

# Trainer Manual

Course 1

## Physiology and Pharmacology for Addiction Professionals

3<sup>rd</sup> Edition, 2017



COLOMBO PLAN

# **Physiology and Pharmacology for Addiction Professionals**

## **Trainer Manual**

**3<sup>rd</sup> Edition - 2017**



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## **Disclaimer**

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3<sup>rd</sup> Edition

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# TRAINER ORIENTATION

## Introduction

### The problem

Psychoactive substance use and substance use disorders (SUDs) continue to be major problems around the world, taking a toll on global health and on social and economic functioning. The United Nations Office on Drugs and Crime (UNODC) reports that, in 2014, some 247 million people between ages 15 and 64 had used illicit substances<sup>1</sup> at least once in the previous year<sup>2</sup>.

Of those who use psychoactive substances, a significant number will develop substance use problems or SUDs. The previous UNODC survey notes that 29 million people between ages 15 and 64 suffer from drug use disorders. This number has remained stable during the period covered by the report.

SUDs contribute significantly to global illness, disability, and death. Injection drug use (IDU) is a significant means of transmission for serious communicable diseases such as hepatitis C and HIV/AIDS. The UNODC, the Joint United Nations Programme on HIV/AIDS (UNAIDS), the World Bank and the World Health Organization (WHO) jointly estimates that the number of people who inject drugs is 11.7 million which corresponds to a prevalence of 0.25 per cent of the population aged 15-64. It is estimated that 14 per cent of the total number of people who inject drugs are living with HIV. Further, more than half of the people who inject drugs are estimated to be living with hepatitis C.

Drug-related deaths show the extreme harm that can result from drug use. These deaths are invariably premature occurring at a relatively younger age. UNODC estimates that there were 207,400 (range between 113,700 - 250,100) drug related deaths in 2014, corresponding to a mortality rate of 43.5 deaths per million population aged 15-64.

As noted in the UNODC report, it is estimated that approximately one in six problem drug users globally receives treatment for drug use disorders or dependence each year.

The numbers are significant. The Executive Director of UNODC, Yuri Fedotov, notes that "there continues to be an enormous unmet need for drug use prevention, treatment, care and support, particularly in developing countries."<sup>4</sup>

### The training series

Course 1: *Physiology and Pharmacology for Addiction Professionals* is part of an eight-volume training series developed through funding from the U.S. Department of State to The Colombo Plan Drug Advisory Programme. Information about the Colombo Plan can be found at <http://www.colombo-plan.org>.

<sup>1</sup> Illicit substances include opioids, cannabis, cocaine, amphetamine-type stimulants, and other substances (e.g., hallucinogens, ecstasy).

<sup>2</sup> UNODC. (2016). *World drug report 2016*. New York: United Nations.

<sup>3</sup> <sup>4</sup> UNODC. (2011). *World drug report 2011* (p. 9). New York: United Nations.

The overall goal of the training series is to reduce the significant health, social, and economic problems associated with SUDs by building international treatment capacity through training, professionalizing, and expanding the global treatment workforce. The training prepares counselors for professional certification at the entry level by providing the latest information about SUDs and their treatment and facilitating hands-on activities to develop skills and confidence in a relatively new treatment workforce. The course also provide an updated review for those who are beginning to supervise workers who are new to the field.

The training series comprises eight separate curricula:

- Course 1: *Physiology and Pharmacology for Addiction Professionals* (this Course, 3 days)
- Course 2: *Treatment for Substance Use Disorders—The Continuum of Care for Addiction Professionals* (5 days)
- Course 3: *Common Co-Occurring Mental and Medical Disorders—An Overview for Addiction Professionals* (3 days)
- Course 4: *Basic Counseling Skills for Addiction Professionals* (5 days)
- Course 5: *Intake, Screening, Assessment, Treatment Planing and Documentation for Addiction Professionals* (5 days)
- Course 6: *Case Management for Addiction Professionals* (2 days)
- Course 7: *Crisis Intervention for Addiction Professionals* (2 days)
- Course 8: *Ethics for Addiction Professionals* (4 days)

Each Course is self-contained; however, participants generally should complete each Course in order. The first three curricula provide an overall context of SUDs and their treatment and serve as a foundation for the skills-based and foundational curricula that follow (Curricula 4 through 8).

## ***Goals and Objectives for Course 1***

### **Training goals**

- To provide participants with an understanding of the physiology of addiction as a brain disease; and
- To provide participants with information about the pharmacology of psychoactive substances.

## **Learning objectives**

Participants who complete Course 1 will be able to:

- Name and briefly describe four classes of psychoactive substances;
- Describe the ways in which psychoactive substances may be taken;
- Define substance use disorders;
- Define physiological dependence;
- Define addiction;
- Briefly describe the ways in which substance use affects normal brain communication;
- Define and describe the concept of stigma; and
- Describe the effects and consequences of at least six psychoactive substances.

## **The Trainer**

### **Trainer qualifications**

Trainers should have had this or similar training and be familiar with the subject matter. Trainers for this course should have the following knowledge and skills:

- A working knowledge of the course content;
- Experience working with the client treatment populations;
- Experience using the techniques taught in the course;
- Ability to facilitate participant learning, including use of diverse exercises, case studies, and group exercises that address multiple learning styles;
- Understanding of and sensitivity to cultural issues specific to both the participants and the client treatment populations; and
- Ability to work with participants in a positive, empathetic manner.

Two trainers, or co-trainers, are essential for multiday courses. In addition, a support person to help with logistics is ideal, particularly with training groups of more than 20 participants.

### **Trainer demeanor**

Just like real estate, trainers need “curb appeal.” If outward appearance is neat and attractive, people will want to know more about the trainer and what he or she has to offer.

The trainer has only one opportunity to make a good first impression. In the first minute of meeting someone new, people make multiple assumptions about the new person,

including the new person's levels of expertise, success, education, and knowledge. Most people start making these assumptions before a single word is uttered. They process visual information and quickly form opinions. Attire, grooming, posture, and facial expressions affect these opinions. The following guidelines may be useful:

- Clothing says a lot about a person. Dressing one level above that of the training participants shows respect for them. On the one hand, dressing too casually or sloppily signals that the trainer does not take the relationship seriously. On the other hand, dressing too formally places distance between the trainer and the participants.
- "Flashy" is distracting at best. Flashy or large earrings, necklaces, and watches focus participants' attention on the objects, not on the content of the training.
- Careful personal grooming (brushed teeth, combed hair, a fresh shave or trimmed beard, clean fingernails) says that the trainer cares about what others think of him or her.
- Perfumes and colognes can be distracting and should be avoided. Many people have allergies or simply dislike certain scents. Ensure that fragrances do not force participants out of the training room!
- Neither the trainer nor the participants should chew gum during the training sessions.

Additional suggestions regarding overall presentation are in Appendix B.

## **The Trainer Manual**

This *Trainer Manual* has five parts:

- Part I—Trainer Orientation (**this section**);
- Part II—Master Agenda;
- Part III—Evaluation Forms;
- Part IV—Training Modules; and
- Part V—Appendices.

Part II—Master Agenda is included for planning. This training is designed to be delivered over 3 consecutive days, as reflected in the Master Agenda. However, the modular structure allows for flexibility. If necessary, the training could be offered over several weeks (with some modifications), although all six modules should be delivered in the order in which they are presented in the manual.

The times indicated for module activities are guidelines. Actual times will depend on each training group's size and participation level. Based on participants' learning needs, more or less time can be allotted by the trainer than is indicated on a particular topic. The Master Agenda also assumes that the training day begins at 0900 hours and ends before 1800 hours. The trainer should prepare a daily schedule for participants, using actual start and end times.

Part III—Evaluation Forms includes two forms: a Daily Evaluation form for participants to complete at the end of each day of training and an Overall Training Evaluation form to be used at the end of the training. The Daily Evaluation helps the trainer identify whether adjustments need to be made during the training. The Overall Training Evaluation provides an overall look at participants' experiences. Participants need to know that completing the forms is important and that their feedback will improve training content and delivery over time.

Part IV—Training Modules provides instructions for presenting the six modules in Course 1. Each Module in the manual includes:

- A Preparation Checklist;
- A timeline;
- An overview of goals and objectives;
- Presentation and exercise instructions;
- Exercise materials;
- Copies of Resource Pages from the *Participant Manual*; and
- Copies of the PowerPoint slides.

Trainer presentations are written as a script, and script text is italicized (e.g., **Say:** *Please turn to Module 2 in your manuals.*). Trainers should feel free to use their own words and add examples. Adding real-life examples enriches the training experience but needs to be balanced with time considerations.

Teaching instructions throughout the modules offer specific guidance, alternative approaches, or special considerations.

**Teaching Instructions:** Look like this.

The course incorporates icons that offer the trainer visual cues:

Icon	Indicates
 30 minutes	The approximate time for the section.
	The trainer introduces a journal or other writing exercise.
	The trainer refers to the <i>Participant Manual</i> .
	The trainer uses newsprint.
	The trainer introduces a small-group exercise.
	The trainer introduces a partner exercise.
	The trainer begins or continues a presentation or asks a question of the group.

Part V—Appendices includes:

- Appendix A—Energizers (a list of activities to invigorate the group);
- Appendix B—Learner-Centered Trainer Skills: A Brief Overview;
- Appendix C—Dealing With Difficult Participants During Training;
- Appendix D—Glossary; and
- Appendix E—Resources

Appendix E—Resources is particularly important. This appendix provides resources for background reading on major Course topics to help trainers become as familiar as possible with the Course topics.

## **The Participant Manual**

Trainers must tell participants to bring their manuals with them each day. The *Participant Manual* contains a participant orientation, glossary, and resources and includes, for each module:

- Training goals and learning objectives;
- A timeline;
- PowerPoint (PPT) slides with space for notes;
- Resource Pages containing additional information or exercise instructions and materials; and
- A module summary for future reference.

The trainer also provides each participant with a notebook. It can be a spiral-bound notebook, a lined notepad, or simply pieces of paper stapled together. Participants use the notebook as a journal, for specific writing exercises, and to note:

- Shared resources they would like to review at a later date;
- Topics they would like to read more about;
- A principle they would like to think more about;
- A technique they would like to try;
- Ways to use their new skills and knowledge in their practice; and
- Possible barriers to using new techniques.

## **The Flash Drive**

The Flash Drive contains PPT presentations for Modules 1–5; Module 6 does not use PPT slides.

## **TAP 21**

Developed by the U.S. Department of Health and Human Services' Substance Abuse and Mental Health Services Administration, Technical Assistance Publication (TAP) 21: *Addiction Counseling Competencies—The Knowledge, Skills, and Attitudes of Professional Practice* provides a common foundation on which to base training and certification of addiction professionals. The publication addresses these questions:

- What professional standards should guide counselors working with people with SUDs?
- What is an appropriate scope of practice for those in the field of SUD counseling?
- Which competencies are associated with positive treatment outcomes?
- What knowledge, skills, and attitudes should all SUD treatment professionals have in common?

TAP 21 can serve as a useful reference for training participants, especially as they prepare for their certification examination. The *Trainer Manual* provides suggestions for relevant participant reading assignments from the TAP. However, trainers should emphasize that it takes time and experience to develop counseling competence. TAP 21 represents an ideal set of goals, not a starting point. It can be downloaded from <http://store.samhsa.gov/product/SMA08-4171>. Hard copies can be ordered from the same site.

## ***The Learning Approach***

### **The adult learner**

Although some didactic presentation by the trainer is necessary, the training series relies heavily on collaborative exercises and other learner-directed activities. Adults have a great deal to offer the learning process, having already accumulated knowledge through their education, work, and other experiences. The Course provides opportunities for the trainer to encourage participants to share their relevant experience and knowledge with others and to connect them with the Course content. This process also facilitates increased partnerships and collaborations when participants return to their home communities.

The training series follows the premise that training of adult learners should be based on the following principles:

- Focus on real-world problems;
- Emphasize how the information can be applied;
- Relate the information to learners' goals;
- Relate the materials to learners' experiences;
- Allow debate of and challenge to ideas;
- Listen to and respect the opinions of learners;
- Encourage learners to be resources for the trainer and for one another; and
- Treat learners with RESPECT.

## The approach

The learning approach for the training series includes:

- Trainer-led presentations and discussions;
- Frequent use of creative learner-directed activities, such as small-group and partner-to-partner interactions;
- Small-group exercises and presentations;
- Reflective writing exercises;
- Skills role-plays;
- Periodic reviews to enhance retention; and
- Learning assessment exercises.

Role-plays and other exercises are important parts of the training approach (particularly in Courses 4 through 8). The trainer can help participants feel safe during and learn from these experiences by:

- Ensuring that participants understand what they are to do or observe;
- Affirming role-players' willingness to participate;
- Offering assistance as needed; and
- Using nonjudgmental language and tone during debriefings (e.g., *What was it like for you being the client? What was the hardest part for you as the worker?*).

It can also be helpful to have participants stand up and literally shake off the roles they were playing before continuing the training.

## Preparation

Major training preparation tasks include:

- Logistical planning, including scheduling, selecting the site, and obtaining or arranging for equipment and supplies at the site;
- Selecting and preparing participants; and
- Becoming thoroughly familiar with the Course.

Scheduling and site selection are connected. If a hotel site is used, planning needs to begin several months ahead of time.

## The training space

An attractive, well-organized training space can enhance a participant's learning experience. The room must be large enough to accommodate all participants and small groups. Seating small groups at round tables is ideal because it saves significant time moving into and out of small groups for the many exercises. The trainer must be able to rearrange the room and seating for particular presentations and exercises. Additional small tables around the edges of the room can hold supplies, learning materials, and trainer materials.

The ideal space is not always possible, however. If the space is not large enough to accommodate tables, small groups can always push back chairs and work on the floor if participants are comfortable doing so. Using more than one room at a site can help with space for small-group activities. However, no more than two rooms should be used because it is helpful to have a trainer present in each room to continuously monitor the group process. The training space must provide privacy for role-plays and other activities.

The trainer can create colorful posters or mobiles to add life to the training room. Posters can present key concepts, such as the stages of change. Playing music softly as participants enter the training room (and, when appropriate, during some activities) creates an inviting atmosphere and relaxes participants. Providing tea, coffee, water, and snacks for refreshment breaks encourages participants to mingle and talk with one another during these times. Participants will need information on where to get lunch, if it is not provided.

## Equipment and supplies

The PowerPoint presentations require a laptop computer, LCD projector, and screen. A remote control for the projector allows the trainer to move freely around the room. If a remote is not available, the co-trainer who is not currently presenting or a training assistant can advance slides.

If a PowerPoint projector is not available (or breaks down during the training!), the training can continue without it. The *Participant Manual* has copies of all slides, and the *Trainer Manual* has all the information to explain each slide.

At least one whiteboard (with markers), several pads or rolls of newsprint, tape, and colored paper and markers for creative group presentations are essential to the training. The Preparation Checklist in each module indicates the specific supplies needed for the module.

## Master Supply List for All Modules

- Newsprint (A LOT! approximately four pads/rolls per Course)
- One *Participant Manual* for each participant
- One copy of the overall training schedule and Master Agenda for each participant
- One notebook for each participant
- Small index cards (approximately four per participant)
- Colored paper (approximately 50 sheets of each of 8 to 10 colors)
- Colored markers:
  - Washable, unscented, and in multiple colors (one set per table for participant use)
  - Multiple black and blue markers for presentation use (black and blue are most visible on newsprint; light colors can be used for highlighting)
- Scissors (one or two pairs per table)
- Tape (one or two rolls of masking tape for hanging newsprint; one roll of cellophane tape per table for exercises)
- One or two soft balls or other squishy toys
- Funny hats or other unusual items to use during exercises
- Poster board (optional for exercises; newsprint can be substituted)
- Timer or watch with a second hand
- Beans, marbles, small candies, or other small objects to use as counters during exercises

Some activities in Appendix A—Energizers use items not listed here.

## Selecting and preparing participants

Ideally, the training group should be large enough to be divided into at least four small groups of at least three participants each, but the training materials can be adjusted for smaller training groups. The training group should not be larger than 20 participants and should comprise the same members throughout the six training modules.

A training group that includes a mix of participants with various degrees of experience often facilitates peer-to-peer teaching and learning. The trainer can prepare participants for learning and increase their positive expectations before the training begins by sending participants a pretraining package that contains items such as:

- A friendly, enthusiastic welcome letter;
- The training Master Agenda;
- Training goals and learning objectives;
- A short list of provocative questions that will stimulate interest in the material (e.g., *Is addiction really a disease?*);
- A quiz that participants can either send back or bring with them to the first session; and
- A list of positive (anonymous) comments about the training from past participants.

The trainer also could ask participants to bring a picture or object that makes them feel relaxed and that can be used to decorate the training space. An energizer on the first day could involve discussing participants' pictures or objects with the group and placing them in the room. This activity indicates that the trainer cares about participants' comfort and that the training may be different from what participants are accustomed to.

When possible, a personal call from a trainer can engage participants and give the trainer useful information about them and their level of interest and motivation.

## Becoming familiar with the Course

Trainers should read the course, study it, and make sure they understand the training goals and learning objectives of each module and are fully prepared to facilitate the exercises. The better a trainer knows the material, the more he or she can focus on the participants. Solid preparation helps a trainer relax and be more engaging. Co-trainers should strategize their roles and responsibilities ahead of time. The content and timeline box in each module has a column labeled "Person Responsible." This page should be photocopied so that trainers can use it for multiple training groups. Co-trainers can specify in this space the training sections for which each will take primary responsibility. Depending on the match of presentation styles and personalities, some trainers choose to deliver entire modules before switching roles; others prefer to switch roles more frequently.

Other decisions to make include:

- When each co-trainer will capture comments from participants on newsprint or act as timekeeper;
- What the expectations are for individual and small-group process observation; and
- Whether content contributions are accepted and/or expected from the nonpresenting co-trainer.

## Customizing the course

The trainer should be prepared to share his or her examples. Whenever possible, the trainer should describe experiences with particular techniques used with clients. The trainer should

discuss any adaptations that were necessary for applying techniques to members of particular ethnic, cultural, or gender groups. The trainer should also ask participants to share experiences from their work to ensure that the training addresses specific concerns.

The trainer also must have a good understanding of the needs of the training group and be prepared to adapt the training accordingly. For example, the trainer may need to:

- Simplify the language (particularly clinical terms and jargon) to make concepts easier to understand;
- Allow more time for participants to understand concepts that may be foreign to their cultural worldview;
- Adapt writing exercises for participants with low levels of literacy; and
- Be creative (e.g., use metaphor or traditional storytelling to make a point).

### **Important!**

Although the course can and should be adapted to suit participants' needs and trainers' personalities and training styles, trainers must maintain the integrity of the content. For example:

- The logistics of an exercise may be changed, but the learning objectives should remain the same and be met.
- Group discussion is a valuable part of learner-directed training, but trainers need to manage the time well and not let undirected discussion replace information dissemination or practice exercises.
- Trainers should not assume that participants already know certain information; sections should not be skipped. This training is for new counselors; participants need *all* the information in the course.
- Training timelines allow for interactivity and creativity. However, trainers must remember that adding extra exercises and allowing extended discussion will increase the time needed to complete the module.

## **Ceremonial welcome**

Time is allotted in Module 1 for a ceremonial welcome. The trainer may want to invite a representative from the organization sponsoring the training and/or a guest speaker (e.g., community leader, local thought leader in the field of SUD treatment, local treatment program director) to welcome participants to the training. Such a welcome can impress on participants the importance of the training.

## **Getting Started: Preparation Checklists**

### **1 to 2 months before the first session**

- Carefully review the course.
- Review Appendix E—Resources for background reading.
- Determine who will attend the training.
- Develop a pretraining package for trainees.
- Develop an overall schedule for the training, including dates and times for each module.
- Arrange for the training space and audiovisual equipment.
- Obtain all necessary training materials.
- Invite guest speakers.
- Make arrangements for refreshments, including lunches if they are provided.
- Prepare a list of local resources for additional training and support for participants. The list could include:
  - Other training programs that are or will be available;
  - Names of local individuals or programs that may be helpful; and
  - The trainer's email address or telephone number and an invitation for participants to contact the trainer with questions or issues (if appropriate).

### **1 to 2 weeks before the first session**

- Confirm participants' registration.
- Confirm guest speakers.
- Select background music.
- Secure enough copies of the *Participant Manual*.
- Check space and equipment arrangements.
- Load the PPT presentations onto the laptop computer.
- Review the entire training manual.
- Prepare and make a copy of daily schedules for each participant.
- Select energizer activities to use and obtain required supplies. Trainers can select energizers from Appendix A, use their own activities, and/or have participants design and facilitate their own exercise.

## **1 to 2 days before the first session**

- Finalize room and equipment arrangements.
- Verify onsite lunch arrangements if necessary.
- Set up the room.
- Prepare name badges, if necessary.
- Make copies of the first day's Daily Evaluation form.
- Gather all supplies, including the *Participant Manual*, notebooks, and copies of daily schedules, and evaluation forms.
- Review "Before every session" (below).

## **Before every session**

Review this checklist before presenting each module.

### **The training space**

- Arrange chairs for each session in a comfortable way, keeping in mind that space is needed for both small- and large-group exercises.
- Prepare posters illustrating key concepts and terms, and post them around the training room.
- Save and post key newsprint pages and posters generated during the training to use for review.
- Create a relaxed atmosphere by playing background music as participants gather.

### **Equipment and materials**

- CD player for instrumental background music.
- Computer, LCD projector, and screen.
- Newsprint pads, easel, and crayons or markers.
- Evaluation forms.
- Pins, tacks, or tape to post newsprint on walls.
- All other materials needed for the session.
- A timer (optional).

### **General preparation**

- Review the Preparation Checklists and the modules.
- Assemble and test necessary equipment, materials, and supplies.
- Prepare to have fun!

## **After each session**

- Review completed Daily Evaluation forms for suggestions for the next day's delivery.
- Secure creative and/or key newsprint resources (e.g., definitions, creative artwork, energizer information) developed by participants for use as a final review and in future trainings.
- Add into the course content information contributed by participants and/or the co-trainers.

