on the dry erase board or flip-chart
      a. One of the most popular analogs of PCP is the drug called Ketamine
      b. Some other analogs of PCP include; Ketalar, Ketaset, and Ketajet.
      c. Dextromethorphan is a drug found in numerous over-the-counter substances
         1) Point out that Dextromethorphan, also known as DXM is a widely abused substance and is easy to obtain
         2) Indicators of the Dissociative Anesthetics Found in Eye Exams
      d. Dextromethorphan is a drug found in numerous over-the-counter substances
         1) Point out that Dextromethorphan, also known as DXM is a widely abused substance and is easy to obtain
         2) It's in over 125 drugs for cough, cold and flu[35]

[35] Web MD, Dangers of DXM Abuse, R. Morgan Griffin and Michael W. Smith, MD. Available at:

http://www.webmd.com/parenting/teen-abuse-cough-medicine-9/teens-and-dxm-drug-abuse

4. Indicators of the Dissociative Anesthetics Found in Eye Exams
   a. **Ask** students: "Do Dissociative Anesthetics cause Horizontal Gaze Nystagmus?"
      1) HGN usually will be present, and often with a very early onset
      2) Write "Present" on the HGN line for Dissociative Anesthetics
         a) Instructor Note: Both HGN and VGN were noted in various DRE evaluations conducted on persons impaired by DXM
         b) Research has also confirmed HGN in persons impaired by DXM[36]
            (1) Officer safety, If PCP or another Dissociative Anesthetic is suspected having additional officers present is advised
            (2) Immediate onset or "resting" nystagmus may be an indicator of influence by this category
      3) **Ask** "Do Dissociative Anesthetics cause Vertical Gaze Nystagmus?"
         a) Vertical Gaze Nystagmus usually will be present
         b) Write "Present" on the VGN line for Dissociative Anesthetics
      4) **Ask** "Do Dissociative Anesthetics cause the eyes to be unable to converge?"
         a) Lack of Convergence usually will be present
         b) Write "Present" on the LACK CONV line for Dissociative Anesthetics
      5) **Ask** "How does Dissociative Anesthetics affect pupil size?"
         a) Dissociative Anesthetics do not normally affect pupil size; therefore, a person under the influence of a Dissociative Anesthetic, such as PCP usually will have pupils that are near normal in size
         b) Write "Normal" on the PUPIL SIZE line for Dissociative Anesthetics
            (1) instructor Note: Actual DRE evaluations conducted on persons impaired by DXM resulted in pupils in the normal ranges
            (2) A NHTSA study showed DXM may dilate pupils[37]
      6) **Ask** "Will Dissociative Anesthetics effect pupillary reaction to light?"
         a) Dissociative Anesthetics normally will not affect pupillary reaction to light
         b) Write "Normal" on the RCTN LIGHT line for this category
5. Indicators of Dissociative Anesthetic Influence Found in Checks of Vital Signs
   a. **Ask** "How do Dissociative Anesthetics affect pulse rate?"
      1) Dissociative Anesthetics usually increase pulse rate
      2) Write "Up" on the PULSE line for this category
   b. **Ask** "How do Dissociative Anesthetics affect blood pressure?"
      1) Dissociative Anesthetics usually elevate blood pressure
      2) Write "Up" on the BLOOD PRESS line for Dissociative Anesthetics
   c. **Ask** "How do Dissociative Anesthetics affect body temperature?"
      1) PCP and its analogs usually elevate body temperature. Dextromethorphan may or may not rise temperature
      2) Write "Up" on the TEMP line for this category
   d. **Ask** "How do Dissociative Anesthetics affect muscle tone?

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[36] NHTSA (2004 April, Drugs and Human Performance Fact Sheets (Report No. DOT HS 809 725)).

Washington, DC: National Highway Traffic Safety Administration. Available at:

http://www.nhtsa.gov/people/injury/research/job185drugs/technical-page.htm

[37] NHTSA (2004 April, Drugs and Human Performance Fact Sheets (Report No. DOT HS 809 725)).

Washington, DC: National Highway Traffic Safety Administration. Available at:

http://www.nhtsa.gov/people/injury/research/job185drugs/technical-page.htm

1) Dissociative Anesthetics usually cause rigid muscle tone.
2) Write “Rigid” on the MUSCLE TONE line for Dissociative Anesthetics

6. Point out that PCP tends to produce the eye indicators associated with Depressants, and the vital sign indicators associated with CNS Stimulants or Hallucinogens
7. Solicit students’ questions about Dissociative Anesthetics

H. Narcotic Analgesics
1. Narcotic Analgesics include some natural derivatives of opium as well as some synthetic drugs
2. **Ask** students to name some examples of Narcotic Analgesics. Make sure the examples include some natural opiates as well as some synthetics
   a. Examples of natural opiates; Raw opium, Morphine, and Codeine
   b. Examples of synthetic opiates; Oxycodone, Suboxone, and Fentanyl
3. Indicators of Narcotic Analgesic Influence Found in Eye Exams
   a. **Ask** students: “Do Narcotics cause Horizontal Gaze Nystagmus?”
      1) HGN will not be present
      2) Write “None” on the HGN line for Narcotics
   b. **Ask** “Do Narcotics cause the eyes to be unable to converge?”
      1) Under the influence of Narcotics, the eyes should still be able to converge; therefore, Lack of Convergence usually is not present
      2) Write “None” on the LACK CONV line for Narcotics
   c. **Ask** “How do Narcotics affect pupil size?”
      1) Narcotic Analgesics usually cause a very noticeable constriction of the pupils
      2) Write “Constricted” on the PUPIL SIZE line for Narcotics
   d. **Ask** “How doe Narcotics affect pupillary reaction to light?”
      1) Though there is always some reaction to light, the constricted pupils caused by Narcotic Analgesics make it nearly impossible to perceive a change in pupil size. However, when observed it will generally be little or none visible
      2) Write “Little or None Visible” on the RCTN LIGHT line for Narcotics
4. Indicators of Narcotic Analgesic Influence Found in Checks of Vital Signs
   a. **Ask** “How do Narcotics affect pulse rate?”
      1) Narcotics usually lower pulse rate
      2) Write “Down” on the PULSE line for Narcotics
   b. **Ask** “How do Narcotics affect blood pressure?”
      1) Narcotics usually lower blood pressure
      2) Write “Down” on the BLOOD PRESS line for Narcotics
   c. **Ask** “How do Narcotics affect body temperature?”
      1) Narcotics usually lower body temperature
      2) Write “Down” on the TEMP line for Narcotics
   d. **Ask** “How do Narcotics affect muscle tone?”
      1) Narcotic Analgesics usually cause flaccid muscle tone
      2) Write “Flaccid” on the MUSCLE TONE line for Narcotics
5. Point out that Narcotics and Depressants tend to produce similar indicators in the vital signs, but very different indicators in the eyes
6. Solicit students’ questions about Narcotic Analgesics

I. Inhalants
1. The category of Inhalants includes a wide variety of gases and fumes that have the power to intoxicate
2. **Ask** students to name some commonly abused Inhalants

a. Examples of commonly abused Inhalants; Glade, nitrous oxide, spray paint, paint thinner and dust off
b. Not all Inhalants affect their users in exactly the same way
c. There is probably less consistency in the signs and symptoms of Inhalants than there is with any other category
d. When we talk of the signs and symptoms of Inhalants, we often must qualify our statements
e. For example, we may say that a particular effect will be observed "for most Inhalants"

3. Indicators of Inhalant Influence Found in Eye Exams
   a. **Ask** students: "Do Inhalants cause HGN?"
      1) With most Inhalants, HGN usually will be present
      2) Write "Present" on the HGN line for Inhalants
   b. **Ask** "Do Inhalants cause Vertical Gaze Nystagmus?"
      1) With most Inhalants, Vertical Gaze Nystagmus may be present, especially with large doses
      2) Write "Present" on the VGN line for inhalants. Denote in parentheses "(High Doses)"
   c. **Ask** "Do Inhalants cause the eyes to be unable to converge?"
      1) Under the influence of Inhalants, Lack of Convergence usually will be present
      2) Write "Present" on the LACK CONV line for Inhalants
   d. **Ask** "How do Inhalants affect pupil size?"
      1) Most Inhalants usually leave the pupils near normal in size
      2) Write "Normal" on the PUPIL SIZE line for Inhalants. Then put a (4) and write "Normal, but may be dilated" below the matrix
         a) Some inhalants may cause pupil dilation
         b) The effect of Inhalants on pupil size depends on the particular substance inhaled
   e. **Ask** "How do Inhalants effect pupillary reaction to light?"
      1) Depending on the substance used, Inhalants may cause a slowed reaction to light or the pupils may react normally. However, the most frequently observed effect will be a sluggish reaction to light
      2) Write "Slow" on the RCTN LIGHT line for Inhalants
4. Indicators of Inhalant Influence Found in Checks of Vital Signs
   a. **Ask** "How do Inhalants affect pulse rate?"
      1) Inhalants usually elevate pulse rate
      2) Write "Up" on the PULSE line for Inhalants
   b. **Ask** "How do Inhalants affect blood pressure?"
      1) Most inhalants usually elevate blood pressure, but some lower blood pressure
      2) Write "Up/Down" on the BLOOD PRESS line for Inhalants. Put a (5) next to "Up/Down" and write down below the matrix "Down with Anesthetic Gases and Up with Volatile Solvents and Aerosols"
   c. **Ask** "How do Inhalants affect body temperature?"
      1) The effects of Inhalants on temperature depend on the particular substance inhaled
      2) Write "Up/Down/Normal" on the TEMP line for Inhalants
   d. **Ask** "How do Inhalants affect muscle tone?"
      1) Depending on the Inhalant, muscle tone will either be normal or flaccid
      2) "Write "Normal or Flaccid" on the MUSCLE TONE line for Inhalants