# MASTER AGENDA

DAY 1

Date: \_\_\_\_\_

<b><i>Module 1—Training Introduction</i></b>		
<b><i>Time of Day</i></b>	<b><i>Time of Session</i></b>	<b><i>Content</i></b>
0900–0920	20 minutes	Ceremonial welcome
0920–0930	10 minutes	Trainer welcome, housekeeping, and ground rules
0930–1030	60 minutes	Partner exercise: Introductions
1030–1045	15 minutes	Presentation: Training materials
1045–1100	15 minutes	<i>Break</i>
1100–1115	15 minutes	Presentation: Why this training?
1115–1130	15 minutes	Large-group exercise: Training expectations
1130–1230	60 minutes	Partner exercise: Terminology
1230–1330	60 minutes	<i>Lunch</i>

<b><i>Module 2—Introduction to Psychoactive Substance Use</i></b>		
1330–1340	10 minutes	Introduction to Module 2
1340–1440	60 minutes	Presentation: What are psychoactive substances and how do they work?
1440–1450	10 minutes	Presentation: Classification of psychoactive substances
1450–1500	10 minutes	Presentation: Methods (routes) of administration
1500–1520	20 minutes	Small-group exercise: Routes of administration
1520–1535	15 minutes	<i>Break</i>
1535–1620	45 minutes	Small-group case studies: Progression of substance use
1620–1650	30 minutes	Learning assessment
1650–1710	20 minutes	Day 1 wrap-up and evaluation

# MASTER AGENDA

DAY 2

Date: \_\_\_\_\_

<b>Module 3—The Science of Addiction</b>		
<b>Time of Day</b>	<b>Time of Session</b>	<b>Content</b>
0900–0915	15 minutes	Welcome and review of day 1
0915–0925	10 minutes	Introduction to Module 3
0925–0955	30 minutes	Small-group exercise: What is addiction?
0955–1015	20 minutes	Presentation: The science of addiction, Part 1
1015–1100	45 minutes	Exercise: Brain communication
<b>1100–1115</b>	<b>15 minutes</b>	<b>Break</b>
1115–1130	15 minutes	Presentation: The science of addiction, Part 2
1130–1230	60 minutes	Exercise: Psychoactive substances and brain communication
1230–1300	30 minutes	Presentation: Addiction and the reward circuit
<b>1300–1400</b>	<b>60 minutes</b>	<b>Lunch</b>
1400–1420	20 minutes	Presentation: Vulnerability to addiction
1420–1520	60 minutes	Small-group exercise: Case study review
<b>1520–1535</b>	<b>15 minutes</b>	<b>Break</b>

<b>Module 4—Social Stigma</b>		
<b>Time of Day</b>	<b>Time of Session</b>	<b>Content</b>
1535–1545	10 minutes	Introduction to Module 4
1545–1610	25 minutes	Presentation: Social stigma
1610–1710	60 minutes	Small-group exercise: Stigma role-play
1710–1730	20 minutes	Day 2 wrap-up and evaluation

# MASTER AGENDA

DAY 3

Date: \_\_\_\_\_

<b>Module 5—Substances of Abuse: Characteristics and Consequences</b>		
<b>Time of Day</b>	<b>Time of Session</b>	<b>Content</b>
0900–0945	45 minutes	Welcome, concert review, and reflection review
0945–0950	5 minutes	Introduction to Module 5
0950–1000	10 minutes	Presentation: Review of drugs of abuse
1000–1045	45 minutes	Small-group exercise: Characteristics, effects, and health consequences of specific drugs, Part 1—Preparation
1045–1100	15 minutes	<i>Break</i>
1100–1200	60 minutes	Small- group exercise: Characteristics, effects, and health consequences of specific drugs, Part 2—Presentation
1200–1220	20 minutes	Presentation: Consequences of drug use
1220–1250	30 minutes	Small-group exercise: Consequences of drug use
1250–1350	60 minutes	<i>Lunch</i>
1350–1435	45 minutes	Small-group exercise: Drug use in the community
1435–1505	30 minutes	Presentation: Family systems—Functional and dysfunctional

<b>Module 6—Integrating Learning Into Practice</b>		
1505–1620	75 minutes	Introduction and exercise: Developing a practice integration plan
1620–1635	15 minutes	<i>Break</i>
1635–1705	30 minutes	Learning assessment competition
1705–1720	15 minutes	Day 3 and overall training evaluations
1720+	30+ minutes	Program completion ceremony and socializing



# **Physiology and Pharmacology for Addiction Professionals**

## **DAILY EVALUATION**

Date: \_\_\_\_\_

Trainer 1: \_\_\_\_\_

Trainer 2: \_\_\_\_\_

To be completed at the end of each day by training participants.

<b>Please indicate your agreement with these statements about today's training session.</b>		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The training was well organized.						
2. The trainers were knowledgeable about the subject.						
3. The trainers were well prepared for the course.						
4. The trainers were open to participant comments and questions.						
5. The training topics were relevant to my work.						
6. I expect to use the information gained from this training.						
7. I would recommend this training to a colleague.						
<b>Please complete the following statements:</b>						
One thing I learned today that I plan to use in my work is...						
What I liked best about today's training was...						
I wish there had been more information about...						
Today's training could have been better if...						
<b>Other comments</b>						



# **Physiology and Pharmacology for Addiction Professionals**

## **OVERALL TRAINING EVALUATION**

Date: \_\_\_\_\_

Trainer 1: \_\_\_\_\_

Trainer 2: \_\_\_\_\_

Please indicate your agreement with these statements about the training <b>OVERALL</b> .		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<b>Training Methodology</b>						
1. The training objectives were clearly stated.						
2. Objectives of the training were achieved.						
3. Material was clearly presented.						
4. The training activities/exercises allowed the practice of important concepts.						
5. The training provided balance among presentations, activities, participant questions, and discussions.						
6. The training topics were relevant to my work.						
7. I expect to use the information gained from this training.						
8. I would recommend this training to a colleague.						
9. The training modules were presented in a logical order.						
<b>Training Materials</b>						
1. Visual aids were adequate and facilitated the learning process.						
2. Manuals were helpful and facilitated understanding of the topics.						
3. Translation services (if applicable) were adequate and facilitated the learning process.						
<b>Trainers (for each trainer)</b>						
1. a.Trainer 1 was well prepared.						
b.Trainer 2 was well prepared.						
2. a.Trainer 1 was knowledgeable about the subject matter.						
b.Trainer 2 was knowledgeable about the subject matter.						
3. a.Trainer 1 communicated the material in a meaningful way.						
b.Trainer 2 communicated the material in a meaningful way.						
4. a.Trainer 1 provided clear answers to participant questions.						
b.Trainer 2 provided clear answers to participant questions.						
5. a.Trainer 1 promoted engagement and participation.						
b.Trainer 2 promoted engagement and participation.						

(continued on back)

**Please complete the following statements:**

The **most** useful module was...

The **least** useful module was...

Before this training is presented again, I suggest the following changes:

I would be interested in having further training on these topics:

**Other comments**

# MODULE 1

## TRAINING INTRODUCTION

Ceremonial welcome.....	29
Trainer welcome, housekeeping, and ground rules .....	30
Partner exercise: Introductions .....	33
Presentation: Training materials .....	35
Presentation: Why this training?.....	38
Large-group exercise: Training expectations.....	57
Partner exercise: Terminology .....	59



## **Module 1 Preparation Checklist**

- Review Getting Started for general preparation information.
- Preview Module 1.
- Prepare for the ceremonial welcome.
- If you are not providing lunch, prepare a list of possible options for participants.
- Write on newsprint the following ground rules, leaving room for more items:
  - Ask questions;
  - Make mistakes;
  - Collaborate; and
  - Have fun!
- Tape two sheets of newsprint together. Label one side “Participants” and the other side “Training Expectations.” Post the sheets in a spot where they can stay until the training ends.
- In addition to the materials listed in Getting Started, assemble the following:
  - A *Participant Manual* for each participant;
  - A copy of the overall training schedule and Master Agenda for each participant;
  - A notebook for each participant;
  - Index cards; and
  - One glue stick or roll of tape for each table.
- Place one index card on each chair.
- Copy the pages of the terminology exercise at the end of the module, and cut out the terms and definitions.
- Pull a table away from the side wall far enough to allow participants to walk around all sides. Distribute around the table the definitions you cut out.
- Post several blank newsprint pages side-by-side on the wall.

Content and Timeline		
Activity	Time	Person Responsible
Ceremonial welcome	20 minutes	
Trainer welcome, housekeeping, and ground rules	10 minutes	
Partner exercise: Introductions	60 minutes	
Presentation: Training materials	15 minutes	
<i>Break</i>	<i>15 minutes</i>	
Presentation: Why this training?	15 minutes	
Large-group exercise: Training expectations	15 minutes	
Partner exercise: Terminology	60 minutes	
<i>Lunch</i>	<i>60 minutes</i>	

## Module 1 Goals and Objectives

### Training goals

- To create a positive learning community and environment;
- To give participants background information about why the training is being done;
- To give participants a summary of the overall training goals, objectives, and learning approach of the Course; and
- To introduce some basic terminology related to the physiology and pharmacology of drug use and addiction.

### Learning objectives

Participants who complete Module 1 will be able to:

- Explain the overall training goals and at least four objectives of the 3-day training;
- State at least one personal learning goal; and
- List and define at least five terms related to the physiology and pharmacology of drug use and addiction.

**Teaching Instructions:** Give each participant a copy of the Master Agenda, a Participant Manual and a notebook as he or she enters and signs in.



20 minutes

## Ceremonial welcome

### Slide 1.1



**Teaching Instructions:** The ceremonial welcome will vary depending on the sponsor and/or invited speakers. If possible, coach the first speaker to tell participants they made an important decision by coming to the training.



10 minutes

## Trainer welcome, housekeeping, and ground rules



Welcome! We want to thank you for taking the time to attend this training. Your presence here shows that you care about the people you work with and are interested in improving the health of the citizens of your communities.

My name is \_\_\_\_\_, and my co-trainer is \_\_\_\_\_. We'll be working together to facilitate this training.

However, we want this training to be a collaborative process among all of us. Each of you brings experience, knowledge, and skills to share with others. The training will also be experiential; you will be actively involved in creating a learning community.

**Teaching Instructions:** Review any important housekeeping items, such as where the restrooms are, if and where smoking is permitted, and where refreshment breaks will be. Turn to the Ground Rules newsprint page you prepared.



Let's take a few minutes to look at some ground rules for our time together. Ground rules help ensure a positive learning environment. I've written some very basic rules on this newsprint:

- Ask questions;
- Make mistakes;
- Collaborate; and
- Have fun!

All of these contribute to learning. Something else we need to add is confidentiality.

**Teaching Instructions:** Add "confidentiality" to the list of ground rules.

**Say:**

The training will include exercises in which you will work together and share your thoughts. To get the most out of the experience, it is important that you feel safe in this training group. A commitment to maintaining confidentiality will help that happen.

Now, what other ground rules do you think we might need?

**Teaching Instructions:** Add items to the list as they are mentioned. You may want to prompt participants if they do not mention things like being on time, no mobile calls or texting, and so on.

**Say:**

I think we have some great ground rules that will help us get the most out of our time together.

Today's sessions, Modules 1 and 2, will give you:

- A chance to get to know one another (or to know one another better);
- An overview of the course and training materials; and
- An introduction on the topic of psychoactive substances.

### Module 1 Learning Objectives

- Explain the overall training goals and at least 4 objectives of the 5-day training
- State at least 1 personal learning goal
- Identify essential forms for documentation

1.2

#### Say:

Let's look at the learning objectives for Module 1. By the time we complete this module, I hope you will be able to:

- Explain the overall training goals and at least four objectives of this 3-day training;
- State at least one personal learning goal; and
- List and define at least five terms related to the physiology and pharmacology of drug use and addiction.

First, we're going to do an exercise that combines getting to know one another and finding out your expectations for the training.



60 minutes



## Partner exercise: Introductions

### Slide 1.3

#### Partner Exercise: Introductions

- What is your name?
- In what town do you live and work?
- What is your job title?
- What does your job entail?
- What do you like about assessment and treatment planning?

1.3

#### Say:

When you came in today, you found two index cards on your chair. Please take one of the cards out now. I'd like you to take 2 minutes to write your answers to the questions on the slide on the card.

**Teaching Instructions:** Allow 2 minutes or until everyone seems to have finished writing.

#### Say:

Please find a partner—preferably someone you don't already know. And include your trainers!

Once you have your partner, you will have 5 minutes each to introduce yourselves to one another, using the questions and answers on your card as a guide:

- What is your name?
- What is your job title? What does your job entail?
- Can you tell me a recent amusing experience OR one interesting fact about yourself (this could be a special skill, interest, hobby)?

Once you know your partner better, you will be introducing him or her to the rest of the training group.

**Teaching Instructions:** Including yourself in the partner exercise will help reinforce the collaborative nature of the training. Sharing something interesting or amusing about yourself will also help participants know you better and increase their comfort levels.

Even though you are participating, watch the time and provide 5- and 2-minute warnings.

**Say:**

Each of us will now introduce our partners to the whole training group, using what we learned from them. Who would like to go first?

**Teaching Instructions:** Facilitate the introductions by ensuring that each person takes only a few minutes.

**Say:**

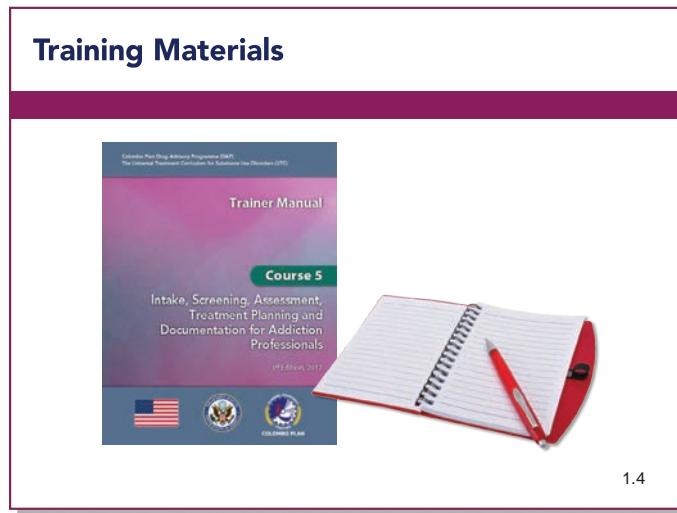
Thank you for sharing! \_\_\_\_\_ will now collect your cards and put them on the newsprint labeled "Participants," so you can review them at any time.



15 minutes

## Presentation: Training materials

### Slide 1.4



*Now we're going to take a look at the materials you received as you came in this morning.*

**Teaching Instructions:** Call participants' attention to the Master Agenda and briefly review it. Hold up each piece as you explain the training materials.



*Please refer to your Participant Manual. This manual plays an important role in the training process. You should bring it with you each day.*

*Take a minute to look through the manual. It begins with Part I—Participant Orientation, page 1; read it as soon as you have a chance. Part II, beginning on page 5, includes, for each module:*

- Notes pages with the PowerPoint slides;
- Resource Pages; these pages have information you'll need for exercises, information to read later, or exercise instructions; and
- A module summary for future reference (for Modules 1–5).

Finally, the manual includes a glossary in Appendix D and a list of resources in Appendix E.

Next, you have a notebook to use as a journal. We'll be giving you specific journal writing exercises from time to time. You can also use the journal to note:

- Shared resources you would like to review at a later date;
- Topics you would like to read more about;
- An idea you would like to think more about; and
- Ways you might be able to add some of the things you are learning to your practice.

The last module of this training will be devoted to sharing and discussing, in both small groups and the whole training group, ideas that you have about integrating the training into your practice, so keep track of your ideas as we go along.

**Teaching Instructions:** Provide the participants with the Web site URL of TAP 21 so that they can download or order it for themselves: <http://www.samhsa.gov>

To understand the professional standards and scope of practice of substance use disorders (SUD) treatment professionals, please read TAP 21, Addiction Counseling Competencies. TAP 21 was developed in the United States to provide a common foundation to guide training and certification of addiction professionals.

The publication addresses these questions:

- What professional standards should guide counselors working with people with substance use disorders (or SUDs)?
- What is an appropriate scope of practice for those in the field of SUD counseling?
- Which competencies are associated with positive treatment outcomes?
- What knowledge, skills, and attitudes should all SUD treatment professionals have in common?

This document can be a useful reference for you, but keep in mind that:

- It takes time and experience to develop counseling competence.
- The TAP represents an ideal set of goals, not a starting point.

Don't let it overwhelm you!



15 minutes

## Break

### Slide 1.5

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# Break

15 minutes

1.5



Let's take a 15-minute break. When we come back we'll start getting oriented to the training content.



15 minutes

## Presentation: Why this training?

### Slide 1.6

#### The Global Problem

- 247 million people used illicit substances at least once in 2014



Source: UNODC. (2016). World drug report 2016. New York: United Nations.

1.6

#### Say:

Let's look at some of the reasons this training series was developed.

Psychoactive substance use continues to be a global problem. A survey done by the United Nations Office on Drugs and Crime (or UNODC) found that, in 2014, 247 million people between ages 15 and 64 used illicit substances at least once in the previous year.<sup>1</sup> Illicit substances in the survey included opioids, cannabis, cocaine, other amphetamine-type stimulants, hallucinogens, and ecstasy, among others.

You will notice that these and other global statistics have a broad range. This is due to the difficulty of compiling such numbers. Different countries track and record statistical information in different ways, and global organizations such as UNODC and the World Health Organization (WHO) need to allow for these differences in their estimates.

<sup>1</sup>UNODC. (2016). *World drug report 2016*. New York: United Nations.

**Teaching Instructions:** The statistics regarding global drug use were current at the time of printing. You can stay up to date by periodically checking the Web sites of the World Health Organization and UNODC:

[http://www.who.int/substance\\_abuse/facts/global\\_burden/en/index.html](http://www.who.int/substance_abuse/facts/global_burden/en/index.html); and

<http://www.unodc.org/unodc/data-and-analysis/WDR.html>.

### The Global Problem

- 29 million suffer from drug use disorders
- People who suffer from drug use disorders/people with drug use disorders
  - Subset of people who use drugs
  - Need treatment, health and social care, and rehabilitation

Source: UNODC. (2016). World drug report 2016. New York: United Nations.

1.7

**Say:**

A significant number of people who use psychoactive substances develop SUDs.

The UNODC report estimates a total of 29 million people between ages 15 and 64 suffer from drug use disorders. People who suffer from drug use disorders or people with drug use disorders are those subset of people who use drugs and in need of treatment, health and social care, and rehabilitation.

There are two classification systems used in the diagnosis of drug use disorders or substance use disorders that are being used. These are the Diagnostic Statistical Manual (DSM) and the International Classification of Diseases (ICD).

<sup>1</sup>UNODC. (2016). World drug report 2016 New York: United Nations.

### Diagnostic and Statistical Manual- 5 (DSM-5)

- Published by the American Psychiatric Association
- Provides standards criteria for the classification of mental disorders
- Substance Use Disorder (SUD) is defined as a problematic pattern of substance use leading to clinically significant impairment in daily life or distress
- Level of severity is measured on a continuum from mild to severe

Source: American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC: Author

1.8

#### Say:

The Diagnostic Statistical Manual (DSM), published by the American Psychiatric Association, offers a common language and standards criteria for the classification of mental disorders.

In 2013, the APA updated the DSM, replacing the categories of substance abuse and substance dependence with a single category: substance use disorder (SUD). SUD is defined as a problematic pattern of substance use leading to clinically significant impairment or distress as manifested by at least two of the 11 criteria occurring in a 12-month period. The level of severity is measured on a continuum from mild to severe.

The symptoms associated with SUD fall into four major groupings: impaired control; social impairment; risky use; and, pharmacological criteria (i.e. tolerance and withdrawal).

Let us go over these 11 criteria on Resource Page 1.1

**Teaching Instructions:** Ask for a volunteer to read. Briefly discuss each item and provide examples. You may ask participants to cite examples.

Emphasize that the criteria is presented for information and not to teach them to diagnose.

<sup>1</sup> American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

### International Classification of Diseases (ICD-10)

- Published by WHO
- Covers health as a whole
- Under ICD 10, patterns of psychoactive substance use are labeled:
  - Harmful Use – if the pattern is causing damage to health (physical or mental)
  - Dependence Syndrome- if there is compulsion to use drugs and physical signs of a withdrawal state upon abstinence is present

Source: World Health Organization (2007) *International Statistical Classification of Diseases and Related Health Problems* (10<sup>th</sup> revision). Geneva: Author

1.9

#### Say:

Another classification system is the International Classification of Diseases (ICD), published by the World Health Organization. It is distinguished from the DSM in that it covers health as a whole.

Under ICD-10, patterns of psychoactive substance use are labeled,

Harmful use - if the pattern is causing damage to health. The damage may be physical (as in the case of hepatitis from self-administration of injected drugs) or mental (i.g. episodes of depressive disorder secondary to heavy consumption of alcohol), and

Dependence syndrome - if the use of a substance or a class of substances takes on a much more higher priority for a given individual than other behaviors that once had greater value. There is compulsion to use drugs and physical signs of a withdrawal state upon abstinence.

Let us look at these criteria on Resource Page 1.2.

**Teaching Instructions:** Ask for a volunteer to read. Briefly discuss each item and provide examples. You may ask participants to cite examples.

<sup>1</sup> World Health Organization. (2007). *International statistical classification of diseases and related health problems*, (10th revision). Geneva: Author.

### The Global Problem

- 12 million people injected drugs in 2014
- About 14 percent of those who inject drugs are HIV positive
- About 52 percent of those who inject drugs are infected with the hepatitis C virus

Source: UNODC. (2016). *World drug report 2016*. New York: United Nations.

1.10

### Say:

The U.N. survey also found that:<sup>1</sup>

- 12 million people injected drugs in 2014;
- About 14 percent of those who inject drugs are HIV positive;
- More than half of those who inject drugs are infected with the hepatitis C virus.

<sup>1</sup>UNODC. (2016). *World drug report 2016*. New York: United Nations.

### The Global Problem

- Global consequences of SUDs are far-reaching and include:
  - Higher rates of hepatitis and tuberculosis
  - Lost productivity
  - Injuries and deaths from automobile and other accidents
  - Overdose deaths
  - Suicides
  - Violence

1.11

#### Say:

*Global consequences of SUDs are far-reaching and include, for example:*

- *Higher rates of HIV/AIDS, hepatitis and tuberculosis;*
- *Lost productivity;*
- *Injuries and death due to automobile and other accidents;*
- *Overdose hospitalizations and deaths;*
- *Suicides; and*
- *Violence.*

**Teaching Instructions:** Add information about overdose deaths. Refer to the latest UNODC World Drug Report

### The Global Problem

- “There continues to be an enormous unmet need for drug use prevention, treatment, care and support, particularly in developing countries.”

—Yury Fedotov, Executive Director, UNODC

Source: UNODC. (2011). *World drug report 2011* (p. 9). New York: United Nations.

1.12

### Say:

The numbers are significant. The Executive Director of UNODC, Yury Fedotov, notes that “there continues to be an enormous unmet need for drug use prevention, treatment, care and support, particularly in developing countries.”<sup>1</sup>

There are a number of reasons for this, but one reason is a lack of adequate treatment capacity.

<sup>1</sup>UNODC. (2011). *World drug report 2011* (p.9). New York: United Nations.

### Training Series Goals

- Build international treatment capacity through:
  - Training
  - Professionalizing
  - Expanding the workforce

1.13

#### Say:

*This course is part of a training series developed through funding from the U.S. Department of State to the Colombo Plan.*

*The overall goal of the training series is to reduce the health, social, and economic problems associated with SUDs by building international treatment capacity through training, professionalizing, and expanding the global treatment workforce.*

*The series prepares counselors for professional credentialing at the entry level by providing them with necessary information and with specific skills training. You will find a list of the courses included in the training series on Resource Page 1.3 in your manuals.*

### Courses in the Series

- Course 1: *Physiology and Pharmacology for Addiction Professionals* (3 days)
  - ▣ Foundational, not how-to or skills-based course
  - ▣ Overview of the physiology of addiction as a brain disease and the pharmacology of psychoactive substances

1.14

#### Say:

So that you'll know more about what to expect during the training, we're going to take a few minutes to look at the entire training series. We'll outline Course 1: Physiology and Pharmacology for Addiction Professionals in a few minutes, so we'll skip this course for now.