5. Solicit students' questions about Inhalants

J. Cannabis
   1. The category of Cannabis includes the four principal forms
      a. Marijuana
      b. Hashish
      c. Hash Oil
      d. Marinol (Medical Marijuana)
   2. Cannabis can include both natural and synthetic cannabinoid products. Ensure students can name some natural and synthetic cannabis products
      a. Examples of natural marijuana products; Honey oil, marijuana, Hashish, various edibles
      b. Examples of common synthetic cannabis; Spice, K2, Spice Gold and Sexy Monkey
   3. Indicators of Cannabis Influence Found in Eye Exams
      a. **Ask** students: "Does Cannabis cause Horizontal Gaze Nystagmus?"
         1) HGN will not be present
         2) Write "None" on the HGN line for Cannabis
      b. **Ask** "Does Cannabis cause Vertical Gaze Nystagmus?"
         1) Vertical Gaze Nystagmus will not be present
         2) Write "None" on the VERT NYST line for Cannabis
      c. **Ask** "Does Cannabis cause the eyes to be unable to converge?"
         1) Under the influence of Cannabis, Lack of Convergence will be present
         2) Write "Present" on the LACK CONV line for Cannabis
            a) Point out that Cannabis is the only category that causes Lack of Convergence but does not cause nystagmus
            b) Lack of Convergence must be immediate
      d. **Ask** "How does Cannabis affect pupil size?"
         1) Under the influence of Cannabis, the pupils may be dilated or possibly normal in size
         2) Write "Dilated" on the PUPIL SIZE line for Cannabis. Put a (6) next to "Dilated" and write "Possibly normal"
      e. **Ask** "How does cannabis affect the pupillary reaction to light?"
         1) The pupillary reaction to light will appear normal when under the influence of Cannabis
         2) Write "Normal" on the RCTN LIGHT line for Cannabis
   4. Indicators of Cannabis Influence Found in Checks of Vital Signs
      a. **Ask** "How does Cannabis affect pulse rate?"
         1) Cannabis usually elevates pulse rate
         2) Write "Up" on the PULSE line for Cannabis
      b. **Ask** "How does Cannabis affect blood pressure?"
         1) Cannabis usually elevates blood pressure.
         2) Write "Up" on the BLOOD PRESS line for Cannabis
      c. **Ask** "How does Cannabis affect body temperature?"
         1) Cannabis usually leaves temperature near normal
         2) Write "Normal" on the TEMP line for Cannabis
      d. **Ask** "How does Cannabis affect muscle tone?"
         1) Cannabis usually causes normal muscle tone
         2) Write "Normal" on the MUSCLE TONE line for Cannabis
   5. Solicit students' questions about Cannabis

K. Wrap-Up
   1. Point out that the matrix summarizes the major signs of drug influence
   2. Emphasize that there are other signs that a DRE considers in reaching a determination as to the category or combination of categories affecting a particular subject
   3. These additional signs will be covered more in-depth during DRE School
   4. Solicit students' questions

L. Review Topics for Study Sheet with Students
   12. Have students complete the review questions as a form of review
   13. Review questions with students

XIX. Pre-School Final Examination (1hr.)

A. Administer Post Test
   1. Post Test
      a. Hand out copies of the Post Test located in the DRE Pre School Instructor Manual
      b. Allow about 30 minutes for students to complete the test
      c. Each student gets their own test
      d. Students write directly on the test
      e. Advise students this a closed book test
      f. Do not review the test with the students as a large group
   2. Collect Completed Post-Tests
      a. Instructors grade the test using the answer key located in DRE Pre School Instructor Manual

B. Critique
      a. Hand out copies of the Student's Critique Form
      b. Allow about 15 minutes for students to complete the critique

C. Review of the Post Test
      a. Score test
      b. Passing Score is 80%
         1) LAPD Personnel only must score 90% or higher to qualify for Drug Recognition Expert School
         2) Non-LAPD Personnel can score a 80% or higher to qualify for Drug Recognition Expert School
      c. If there are students who did not pass,
         1) LAPD DRE Sergeant will review the Post test with the student
         2) If the student, then obtains a passing score of 80% they will be allowed to continue with the training
         3) If the student fails to obtain a minimum of 80%, the student is given the option to leave class or remain to further their knowledge
      d. Inform students of their score by allowing them to review their test after it is scored. This will be done one on one
      e. Collect all Post test
      f. Collect the completed critiques

XX.Narcotics Laws (1hr.)

A. Learning Objectives
   1. Review elements of enforcing 11550 HS (Under the Influence of a controlled substance)
   2. Articulate the difference between under the influence and impaired
   3. Review reasonable suspicion and probable cause
   4. Review the new updated narcotic and DUI laws

B. Elements of 11550 H&S
   1. No Person shall be under the influence of
   2. Any controlled substance (certain specified controlled substances)
   3. Not restricted to public places
   4. Impairment of individual not an element
      a. The Standardized Field Sobriety Tests are not required to be conducted as part of the 11550 H&S investigation
      b. General indicators observed signs and/or symptoms are required for an arrest
   5. Exception is when administered by or under the direction of a person licensed by the state to dispense, prescribe, or administer controlled substances

C. Application of 11550 H&S
   1. Arrest individuals inside residences
   2. No victim or witness needed

D. Law Review
   1. Reasonable Suspicion and Probable Cause
      a. Reasonable Suspicion[38]
         1) For an investigative stop or detention to be valid, you must have "reasonable suspicion" that:
            a) Criminal activity may be afoot and
            b) The person you are about to detain is connected with that possible criminal (Wardlow (2000) 528 U.S. 119; Ornelas (1996) 517 U.S. 690, 695-696; Sokolow (1989) 490 U.S. 1, 7-8; Bennett (1998) 17 Cal.4th 373, 386.)
         2) "Reasonable Suspicion" both the quality and quantity of the information you need is considerably less than the "probable cause" you need to arrest or search (White (1990) 496 U.S. 325, 330; Bennett (1998) 17 Cal.4th 373, 387; Johnson (1991) 231 Cal.App.3d 1, 11.)
         3) "Reasonable Suspicion' is a less demanding standard than probable cause and requires a showing considerable less than preponderance of the evidence…."(Wardlow (2000) 528 U.S. 119, 123; Arvizu (2002) 534 U.S. 266, 274.)
         4) The suspicion must be supported by specific articulable facts not just a hunch or instinct

[38] California Peace Officers Legal Sourcebook , Chapter 3, section B, Search and Seizure-Premises, Electronic Edition Revision #176, 2014

5) These facts can be drawn from your observations, personal training and experience, or information from eyewitnesses, victims, or other officers

b. Contributing Factors to Reasonable Suspicion
   1) Condition or appearance of a person
      a) Under the influence
      b) Resemblance of a wanted person
   2) Actions
      a) Furtive movements
      b) Running from a crime scene
   3) Driving behaviors
      a) Wide turns, speeding
      b) Weaving within the lane
   4) Knowledge of the persons "history"
      a) Criminal record of conduct
      b) Prior arrest of person
   5) Demeanor
      a) Nervous, non-responsive, aggressive
   6) Time of day
      a) Unusualness of what person is wearing
      b) Activities for the time
   7) Location of the stop
      a) Near a crime scene
      b) Known criminal activity in the area
   8) Officer training and experience
      a) Narcotics
      b) Gangs, vice

2. Probable cause
   a. Means reasonably reliable information to suspect there is a "fair probability" that a person has committed a crime, or
   b. That a search will reveal contraband or evidence

E. Drug Law Update
   1. Proposition 47 – Reduction in criminal penalties[39]
      a. Proposition 47 reduced specified felony offenses to misdemeanors, created a new "shoplifting" crime, and allows resentencing of certain convicted felons as misdemeanants.
      b. Except as to "Prop 47 Ineligible" individuals, the following are now misdemeanors:
         1) PC § 459.5—the new misdemeanor crime of "shoplifting" is entering a commercial establishment, during business hours, with the intent to steal, where value does not exceed $950. "Shoplifting" as defined may not be charged as theft or burglary.
         2) PC § 459.5—the new misdemeanor crime of "shoplifting" is entering a commercial establishment, during business hours, with the intent to steal, where value does not exceed $950. "Shoplifting" as defined may not be charged as theft or burglary.