### Courses in the Series

- Course 2: *Treatment for Substance Use Disorders—The Continuum of Care for Addiction Professionals* (5 days)
  - ▣ Builds the foundation for understanding SUD treatment and the continuum of care
  - ▣ Provides an overview of recovery and recovery management, stages of change, components of SUD treatment and evidence-based practices

1.15

### Say:

Course 2: Treatment for Substance Use Disorders—The Continuum of Care for Addiction Professionals is a 5-day foundational course. It provides the foundation for understanding SUD treatment and the continuum of care. It gives an overview of recovery and recovery management, the stages of change, principles of effective treatment, components of treatment, and evidence-based practices in SUD treatment.

### Courses in the Series

- Course 3: *Common Co-Occurring Mental and Medical Disorders—An Overview for Addiction Professionals* (3 days)
  - Provides an overview of co-occurring disorders (COD), its relationship to one another
  - Discusses COD treatment and related issues as well as mental and medical disorders that commonly co-occur with SUD

1.16

### Say:

*Course 3: Common Co-Occurring Mental and Medical Disorders—An Overview for Addiction Professionals* is a 3-day course. It is also foundational and provides an overview of the relationship of co-occurring disorders to one another and to related treatment issues, as well as outlines brief descriptions of the most commonly co-occurring mental and medical disorders.

### Courses in the Series

- Course 4: *Basic Counseling Skills for Addiction Professionals* (5 days)
  - ▣ Provides the basic understanding of the helping relationship
  - ▣ Provides opportunities to enhance core counseling and motivational interviewing skills
  - ▣ Introduces psychoeducation and recovery skills building as components of SUD treatment

1.17

**Say:**

Course 4: Basic Counseling Skills for Addiction Professionals is a 5-day skills-based course. It provides an overview of the helping relationship. It also provides opportunities to learn and practice core counseling and motivational interviewing skills that cut across different treatment modalities. The course also introduces psychoeducation and recovery skills building as components of SUD treatment.

### Courses in the Series

- Course 5: *Intake, Screening, Assessment, Treatment Planning and Documentation for Addiction Professionals* (5 days)
  - Provides an overview of effective, integrated screening, assessment and treatment planning in SUD treatment;
  - Introduces the use of valid screening and assessment tools
  - Highlights the importance of documentation in the process

1.18

**Say:**

Course 5: Intake, Screening, Assessment, Treatment Planning and Documentation for Addiction Professionals is a 5-day skills-based course that teaches effective, integrated screening, assessment and treatment/service planning. It also highlights the importance of documentation in the process

### Courses in the Series

- Course 6: *Case Management for Addiction Professionals* (2 days)
  - Provides understanding of case management in SUD treatment
  - Describes case management functions (planning, linkage, monitoring, advocacy, consultation, and collaboration)
  - Provides opportunities to practice case management

1.18

### Say:

Course 6: Case Management for Addiction Professionals is a 2-day foundational and skills-based course that provides an overview of case management in SUD treatment and skills practice in case management functions such as planning, linkage, monitoring, advocacy, consultation, and collaboration

### Courses in the Series

- Course 7: *Crisis Intervention for Addiction Professionals* (2 days)
  - ▢ Develops an understanding of crisis
  - ▢ Provides guidelines for crisis management, managing suicide risk, and avoiding your own crisis (counselor self-care)

1.19

### Say:

Course 7: Crisis Intervention for Addiction Professionals, a 2-day course, addresses the concept of crisis as a part of life and provides guidelines for and practice in crisis management, including managing suicide risk. It also addresses ways counselors can avoid personal crisis situations by providing information and exercises about counselor self-care.

### Courses in the Series

- Course 8: *Ethics for Addiction Professionals* (4 days)
  - ▣ Develops an understanding of ethics in SUD treatment practice
  - ▣ Provides an overview of the standards of professional conduct as defined in the Code of Ethics
  - ▣ Introduces the ethical decision-making Model and provides opportunities for practice

1.20

### Say:

Course 8: Ethics for Addiction Professionals is a 4-day course that aims to develop an understanding of ethics in SUD treatment, provides an overview of professional conduct as defined in the Code of Ethics It provides the opportunity to learn and practice the process of ethical decision making. The course also addresses the importance of supervision as part of ethical practice.

### Course 5

- Skills-based course
- Effective, integrated screening, assessment and treatment planning
- Highlights the importance of documentation

1.21

#### Say:

Now let's take a look at the goals and objectives of this training, Physiology and Pharmacology for Addiction Professionals. The overall goals of the training are:

- To provide participants with an understanding of the physiology of addiction as a brain disease; and
- To provide participants with information about the pharmacology of psychoactive substances.

For the rest of this morning, we'll do an exercise that will introduce some of the terms we'll be using in this training. This afternoon, in Module 2, we'll look at characteristics of drugs that can lead to addiction, the involvement of the central nervous system, and how routes of administration change the effect of the drugs.

In Module 3, we will talk about a definition of addiction as a brain disease. This definition is based on scientific research demonstrating that brains exposed to prolonged use of drugs of abuse are different from brains that do not have this exposure. This understanding affects how we currently view and treat addiction.

In Module 4, we'll explore stigma and how our view of addiction can create barriers to accessing treatment for addiction disorders; in Module 5, we'll explore the consequences of drug use on the physical and mental health of individuals, communities, and families.

Finally, because training is valuable only if it's integrated into practice, Module 6 will provide you with an opportunity to think about all the information you have learned and ways to apply it to your practice.

### Course 5 Learning Objectives

- Describe the process of intake and screening
- Describe the goal of screening and brief intervention
- Demonstrate ability to screen clients using the ASSIST
- Describe the process of assessment
- List 4 domains of assessment
- Explain the importance of building rapport during initial assessment

1.22

#### Say:

At the end of these 3 days, I hope you will be able to:

- Name and briefly describe four classes of psychoactive substances;
- Describe the ways in which psychoactive substances may be taken;
- Define substance use disorders;
- Define physiological dependence;
- Define addiction;
- Briefly describe the ways in which substance use affects normal brain communication;
- Define and describe the concept of stigma; and
- Describe the effects and consequences of at least six psychoactive substances.



15 minutes

## Large-group exercise: Training expectations

### Slide 1.24

#### Course 5 Learning Objectives

- Demonstrate beginning ability to use the ASI as part of assessing clients
- List the 5 elements of a self-directed goal
- List the 6 elements of a narrative summary
- List the 5 features for treatment plan objectives
- List the 5 elements for treatment plan interventions
- Describe how structured documentation supports effective treatment

1.23

#### Say:

Before we move on, I'd like you to take some time to consider your expectations for this training, given what you know so far. Please take 2 minutes to think about what you would like to get from these 3 days, and then write those expectations on the second index card.

**Teaching Instructions:** After 1 minute, ask for volunteers to briefly share their training expectations with the group. As each participant gives his or her expectations, comment as appropriate. For example:

- Yes, we will definitely be able to meet that expectation.
- Yes, that's an important part of this training.
- Actually, we won't be getting into that much detail in this training; we'll be talking more about that in Course X (Mention the related course).
- That is not really in the scope of this training, but I can help you find some resources on the topic.

Take no more than 10 minutes for sharing.

**Say:**

Thank you for sharing! \_\_\_\_\_ is going to collect your cards now and attach them to the "Training Expectations" newsprint. We'll leave that newsprint up until the end of the training, so we can check back from time to time and see how we're doing.



60 minutes



## Partner exercise: Terminology

### Slide 1.25

#### Partner Exercise: Terminology

- Look at your terms
- Find the definition for each of your terms

1.25

#### Say:

We're now going to do an exercise that will both assess what you already know and introduce important terms that will be used throughout the training.

Please find a partner and stand together.

**Teaching Instructions:** The purposes of this exercise are to introduce terminology that will be used throughout the course and to affirm what participants already know.

Give each pair several of the terms you cut out before the session. Point out the table where you laid out the definitions.

#### Say:

You will now have 10 minutes to work with your partner to try to find the definition that matches each of your terms. Ready, set, go!

**Teaching Instructions:** When all the definitions are gone, ask each pair to read its terms and definitions to the group and:

- For each correct match, affirm the pair for its correct choices. Ask the co-trainer, training assistant, or a participant volunteer to glue or tape each term and matching definition to the blank pieces of newsprint posted on the wall.
- If a match is incorrect, ask the pair to put the incorrect definition back on the table.

When all pairs have finished presenting, redistribute any unmatched terms and ask participants to try again to match them with the mismatched definitions that were returned to the table.

Have the pairs again read their terms and definitions. If necessary, match any remaining terms and definitions yourself. The correct matches are in the table on the next page.

### Say:

*Thank you for participating! You did a great job. Let us look at these two terms which we will come across often during the training, addiction and substance use disorders.*

Addiction occurs when a person cannot control the impulse to use drugs even when there are negative consequences- the defining characteristic of addiction. These behavioral changes are also accompanied by changes in the brain functioning especially in the brain's natural inhibition and reward centers. The use of the term addiction roughly corresponds to the DSM-5 definition of substance use disorder. In this course, we will be using these two terminologies interchangeably.<sup>1</sup>

<sup>1</sup> <http://www.drugabuse.gov/publications/media-guide/science-drug-abuse-addiction-basics>

## Correct Term/Definition Matches

Term	Definition
Addiction	A chronic, relapsing brain disease characterized by compulsive drug seeking and use, despite harmful consequences
Chronic disease	A disease that is long lasting and that cannot be cured but can be managed
Detoxification	The process of eliminating all psychoactive substances from a person's body
Disease	Any alteration of the normal structure or function of any body part, organ, or system that can be identified by a characteristic set of symptoms and signs
Lapse or slip	A brief, often one-time, return to drug use
Neuron	A nerve cell in the brain that sends messages to and receives messages from other cells
Neurotransmitter	Chemicals that send messages from one neuron to another
Pharmacology	A branch of science that studies the effect of psychoactive substances on the brain and body
Physiological dependence	A state of adaptation to a specific psychoactive substance characterized by the emergence of a withdrawal syndrome during abstinence, which may be relieved in total or in part by taking more of the substance
Psychoactive substances	Drugs or medicines that affect the body's central nervous system and change how people behave or perceive what is happening around them
Relapse	A complete return to using psychoactive substances in the same way the person did before he or she quit
Reward circuit	A linked group of brain structures that provide reward (including pleasure) for life-sustaining activities (like eating), ensuring that these activities are repeated
Substance use disorders	occur when the recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home
Tolerance	The decreased effect produced after the same amount of a psychoactive substance is repeatedly administered or when increasingly larger amounts are needed to get the same effect experienced with the original amount of a psychoactive substance
Withdrawal syndrome	Signs and symptoms that occur when a person stops using a psychoactive substance on which he or she is dependent



60 minutes

## Lunch

### Slide 1.26

---

# Lunch

60 minutes

1.26

#### Say:

We'll leave these terms and definitions on the wall for future reference. You will be hearing more about each term, beginning this afternoon.

Right now, we're going to break for lunch. You have 60 minutes; please be back in the room at \_\_\_\_\_.

## Terminology Exercise: Terms and Definitions

Addiction

Chronic  
disease

Detoxification

Disease

Lapse or slip

Neuron

# Neuro-transmitter

## Pharmacology

## Physiological dependence

## Psychoactive substances

## Relapse

# Reward circuit

# Substance use disorders

## Tolerance

## Withdrawal syndrome

Drugs or medicines that affect the body's central nervous system and change how people behave or perceive what is happening around them

A branch of science that studies the effect of psychoactive substances on the brain and body

Signs and symptoms that occur when a person stops using a psychoactive substance on which he or she is dependent

The decreased effect produced after the same amount of a psychoactive substance is repeatedly administered or when increasingly larger amounts are needed to get the same effect experienced with the original amount of a psychoactive substance

A chronic, relapsing brain disease characterized by compulsive drug seeking and use, despite harmful consequences; also known as psychological dependence

The process of eliminating all psychoactive substances from a person's body

Occur when the recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home

A state of adaptation to a specific psychoactive substance characterized by the emergence of a withdrawal syndrome during abstinence, which may be relieved in total or in part by taking more of the substance

Any alteration of the normal structure or function of any body part, organ, or system that can be identified by a characteristic set of symptoms and signs

A disease that is long lasting and that cannot be cured but can be managed

A brief, often one-time, return to drug use

A complete return to using psychoactive substances in the same way the person did before he or she quit

A nerve cell in the brain that sends messages to and receives messages from other cells

Chemicals that send messages from one neuron to another

A linked group of brain structures that provide reward (including pleasure) for life-sustaining activities (like eating), ensuring that these activities are repeated

## **Resource Page 1.1: The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) Criteria for Substance Use Disorder<sup>1</sup>**

---

Substance Use Disorder (SUD) is a problematic pattern of use of an intoxicating substance leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. The substance is often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful effort to cut down or control use of the substance.
3. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
4. Craving, or a strong desire or urge to use the substance.
5. Recurrent use of the substance resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued use of the substance despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of its use.
7. Important social, occupational, or recreational activities are given up or reduced because of use of the substance.
8. Recurrent use of the substance in situations in which it is physically hazardous.
9. Use of the substance is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Tolerance, as defined by either of the following:
  - a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect.
  - b. A markedly diminished effect with continued use of the same amount of the substance.
11. Withdrawal, as manifested by either of the following:
  - a. a strong desire or sense of compulsion to take the substance;
  - b. difficulties in controlling substance-taking behaviour in terms of its onset, termination, or levels of use;

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<sup>1</sup> <https://www.drugabuse.gov/publications/media-guide/science-drug-abuse-addiction-basics>

## **Resource Page 1.2: ICD -10 Classification of Mental and Behavioral Disorder<sup>1</sup>**

---

Mental and behavioural disorders due to psychoactive substance use

### **F1x.1 Harmful use**

A pattern of psychoactive substance use that is causing damage to health. The damage may be physical (as in cases of hepatitis from the self-administration of injected drugs) or mental (e.g. episodes of depressive disorder secondary to heavy consumption of alcohol).

#### **Diagnostic guidelines**

The diagnosis requires that actual damage should have been caused to the mental or physical health of the user.

Harmful patterns of use are often criticized by others and frequently associated with adverse social consequences of various kinds. The fact that a pattern of use or a particular substance is disapproved of by another person or by the culture, or may have led to socially negative consequences such as arrest or marital arguments is not in itself evidence of harmful use.

### **F1x.2 Dependence syndrome**

A cluster of physiological, behavioural, and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviours that once had greater value. A central descriptive characteristic of the dependence syndrome is the desire (often strong, sometimes overpowering) to take psychoactive drugs (which may or may not have been medically prescribed), alcohol, or tobacco. There may be evidence that return to substance use after a period of abstinence leads to a more rapid reappearance of other features of the syndrome than occurs with nondependent individuals.

#### **Diagnostic guidelines**

A definite diagnosis of dependence should usually be made only if three or more of the following have been present together at some time during the previous year:

- a. a strong desire or sense of compulsion to take the substance;
- b. difficulties in controlling substance-taking behaviour in terms of its onset, termination, or levels of use;
- c. a physiological withdrawal state (see F1x.3 and F1x.4) when substance use has ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms;

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<sup>1</sup> [www.who.int/substance\\_abuse/terminology/ICD10ClinicalDiagnosis.pdf](http://www.who.int/substance_abuse/terminology/ICD10ClinicalDiagnosis.pdf)

- d. evidence of tolerance, such that increased doses of the psychoactive substances are required in order to achieve effects originally produced by lower doses (clear examples of this are found in alcohol- and opiate-dependent individuals who may take daily doses sufficient to incapacitate or kill nontolerant users);
- e. progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the substance or to recover from its effects;
- f. persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually, or could be expected to be, aware of the nature and extent of the harm.

## **Resource Page 1.3: The Universal Treatment Curriculum for Substance Use Disorders (UTC) Basic Level Training Series**

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- Course 1: *Physiology and Pharmacology for Addiction Professionals (this course)*
- Course 2: *Treatment for Substance Use Disorders—The Continuum of Care for Addiction Professionals*
- Course 3: *Common Co-Occurring Mental and Medical Disorders—An Overview for Addiction Professionals*
- Course 4: *Basic Counseling Skills for Addiction Professionals*
- Course 5: *Intake, Screening, Assessment, Treatment Planning and Documentation for Addiction Professionals*
- Course 6: *Case Management for Addiction Professionals*
- Course 7: *Crisis Intervention for Addiction Professionals*
- Course 8: *Ethics for Addiction Professionals*

# MODULE 2

## INTRODUCTION TO PSYCHOACTIVE SUBSTANCE USE

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Presentation: What are psychoactive substances and how do they work? .....	79
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Learning assessment .....	103
Day 1 wrap-up and evaluation .....	105



## **Module 2 Preparation Checklist**

- Review Getting Started for general preparation information.
- Preview Module 2. Become very familiar with the instructions for the exercises in this module.
- Make sure the newsprint pages and the terms/definitions from Module 1 are displayed on the wall.
- Write the following on four small slips of paper, then fold the slips in half:
  - Experimental/recreational;
  - Circumstantial/occasional;
  - Intensified/regular; and
  - Compulsive/addictive.
- Bring to the session one bucket or other container.
- Copy one Daily Evaluation form for each participant.
- Write the following headings on three separate sheets of newsprint:
  - Mood;
  - Thinking and Judgment;
  - Sensory Perceptions; and
  - Behavior.

<b>Content and Timeline</b>		
<b>Activity</b>	<b>Time</b>	<b>Person Responsible</b>
Introduction to Module 2	10 minutes	
Presentation: What are psychoactive substances and how do they work?	60 minutes	
Presentation: Classification of psychoactive substances	10 minutes	
Presentation: Methods (routes) of administration	10 minutes	
Small-group exercise: Routes of administration	20 minutes	
<b>Break</b>	<b>15 minutes</b>	
Small-group case studies: Progression of substance use	45 minutes	
Learning assessment	30 minutes	
Day 1 wrap-up and evaluation	20 minutes	

## **Module 2 Goals and Objectives**

### **Training goals**

- To provide an overview of psychoactive substances as discussed in this course;
- To introduce the main categories (classes) of psychoactive substances;
- To summarize eight methods by which psychoactive substances are administered and what happens to them after they are administered; and
- To describe levels of progression of psychoactive substance use.

### **Learning objectives**

Participants who complete Module 2 will be able to:

- Define psychoactive substance;
- List general ways in which psychoactive substances affect mood, thoughts, and behavior;
- List the four main categories (classes) of psychoactive substances and several substances within each;
- List the methods of administering psychoactive substances; and
- Discuss the levels of progression of substance use.



10 minutes

## Introduction to Module 2

### Slide 2.1

The slide has a dark blue header bar at the top with white text. The text reads "Colombo Plan Drug Advisory Programme (DAP)" and "The Universal Treatment Curriculum for Substance Use Disorders (UTC)". Below this is a large red rectangular area containing the text "Course 1" in white, followed by "Physiology and Pharmacology for Addiction Professionals" in a smaller white font. The main title "MODULE 2—INTRODUCTION TO PSYCHOACTIVE SUBSTANCE USE" is centered in a large white font. At the bottom of the slide is a dark blue footer bar featuring the American flag on the left, the seal of the U.S. Department of State in the center, and the Colombo Plan logo on the right. The Colombo Plan logo includes the text "PLANNING PROSPERITY TOGETHER" and "COLOMBO PLAN".

**Teaching Instructions:** As participants return from lunch, ask them to spend some time walking around the room and looking at the newsprint pages from the morning session. Allow 5 minutes for this review.



Module 2 focuses on psychoactive substance use and will answer several questions:

- What are psychoactive substances?
- What are the four main categories (classes) of psychoactive substances?
- How are psychoactive substances administered (taken)?
- What is the typical pattern of progression from initial use to dependence and addiction?

## Slide 2.2

### Module 2 Learning Objectives

- Define psychoactive substance
- List general ways in which psychoactive substances affect mood, thoughts, and behavior
- List the four main categories (classes) of psychoactive substances and several substances within each
- List the methods of administering psychoactive substances
- Discuss the levels of progression of substance use

2.2



**Teaching Instructions:** Refer participants to Module 2 to briefly review the learning objectives.

#### Say:

*By the time we complete this Module, I hope you will be able to:*

- Define psychoactive substance;
- List general ways in which psychoactive substances affect mood, thoughts, and behavior;
- List the four main categories (classes) of psychoactive substances and several substances within each;
- List the methods of administering psychoactive substances; and
- Discuss the levels of progression of substance use.



60 minutes

## Presentation: What are psychoactive substances and how do they work?

### Slide 2.3

#### Psychoactive Substances

- Affect the body's central nervous system
- Change how people behave or perceive what is happening around them

2.3

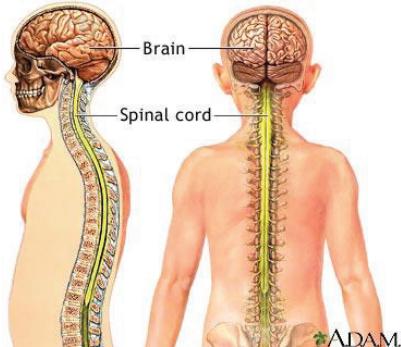


A psychoactive substance is a substance that affects the body's central nervous system (or CNS) and changes how people behave or perceive what is happening around them:

- Psychoactive substances include illicit/illegal drugs and some medications.
- Medications have the potential to prevent or cure disease or enhance a person's physical or mental well-being, but psychoactive medications (like those used to treat anxiety or pain) also have the potential to create problems.

## Slide 2.4

### Central Nervous System

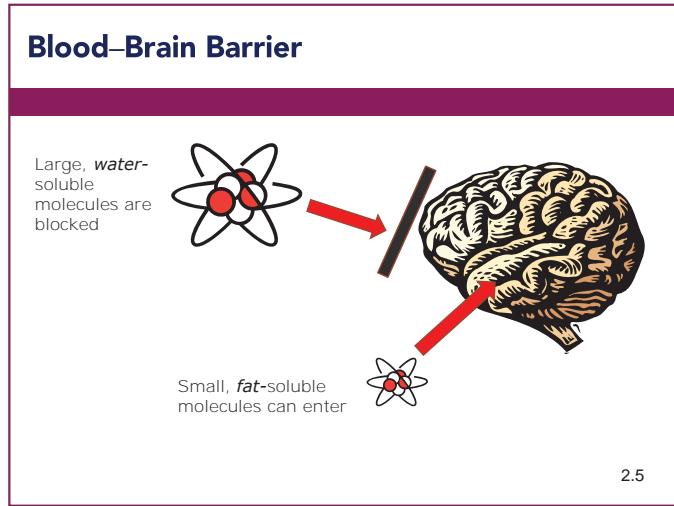


2.4

#### Say:

The CNS is that part of the nervous system that consists of the brain and spinal cord. Our brains are protected by a membrane called the blood-brain barrier. This barrier is a series of tightly pressed-together cells that allows for the passage of only certain chemicals.

## Slide 2.5



**Teaching Instructions:** If you have a pointer or laser, point to each process as you describe it.

**Say:**

Because the cells of the blood–brain barrier are so tightly pressed together, substances with a large molecular structure and that are water soluble (meaning that they dissolve easily in fluid) can't get through the barrier. Most medications we take, like aspirin or antibiotics, are in this category.

However, substances with a small molecular structure and that are fat soluble, as most psychoactive substances are, can easily pass through the blood–brain barrier. In this way, psychoactive substances can have a direct effect on brain functioning.