[39] Devallis Rutledge, <u>One Minute Brief</u>, Los Angeles County District Attorney's Office, November 14, 2014

3) PC § 473(b)—forgery of checks and related instruments of not more than $950.
4) PC § 476a—NSF checks totaling not more than $950 (unless 3 or more specified priors).
5) PC § 490.2—grand theft (any form) not more than $950.
6) PC § 496(a)—receiving/concealing stolen property not more than $950.
7) PC § 666—"wobbler" "petty theft with a prior" applies only to "Prop 47 Ineligible" defendants with specified priors, and certain elder abusers. For all other defendants, petty thefts are misdemeanors, regardless of the number of priors.
8) H&S § 11350—simple possession of heroin, cocaine, listed controlled substances.
9) H&S § 11357(a)—simple possession of concentrated cannabis.
10) H&S § 11377—simple possession of methamphetamine, ecstasy, GHB, listed substances.

2. 647 (f) PC Drug (Drugs or Alcohol) in Public
   a. Overview of elements
      1) Public place
      2) Any substantially impairing substance
      3) Unable to care of self, property or others
   b. Application issues
      1) Covers non-11550 H&S drugs
      2) Covers non-controlled substances
      3) Keeps problem situation from worsening
3. 4140 B&P (Repealed)
   a. Misdemeanor crime of unlawfully possessing or controlling a hypodermic needle or syringe
   b. Replace by 11364.1 H&S
4. 11350(e) H&S (New)
   a. The possession of the controlled substance is at the direction or with the express authorization of the prescription holder
   b. The sole intent of the possessor is to deliver the prescription to the prescription holder for its prescribed use or to discard the substance in a lawful manner
5. 11364 H&S (Repealed)
   a. It is unlawful to possess an opium pipe or any device, contrivance, instrument, or paraphernalia used for unlawfully injecting or smoking
      1) A controlled substance specified in the subdivision
      2) As few as one syringe
   b. This section shall be inoperative until January 1, 2015
6. 11364.1 H&S (New)
   a. It is unlawful to possess an opium pipe or any device, contrivance, instrument, or paraphernalia used for unlawfully injecting or smoking
      1) A controlled substance specified in the subdivision
      2) This section shall not apply to the possession solely for personal use of 30 or fewer hypodermic needles or syringes
      3) Acquired from a physician, pharmacist, needle/syringe exchange program or any other source authorized by law to provide sterile syringes without prescription
   b. This section shall be operative until January 1, 2015
7. 11357.5 H&S (New)

   a. Furnishing Synthetic Cannabinoid or Derivative
      1) A person, who sells, distributes, furnishes, or gives, or offers to sell, distribute, furnish, or give, or possess for sale, any synthetic cannabinoid compound or
      2) Any synthetic cannabinoid derivative, to any person, is guilty of a misdemeanor
   b. Misdemeanor: Six months in jail and/or a fine of $1,000
   c. Synthetic cannabinoid compound refers to five specified substances
      1) pentyl-3-(1-naphthoyl) indole (JWH-018)
      2) l-butyl-3-(1-naphthoyl) indole (JWH-073)
      3) 1-[2-(4-morpholinyl) ethyl]-3-(1-naphthoyl) indole (JWH-200)
      4) 5-(l, l-dimethylheptyl)-2-[(lR,3S)-3-hydroxycyclohexyl]-phenol (CP- 47,497)
      5) 5-(l, l-dimethyloctyl)-2-[(lR,3S)-3-hydroxycyclohexyl]-phenol (cannabicyclohexanol; CP-47, 497 C8 homologue)
8. 11376.5 H&S (New)
   a. No crime (possession or under the influence) for 911 caller during overdose
   b. Provided the person does not obstruct medical or law enforcement personnel
   c. No crime (possession or under the influence) for user during overdose
   d. This section shall not affect laws prohibiting the selling, providing, giving or exchanging drugs, or the laws of forcible administration
9. 11377(d) H&S (New)
   a. The possession of the controlled substance is at the direction or with the express authorization of the prescription holder
   b. The sole intent of the possessor is to deliver the prescription to the prescription holder for its prescribed use or to discard the substance in a lawful manner
10. 46.20 LAMC (New)
   a. Applies only within Los Angeles City Limits
   b. Possession of Bath Salts
   c. Under the influence of Bath Salts
11. CVC 23152 – Driving Under the Influence (New)
   a. (e) Unlawful for a person who is under the influence of any drug to drive a vehicle
   b. (f) Unlawful for a person who is under the combined influence of any alcoholic beverage and drug to drive a vehicle
   c. (c) Unlawful for a person who is addicted to the use of any drug to drive a vehicle
   d. Does not apply if the person is participating in an approved narcotic treatment program identified by the court
12. CVC 21200.5 Riding Bicycle Under the Influence
   a. Overview elements
      1) Upon a highway
      2) Any impairing substance
      3) Impairment of individual must be proven
   b. Application issues
      1) Many drug abusing individuals ride bicycles
      2) Many violations of the law commonly committed
         a) Riding wrong way in the street
         b) No light during darkness
13. 381 PC- Under the Influence of Toluene or Similar Substance/ 381b PC Under the Influence of Nitrous Oxide
   a. Overview elements
      1) Not restricted to public place