Although psychotropic medications used to treat major mental disorders (like antipsychotics and antidepressants) are psychoactive substances, they are not abused substances because they do not produce the same immediate pleasurable effects.

### Pharmacology

- Studies the effects of medications and other substances on the body and the brain



2.6

#### Say:

In addition to their direct effects in the brain, psychoactive substances can alter the biochemical processes of body tissues and organs.

Pharmacology is the branch of science that studies the effects of psychoactive substances on the body and the brain, including how they are metabolized:

- Metabolism is a complex chemical process that is constantly happening in our bodies.
- For example, we get the energy we need from food through metabolism.
- These chemical reactions in our bodies' cells convert fuel from food into the energy we need to do everything from moving to thinking to growing; they then eliminate what is left of the food.
- All substances we ingest are metabolized in some way.
- As soon as a person takes a substance, the body immediately begins to break it down and eliminate it.
- The liver is responsible for metabolizing most foreign substances, with the kidneys providing support for the process.
- Once a substance has been metabolized, it is eliminated from the body, primarily through urine or feces but also through sweat, saliva, or breath.

### Half-Life

- The amount of time it takes to eliminate half of the original dose of a substance from the body

2.7

#### Say:

Different substances take different lengths of time to break down and be eliminated. The amount of time it takes to eliminate half of the original dose of a substance from the body is called the substance's half-life:

- The half-life of a substance affects how long its effects last and how long it takes to fully clear the body.
- When a person stops using a substance, it can be important to know the half-life of the substance to know how long it will take the person to detoxify or to fully clear the substance from the body.

### Other Factors

- A person's age, the length of time a person has regularly used a substance, and the amount of a substance regularly used affect how the body:
  - Absorbs psychoactive substances
  - Metabolizes them
  - Eliminates them

2.8

### Say:

Factors other than the half-life of a substance also affect how long it takes to metabolize a substance. A person's age, the length of time a person has regularly used a substance, and the amount of a substance regularly used make a difference in how the body:

- Absorbs psychoactive substances;
- Metabolizes them; and
- Eliminates them.

For example:

- Young children and older adults metabolize and eliminate substances more slowly.
- If a person uses a substance often and heavily, it may be metabolized and eliminated more quickly.

### Psychoactive Substances

- Psychoactive substances alter:
  - Mood
  - Thoughts
  - Sensory perceptions
  - Behavior



2.9

#### Say:

The primary characteristic of psychoactive substances is that they alter mood, thoughts, judgments, sensory perceptions, and behavior.



#### Ask:

In what ways do you think a psychoactive substance could alter someone's mood?

**Teaching Instructions:** Turn to the newsprint you prepared labeled "Mood." Note participants' responses. Participants will most likely have a lot of ideas. Possible answers include:

Feeling more alert

Feeling more sociable

Feeling more relaxed

Feeling "happy"

Feeling more or less depressed than usual

Feeling more or less sexual

Feeling irritable or angry

Feeling fearful

When participants have finished, note that effects on mood can be either positive or negative. Post the pages on the wall.

**Ask:**

*In what ways do you think a psychoactive substance could alter someone's thinking or judgment?*

**Teaching Instructions:** Turn to the newsprint you prepared labeled "Thinking and Judgment." Note participants' responses. Participants will most likely have a lot of ideas. Possible answers include:

- |                                      |                              |
|--------------------------------------|------------------------------|
| Racing thoughts                      | Increased clarity of thought |
| Inability to plan or make a decision | Paranoid thoughts            |
| Distorted perceptions                | Poor judgment                |

When participants have finished, note that effects on thoughts can be either positive or negative. Post the pages on the wall.

**Ask:**

*In what ways do you think psychoactive substance use could alter someone's sensory perceptions?*

**Teaching Instructions:** Turn to the newsprint you prepared labeled "Sensory Perceptions." Note participants' responses. Ensure answers include:

- Perceptual distortions
- Changes in temperature perception
- Changes in pain perception

**Ask:**

*In what ways do you think a psychoactive substance could alter someone's behavior?*

**Teaching Instructions:** Turn to the newsprint you prepared labeled "Behavior." Note participants' responses. Participants will most likely have a lot of ideas. Possible answers include:

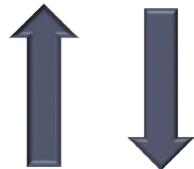
Decreased or increased activity	Aggression or violence
Increased risk-taking; dangerous activities	Passivity
Behavior not in line with personal values	Increased or decreased sexual behavior

When participants have finished, note that effects on behavior can be either positive or negative. Post the pages on the wall.

**Teaching Instructions:** Save these newsprint sheets. You will use them again in Module 5.

### Effects of Psychoactive Substances

- Can be positive or negative
- Depend to a large extent on the *type* of substance used



2.10

**Say:**

In summary, psychoactive substances produce a variety of effects, both positive and negative. These effects depend in large part on the type of substance taken.



10 minutes

## Presentation: Classification of psychoactive substances

### Slide 2.11

Drug Classes: Examples			
Stimulants	Opioids (narcotics)	Depressants	Hallucinogens
Cocaine	Heroin	<b>Alcohol</b>	LSD
Amphetamine	Morphine	Barbiturates	Mescaline Peyote
Methamphetamine	Opium	Benzodiazepines	Ecstasy
<b>Nicotine, Caffeine</b>	Demerol	Gamma-Hydroxybutyrate (GHB); Rohypnol	Mushrooms

2.11

### Say:

There are four main classes, or types, of psychoactive substances:

- Stimulants;
- Opioids (sometimes called narcotics);
- Depressants; and
- Hallucinogens.

These classes are based on the substance's primary effects on the CNS:

- Stimulants increase the activity of the CNS. They tend to increase heart rate and breathing and offer a sense of excited euphoria.
- Opioids selectively depress the CNS. These analgesics reduce pain and tend to induce sleep.
- Depressants decrease the activity of the CNS. They tend to decrease heart rate and breathing and offer a relaxed, sometimes sleepy, sense of well-being or euphoria.
- Hallucinogens produce a spectrum of vivid sensory distortions and markedly alter mood and thinking.

**Teaching Instructions:** Review the examples on the slide, providing more detail as follows. If you have a pointer or laser, point out each example as you mention it.

- Benzodiazepines (a depressant) include anti-anxiety medications such as Xanax, Librium, and Valium. These are sometimes called tranquilizers.
- Opioids include heroin, morphine, opium, and other substances used to treat severe pain; they are called opioids because they work at the opiate receptors in the brain.
- Barbiturates (a depressant) include phenobarbital and Seconal; these have been used to treat seizure disorders and sleeping problems, but newer substances work better for those conditions without the risk of addiction.
- Depressants also include GHB and Rohypnol, sometimes called club drugs or date rape drugs because at low doses they are thought to enhance the dance club experience and at high doses can be completely sedating.
- Hallucinogens include LSD, mescaline (derived from peyote, a cactus), ecstasy, and certain types of mushrooms.

**Teaching Instructions:** Point to Nicotine/Caffeine and Alcohol, in red on the slide.

**Say:**

Note that nicotine, caffeine, and alcohol, all of which are legal, are included in the chart of psychoactive substances.

## Slide 2.12

### Legal Substances

- Just because a substance is legal does not mean it is safer than an illegal substance



2.12

#### Say:

*It's important to keep in mind that just because a substance is legal does not mean it is safer than an illegal substance. The legality of a substance is generally more the result of traditions, culture, or political or religious factors than whether a substance is more or less harmful than another.*

### Other

- Some drugs do not fit neatly into a category:
  - Cannabinoids (marijuana, hashish)
  - Khat/Miraa
  - Dissociative anesthetics (phencyclidine [PCP], ketamine)
  - Inhalants solvents, gases, nitrites

2.13

### Say:

You probably noticed that a very common substance, marijuana, was not included in the classification chart. This is because the classification system is intended as a general guide, and some psychoactive substances do not fit neatly into the basic categories.

For example:

- Marijuana may be somewhat sedating or relaxing at low doses but may have some hallucinogenic effects at high doses.
- Miraa (khat) can induce mild euphoria and excitement at low doses but at higher doses it can also induce manic behaviors and hyperactivity.
- Dissociative anesthetics (or PCP) can have hallucinogenic effects but can also have depressant or stimulant effects.
- Inhalants generally have depressant effects but can also have stimulant or hallucinogenic effects.

So, we've talked about how a substance's effect depends on what type of substance it is. While that is a critical factor, it's not the only one.

The specific effects of a substance will vary depending on how much is taken and how it is taken.



10 minutes

## Presentation: Methods (routes) of administration

### Slide 2.14

#### Routes of Administration

- Swallowing
- Snorting
- Smoking
- Inhaling fumes
- Intramuscular (IM) injection
- Subcutaneous (SC) injection
- Intravenous (IV) injection
- Topical
- Sublingual

UNODC (2016). Terminology and Information on Drugs. Retrieved on March 22, 2017 at [https://www.unodc.org/documents/scientific/Terminology\\_and\\_Information\\_on\\_Drugs-3rd\\_edition.pdf](https://www.unodc.org/documents/scientific/Terminology_and_Information_on_Drugs-3rd_edition.pdf) 2.14

#### Say:

How a substance is taken is called the method or route of administration. Psychoactive substances can enter the body through nine routes of administration:

- Swallowing;
- Snorting (inhaling through the nose);
- Smoking;
- Inhaling fumes;
- Intramuscular (IM) injection (injecting into a muscle);
- Subcutaneous (SC) injection (injecting the substance just beneath the skin);
- Intravenous injection (injecting the substance into a vein);
- Topically (applying the substance to the top layer of the skin); and
- Sublingually (dissolving the substance under the tongue and absorbing it through the mouth tissue).

Source: UNODC (2016). Terminology and Information on Drugs. Retrieved on March 22, 2017 at [https://www.unodc.org/documents/scientific/Terminology\\_and\\_Information\\_on\\_Drugs-3rd\\_edition.pdf](https://www.unodc.org/documents/scientific/Terminology_and_Information_on_Drugs-3rd_edition.pdf)

### Routes of Administration

- The faster the drug hits the brain, the greater and more reinforcing its effect



2.15

**Say:**

The route of administration matters because it affects how quickly a substance gets to the brain; the faster the substance hits the brain, the greater and more reinforcing its effect.

### Speed of Action

- Smoking: 7–10 seconds
- Intravenous injecting: 15–30 seconds
- Injecting into the muscle or under the skin: 3–5 minutes

Source: <http://www.pharmacologie.u-bordeaux2.fr/en/pharmacodependance/administration.htm>

2.16

### Say:

From fastest to slowest, the speeds of action for the various routes of administration are<sup>1</sup>:

- Smoking: 7–10 seconds;
- Intravenous injecting: 15–30 seconds;
- Injecting into the muscle or under the skin: 3–5 minutes;

1. <http://www.pharmacologie.u-bordeaux2.fr/en/pharmacodependance/administration.htm>

### Speed of Action

- Mucous membrane absorption (snorting, rectal): 3–5 minutes
- Swallowing: 20–30 minutes
- Absorbed through skin: Slowly over a long period

Source: <http://www.pharmacologie.u-bordeaux2.fr/en/pharmacodependance/administration.htm>

2.17

**Say:**

- *Mucous membrane absorption (snorting, rectal): 3–5 minutes;*
- *Swallowing: 20–30 minutes; and*
- *Absorbed through skin: Slowly over a long period.*

1. <http://www.pharmacologie.u-bordeaux2.fr/en/pharmacodependance/administration.htm>



20 minutes



## Small-group exercise: Routes of administration

### Slide 2.18

#### Small-Group Exercise: Routes of Administration

- Form small groups
- As a group, develop a list of any five psychoactive substances
- For each substance, list the most common routes of administration used in your area
- Keep in mind that some substances have more than one route of administration

2.18

#### Say:

We're going to do an exercise to learn more about routes of administration. Please form small groups of four or five people each.

**Teaching Instructions:** The purposes of this exercise are to help participants integrate information about routes of administration and to apply it to their own situations.

Participants may already be sitting at tables of four to five people each. If so, then simply ask the participants at each table to work together as a group. Otherwise, allow a minute for groups to form.

**Say:**

I'd like you to develop a list of any five psychoactive substances, then list the common routes of administration of each, particularly in your regions. Keep in mind that some drugs have more than one route of administration.

You will have 5 minutes to develop your lists, starting now.

**Teaching Instructions:** Allow 5 minutes. Provide a 1-minute warning if necessary.

**Ask:**

Could I please have a volunteer present the first group's lists?

**Teaching Instructions:** Note the first group's list of substances and routes of administration on newsprint. Add to the list as you go along. Post the newsprint pages on the wall when all groups have finished adding to the list.

**Say:**

Thanks—great job! Now, do any of the other groups have additional substances to add to the list?

**Teaching Instructions:** Continue asking each group to add to the list. Post the newsprint pages on the wall when all groups have finished adding to the list.



15 minutes

## Break

### Slide 2.19

---

# Break

15 minutes

2.19

#### Say:

You did a great job with this. Next, we'll take a look at how substance use disorders develop. But first we'll take a 15-minute break.



45 minutes



## Small-group case studies: Progression of substance use

### Say:

Tomorrow's sessions will focus on the physiology of addiction and will include technical information on how substance use affects the brain and how it can progress to addiction. Now, however, we're going to take a look at the progression of substance use in a more general way.

The pattern of progression from use to abuse to dependence typically begins with the first rewarding experience with a psychoactive substance; a rewarding experience usually results in a person's seeking another rewarding experience. If the experience is unpleasant, the individual will most likely not repeat the experience.

### Progression of Use

- Experimental/recreational use
- Circumstantial/Occasional use
- Intensified/regular use
- Compulsive/addictive use



Source: Landry, M.J. Understanding Drug of Abuse: The Process of Addiction, Treatment and Recovery. 2.20  
1994 American Psychiatric Publishing Inc, USA

#### Say:

When substance use does progress, the progression typically follows a pattern. The pattern can be described in a number of ways, but one way to look at it is:

- Experimental/recreational use;
- Circumstantial/occasional use;
- Intensified/regular use; and
- Compulsive/addictive use.



Let's look at each of these in some detail. Please form four small groups, preferably with at least a few people you haven't yet worked with, and turn to Resource Page 2.1 in your manuals.

**Teaching Instructions:** Allow a minute for groups to form, then give each group one of the slips of paper you prepared (e.g., experiential/recreational, circumstantial/occasional).

Source: Landry, M.J. Understanding Drug of Abuse: The Process of Addiction, Treatment and Recovery.  
1994 American Psychiatric Publishing Inc, USA

**Say:**

You will have 10 minutes to come up with a skit or fictional case study that illustrates the substance use of a person in your group's assigned category. Don't tell the other groups what your category is! Take a few minutes to read the appropriate description on Resource Page 2.1 and use it as a general guide. Start now.

**Teaching Instructions:** Provide 5- and 2-minute warnings, then ask each group to present its work. After each presentation, ask all participants to guess which category of use the group portrayed, what they saw, and why they made the guess they did.

**Say:**

Tomorrow we'll be talking about how and why substance use progresses in some people but not in everyone.



30 minutes

## Learning assessment

### Slide 2.21

#### Learning Assessment

- Write one quiz question about today's material on a piece of paper

2.21

**Teaching Instructions:** Put the bucket, box, or other container you brought in the center of the room.

#### Say:

You did a great job of participating today! Let's take a look at what you've learned. You have 3 minutes to think of one quiz question about today's material. Write the question on a piece of paper, crumple the paper up, and toss it in the bucket.

**Teaching Instructions:** When participants have finished, shake the bucket up a little and walk around the room with it. Toss one piece of crumpled paper to each participant.

#### Say:

You each have a question in your hand to answer. You may take 5 minutes to move around the room and look at the posted newsprint, review your notes, or get help from another person to answer your question.

**Teaching Instructions:** After 5 minutes, ask each participant to read his or her question and answer it out loud. Encourage participants to cheer and clap as each correct answer is read.



20 minutes



## Day 1 wrap-up and evaluation

### Slide 2.22

---

#### Reflective Exercise

- What did you learn today that you did not already know?
- How might you apply what you learned to your job?
- What questions do you still have?

2.22

#### Say:

To wrap up today, please take 5 minutes to write in your journals, considering the questions on the slide:

- What did you learn today that you did not already know?
- How might you apply what you learned to your job?
- What questions do you still have?

We'll take a few minutes tomorrow morning to talk about your reflections. If you think of anything else this evening, please add it to your journal.

While you're writing, we're going to give each of you an evaluation form. It is very important that you complete this form before you leave. Your feedback is important; it will help us improve the training for this group and for future training groups.

Once you have finished your reflections and the evaluation form, you're free to go. Thank you for being open to new learning and making today a success!

**Teaching Instructions:** Select newsprint pages to save and post for review tomorrow. Be sure to save the pages from the moods, thoughts, and behavior exercise. You will use them again for a review in Module 5.

# Resource Page 2.1: Progression of Use

---

## ***Experimental/Recreational Use***

Recreational use is the least severe level. It usually occurs in a social setting among friends, does not happen very often, and typically involves consuming small to moderate amounts of psychoactive substances. It is often driven by curiosity or peer pressure. A person using recreationally rarely experiences problems related to use. A possible exception is if the substance used is illegal.

## ***Circumstantial/Occasional Use***

Circumstantial use happens often when an individual is motivated to achieve a desirable effect as a way of coping with something circumstantial. For example, a very shy person may find that smoking marijuana makes him or her more relaxed and able to talk to people, dance, or otherwise be more social. Or a person with depression may try a substance to feel livelier and better. An extreme example is that soldiers in combat have been known to use marijuana, heroin, or other available substances to help them relax and escape the stresses of war. A person at this level also may use occasionally for fun or to be social. A person may or may not experience problems because of use at this level.

## ***Intensified/Regular Use***

Some people start out with recreational or circumstantial use but begin to use more of the substance, more often. When psychoactive substances are used daily or almost daily, in low to moderate doses, the effect is intensified. At this level, a person is often motivated by a need to get regular relief from an ongoing problem, such as anxiety or depression, or to maintain a desired level of performance. At this level, a person is probably beginning to experience problems with use (e.g., being late to work on Monday mornings because of hangovers; others being concerned about the use). This level of substance use is considered abuse.

## ***Compulsive/Addictive Use***

Compulsive use is the most dangerous and severe. At this level, high doses are needed daily or almost daily to reach a desired physical and/or psychological effect or to avoid withdrawal symptoms. At this level, the substance becomes the most important thing in a person's life, around which all other activities are organized. At this level, a person experiences problems related to use but continues using in spite of them. This level of substance use is considered addiction.

---

Source: Landry, M.J. Understanding Drug of Abuse: The Process of Addiction, Treatment and Recovery. 1994 American Psychiatric Publishing Inc, USA



# MODULE 3

## THE SCIENCE OF ADDICTION

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Small-group exercise: What is addiction? .....	117
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Presentation: Addiction and the reward circuit .....	156
Presentation: Vulnerability to addiction .....	171
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## Module 3 Preparation Checklist

- Review Getting Started for general preparation information.
- Preview Module 3. Become very familiar with the instructions for the exercises in this module.
- Write the following definition of *addiction* on a sheet of newsprint:  
*Addiction: A chronic, relapsing brain disease that is characterized by compulsive substance seeking and use, despite harmful consequences*
- Keep the newsprint hidden until Presentation: The science of addiction 1.
- Bring two long sashes, scarves, or pieces of rope to the session.
- Select an energizer activity from Appendix A, and gather needed supplies.
- Make small signs labeled as follows (use a different color paper for each category):
  - “Correct neurotransmitter” (enough signs for about half the group);
  - “Incorrect neurotransmitter” (enough signs for about half the group);
  - “Transporter” (three signs); and
  - “Cocaine” on one side and “Heroin” on the other side (three signs).

Content and Timeline		
Activity	Time	Person Responsible
Welcome and review of day 1	15 minutes	
Introduction to Module 3	10 minutes	
Small-group exercise: What is addiction?	30 minutes	
Presentation: The science of addiction, Part 1	20 minutes	
Exercise: Brain communication	45 minutes	
<b>Break</b>	<b>15 minutes</b>	
Presentation: The science of addiction, Part 2	15 minutes	
Exercise: Psychoactive substances and brain communication	60 minutes	
Presentation: Addiction and the reward circuit	30 minutes	
<b>Lunch</b>	<b>60 minutes</b>	
Presentation: Vulnerability to addiction	20 minutes	
Small-group exercise: Case study review	60 minutes	
<b>Break</b>	<b>15 minutes</b>	

## **Module 3 Goal and Objectives**

### **Training goal**

To provide an overview of the science of addiction as a brain disease.

### **Learning objectives**

Participants who complete Module 3 will be able to:

- Define addiction;
- Discuss why addiction is considered a brain disease; and
- Provide a basic description of how psychoactive substances create their effects in the brain.



15 minutes

## Welcome and review of day 1

### Slide 3.1

The slide features a dark blue header with white text: "Colombo Plan Drug Advisory Programme (DAP)" and "The Universal Treatment Curriculum for Substance Use Disorders (UTC)". Below this is a red banner with the text "Course 1". The main title "Physiology and Pharmacology for Addiction Professionals" is centered in white. The middle section has a purple-to-blue gradient background with the title "MODULE 3—THE SCIENCE OF ADDICTION" in white. At the bottom, there are three logos: the American flag, the U.S. Department of State seal, and the Colombo Plan logo with the text "PLANNING PROSPERITY TOGETHER COLOMBO PLAN".

**Say:**

Good morning, and welcome back!

Yesterday, before you left, you wrote in your journals. Would anyone like to share what he or she wrote?

### Reflective Exercise

- What did you learn that you did not already know?
- How might you apply what you learned to your job?
- What questions do you still have?

3.2



**Say:**

As a reminder, the questions you considered were:

- What did you learn that you did not already know?
- How might you apply what you learned to your job?
- What questions do you still have?

**Teaching Instructions:** Facilitate a brief discussion. Note the answers to *What questions do you still have?* on newsprint. Thank participants for sharing.



10 minutes

## Introduction to Module 3

### Say:

Now that we've had an introduction to psychoactive substances and their general effects, we're going to consider these questions:

- *What is addiction?*
- *How do psychoactive substances affect brain function?*
- *Why doesn't everyone who uses a substance become addicted?*

### Module 3 Learning Objectives

- Define addiction
- Discuss why addiction is considered a brain disease
- Provide a basic description of how psychoactive substances create their effects in the brain

3.3



#### Say:

Please turn to *Module 3* in your manuals, to view the learning objectives. By the time we complete this module, I hope you will be able to:

- Define addiction;
- Discuss why addiction is considered a brain disease; and
- Provide a basic description of how psychoactive substances create their effects in the brain.



30 minutes



## Small-group exercise: What is addiction?

### Slide 3.4

---

#### Small-Group Exercise: What is Addiction?

- Choose one person to write on newsprint for your group
- Share your thoughts about addiction and those who are addicted
- Work quickly and include everything that comes to mind; don't edit yourselves

3.4

#### Say:

Before going further, we're going to do an exercise. Please form small groups of four to five people each.

**Teaching Instructions:** While groups are getting settled, give each group several sheets of newsprint and colored markers.

#### Say:

For this exercise, please share all your thoughts about addiction and those who are addicted. Work quickly and include everything that comes to mind. Choose one person to write on the newsprint everything you think of.