2) Impairment need not be proven
3) Also covers possession with intent

b. Application issues
1) Many juveniles' offenders
2) Substance odor and visible paint or glue evidence easily identifies paint and glue sniffers

14. 381 (c) PC Sales of Nitrous Oxide to Minor
a. Only Nitrous Oxide Covered
b. Sales or Furnishing to a Minor

XXI. Report Writing, Processing the Arrested Suspect, and Preparing for Trial[40] [41] (1.5hrs.)

A. Learning Objectives
1. Discuss what DWI detection is
2. Discuss the required information on a narrative arrest report
3. Describe effective roadside interview techniques
4. List the elements of Driving While Under the Influence
5. Discuss the need for competent courtroom testimony
6. Identify the prosecution team
7. Identify additional resources to support prosecution
8. Articulate relevant evidence as it relates to case preparation and prosecution

B. What is DWI detection
1. This is defined as:
2. "The entire process of identifying and gathering evidence to determine whether or not a suspect should be arrested for impaired driving attributed to alcohol, drug or a combination of alcohol and drugs."
3. Question: "When does this detection process begin and end?"
4. Answer: It begins when you first observe the vehicle in motion (or your first observations of the suspected DWI offender if not in the vehicle) and ends once the subject has been booked into jail and is no longer in your presence
5. This process includes:
a. Vehicle in motion
b. Personal contact
c. Pre-arrest screening

C. What is needed for a good report and successful prosecution?
1. Active observations
a. Officers should pay close attention to all three phases
b. Officers should converse with their partner (if they have one) to ensure both officers are informed of the other observations
2. Effective documentation
a. Officers should document all observations in a clear manner
b. Officers should document the incident in chronological order

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[40] DWI Detection and Standardized Field Sobriety Testing Section XIII, HS178 R5/13

[41] Advanced Roadside Impaired Driving Enforcement, Section VIII, HS 172B R5/13

3. Articulation
    a. Officers should use clear articulation, so all readers of the report can understand what is being said
    b. Officers should be able to read their report and articulate what occurred in an intelligent manner
4. Effective courtroom testimony
    a. Officers should review and prepare with the prosecuting attorney
    b. Officers should review their report and be able to articulate the incident without constant referral to the report
    c. Officers should use clear words to describe the incident. This will ensure the jurors are able to understand
5. Support from City Attorney and District Attorney
    a. Writing a clear and well document report will help get the confidence from the prosecuting attorney
    b. Officers should prepare and present themselves in a professional manner to instill confidence with the prosecuting attorney

D. Narrative DWI Arrest Report
1. Successful prosecution depends on clarity and completeness with which the arresting officer's and the evaluator's observations are presented
    a. Arresting officer must be able to convey observations with sufficient clarity to convince others there was probable cause to believe the suspect was under the influence
    b. Chemical test evidence and additional evidence gathered subsequent to the arrest may be suppressed if the arresting officer does not adequately establish probable cause for the arrest prior to the chemical test
    c. DWI trials are often held many months after the defendant's arrest
    d. A clear, concise report will enable the officer to recall those details and present them through direct testimony
    e. Evidence must be clearly conveyed in the formal structured reports (forms) and in a narrative offense/arrest report
    f. Accurate documentation of times (when the traffic stop was, when the PBT was administered, when the breath test or blood draw was done, etc.) is essential
    g. A well-written, clear and convincing narrative report increases the likelihood that conviction will result because
        1) A prosecutor is more likely to file the charge if the evidence is organized, clearly documented and compelling
        2) The defense is less likely to contest the charge when the report is descriptive, detailed and complete
        3) It helps to ensure convincing verbal testimony in court
    h. The written report should document all evidence available to establish the essential ingredients of the prosecution's case
    i. That there was probable cause for arrest
        1) the accused was the operator or in actual physical control of the vehicle
        2) there was reasonable suspicion for stopping/ contacting the accused; and
        3) there was probable cause to believe the accused was impaired
            a) That proper arrest procedures were followed
            b) That proper procedure was followed with regards to the rights of the accused

c) That subsequent observation and interview of the accused provided additional evidence relevant to the alleged offense
d) That there was a proper request for the accused to submit to the chemical test
(1) The narrative offense/arrest report should be organized around the total sequence of events, beginning at the first observation of the offender, continuing through the arrest, and ending with the incarceration or release of the subject
(2) The DWI Investigation Field Notes describing the evidence observed during the three phases of detection greatly assist preparation of the narrative offense/arrest report
(3) Video segment of nighttime DWI arrest