You have 5 minutes to complete your list, starting now.



**Teaching Instructions:** Provide a 1-minute warning. After 5 minutes, ask each group to share its list with the whole training group. As the groups report back, note on a separate sheet of newsprint the common elements among the groups. Summarize the lists, particularly the overlap. Stress that these items represent common thinking about addiction.

**Say:**

*Now, please take 10 minutes to create a definition of addiction and write it on a clean sheet of newsprint.*

**Teaching Instructions:** Provide 5- and 2-minute warnings. After 10 minutes, ask each group to share its definition with the entire training group. Write the definitions on newsprint, and post the newsprint on the wall. Note elements of their definitions that refer to addiction as a disease, and congratulate participants on accurate information in their definitions.



20 minutes

## Presentation: The science of addiction, Part 1

### Slide 3.5

#### Addiction

- Is NOT a character flaw, a personality disorder, or a moral failing
- IS a health problem

3.5

#### Say:

People have had many different ideas about addiction over the centuries. Many people still see addiction as a character flaw, a personality disorder, or a moral failing rather than as a health problem.

We now know that substance addiction is not just a lot of drug use:

- Addiction is now thought of as a chronic disease, one that often remains throughout a person's life and is as much a disease as diabetes or hypertension.
- A chronic disease is not curable, but it is manageable.

### Science of Addiction

- Addiction is a chronic, relapsing brain disease that is characterized by compulsive substance seeking and use, despite harmful consequences

3.6

**Say:**

The U.S. National Institute on Drug Abuse defines addiction as a *chronic, relapsing brain disease that is characterized by compulsive substance seeking and use, despite harmful consequences.*



**Teaching Instructions:** Post the newsprint you prepared with the definition of addiction.

### Disease

- Alteration of the normal structure or function of any body part, organ, or system
- A characteristic *syndrome*, or set of symptoms and signs

3.7

### Say:

Let's look at this definition more closely.

**Teaching Instructions:** Underline the word disease on the newsprint.

### Say:

A common definition of disease is any alteration of the normal structure or function of any body part, organ, or system that can be identified by a characteristic syndrome, or set of symptoms and signs. Addiction meets the criteria of disease because, like heart disease, addiction alters normal functioning in an organ, in this case the brain, and it has a characteristic set of symptoms and signs.

### Symptom

- Subjective: Directly experienced by the person; cannot be seen or measured by another person
- Examples: Stomachache, fatigue, dizziness
- Addiction examples: Craving, anxiety when *not* using

3.8

### Say:

A symptom is subjective—something that is directly experienced and cannot be seen or measured by another person. Examples of symptoms include stomachache, fatigue, or dizziness.

A symptom of addiction would be craving, for example.

### Sign

- Objective: physical indication of disease that can be seen or measured by another person
- Examples: skin rash, fever, high blood pressure
- Addiction examples: abscess at an injection site; difference in brain activity as measured by imaging techniques

3.9

### Say:

A sign is an objective physical indication of disease that can be seen or measured by another person. Examples of signs include a skin rash, fever, or high blood pressure.

A sign of addiction might be an abscess at an injection site or differences in brain activity measured by imaging techniques.

### Imaging the Brain

MRI



PET



SPECT

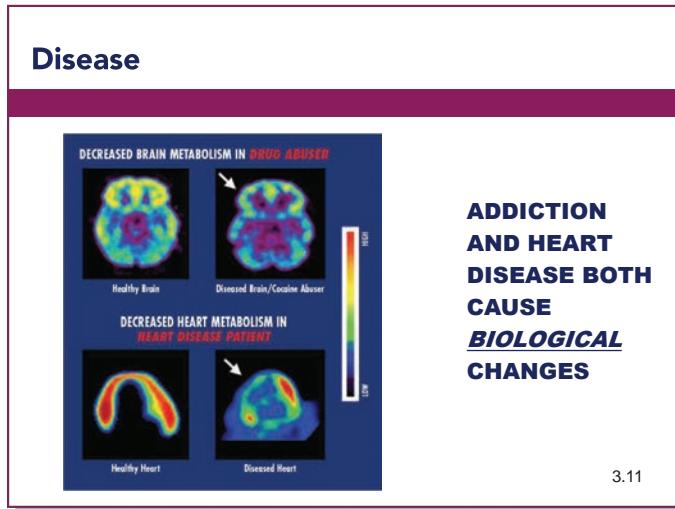
3.10

#### Say:

Imaging techniques allow scientists to actually see what is happening in the brain in response to drug use and addiction. These techniques include:

- Magnetic resonance imaging (MRI);
- Positron emission tomography (PET) scan; and
- Single photon emission computed tomography (SPECT).

## Slide 3.11



**Say:**

Research has shown that the addicted brain is distinctly and biologically different from the nonaddicted brain, just as a heart with heart disease is distinctly and biologically different from a healthy heart. This slide compares scan images showing that both addiction and heart disease cause biological changes.

The top two images show visible differences between a healthy brain and the brain of someone who abuses cocaine.

The bottom two images show visible differences between a healthy heart and one with heart disease.

**Teaching Instructions:** If you have a pointer or laser, point to each image as you describe it.

### Etiological Agent

- An external cause
- Examples:
  - For AIDS, the etiological agent is HIV
  - For a severe sore throat, the etiological agent is probably a bacterium
  - For addiction, the agent is the substance

3.12

### Say:

A term that is often used when discussing disease is *etiological*, or causal, agent. The etiological agent for AIDS, for example, would be the human immunodeficiency virus (HIV). If you have a severe sore throat, the agent might be the streptococcus bacterium.

With addiction, the etiological agent can be considered the substance used.

Of course, not all diseases have an external etiological agent. Heart disease and diabetes are examples.

### Other Factors

- Other factors play a role in disease development
- Just as not everyone exposed to a cold virus will actually get a cold, not everyone who is exposed to a substance will become addicted to it
- While the presence of the substance is *necessary* for addiction to develop, it is not enough in and of itself

3.13

#### Say:

But even for diseases with an identifiable external cause, like a cold virus, other factors play a role. Just as not everyone exposed to a cold virus will actually get a cold, not everyone who is exposed to a substance will become addicted to it. Although the etiological agent is necessary for the disease to develop, it is usually not enough in and of itself.

We're all exposed to millions of viruses and bacteria every day.

### Other Factors

- With heart disease, for example, the environment and lifestyle issues play important roles
- A person's genetic makeup also plays an important role



3.14

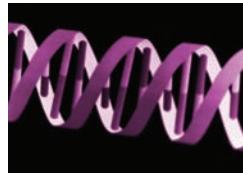
### Say:

Going back to our comparison of addiction and heart disease, we know that the environment and lifestyle issues play important roles in development of heart disease. In addition, a person's genetic makeup also plays an important role.

## Slide 3.15

### Genetics

- The same is true of addiction
- Example: As much as half of an individual's risk of becoming addicted to nicotine, alcohol, or other drugs depends on his or her genes



Source: National Institute on Drug Abuse. (2008). Genetics of Addiction: A Research Update From the National Institute on Drug Abuse. Accessed April 17, 2011 at <http://www.drugabuse.gov/tb/genetics.htm>

3.15

### Say:

The same is true of addiction. For example, we know from studies of identical twins that as much as half of an individual's risk of becoming addicted to nicotine, alcohol, or other drugs depends on his or her genes.<sup>1</sup>

We'll be looking more closely at genetic and other factors that influence addiction later in the module.

<sup>1</sup> U.S. National Institute on Drug Abuse. (2016). *Genetics and epigenetics of addiction: A research update from the National Institute on Drug Abuse*. Retrieved March 22, 2017, from <http://www.drugabuse.gov/publications/drugfacts/genetics-epigenetics-addiction>

### Pathogenesis

- The progression of a disease from its origins through its critical development and expected outcomes
- Most diseases, when untreated, follow a generally predictable path of symptom development and biological changes
- This is also true of addiction



3.16

### Say:

Another disease term is *pathogenesis*, or the progression of a disease from its origins through its critical development and expected outcomes. Most diseases, when untreated, follow a generally predictable path of symptom development and biological changes. This is also true of addiction. We'll be talking about the progression of addiction later in the module. For now, let's move on to look at the chronic disease part of the definition of addiction.

### Chronic Disease

- Long lasting
- Cannot be cured but can be managed

3.17

**Say:**

*Another element of the definition of addiction is chronic disease.*

**Teaching Instructions:** Underline the word chronic on the newsprint.

**Say:**

*Chronic disease is defined as one that is long lasting and that cannot be cured but can be managed.*

### Chronic Disease

- The brain shows distinct changes after substance use that can persist long after the substance use has stopped

*And*

- Like diabetes and hypertension, addiction:
  - Cannot be cured
  - Can be managed

3.18

### Say:

Addiction is defined as a chronic disease because the brain shows distinct changes after substance use that can persist long after the substance use has stopped.

And, like diabetes and hypertension, it cannot be cured, but it can be managed with pharmacotherapy and counseling intervention or with counseling intervention alone.

### Brain Disease

- Substances actually change the structure of the brain and how it works



3.19

**Teaching Instructions:** Underline the word brain on the newsprint.

**Say:**

Addiction is considered a brain disease because psychoactive substances change the structure of the brain and how it works.

These brain changes can be long lasting and can lead to addiction and the harmful behaviors associated with addiction.

### Relapsing Disease

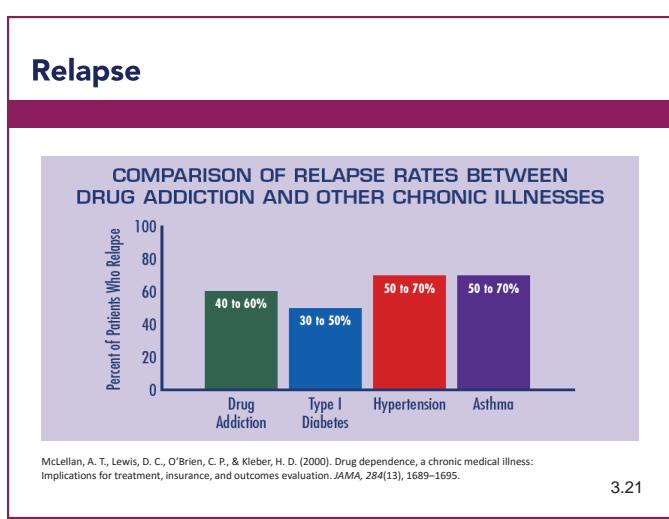
- Because of addiction's chronic nature, relapsing to substance use is not only possible but common

3.20

**Teaching Instructions:** Underline the word relapsing on te newsprint.

**Say:**

*Relapsing is included in the definition because, given the chronic nature of the addiction, relapsing to substance use is not only possible, but common. Relapsing is part of all chronic diseases, not just addiction.*



**Say:**

Relapse rates for substance use are similar to relapse rates for other chronic diseases such as diabetes and hypertension.<sup>1</sup>

As you can see on the slide, the relapse rate for drug addiction is between 40 and 60 percent. The rate for diabetes is just a bit lower, between 30 and 50 percent, and the rates for both hypertension (high blood pressure) and asthma are both even a bit higher than the rates for addiction, at between 50 and 70 percent.

<sup>1</sup> McLellan, A. T., Lewis, D. C., O'Brien, C. P., & Kleber, H. D. (2000). Drug dependence, a chronic medical illness: Implications for treatment, insurance, and outcomes evaluation. *JAMA*, 284(13), 1689–1695.

### Lapse and Relapse

- A lapse is a brief, often one-time, return to substance use
- A relapse is a complete return to using substances in the same way the person did before he or she quit
- A lapse can lead to relapse, but it doesn't always
- Relapse can be avoided

3.22

#### Say:

*It's important to distinguish between a lapse (sometimes called a slip) and a relapse.*

*A lapse is a brief, often one-time, return to substance use. For example, a person could run into an old friend who still uses. He or she might use with the old friend and then regret it right away. Sometimes lapses are triggered by stress, unhappiness, or fatigue.*

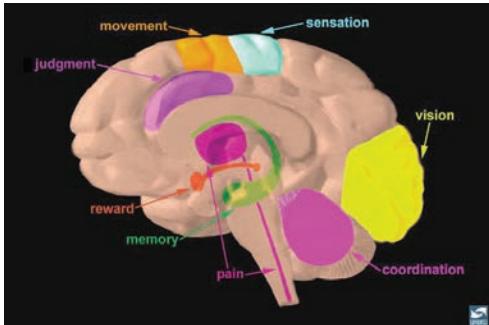
*A relapse is a complete return to using psychoactive substances in the same way the person did before he or she quit.*

*Lapses are fairly common in the early stages of recovery. A lapse can lead to relapse, but it doesn't always, and relapse can be avoided.*

*Before we start looking at how substances affect brain function, it is important to understand more about how the brain works normally.*

## Slide 3.23

### Introduction to the Brain



3.23

#### Say:

Different areas of the brain are responsible for different functions.

**Teaching Instructions:** If you have a pointer or laser, point to each area as you mention it. Otherwise, use the colors on the slide to call participants' attention to the various areas:

- Movement (orange);
- Sensation (blue);
- Vision (yellow);
- Coordination (pink);
- Pain (dark pink);
- Judgment (lightest pink)
- Memory (green); and
- Reward (dark orange).

#### Say:

We'll be talking much more about the reward area later today.

### Brain Communication

- The brain is a communications center consisting of billions of neurons or nerve cells

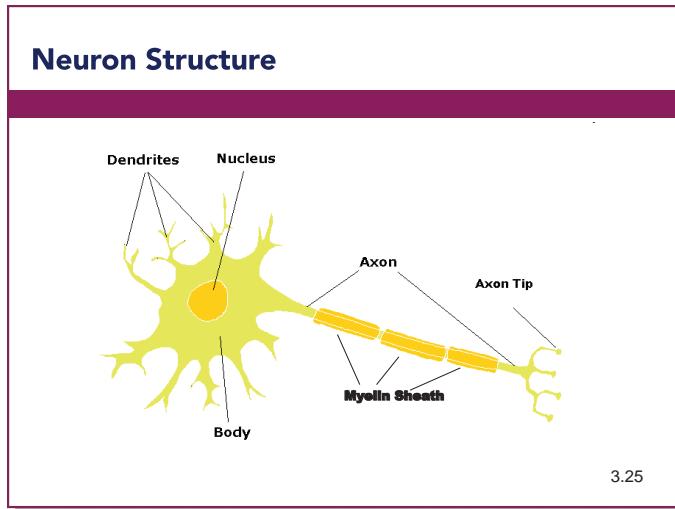


3.24

**Say:**

*The brain is a communications center consisting of billions of neurons or nerve cells.*

## Slide 3.25



**Teaching Instructions:** If you have a pointer or laser, point to the parts of the neuron as you describe them.

**Say:**

Each neuron consists of a cell body and nucleus, a tail called an axon, axon tips, and many dendrites (branch-like projections).

A neuron sends messages to other cells through its axon tips and receives messages from other cells at its receptor sites. The cell body directs all activities of the neuron.

Dendrites (the parts that look like tree branches) are short fibers covered with receptor sites. These receptor sites receive messages from other neurons and relay those messages to the cell body.

The axon is a long single fiber that sends impulses, or messages, from the cell body to dendrites of other neurons. The axon is covered with a myelin sheath; myelin insulates the axon and increases the speed at which impulses travel.

### Brain Communication

- Networks of neurons pass messages back and forth to different structures within the brain, the spinal column, and the peripheral nervous system

3.26

#### Say:

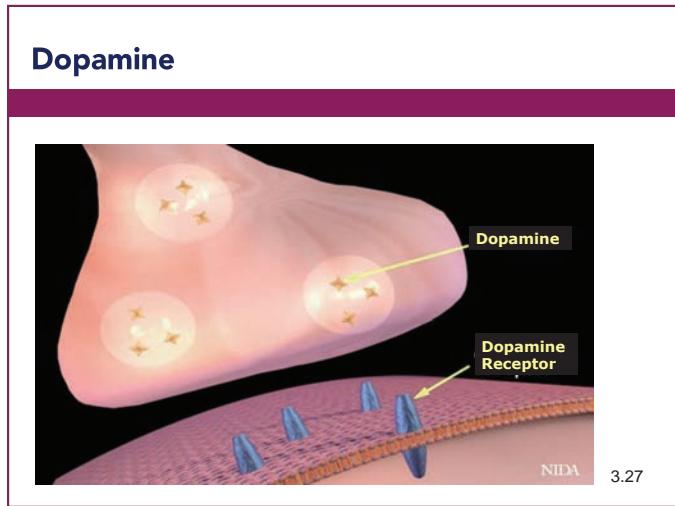
Networks of neurons pass messages back and forth to different structures within the brain, the spinal column (the central nervous system), and the peripheral nervous system. The peripheral nervous system includes all the nerves going to your arms, legs, hands, and feet—basically all of the nerve systems outside the central nervous system.

These nerve networks coordinate and regulate everything we feel, think, and do.

Each nerve cell in the brain sends and receives messages in the form of chemical impulses:

- These chemicals are called neurotransmitters.
- The brain has many different neurotransmitters.
- The sending neuron releases a neurotransmitter from its axon terminal across a space between neurons called a synapse or synaptic cleft.
- A neurotransmitter attaches to a specialized site on the receiving cell called a receptor.
- Once the receiving neuron gets and processes the message, it becomes a sender and passes the message to other neurons.

## Slide 3.27



**Say:**

*This slide uses the neurotransmitter dopamine to illustrate the communication between neurons:*

- The yellow dopamine is in the sending neuron.
- The blue dopamine receptors are on the receiving neuron.

### Brain Communication

- A neurotransmitter and its receptor operate like a key and lock

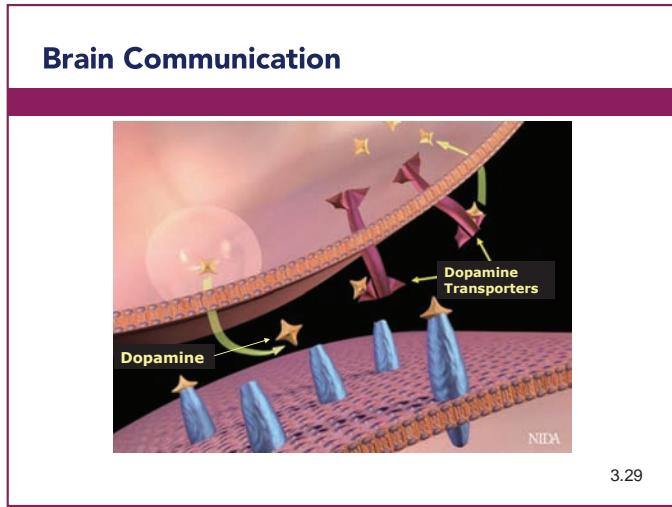


3.28

**Say:**

A neurotransmitter and its receptor operate like a key and lock. Each receptor will pass on the appropriate message only after interacting with the correct kind of neurotransmitter.

## Slide 3.29



**Teaching Instructions:** If you have a pointer or laser, point to each structure as you discuss it.

**Say:**

Once the dopamine (the little orange stars) is released from the sending cell, crosses the synapse, and makes contact with its receptors (the blue ovals), transporters (the dark pink structures) located on the sending cell recycle the dopamine, bringing it back into the cell that released it. This is called reuptake.

Reuptake stops the signal between neurons once the message has been communicated.



45 minutes

## Exercise: Brain communication

### Slide 3.30

#### Exercise: Normal Brain Communication

- Both correct and incorrect neurotransmitters move from sending neuron to receiving neuron
- Receiving neuron shakes hands with correct neurotransmitters, does not shake with incorrect neurotransmitters
- Transporters escort correct neurotransmitters back to sending neuron; incorrect neurotransmitters go on their own
- MOVE IN A CONTROLLED MANNER

3.30

**Teaching Instructions:** This exercise helps participants understand normal brain communication in a visual and physical way. The desired outcome is that participants perform the exercise in a calm, systematic, and flowing way. To achieve this, the trainer needs to ensure that participants listen carefully to instructions. Once participants are on their feet, the tendency is to chat; to counteract this, it can help to take each group of participants (neurons, transporters, correct neurotransmitters, incorrect neurotransmitters) aside separately to explain their roles.

#### Say:

You'll now have a chance to stretch your legs while you "become" brain communication. First, I need two volunteers to play neurons. Who wants to play?

**Teaching Instructions:** Ask each volunteer for permission to tie one of the sashes, scarves, or ropes around his or her waist, securing it in back to form a tail (or have the volunteers do it themselves). Point out the axon tail to the group.

#### Say:

Now I need three volunteers to play transporters.

**Teaching Instructions:** Give each volunteer one of the “Transporter” signs you created.

**Say:**

I’m going to give half of the rest of you a “Correct neurotransmitter” sign and half an “Incorrect neurotransmitter” sign.

**Teaching Instructions:** Give each remaining participant a “Correct neurotransmitter” or an “Incorrect neurotransmitter” signs.

As you move through the exercise, you may need to physically guide participants to the correct positions and demonstrate (e.g., holding your arms out, then wiggling your fingers as you tell the receiving neuron that his or her arms represent dendrites and hands represent receptor sites).

**Say:**

For this to work, I need everyone’s full attention. Each of you has a role to play. First, neurons: please stand about three meters apart, both of you facing in the same direction. The space between you is the synapse.

\_\_\_\_\_ [the first neuron], you are the sending neuron. Your tail is your axon. Your role is to send neurotransmitters to the receiving neuron.

\_\_\_\_\_ [the other neuron], you are the receiving neuron. Hold your arms straight out in front of you. Your arms are your dendrites. Now wiggle your fingers. Your fingers are your receptor sites. Your role is to make contact with each correct neurotransmitter and not to make contact with an incorrect neurotransmitter.

Correct neurotransmitters please stand together. Your role is to move from the sending neuron to the receiving neuron and shake the receiving neuron’s hand. Once you have shaken the receiving neuron’s hand, a transporter will escort you back to the sending neuron. You are to go quietly with the transporter.

Incorrect neurotransmitters please stand together. You will also move from the sending neuron to the receiving neuron and attempt to shake the receiving neuron’s hand. The receiving neuron will not allow contact, and you will simply drift quietly back to the sending neuron.

Transporters please stand on either side of the receiving neuron. Your role is to escort each correct neurotransmitter back to the sending neuron after each neurotransmitter makes contact with the receiving neuron. Once you’ve escorted one neurotransmitter back, return immediately to the receiving neuron and escort another correct neurotransmitter back.

Sending neuron, once a neurotransmitter returns to you, send it back out again.

Does everyone understand his or her role? Let's begin. All neurotransmitters stand behind the sending neuron. Sending neuron, start sending your neurotransmitters out. Neurotransmitters, start walking in an orderly and controlled manner. We'll repeat the cycle several times.

**Teaching Instructions:** When everyone has gone through the cycle two or three times, tell participants to stop.

**Say:**

This is what healthy, orderly brain communication looks like, calm and smooth. Of course, everything is much more complex than this, but this is the basic idea.

After we've taken a 15-minute break, we'll talk about how a psychoactive substance affects this normal communication. Neurons, hang on to your belts. Everyone else, hang on to your signs. You'll need them in the next exercise.