2. Report writing is an essential skill for every officer
3. While there is no one best way to write a report, it is helpful to follow a uniform format
4. Observation/results recorded on the field notes can be used to refresh the officer's memory when preparing the narrative report
5. Suggested report writing format
   a. Initial Observations
      1) First observations of the offender and their actions
      2) Factors that drew officer's attention
      3) Time and location of first observations
   b. Stopping sequence
      1) Unusual actions taken
      2) Offender's response to the stop command
      3) Method(s) officer used to signal the stop command
      4) The fashion in which the offender stopped the vehicle
   c. Contact with driver/offender
      1) Offender's personal appearance
      2) Condition of eyes, speech, etc.
      3) Statements made by offender
   d. Document the SFSTs
   e. Document if there was a PBT
   f. Document the arrest
   g. Document the chemical test
   h. Document environmental and other conditions
   i. Explain your findings
      1) Based on your training and experience:
         a) Is impairment present?
         b) What is causing your observations?
         c) Is more info needed to decide?
      2) Think, “totality of the circumstances”, we do not base our decision to arrest on one factor
   j. If you did not write it down…It did not happen
      1) Be clear and articulate the circumstances and environment I which the stop was conducted
      2) Be descriptive and paint a picture for the prosecutor and the court
   k. Document any other relevant evidence and/or witnesses

E. Effective roadside interview techniques
   1. This evidence is critical to successful prosecution of DWUI cases

2. Necessary to gather valuable information during detection
3. Learn and practice effective roadside interview techniques
4. What you say
   a. Word choice and communication style are important
   b. Tailoring your communication style to each situation is important, do not talk to every person or treat every situation the exact same way (be flexible)
5. What you do
   a. Physical positioning, demeanor
      1) Avoid an over bearing posture or stance
      2) Keep officer safety in mind
   b. Goal: encourage cooperation
   c. Facilitate open dialog
   d. Develop a good rapport with the subject
6. What you see, smell, hear
   a. What do you see? Bloodshot and watery eyes, clothing, paraphernalia, etc.
   b. What do you smell? Odor of alcoholic beverage, chemical odors, odor of marijuana
   c. What do you hear? Slurred speech, unusual and/or inappropriate statements, drug lingo, etc.

F. Elements of DUI
   1. Elements of the offense: it is unlawful for any person to
      a. Operate or be in actual physical control of
      b. Any vehicle
      c. Within this state
      d. While under the influence of alcohol and/or any drug
   2. In order to arrest someone for a basic DWI violation, officer must have probable cause to believe that all four elements are present
   3. In order to convict a person of DWI, the arresting officer must establish beyond a reasonable doubt that all four elements were present
   4. In particular, the arresting officer must establish that the accused was "under the influence"
      a. Courts have generally held that "under the influence" means the ability to operate a vehicle has been affected, or impaired
      b. To convict a person of DWI, the arresting officer must be able to show that the person's capability of safe operation has been impaired

G. The Processing Phase
   1. Relationship to overall DWI enforcement function
      a. Processing of arrested suspect is the bridge between arrest and conviction of a DWI offender
         1) During processing phase, all evidence gathered during the detection phases is organized to ensure that it will be available and admissible in court
         2) Additional evidence may be obtained during the processing phase, subsequent to arrest
         3) It is important that proper procedures be followed during this phase; otherwise, important evidence might be ruled inadmissible, and therefore worthless
      b. The processing phase begins with the arrest of the offender

c. Processing ends when the offender is incarcerated or released to a responsible third party (depending on jurisdiction)

H. Report writing exercise
   1. Procedures
      a. Report writing exercise consists of two sections
      b. The first section employs a video segment to simulate the first two phases of DWI Detection
         1) Class will view the video segment
         2) Video segment begins with initial observation of a vehicle in operation, proceeds through the stop command and the observation of the stop, continues through the face-to-face interview with the driver, and ends with the observation of the driver's exit from the vehicle
         3) Students are asked to take notes on the video and to use those notes to prepare the arrest report
      c. The second section is when the students prepare an arrest narrative based on what they observed and the notes they took
         1) The report will include all the evidence portrayed in the video segment.
         2) Students will be provided blank arrest report paper with proper LAPD headings
         3) The report should include evidence portrayed in the video
   2. Instructors will collect the arrest reports and review them for completeness