15 minutes

## Break

### Slide 3.31

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# Break

15 minutes

3.31

#### Say:

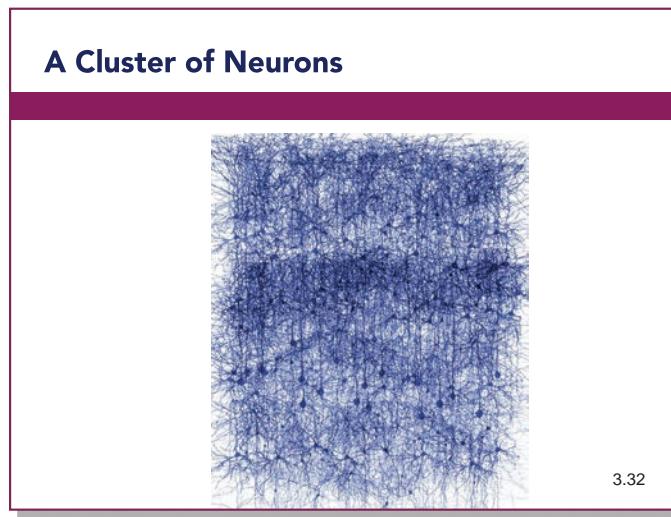
You did a great job with this. Next we will continue learning about the science of addiction, but first we'll take a 15-minute break.



15 minutes

## Presentation: The science of addiction, Part 2

### Slide 3.32

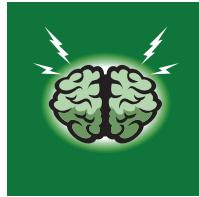


**Say:** As we continue our discussion, keep in mind that the human brain has billions of neurons, each one sending and receiving messages, and that each neuron has thousands of receptor sites.

*This slide is an actual picture of a tiny cluster of neurons. Just imagine the complex communication traffic going on in our brains at any given moment.*

### Brain Communication

- Psychoactive substances tap into the brain's communication system and mimic or disrupt the way nerve cells normally send, receive, and process information



3.33

#### Say:

*Psychoactive substances are chemicals that tap into the brain's communication system and mimic or disrupt with the way nerve cells normally send, receive, and process information.*

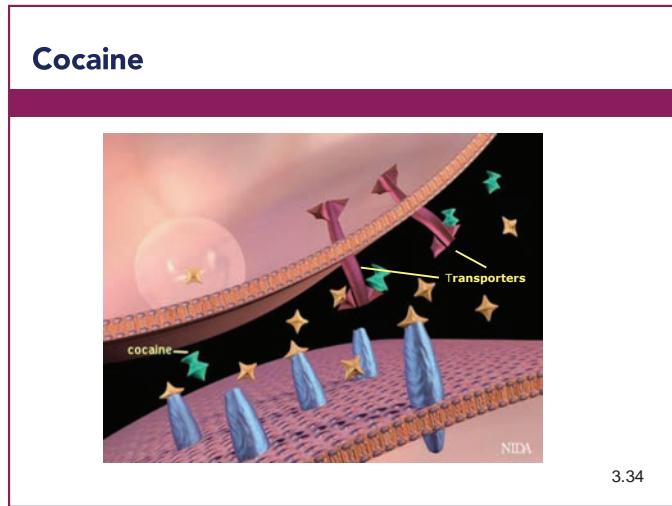
*Some psychoactive substances, like marijuana and heroin, can activate neurons because their chemical structure mimics that of a natural neurotransmitter. This similarity in structure fools receptors and allows the substances to lock onto and activate the nerve cells.*

*Meanwhile, the correct neurotransmitters are blocked from communicating with the neuron.*

*Although these substances mimic brain chemicals, they do not activate nerve cells in the same way as a natural neurotransmitter, and they transmit abnormal messages through the network.*

*Other psychoactive substances, like amphetamine or cocaine, can cause the nerve cells to release abnormally large amounts of natural neurotransmitters or prevent the normal reuptake of these brain chemicals. This disruption produces a greatly amplified message, ultimately disrupting communication channels.*

## Slide 3.34



3.34

**Teaching Instructions:** If you have a pointer or laser, point to each structure as you discuss it.

### Say:

This slide illustrates one way in which a substance (in this case, cocaine) can disrupt brain communication:

- Dopamine (the little orange stars) is released normally from the sending neuron and makes contact with its receptor site (blue ovals) as usual.
- But cocaine (green squiggles) has attached itself to the transporters, and the transporters cannot do their job of recycling the dopamine back into the sending cell.
- The dopamine keeps circulating and making contact with the receptors.
- Meanwhile, the communication is not turning off, because the dopamine has not been returned to the sending cell.
- So, dopamine continues to be released, and the receptors are flooded. This flooding produces cocaine's effects.



60 minutes

## Exercise: Psychoactive substances and brain communication

### Slide 3.35

#### Exercise: Drug-affected Brain Communication—Cocaine

- Correct neurotransmitters shake hands with receiving neuron
- Cocaine blocks transporters, not allowing them to take neurotransmitter back to sender, so...
- Neurotransmitters continue to try to make contact with receiving neuron, “mobbing” him or her

3.35

**Teaching Instructions:** The next two exercises help participants understand drug-affected communication in a visual and physical way. This time, though, the desired effect is chaos. You want participants to experience the difference between normal brain communication and drug-affected communication. Watch carefully, though, and don’t allow the chaos to get out of hand. Be sure to debrief the receiving neuron. He or she will most likely begin to feel anxious in the role.

#### Say:

Neurons put your belts back on. We’re now going to “be” drug-affected brains. First, I need three incorrect neurotransmitters to change their signs.

**Teaching Instructions:** Exchange the “Incorrect neurotransmitter” signs for the cocaine/heroin signs prepared earlier. Tell these participants that they will be starting with the “Cocaine” side.

#### Say:

Now, everyone take the same starting position he or she had for the last exercise.

**Teaching Instructions:** Allow a minute for everyone to get into place.

**Say:**

This time, we're going to demonstrate the effects of a stimulant substance, cocaine. Cocaine disrupts brain communication by interfering with the job of the transporters, allowing too much chemical to build up in the synapse.

This time, like before, the neurotransmitters will shake hands (or try to shake hands) with the receiving neuron. Unlike before, however, the transporters will not be escorting them back to the sending neuron because cocaine is not going to allow them to do their job. So, cocaine, your job is to block the transporters from the receiving neuron. And neurotransmitters, you need to keep trying to shake hands with the neuron, over and over. Go.

**Teaching Instructions:** Allow 20 seconds.

**Say:**

Neurotransmitters, be really persistent. Don't let the neuron alone.

**Teaching Instructions:** Allow 15 more seconds for the interactions. Keep a close eye on participants to ensure everyone remains safe. In one training session, the neurotransmitters actually took the neuron down to the floor; everyone laughed at the interaction. However, a danger exists for possible injury if the exercise is taken too seriously.

**Say:**

Stop! Neuron, how did it feel to have all the neurotransmitters mobbing you and not leaving you alone?

**Teaching Instructions:** The neuron will most likely say something about feeling overwhelmed, overstimulated, or anxious. The neuron's response should allow you to make the connection to the stimulant action of cocaine.

**Say:**

Receiving neuron, take a moment to collect your thoughts.

Can you see how this sort of chaos, occurring with billions of neurons, might affect a person's mood, thoughts, and behavior?

**Teaching Instructions:** Allow a minute for participants to comment.

### Exercise: Drug-affected Brain Communication—Heroin

- Transporters are out of the game
- Heroin people rush to receiving neuron, take his/her hands, do not let go! Stand tall, do not let neurotransmitters make contact with neuron
- Neurotransmitters, keep trying to shake hands with receiving neuron

3.36

#### Say:

In a minute we're going to act out the effects of another substance, heroin:

- Heroin's effects differ from cocaine's. Heroin mimics the action of neurotransmitters.
- The natural neurotransmitters endorphin and enkephalin are responsible for producing pleasure responses and blocking pain.
- These natural substances send their messages the same way as all neurotransmitters do—by making contact with their receptor sites. These particular sites are called opiate receptors.
- Opiate receptors recognize heroin and other opioids and allow the substances to attach.
- The opioid actually takes the place of the natural endorphin and enkephalin.
- However, the substance produces a stronger effect than that produced by the natural neurotransmitters, and there is no natural signal to stop communication.

Those of you with the cocaine signs please flip your sign to the heroin side. Transporters, please take your seats. You are out of this game!

Everyone else take the same starting positions as before.

Heroin people, when I say go, please rush to the receiving neuron and take his or her hand. Do not let go this time!

Neurotransmitters, you are the natural neurotransmitters, endorphin and enkephalin. You are going to try to connect with the neuron, but not aggressively. Ready, set, go!

**Teaching Instructions:** Allow 15 seconds.

**Say:**

*Heroin people, continue to hold the neuron's hand with your hand. Raise your other hand, stand tall, and act big and strong; do not allow the natural neurotransmitters near the neuron.*

**Teaching Instructions:** Allow another few seconds.

**Say:**

*Stop! Earlier, I said that there is no natural stop signal with heroin. You saw that the transporters, which usually create this stop signal by escorting neurotransmitters back to the sending neuron, were not even in the game this time. Because there is no interaction between the natural neurotransmitters and the receiving neuron, the transporters aren't triggered.*

*Heroin also produces a stronger effect than that produced by the natural neurotransmitters. Heroin's effect can be positive when it blocks pain signals effectively. However, it also depresses other functioning, leading to the depressant effects associated with heroin.*

Thanks for participating, everyone. You may take your seats.



30 minutes

## Presentation: Addiction and the reward circuit

### Slide 3.37

#### Parts of the Brain Most Affected by Substance Use

- The brain stem
- The cerebral cortex
- The limbic system

3.37

**Say:**

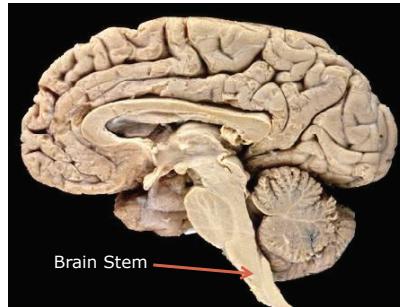
The way the brain communicates is the same throughout the brain. However, different parts of the brain are responsible for coordinating and performing specific functions, and certain areas of the brain are more affected by substance use than others.

The areas of the brain most involved in substance effects and addiction are the brain stem, the cerebral cortex, and the limbic system.

## Slide 3.38

### Brain Stem

Controls functions critical to life, such as heart rate, breathing, and sleeping



3.38

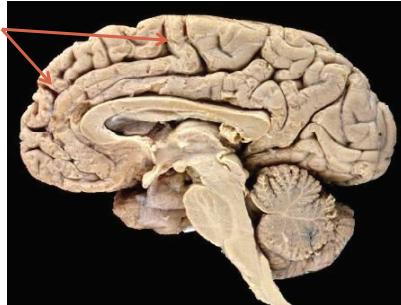
**Say:**

The brain stem controls functions critical to life, such as heart rate, breathing, and sleeping.

### Cerebral Cortex

Cerebral Cortex

Processes information from the senses; the thinking and judgment center of the brain



3.39

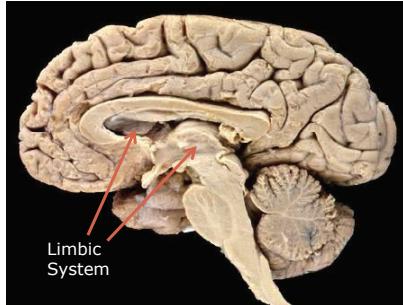
#### Say:

The front part of the cortex, the cerebral cortex or forebrain, processes information from our senses and is the thinking and judgment center of the brain. It powers our ability to think, plan, solve problems, and make decisions.

## Slide 3.40

### Limbic System

Contains the brain's reward circuit



3.40

#### Say:

The limbic system contains the brain's reward circuit. The limbic system links together a number of brain structures that control emotional memory and regulate the ability to feel pleasure. Feeling pleasure motivates us to repeat behaviors such as eating—actions that are critical to existence.

The limbic system is activated when we perform these activities and by substances of abuse. In addition, the limbic system is responsible for the perception of other emotions, both positive and negative, which explains the mood-altering properties of many psychoactive substances.

The limbic system is divided into areas that control specific functions. Different areas process information from our senses, enabling us to see, smell, feel, hear, and taste.

### Addiction and the Reward Circuit

- Our brains are wired to ensure that we repeat life-sustaining activities by associating those activities with pleasure or reward



3.41

**Say:**

The brain's reward circuit, in the limbic system, is critical to the development of addiction.

Our brains are wired to ensure that we repeat life-sustaining activities by associating those activities with pleasure or reward.

This pleasure or reward is largely related to the neurotransmitter dopamine. Certain survival activities, like eating and sex, stimulate production of dopamine.

### Addiction and the Reward Circuit

- The overstimulation of the reward circuit, which rewards our natural behaviors (eating, drinking, sexual behavior), produces the euphoric effects sought by people who use psychoactive substances and teaches them to repeat the behavior

3.42

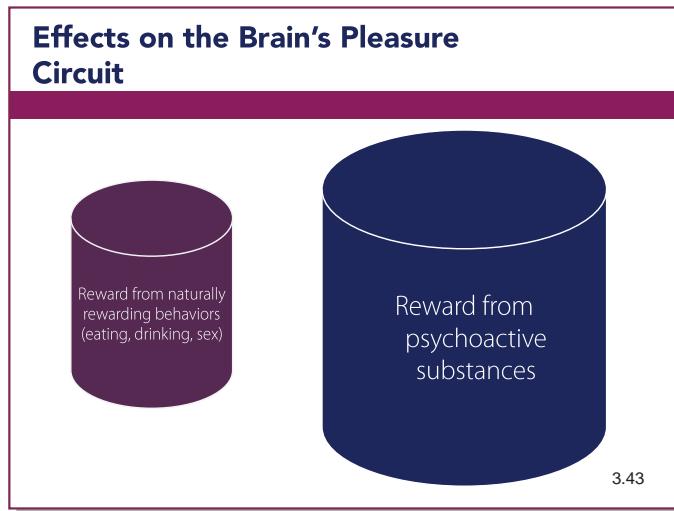
#### Say:

All psychoactive substances of abuse also directly or indirectly target the brain's reward system by flooding the circuit with dopamine and/or other neurotransmitters.

However, substance-induced rewards are much more powerful than natural rewards. When some substances of abuse are taken, they can release 2 to 10 times the amount of dopamine that natural rewards do. In some cases, this occurs almost immediately (as when substances are smoked or injected). The effects can also last much longer than those produced by natural rewards.

This overstimulation of the reward circuit produces the euphoric effects sought by people who abuse psychoactive substances and teaches them to repeat the behavior.

Whenever this reward circuit is activated naturally, the brain notes that something important is happening that needs to be remembered and teaches us to do it again and again, without thinking about it. Because psychoactive substances of abuse stimulate the same circuit, people learn to abuse substances in the same way.



**Say:**

The resulting effects on the brain's pleasure circuit dwarfs those produced by naturally rewarding behaviors such as eating and sex.

The effect of such a powerful reward strongly motivates people to take psychoactive substances over and over again.

This overstimulation of the reward system becomes even more complicated, leading the brain to try to compensate and reinstate balance.

### Addiction and the Reward Circuit

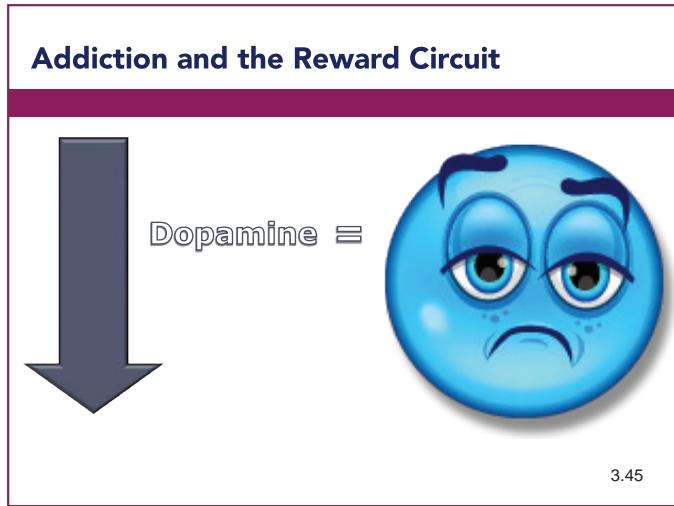
- The brain adjusts to the overwhelming surges in dopamine (and other neurotransmitters) by producing less dopamine or by reducing the number of receptors



3.44

#### Say:

The brain adjusts to the overwhelming surges in dopamine (and other neurotransmitters) by producing less dopamine or by reducing the number of receptors that can receive and transmit signals.

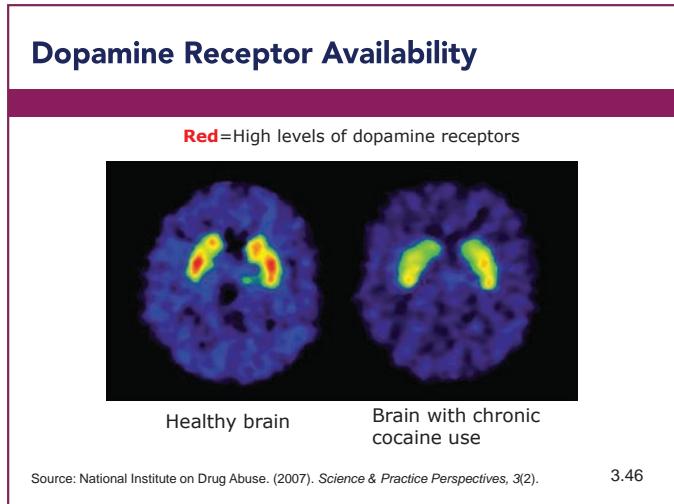


**Say:**

As a result, dopamine's impact on the reward system of the brain of a person who abuses substances can become abnormally low, and the ability to experience any pleasure induced by normal stimuli is reduced.

This is why the person who abuses substances eventually feels listless and depressed and cannot enjoy things that previously brought pleasure.

## Slide 3.46



**Say:**

The decrease in dopamine receptors can actually be seen on brain scans.

The slide shows PET scans of a healthy brain and the brain of a person who has used cocaine chronically. The scan illustrates how dopamine receptors have been depleted over time. The red spots in the healthy brain on the left are dopamine receptors. In the brain of the person who uses cocaine, on the right, hardly any dopamine receptors are visible.

### Tolerance

- Needing more of a substance to get the same effect

3.47

### Say:

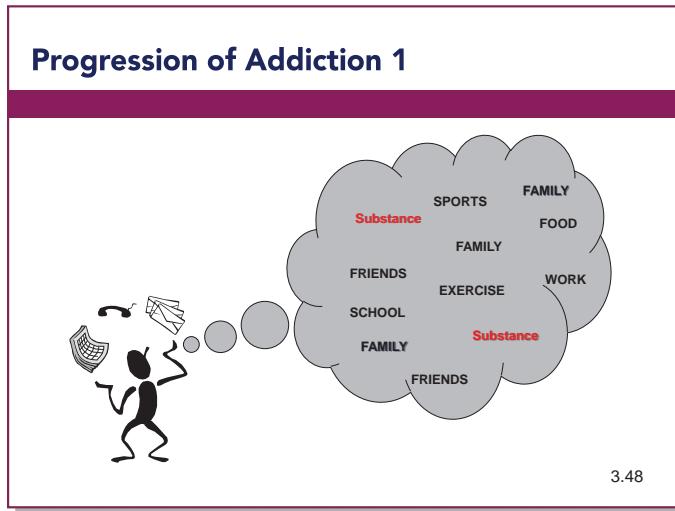
Now the person needs to take the substance just to bring the dopamine function back to normal. The person must take larger amounts of the substance than he or she first did to create the dopamine high—an effect known as tolerance.

Just as continued abuse may lead to tolerance (the need for more of the drug to produce the same effect), it may also lead to addiction, which can drive the person to seek out and take psychoactive substances compulsively. Substance addiction erodes a person's self-control and ability to make sound decisions, while sending intense impulses to take psychoactive substances.

Over time, the person spends less time thinking about other areas of his or her life and more time thinking about finding and using psychoactive substances.

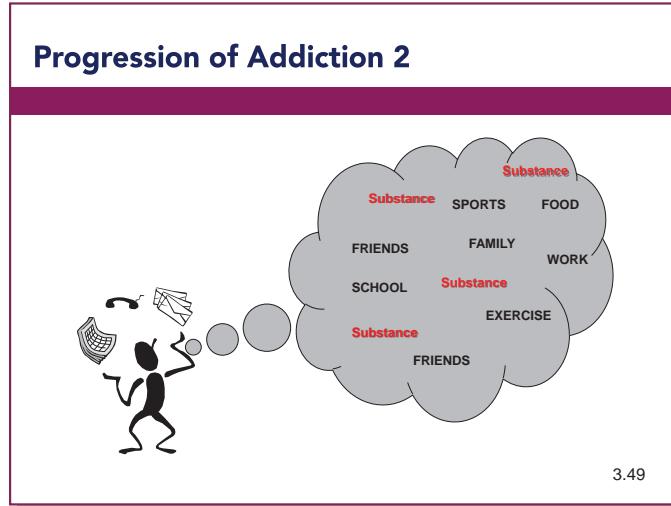
The next three slides illustrate the progression of use to addiction and how a person's focus in life gradually changes.

**Teaching Instructions:** If you have a pointer or laser, point to the pattern on each slide as you describe it.



**Say:**

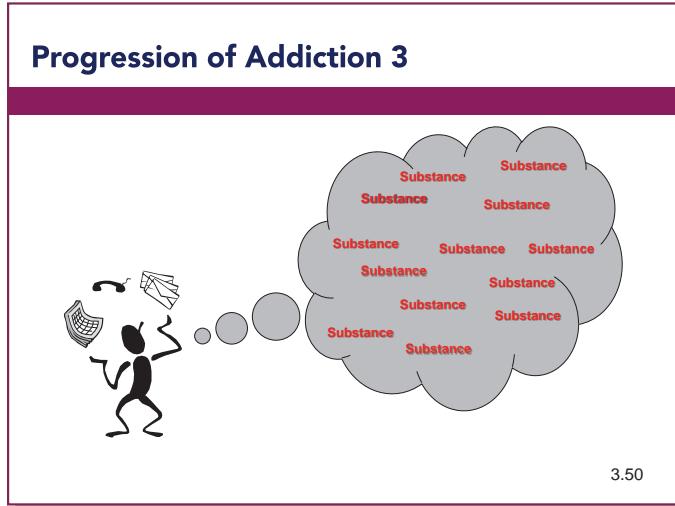
At first, the person is using a substance casually or experimentally (the recreational or circumstantial use talked about yesterday). Other interests remain intact and in balance.



**Say:**

As use progresses, the person begins thinking about the substance more and spending more time planning and obtaining substances (the intensified use talked about yesterday).

## Slide 3.50



**Say:**

Eventually, the person is spending most of his or her energy on finding and using substances (compulsive use or addiction).



60 minutes

## Lunch

### Slide 3.51

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# Lunch

60 minutes

3.51

**Say:**

Now, let's take 60 minutes for lunch. Please be back in the room at \_\_\_\_\_.



20 minutes

## Presentation: Vulnerability to addiction

### Slide 3.52

#### Why Do People Start Using Substances?

- Curiosity
- Because friends are doing it
- To feel good; to celebrate
- To feel better
- To do better

3.52

#### Ask:

Why do people start using psychoactive substances?

#### Say:

Think back to the stages of use we talked about yesterday.

**Teaching Instructions:** Facilitate a brief discussion, and acknowledge participants' responses.

**Say:**

People start using psychoactive substances for a variety of reasons:

- Curiosity;
- Because friends are doing it;
- To feel good and to celebrate;
- To feel better; and
- To do better.

Substances make us feel good. Most abused substances produce intense feelings of pleasure. An initial sensation of euphoria is followed by other effects, which differ with the type of substance used. For example, with stimulants such as cocaine, the high is followed by feelings of power, self-confidence, and increased energy. In contrast, the euphoria caused by opioids such as heroin is followed by feelings of relaxation and satisfaction.

Some people start because they want to feel better.

**Ask:**

Can you think of reasons a person might use a substance to feel better?

**Teaching Instructions:** Note responses on newsprint. Ensure responses include:

- To lessen feelings of depression or sadness;
- To feel less anxious;
- To reduce stress;
- To feel less tired;
- To lessen physical pain; and
- To feel more at ease socially.

**Say:**

Some people start using a substance because it was prescribed for a medical reason (usually pain).

Some people who suffer from social anxiety, stress-related disorders, and depression begin abusing substances to lessen feelings of distress. Stress can play a major role in beginning substance use, continuing substance abuse, or relapse in those recovering from addiction.

Some people start using psychoactive substances to do better.

**Ask:**

Can you think of reasons a person might use a substance to feel or do better?

**Teaching Instructions:** Note responses on newsprint. Ensure responses include:

- To improve concentration or be able to study longer;
- To feel “sharper”;
- To improve athletic performance; and
- To do more work in a shorter period of time or stay awake longer.

**Say:**

Some people feel pressure to improve their athletic or cognitive performance or believe that they will perform better or be better socially if they use a substance.

**Addiction**

**No one ever *plans*  
to become  
addicted!**

3.53

**Say:**

No matter what a person's reason for starting to use psychoactive substances, no one ever plans to become addicted.

People who use psychoactive substances are just trying it, once or a few times. Every person who has a substance use disorder starts out as an occasional user, and that initial use is a voluntary and controllable decision.

As time passes and use continues, a person can go from voluntary use to compulsive use.

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- Vulnerability to addiction differs from person to person

3.54

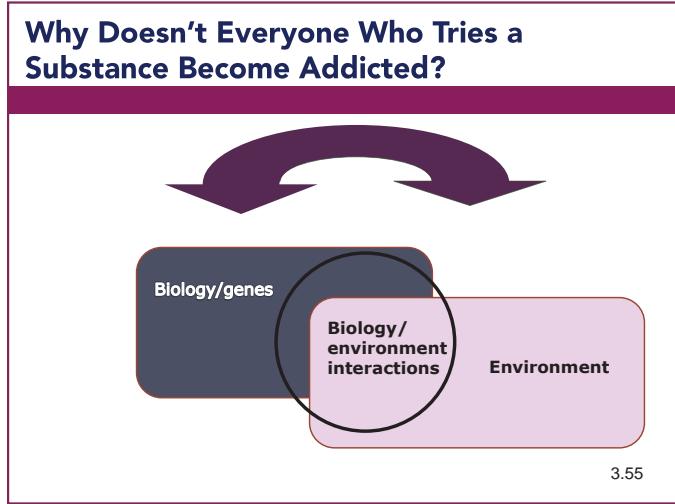
#### Ask:

Why doesn't everyone who tries a substance become addicted?

#### Say:

The reason is that vulnerability to addiction differs from person to person. In general, the more risk factors an individual has, the greater the chance that taking psychoactive substances will lead to abuse and addiction.

## Slide 3.55



**Say:**

No single factor determines whether a person will become addicted. The overall risk for addiction is affected by both biological and environmental factors and by the interaction between the two.

Gender or ethnicity affects risk, and individuals with mental disorders appear to be at greater risk of substance abuse and addiction than is the general population.

Age is also important. Although taking psychoactive substances at any age can lead to addiction, research shows that the earlier a person begins to use, the more likely he or she will progress to more serious abuse.

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- Between 40 and 60% of a person's vulnerability to addiction is genetic



Source: <http://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-abuse-addiction>.

3.56

#### Say:

Scientists estimate that genetic factors account for between 40 and 60 percent of a person's vulnerability to addiction, including the effects of environment on gene expression and function.<sup>1</sup>

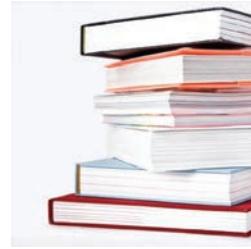
In fact, there is some evidence that even the likelihood a person will start using a substance may be largely affected by genetic factors. For example, a recent (and large) study found that use of marijuana and alcohol appeared to be affected by common genetic factors.<sup>2</sup>

<sup>1</sup>U.S. National Institute on Drug Abuse. (2014). *Drugs, Brain and Behavior: The science of addiction*. Retrieved on March 22, 2017 from <http://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-abuse-addiction>.

<sup>2</sup>Sartor, C.E., Grant, J.D., Bucholz, K.K., Madden, P.A.F., Heath, A.C., Agrawal, A., et al. (2010). Common genetic contributions to alcohol and cannabis use and dependence symptomatology. *Alcoholism: Clinical and Experimental Research*, 34(3), 545–554.

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- Each gene is like a book that stores information.
- A gene contains the information required to make a protein or ribonucleic acid (RNA), the building blocks of life



3.57

**Say:**

Genes are functional units that make up our DNA. Each gene is like a book that stores information. A gene contains the information required to make a protein or ribonucleic acid (RNA), the building blocks of life.

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- The DNA sequences of any two individuals are 99.9% identical
- However, that 0.1% variation is profoundly important

Source: <http://www.drugabuse.gov/publications/drugfacts/genetics-epigenetics-addiction>

3.58

#### Say:

Research on the human genome has shown that the DNA sequences of any two individuals are 99.9 percent identical. However, that 0.1 percent variation is profoundly important, contributing to visible differences, like height and hair color, and to invisible differences, such as increased risks for, or protection from, heart attack, stroke, diabetes, and addiction.<sup>1</sup>

<sup>1</sup>U.S. National Institute on Drug Abuse. (2016). *Genetics and epigenetics of addiction: A research update from the National Institute on Drug Abuse*. Retrieved March 22, 2017, from <http://www.drugabuse.gov/publications/drugfacts/genetics-epigenetics-addiction>

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- Most diseases, including addiction, are complicated
- Addiction arises from complex interactions among multiple genes and from genetic interactions with environmental influences

3.59

#### Say:

Some diseases, like sickle cell anemia or cystic fibrosis, are caused by an error in a single gene. However, most diseases, including addiction, are more complicated, arising from complex interactions among multiple genes and from genetic interactions with environmental influences.

For example, susceptibility to high blood pressure is influenced by both genetics and lifestyle, including diet, stress, and exercise. Research suggests that genes can also influence how a person responds to his or her environment, placing some individuals at higher risk than others.

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- Environmental factors play a role
  - Home
  - School
  - Neighborhood
  - Family and friends
  - Cultural customs and mores

3.60

#### Say:

Let's look at some of the environmental factors that influence development of addiction. These factors include conditions at home, at school, at work, or in the neighborhood.

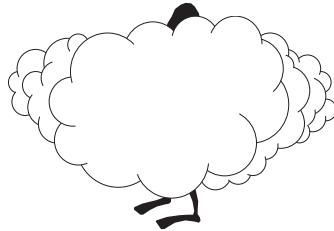
Parents or older family members who abuse psychoactive substances or who engage in criminal behavior can increase children's risks of developing substance problems.

Friends and acquaintances have the greatest influence during adolescence, but they can influence use at any age. Lack of family or other social support, poor social skills, traumatic experiences, and similar factors also increase a person's risk of addiction.

Cultural factors play a role as well. If a particular culture strongly discourages use of substances, the rate of addiction may be lower. However, if substance use is an integral part of cultural celebrations, there may be few disincentives for a person to start and continue use.

### Why Doesn't Everyone Who Tries a Substance Become Addicted?

- How a substance is used is a factor
  - Smoking or injecting a substance increases its addictive potential



3.61

#### Say:

How a substance is used is also a factor. Smoking or injecting a substance increases its addictive potential. Both smoked and injected substances enter the brain within seconds, producing a powerful rush of pleasure.

However, this intense high can fade within minutes, taking the person using the substance down to lower than normal levels. It is a stark contrast, and scientists believe that this low feeling drives individuals to repeated substance use to recapture the high, the pleasurable state.



60 minutes



## Small-group exercise: Case study review

### Slide 3.62

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#### Small-Group Exercise: Case Study

- Create a fictional case study that illustrates *progression* of addiction
- Include:
  - Behavior changes
  - Biological factors
  - Environmental factors
- Be creative!

3.62



You have heard a lot of new information today. To help you absorb and review what you have heard, we're going to do a group project.

I would like you to form three small groups. To make sure each group has a good mix of experience levels, please line up along the side of the room in the order of years or months of experience working with clients. Take a few minutes to talk to each other and try to work it out.

**Teaching Instructions:** Allow about 2 minutes, if necessary. While the group is lining up, put several pieces of newsprint and markers on each of three tables or areas of the room. Once the group is in a line, double check the order by asking each person how much experience he or she has. Rearrange people if needed, then ask participants to count off in sets of three. Direct groups one, two, and three to the tables or areas of the room you prepared with newsprint.

**Say:**

You will have 20 minutes to put together a fictional client case study that illustrates the progression of addiction and incorporates the behavior changes and the biological and environmental factors discussed today.

You may use any resources available, including the slides in your manuals, the posted newsprint pages, and your experiences with clients.

You may use newsprint and markers to create your case study, or you can role-play interviews or use skits or another method to convey the information. Be creative!

**Teaching Instructions:** Provide 10- and 2-minute warnings. After 20 minutes, ask each group to present its case study. Encourage the group to applaud each presentation and to comment or ask questions of each small group. Thank everyone for participating.



15 minutes

## Break

### Slide 3.63

---

# Break

15 minutes

3.63

#### Say:

You have done a great job of taking in a huge amount of information today! After we take a 15-minute break, we'll complete Module 4—Social Stigma and then wrap up for the day.



# **MODULE 4**

## **SOCIAL STIGMA**

Introduction to Module 4 .....	190
Presentation: Social stigma .....	192
Small-group exercise: Stigma role-play .....	203
Day 2 wrap-up and evaluation .....	206



## **Module 4 Preparation Checklist**

- Review Getting Started for general preparation information.
- Preview Module 4.
- Copy one Daily Evaluation form for each participant.

<b>Content and Timeline</b>		
<b>Activity</b>	<b>Time</b>	<b>Person Responsible</b>
Introduction to Module 4	10 minutes	
Presentation: Social stigma	25 minutes	
Small-group exercise: Stigma role-play	60 minutes	
Day 2 wrap-up and evaluation	20 minutes	

## **Module 4 Goal and Objectives**

### **Training goal**

To introduce the concept of social stigma and stimulate thinking about stigma and its possible effects.

### **Learning objectives**

Participants who complete Module 4 will be able to:

- Define social stigma;
- Describe the possible effects of stigma related to addiction; and
- Describe at least three strategies for counteracting stigma.



10 minutes

## Introduction to Module 4

### Slide 4.1

Colombo Plan Drug Advisory Programme (DAP)  
The Universal Treatment Curriculum for Substance Use Disorders (UTC)

Course 1  
Physiology and Pharmacology for  
Addiction Professionals

MODULE 4—SOCIAL STIGMA



Module 4 focuses on the concept of social stigma. Please turn to the Module 4 learning objectives in your manuals.

## Slide 4.2

### Module 4 Learning Objectives

- Define social stigma
- Describe the possible effects of stigma related to addiction
- Describe at least three strategies for counteracting stigma

4.2

#### Say:

By the time we complete this module, I hope you will be able to:

- Define social stigma;
- Describe the possible effects of stigma related to addiction; and
- Describe at least three strategies for counteracting stigma

Social stigma occurs in all cultures and communities and can differ among subgroups of a community. For example, multiple body piercings or tattoos may be socially desirable in some peer groups but may be stigmatized by others. Stigma is often based on unfounded fears, lack of education, or a lack of information about a particular person or group.

#### Ask:

What words come to mind when you hear the word “stigma”?

**Teaching Instructions:** Note responses on newsprint. Ensure responses include words like stereotype, ignorance, fear, prejudice, judgment, discrimination, and so on.



25 minutes

## Presentation: Social stigma

### Slide 4.3

#### Social Stigma

- Severe social disapproval of personal characteristics or beliefs that are against cultural norms

4.3



*Social stigma can be defined as severe social disapproval of personal characteristics or beliefs that are against cultural norms.<sup>1</sup>*

<sup>1</sup> Wikipedia. Retrieved October 24, 2010, from [http://en.wikipedia.org/wiki/Social\\_stigma](http://en.wikipedia.org/wiki/Social_stigma)

## Slide 4.4

### Social Stigma

- Social stigma often leads to status loss, discrimination, and exclusion from meaningful participation in society



4.4

#### Say:

*Social stigma often leads to status loss, discrimination, and exclusion from meaningful participation in society.*



#### Ask:

*How would you define discrimination?*

**Teaching Instructions:** Note responses on newsprint. Ensure responses include:

- Unfair treatment of a person or group on the basis of prejudice; and
- Taking some sort of action based on the group, class, or category to which a person belongs rather than based on individual merit.

**Say:**

*It's important to clarify that discrimination is not just having negative thoughts about a person based on his or her personal characteristics or group. Discrimination is active in some way and has an impact on the person being discriminated against.*

*For example, someone may think that a person who has a substance use disorder (SUD) is weak willed and is not to be trusted, even though the person is in recovery. That's prejudice, and it may or may not make an actual difference to the person in recovery.*

*However, an employer's refusal to hire a person in recovery based on the employer's negative thoughts about SUDs is an action that directly affects the person with an SUD; this is discrimination.*

**Ask:**

*In what ways have you noticed people with SUDs, even people in recovery, being discriminated against or excluded from participation in society?*

**Teaching Instructions:** Note responses on newsprint.

### Social Stigma

- Stigma can interfere with effective treatment:
  - A person who sees that addiction is stigmatized may feel shame and be reluctant to seek treatment
  - Social supports for recovery may not be adequate in a community that stigmatizes addiction

4.5

#### Say:

Stigma tends to arise when the true nature of a condition is not understood. Stigma can interfere with effective treatment of any disease, including substance use disorders (or SUDs). For example:

- A person who sees that addiction is stigmatized may feel shame and may be reluctant to seek treatment; and
- Social supports for recovery may not be adequate in a community that stigmatizes addiction.

People with addiction often have other conditions or experiences that also may be stigmatized, like HIV/AIDS, mental disorders, or a criminal record.

### Stigma Study

- Study participants reported that:
  - People treated them differently (60%)
  - Others were afraid of them (46%)
  - Some of their family members gave up on them (45%)
  - Some of their friends rejected them (38%)
  - Employers paid them a lower wage (14%)

Source: Luoma, J.B., Twohig ,M.P., Waltz, T., Hayes, S.C., Roget, N., Padilla, M, & Fisher, G. (2007). An investigation of stigma in individuals receiving treatment for substance abuse. *Addictive Behaviors* 32(7). 1331-1346.

4.6

### Say:

The Center for Addictions and Substance Abuse Technologies at the University of Nevada in the United States did an interesting study on the effects of stigma. The study included 197 people who were in outpatient or residential treatment for SUDs. Participants reported high levels of actual or perceived stigma, including feeling that:

- People treated them differently after finding out about their drug use (60 percent);
- Others were afraid of them when finding out about their drug use (46 percent);
- Some of their family members gave up on them after finding out about their drug use (45 percent);
- Some of their friends rejected them after finding out about their drug use (38 percent); and
- Employers paid them a lower wage after finding out about their drug use (14 percent).

Those who injected drugs and those who had been in treatment multiple times reported more perceived stigma than those not in those categories, even from those within treatment systems.

Source: Luoma, J.B., Twohig ,M.P., Waltz, T., Hayes, S.C., Roget, N., Padilla, M, & Fisher, G. (2007). An investigation of stigma in individuals receiving treatment for substance abuse. *Addictive Behaviors* 32(7). 1331-1346.

### Stigma

- Stigma negatively affects recovery rates

4.7

#### Say:

This study also found that there was a direct relationship between the degree to which people felt stigmatized and whether they started and maintained recovery. In fact, the study suggested that people with SUDs tended to become more dependent as a result of stigma.

### Stigma

- The stress of hiding an SUD either out of shame or to avoid stigmatizing responses from others can cause other medical and social problems and make it harder to seek treatment



4.8

### Say:

Stigma is a difficult aspect of addiction because it makes it harder for individuals and families to deal with their problems and get the help they need. People who are stigmatized often internalize the hate stigma carries, transforming it to shame. The stress of hiding an SUD either out of shame or to avoid stigmatizing responses from others can cause other medical and social problems.

The authors of the University of Nevada study found that people who feel they have to cope with an addiction alone (what they called "secrecy coping") had poorer mental health that appeared to decrease their chances of recovery.

Secrecy coping also can make accessing treatment more difficult. For example, fear often prompts adolescents to hide a substance problem from their parents. When parents do find out, stigma can make them feel guilty and ashamed. They then may find it harder to fight for the care and resources their child urgently needs.

## Slide 4.9



### Say:

Treatment systems and helpers are not immune from prejudice. Treatment professionals also may unthinkingly stigmatize clients with the language they use.

## Slide 4.10

### Language of Stigma

- User
- Abuser
- Intravenous drug user (IDU)
- Junkie
- Addict

4.10

#### Say:

Think about these terms, commonly used to describe clients and their problems:

- User;
- Abuser;
- Intravenous drug user (IDU);
- Junkie; and
- Addict.

#### Ask:

In what way might these terms be stigmatizing?

**Teaching Instructions:** Ensure that responses include some variation of the following:

- They make no distinction between the person and the disease, denying the dignity and individuality of the person.
- They imply a permanency to the condition of having an SUD, leaving no room for a change in status.
- They are frequently used as slurs by the general public.

## Slide 4.11

---

### Language of Stigma

- Clean
- Dirty

4.11

#### Say:

Similarly, terms like “clean” and “dirty” reinforce stigma. When clean is used to describe someone in recovery, it implies that he or she once was dirty. When used to describe positive or negative drug tests, the words clean or dirty associate what is a symptom of a disease (drug use) with filth.

### Language: People First

- Person with a substance use disorder
- Person who injects drugs
- Person with addiction

4.12

#### Say:

One way to avoid using stigmatizing language is to remember to put people first:

- Person with a substance use disorder;
- Person who injects drugs; or
- Person with addiction.

The terms "client" and "patient" describe a person's current status in treatment, not who they are as individuals.



60 minutes



## Small-group exercise: Stigma role-play

### Slide 4.13

---

#### Small-Group Exercise: Stigma Role-Play

- Use the case study you created in the last exercise as a base
- Develop a 3-4 minute role-play that illustrates stigma

4.13

#### Say:

We're going to do a role-play that focuses on stigma. Please form the same small groups you were in before the break.

**Teaching Instructions:** Allow the groups to get settled before continuing.

**Say:**

Using the case study you created for the last exercise, develop a 3- to 4-minute role-play that illustrates the concept of stigma. You may change your case study to fit this assignment, but you have only 10 minutes to develop the role-play.

**Teaching Instructions:** Provide 5- and 2-minute warnings. After 10 minutes, ask each group to present its role-play. After each presentation:

- Ask the person playing the “stigmatized” person how the role-play felt for him or her;
- When the “stigmatized” person has finished sharing, tell him or her to literally “shake off” the role; and
- Ask the training group for comments or questions.

### Stigma

- Can lead to self-fulfilling predictions that those who are addicted cannot recover or play positive and productive social roles
- Can lead to discrimination (e.g., employers not wanting to hire anyone who is in recovery)
- Can lead those who are addicted to feel hopeless and reluctant to seek help

4.14

### Say:

In summary, the perception that those with addiction are somehow less than human, or worthless, can:

- Lead to self-fulfilling predictions that those who are addicted cannot recover or ever play positive and productive social roles;
- Lead to discrimination (e.g., employers not wanting to hire anyone who is in recovery); and
- Lead those who are addicted to feel hopeless and reluctant to seek help.

There are no easy ways to address stigma, but being aware of the effects of stigma and working to recognize and deal with negative thoughts and feelings toward those who are addicted can lead to more positive outcomes for individuals and, eventually, society.

Counselors who work with people with addiction are not immune to feelings of prejudice. Honestly evaluating your own attitudes and feelings can help you work more effectively with your clients.



20 minutes



## Day 2 wrap-up and evaluation

### Slide 4.15

#### Reflective Exercise

- Are you surprised by anything you've heard?
- Are you having trouble accepting a chronic disease model of addiction?
- Has your thinking changed in any way?
- What are some ways you might be able to fight stigma in your community?

4.15

#### Say:

We have covered a lot of materials today. To wind up the day, please take the next 15 minutes to write in your journals, considering the questions on the slide:

- Are you surprised by anything you've heard?
- Are you having trouble accepting a chronic disease model of addiction?
- Has your thinking changed in any way?
- What are some ways you might be able to fight stigma in your community?

We'll take time tomorrow morning to talk about your reflections. However, you won't have to share anything you don't want to so be as honest as possible. Start writing!

**Teaching Instructions:** After 4 minutes, quietly pass out the Daily Evaluation forms. When all participants have a form, ask them to complete the form before leaving for the day.

Select newsprint pages to save and post for review tomorrow.

# MODULE 5

## SUBSTANCES OF ABUSE: CHARACTERISTICS AND CONSEQUENCES

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Exercise: Characteristics, effects, and health consequences of specific drugs, Part 2—Presentation .....	224
Presentation: Consequences of drug use.....	225
Small-group exercise: Consequences of drug use .....	235
Small-group exercise: Drug use in the community.....	238
Presentation: Family systems—Functional and dysfunctional .....	241



## **Module 5 Preparation Checklist**

- Review Getting Started for general preparation information.
- Preview Module 5, including Resource Page 5.1.
- Post the newsprint sheets from the Module 2 Exercise: General effects of psychoactive substances on mood, thoughts, and behavior.
- Write the following on four small pieces of paper:
  - Opioids (Narcotics) (Resource Page 5.1);
  - Stimulants (Resource Page 5.2);
  - Depressants (Resource Page 5.3); and
  - Hallucinogens (Resource Page 5.4).
- Fold the papers, and place them in a container.
- Write the following on four small pieces of paper:
  - Dissociative Anesthetics (Resource Page 5.5);
  - Inhalants (Resource Page 5.6);
  - Marijuana and Hashish (Resource Page 5.7); and
  - Mira (Khat) (Resource Page 5.8);
- Fold the papers, and place them in a different container.
- If possible, obtain a hanging mobile to use for demonstration.