I. Competent Courtroom Testimony
   1. Officers must prepare for court and present themselves in a professional manner
   2. Prior to going to trial, speak with the prosecuting attorney:
      a. Find out if they would prefer you in police uniform or in a suite
      b. Review relevant facts of the case
      c. Obtain question script to prepare
      d. Provide them with your CV, if you have one
      e. Ensure they have all relevant evidence, i.e. in car video, audio or other video
   3. Read your report and know the contents
   4. Officers should be able to testify to the report without having to constantly refer to it
      a. You may need to refer to your report to refresh your memory on a particular fact
      b. Referring to your report too much does not instill confidence from the jury or the prosecuting team
   5. When testifying:
      a. Be on time
      b. Do not chew gum
      c. Speak to the jury
      d. Make eye contact
      e. Speak clearly and use words that everyone can understand
      f. Do not rush to answer, think then answer
      g. Testify accurately
      h. Ask for clarity if needed. If you did not understand the question, the jury may not understand either
      i. Address the prosecutor and defense attorney the same, do not show favorites
      j. Listen to the questions carefully and only answer the question
      k. Sit straight up in the chair, do not slouch

l. Speak in a manner that keeps the attention of the jury and shows you have a vested interest in the case
m. Remember that these cases are often successfully prosecuted based on how well you present he evidence and facts
n. If you don't know the answer just say so
   1) I do not know
   2) I do not recall
   3) I cannot answer that question without explanation

J. The Prosecution Team
   1. The prosecution team is made of:
      a. The officer
      b. The prosecutor
      c. The Toxicologist
      d. A DRE or expert
      e. Other expert witnesses and/or medical personnel

   2. Additional Resources to help the Prosecution
      a. Traffic Safety Resource Prosecutor
      b. LAPD's DRE Unit
      c. CHP's DRE Unit
      d. LA County Corners office
      e. Department of Motor Vehicle
      f. Probation or Parole
      g. Civilian witnesses
      h. NHTSA/NAPC Prosecutor Fellow
      i. National Traffic Law Center

K. Relevant evidence as it relates to case preparation and prosecution
   1. All observations
   2. All evidence
   3. Potential witness list
   4. Chemical test results
   5. Photo, diagrams, scene sketch
   6. There is NO substitute for preparation

XXII. The Mock Court Exercise [42] (2 hrs.)

A. Learning Objective
   1. Discuss the need for competent courtroom testimony
   2. Demonstrate the proper techniques of courtroom testimony

B. Mock Court Exercise
   1. The purpose of this exercise is to have the participants demonstrate their ability to testify in a logical sequence to the evidence they collected during the two phases of DWI Detection with "The Impatient Driver"
   2. All students will be provided an "arrest report" to testify to

[42] DWI Detection and Standardized Field Sobriety Testing Section XIII, HS178 R5/13

3. Choose two participants who will testify as the "arresting officers"
4. A participant judge will be appointed to preside over the case
5. The remainder of the participants will serve as members of the jury
6. When possible, the City Attorney or Traffic Safety Resource Prosecutor will serve as the prosecutor. If neither are available, a DRE instructor will serve as the prosecutor
7. The first officer will be called to testify
8. The second officer will be called to testify
9. Prosecutor and defense counsel will give closing statements
10. Judge will direct jury to render a verdict
11. Discussion - Solicit participant's comments as to the testimony of the two arresting officers
    a. What was done well?
    b. What could be improved upon?

XXIII. Program Conclusion Graduation [43] (1.5hrs.)

A. Learning Objective
   1. Demonstrate knowledge of the concepts covered during the training
   2. Offer anonymous comments and criticisms concerning the school
   3. Review POST test with students
   4. Remediate if necessary

B. Critique
   1. Purpose of the Critique Form: to identify possible areas of improvement that can and should be made to this program
   2. Distribute Critique Forms
   3. Allow about 15 minutes for students to complete the critique
   4. Collect completed critique forms

C. Concluding Remarks
   1. Overall Goals
      a. Briefly remind participants of the enormous importance of DWI deterrence
      b. Express the hope that the participants will strive always to obtain and clearly convey all of the evidence that is present in their DWI contacts

D. Certificates and Dismissal
   1. Hand out Certificates
   2. Urge students to take the "Test your knowledge" test as a self-study exercise at least once between now and the start of DRE school, if they qualify and desire to go
   3. Thank the participants for their time and attention

[43] Preliminary Training for Drug Evaluation and Classification Program, Section X, HS172 R5/13