<b>Content and Timeline</b>		
<b>Activity</b>	<b>Time</b>	<b>Person Responsible</b>
Welcome, concert review, and reflection review	45 minutes	
Introduction to Module 5	5 minutes	
Presentation: Review of drugs of abuse	10 minutes	
Small-group exercise: Characteristics, effects, and health consequences of specific drugs, Part 1—Preparation	45 minutes	
<b>Break</b>	<b>15 minutes</b>	
Exercise: Characteristics, effects, and health consequences of specific drugs, Part 2—Presentations	60 minutes	
Presentation: Consequences of drug use	20 minutes	
Small-group exercise: Consequences of drug use	30 minutes	
<b>Lunch</b>	<b>60 minutes</b>	
Small-group exercise: Drug use in the community	45 minutes	
Presentation: Family systems—Functional and dysfunctional	30 minutes	

## **Module 5 Goals and Objectives**

### **Training goals**

- To provide a comprehensive overview of psychoactive drugs of abuse;
- To describe short- and long-term physiological and psychological effects of psychoactive substances;
- To provide a chance to discuss drug use in participants' communities; and
- To provide a comprehensive overview of effects of drug use on the family.

### **Learning objectives**

Participants who complete Module 5 will be able to:

- Describe at least three characteristics of drugs in each substance class;
- Discuss the individual, family, and community consequences of substance use;
- Discuss substance use in the community; and
- Discuss the effects of drug use on the family.

**Teaching Instructions:** Begin playing music and start the concert review presentation about 5 minutes before the session begins. Make sure the concert review loops for 10 minutes into the session.

As participants enter the room, ask them to watch the concert review and look at the posted newsprint pages for review.

After 10 minutes, switch to the Module 5 PowerPoint presentation and start the session.



45 minutes

## Welcome, concert review, and reflection review

### Slide 5.1

The slide is titled "Course 1" in a red box at the top right. Below it, the title "Physiology and Pharmacology for Addiction Professionals" is displayed. The main content area has a dark blue background with the title "MODULE 5—SUBSTANCES OF ABUSE: CHARACTERISTICS AND CONSEQUENCES" in white. At the bottom, there are three logos: the United States flag, the seal of the U.S. Department of Health and Human Services, and the seal of the Colombo Plan, which includes the text "PLANNING PROSPERITY TOGETHER".



Good morning, everyone. Welcome to the last day of training for Course 1.

### Reflective Exercise-Part 1

- Are you surprised by anything you've heard?
- Are you having trouble accepting a chronic disease model of addiction?
- Has your thinking changed in any way?

5.2

#### Say:

*Yesterday afternoon you completed a writing assignment. Would anyone like to share something he or she wrote about the first three questions?*

**Teaching Instructions:** Facilitate a brief discussion, using additional questions such as:

- Can anyone else relate to what \_\_\_\_\_ just said?
- What do others think about that?
- How would you answer that question?

### Reflective Exercise: Part 2

- What are some ways you might be able to fight stigma in your community?

5.3

#### Say:

Thank you for sharing. Let's move to the question about fighting stigma in your community.



#### Ask:

What ideas did you come up with?

**Teaching Instructions:** Facilitate discussion, trying to elicit concrete ideas. Have the co-trainer write participants' ideas on newsprint. If possible, type the list up, and give a copy to each participant at the end of the day.



5 minutes

## Introduction to Module 5

### Slide 5.4

#### Module 5 Introduction

- What are the characteristics of psychoactive substances?
- What are the consequences of substance use?
- How does substance use and addiction affect a person's family?

5.4



*This morning we will first review several concepts introduced in Module 2 and then focus on answering these questions:*

- *What are the characteristics of specific psychoactive substances?*
- *What are the consequences of substance use?*
- *How does substance use and addiction affect a person's family?*

*We'll also spend some time looking at the patterns of substance use in your communities.*

### Module 5 Learning Objectives

- Describe at least three characteristics of drugs in each substance class
- Discuss the individual, family, and community consequences of substance use
- Discuss substance use in the community
- Discuss the effects of drug use on the family

5.5

#### Say:

The learning objectives for Module 5 are to:

- Describe at least three characteristics of drugs in each substance class;
- Explain the individual, family, and community consequences of substance use;
- Describe substance use in the community; and
- Recognise the effects of drug use on the family.



10 minutes

## Presentation: Review of drugs of abuse

### Slide 5.6

#### What Is a Drug?

- *In medicine:* Any substance with the potential to prevent or cure a disease or the potential to enhance physical or mental well-being



5.6

#### Say:

We've been using the general term "substance" so far in this training. Let's take a minute to look at the word "drug," a term commonly used.

The meaning of the word drug differs depending on perspective. For example, in medicine the term drug refers to any substance with the potential to prevent or cure a disease or the potential to enhance physical or mental well-being.

### What Is a Drug?

- *In pharmacology:* Any chemical agent that alters the biochemical or physiological processes of body tissues or organisms



5.7

#### Say:

In pharmacology (the study of drugs and drug action), the term refers to any chemical agent that alters the biochemical or physiological processes of body tissues or organisms.

### What Is a Drug?

- *In common usage:* A substance that is used for nonmedical (e.g., recreational) reasons



5.8

#### Say:

*In common usage, the term drug often refers to a substance that is used for nonmedical (e.g., recreational) reasons.*

#### Ask:

*Thinking back to Module 2, what is a psychoactive drug?*



**Teaching Instructions:** Validate correct responses. Make sure participants define psychoactive drug as any drug that can alter mood, thoughts, and behavior.

Point out the posted newsprint pages from Module 2, and remind participants of a few items they said for each heading:

- In what ways could a drug alter someone's mood?
- In what ways could a drug alter someone's thoughts?
- In what ways could a drug alter someone's behavior?

### Drug Classification—Review

- Stimulants—*increase* the activity of the CNS
- Depressants—*decrease* the activity of the CNS
- Opioids—*decrease* the activity of the CNS
- Hallucinogens—produce a spectrum of vivid sensory *distortions* and markedly alter mood and thinking

5.9

#### Say:

To review, the way a drug affects a person depends in part on the type of drug and how it affects the central nervous system (CNS):

- Stimulants increase the activity of the CNS. They tend to increase heart rate and breathing and offer a sense of excited euphoria.
- Depressants and opioids (also called narcotics) decrease the activity of the CNS. They tend to decrease heart rate and breathing and offer a relaxed, sometimes sleepy, sense of well-being or euphoria.
- Hallucinogens produce a spectrum of vivid sensory distortions and markedly alter mood and thinking.

### Psychoactive Substances

- Some psychoactive drugs do not neatly fit into the basic classes:
  - Cannabis (marijuana and hashish)
  - Miraa (Khat)
  - Inhalants (solvents, gases, nitrites)
  - Dissociative anesthetics (PCP, ketamine)

5.10

### Say:

Remember, that the classification system is intended as a general guide and that not all drugs fit neatly into the four classes. For example:

- Cannabis (marijuana, hashish);
- Miraa (khat);
- Inhalants (solvents, gases, nitrites); and
- Dissociative anesthetics (PCP, ketamine).



45 minutes



## Small-group exercise: Characteristics, effects, and health consequences of specific drugs, Part 1—Preparation

### Slide 5.11

#### Exercise: Characteristics, Effects, and Health Consequences of Drugs

- Draw a human figure on each piece of newsprint
- Using as few words as possible, indicate the routes of administration, effects, side effects, and medical consequences of the assigned drug or drug class on one of the figures
- Be prepared to tell participants the street names of the drugs commonly used in your area
- On the other figure, indicate withdrawal symptoms (if any)

5.11

#### Say:

We're going to be doing small-group presentations on the characteristics, effects, and health consequences of drugs in each drug class. Please form four small groups.

**Teaching Instructions:** The purpose of the exercise is to have small groups "teach back" to the training group in a way that is more engaging and memorable than a lecture.

Allow a few minutes for groups to form. Have available the two containers containing the pieces of paper you labeled Opioids (Resource Page 5.1) and so on. While groups are forming, have the co-trainer give each group four sheets of newsprint.

Ask one representative from each group to select one piece of paper from each container.

**Say:**

Each group now has two assignments for this exercise: one drug class and one drug from the other category. The effects and consequences of different types of stimulants are very similar to one another, as are the effects and consequences of different types of opioids, depressants, and hallucinogens. The drugs classified as “other” are very different from one another and need to be addressed separately rather than by class.

Using the Resource Pages noted on your pieces of paper, you will prepare presentations on your two topics. The members of each group can either work together on the two topics, or half the members of the group can work on one topic and the other half can work on the other topic.

You have four sheets of newsprint, two for each topic. To prepare each presentation:

- Draw a human figure on each piece of newsprint. Artistic talent is not required. A stick figure will do, but be creative.
- Using as few words as possible, indicate the routes of administration, effects, side effects, and medical consequences of the assigned drug or drug class on one of the figures. Draw pictures, cut shapes out of colored paper, use different colors, and so on to make your presentation interesting.
- Be prepared to tell participants the street names of the drug commonly used in your area.
- On the other figure, indicate withdrawal symptoms (if any).

You have 45 minutes to prepare your presentations, starting now.

**Teaching Instructions:** Provide 15-, 5-, and 2-minute warnings.



15 minutes

## Break

### Slide 5.12

---

# Break

15 minutes

5.12

**Say:**

*Before we begin the presentations, let's take a 15-minute break.*



60 minutes

## Exercise: Characteristics, effects, and health consequences of specific drugs, Part 2—Presentations

### Say:

*Let's begin the presentations. Who would like to start?*

**Teaching Instructions:** Encourage participants to ask questions or add information after each presentation. To ensure time for questions and comments, limit each group's presentation to 15 minutes. As each group finishes, ask it to move its presentation materials to another part of the wall to make room for the next group.

### Say:

*Thank you for great presentations! Please stay in your groups; we'll be doing another group exercise shortly.*



20 minutes

## Presentation: Consequences of drug use

### Slide 5.13

### Consequences of Drug Use

■ Individuals may suffer a range of consequences:

- Medical
- Legal
- Social
- Economic

5.13



In addition to the physical consequences of specific drugs discussed in the presentations, drug use and addiction have major consequences for the individual, family, community, and society.

Individuals with addiction may suffer a range of consequences:

- Medical;
- Legal;
- Social; and
- Economic.

**Say:**

Your group presentations discussed the medical problems most likely to occur with each drug. In addition:

- Individuals who have addiction are more likely to be injured in fights or accidents of all kinds.
- Drug use may trigger or make mental disorders worse, particularly in individuals with specific vulnerabilities.
- Heavy drug use often compromise a person's immune system, making him or her more susceptible to disease.
- People who use drugs are much more likely than those who don't to contract major diseases such as HIV/AIDS, hepatitis, tuberculosis, and other infectious diseases.
- This is true even if the person does not inject drugs, because the inhibition-lowering and negative cognitive effects of drug use often lead to increased risk-taking behavior.

### Differing Physiological Responses: Women

- Compared with men, women tend to:
  - Develop physical problems related to substance use sooner
  - Escalate to addiction more quickly (“telescoping”)



5.14

#### Say:

Studies have demonstrated that women are more sensitive to the consumption and long-term effects of alcohol and drugs than are men. Women experience an effect called “telescoping,” meaning they tend to progress faster than do men from initial use to addiction and to substance-related consequences, even when using a similar or smaller amount of substances.<sup>1</sup>

For example, women who drink are at greater risk than are men for developing cirrhosis and other medical problems, and they develop these problems sooner than do men. One reason for this appears to be that women have less water in their bodies than do men, and they metabolize alcohol in a way that leads to higher blood alcohol levels with comparable intake and body weight.<sup>1</sup>

<sup>1</sup>U.S. Center for Substance Abuse Treatment. (2009). Substance abuse treatment: Addressing the specific needs of women. Treatment Improvement Protocol Series 51. HHS Publication No. (SMA) 09-4426. Rockville, MD: Substance Abuse and Mental Health Services Administration.

### Differing Physiological Responses: Women

- Much of the research on women has been done regarding alcohol consumption
- Newer research suggests that there is a similar pattern of rapid progression with illicit drugs

Source: Hernandez-Avila, C. A., Rounsvville, B. J., & Kranzler, H. R. (2004). Opioid-, cannabis- and alcohol-dependent women show more rapid progression to substance abuse treatment. *Drug and Alcohol Dependence*, 74(3), 265.

5.15

#### Say:

Much of the research on women has been done regarding alcohol consumption, but newer research suggests that there is a similar pattern of rapid progression with illicit drugs. For example, a study of women in treatment found that women had used opioids and cannabis for fewer years than men did before entering treatment. The women also reported more severe psychiatric, medical, and employment complications than did men.<sup>1</sup>

<sup>1</sup>Hernandez-Avila, C. A., Rounsvville, B. J., & Kranzler, H. R. (2004). Opioid-, cannabis- and alcohol-dependent women show more rapid progression to substance abuse treatment. *Drug and Alcohol Dependence*, 74(3), 265.

### Differing Physiological Responses: Women

- Studies have traditionally used male subjects
- Significant gaps remain in knowledge of physiological effects across the continuum of a woman's life

5.16

**Say:**

*Why this seems to be the case is still largely unknown. Because studies have traditionally used male subjects, significant gaps remain in knowledge of the physiological effects across the continuum of a woman's life.*

### Fetal Effects

- Effects generally range from low birth weight to developmental behavioral and cognitive deficits



5.17

**Say:**

Fetal effects generally range from low birth weight to developmental behavioral and cognitive deficits.

### Fetal Effects

- Cocaine and marijuana exposure: Impaired attention, language, and learning skills; behavioral problems
- Methamphetamine exposure: Fetal growth restriction, decreased arousal, and poor quality of movement in infants
- Heroin exposure: Infants born addicted; low birth weight—an important risk factor for delayed developmental

5.18

#### Say:

*Impaired attention, language, and learning skills, as well as behavioral problems, have been seen in children exposed to cocaine and marijuana.*

*Methamphetamine exposure has been associated with fetal growth restriction, decreased arousal, and poor quality of movement in infants.*

*Use of heroin during pregnancy may result in infants born addicted and needing to go through painful withdrawal. Heroin exposure also has been associated with low birth weight—an important risk factor for delayed development.*

### Differing Physiological Responses: Youth

- Early use of drugs increases a person's chances of more serious drug abuse and addiction



5.19

**Say:**

*Early use of drugs increases a young person's chance of more serious drug abuse and addiction.*

### Differing Physiological Responses: Youth

- Young people also are particularly vulnerable to physical and social problems related to substance use

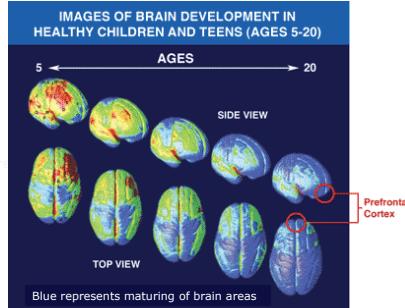


5.20

#### Say:

Young people also are particularly vulnerable to physical and social problems related to substance use. Some of this vulnerability is due to the effects of substances on a still-maturing brain and body.

### Differing Physiological Responses: Youth



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5.21

#### Say:

Drug and alcohol abuse can disrupt brain function in areas critical to motivation, memory, learning, judgment, and behavior control. All of these functions continue to mature into adulthood. So, it is not surprising that teens who abuse alcohol and other drugs often have family and school problems, poor academic performance, and health-related problems (including mental health). They may also be involved in the criminal justice system.

One of the brain areas still maturing during adolescence is the prefrontal cortex—the part of the brain that enables us to assess situations, make sound decisions, and keep emotions and desires under control.

The fact that this critical part of an adolescent's brain is still a work in progress puts them at increased risk for making poor decisions (such as trying drugs or continuing drug abuse).

Introducing drugs while the brain and body are developing may have profound and long-lasting consequences.



30 minutes



## Small-group exercise: Consequences of drug use

### Slide 5.22

#### Small-Group Exercise: Consequences of Drug Use

- For your assigned area (legal, family, social, or economic), list on newsprint consequences that:
  - Directly affect the individual
  - Affect the individual's family, friends, co-workers, and significant others

5.22



*Physical consequences are not the only way in which drug abuse and addiction affect people's lives. We're going to take a look at the variety of consequences of substance use and addiction.*

*Please form four groups for an exercise.*

**Teaching Instructions:** Give each group two sheets of newsprint, and assign each group one life area: legal, family, social, or economic.

**Say:**

You have 10 minutes to make a list of possible consequences in one of four life areas: legal, family, social, and economic. For your group's assigned life area, consider consequences that:

- Directly affect the individual who is using substances; and/or
- Affect the individual's family, friends, co-workers, and others.

Consider individuals of all ages: youth, adults, and older adults.

Thinking about the situations of particular clients you have known may help you with the task. Now, label your newsprint to indicate your assigned life area and begin making your lists.

**Teaching Instructions:** Provide 5- and 2-minute warnings. After 10 minutes, tell participants to pass their newsprint pages to the group on their right. Tell the groups that they will have an additional 5 minutes to add anything they think the first group might have missed.

After 5 minutes, have the groups again pass the pages to the next group, and allow another 5 minutes. Continue until all groups have read and had an opportunity to contribute to each area.

Ask the groups to tape the newsprint pages on the wall.

**Say:**

You have listed many, many ways in which drug abuse and addiction affect individuals and their families. Now, in what ways do you think drug use affects society as a whole?

**Teaching Instructions:** Note responses on newsprint. Ensure that responses include:

- Decreased productivity;
- Costs of incarceration and residential treatment centers;
- Increased medical costs;
- Social and financial costs of drug-related crime;
- Increased spread of infectious disease; and
- High rates of HIV/AIDS around the world.



60 minutes

## Lunch

### Slide 5.23

# Lunch

60 minutes

5.23

#### Say:

We're going to break for lunch. After lunch, we will talk about the consequences of use and addiction for families.



45 minutes



## Small-group exercise: Drug use in the community

### Slide 5.24

#### Drug Use in the Community

- You probably know more about drugs and drug use in your communities than you realize
- Drug use is common among all ages
- Drug use is not limited to one socioeconomic group

What drugs are the people *you work with most likely to use?*



5.24



You probably know more about drugs and drug use in your communities than you realize. Drug use is common among many ages and socioeconomic groups.



What drugs are the people you work with most likely to use?

**Teaching Instructions:** Listen to a few answers.

**Say:**

Please form six groups. You will have 15 minutes to discuss drug use in your communities. Each group will focus on one specific demographic group:

- Adolescent girls and young women;
- Adolescent boys and young men;
- Adults older than age 65;
- Adult men;
- Adult women; or
- Members of subgroups (sex workers, adults who are homeless, and so on).

**Teaching Instructions:** Give each group two sheets of newsprint, and assign each group one of the demographic categories.

### Small-group Exercise: Drug Use and Demographic Groups

- For your assigned group, list:
  - Drugs commonly used
  - Routes of administration
  - Special problems

5.25

**Teaching Instructions:** This exercise helps participants apply the information they learned to the special populations they work with.

#### Say:

Although there are many commonalities among demographic groups, specific groups often have particular drug use patterns. Please list on newsprint the specific drugs, the drug class, common routes of administration, special problems, and anything else you deem important about the use of the drugs for your assigned group, starting now.

**Teaching Instructions:** Provide 5- and 2-minute warnings. After 15 minutes, ask each group to present its report. After each group presents, ask whether anyone in the large group has anything to add to the report or has any questions.

#### Say:

Are there other demographic groups with different characteristics, different drug use patterns, and different special concerns that should be noted?



30 minutes

## Presentation: Family systems—Functional and dysfunctional

### Slide 5.26

#### Family System: Definition

- A family system is the unique interaction and relationship of family members to one another



5.26

#### Say:

As we learned in the previous section, the use of drugs affects other people besides the user. This section focuses on families and how they operate—both when they function well and when they do not.

Addiction is both an individual disease and a family disease.

A family system is defined as the unique interaction and relationship of each family member to one another. Families are perhaps the most complex social system we have.

### Elements of Families

- Hierarchy
- Roles
- Rules—spoken and unspoken
- Patterns of behavior
- Interlocking relationships



5.27

#### Say:

All families have the following elements:

- *Hierarchy;*
- *Roles;*
- *Rules—spoken and unspoken;*
- *Patterns of behavior; and*
- *Interlocking relationships.*

### Functional Families

- Operate out of love, care, respect, and concern
- Create and maintain order
- Seek balance:
  - Skills to solve problems and make decisions
  - Everyone cooperates and works together
- Have clear and noticeable boundaries

5.28

#### Say:

What is considered a functional family system may vary significantly from culture to culture, but in general functional families:

- Operate out of love, care, respect, and concern for their members;
- Create and maintain order through consistent behavior;
- Seek balance when order is upset by crisis, using skills to solve problems and make decisions (everyone cooperates and works together); and
- Have clear and noticeable boundaries from parent to child and sibling to sibling.

### Functional Families

- Rules, standards, and guidelines are consistent; everyone knows what to expect
- Adults are close, share authority, and support each other
- A single parent is confident and in charge
- Members share feelings, negotiate, and disagree without fear of rejection or losing the relationship
- Members offer growth opportunities for other members

5.29

### Say:

Functional families:

- Have rules, standards, and guidelines for behavior that are explained and consistently enforced for as long as they are deemed appropriate and developmentally necessary (everyone knows what to expect);
- Have adults who are close, share authority (though not always equally), and support one another (a single parent is confident and in charge);
- Have members who share feelings, negotiate, and disagree without fear of rejection; and
- Offer growth opportunities for members.

However, when a family member has an addiction problem, functional family characteristics change, making the family system dysfunctional.

### Dysfunctional Families

- Do not acknowledge that problems exist
- Do not talk about problems
- Learn not to express emotion and needs or to take care of needs
- Learn how to become survivors

5.30

#### Say:

*This dysfunction is often characterized by members of the family system who:*

- Do not acknowledge that problems exist;
- Do not talk about problems;
- Learn not to express emotion and needs or to take care of needs; and
- Learn how to become survivors.

### Dysfunctional Families

- Become detached and lose trust
- Suffer a loss of individual identity
- Experience interruptions in emotional development, especially for children and youth
- Focus nearly all attention on the member who is addicted

5.31

**Say:**

Dysfunctional families also often:

- Become detached from one another and lose trust;
- Suffer a loss of individual identity;
- Experience interruptions in emotional development, especially for children and youth; and
- Focus nearly all attention on the member who is addicted.

### Substance Use Disorders in the Family System

- When a family member has a substance use disorder, the family system changes because all of its elements and functions are affected



5.32

#### Say:

When a family member develops a substance use disorder, the family system changes because all of its elements and functions are affected. To adjust, the family system has to compensate in some way, which changes the family dynamics and household rules.

**Teaching Instructions:** If you have a mobile, demonstrate by holding it up and pulling on one element. Note that all the other elements must also move.

#### Say:

Often, the adjustments a family makes include:

- A breakdown of skills for communicating, solving problems, and making decisions; and
- Changes in rulemaking as the family system breaks down, often becoming chaotic.

Rules become rigid, and family members may be encouraged:

- Not to talk about what they see, hear, or know;
- To ignore what they are feeling; and
- Not to trust anyone or what anyone says or does, including themselves.

**Say:**

When these types of adjustments are made:

- Healthy, appropriate boundaries are no longer working;
- It becomes unclear who is in charge or in control;
- Children can take on parenting roles; and
- Focus is on individual survival within the family system.

In the West, these types of adjustment have been called codependency.

### Codependency Roles

- Enabler
- Hero
- Scapegoat
- Mascot
- Lost child

5.33

#### Say:

The codependency literature describes the following roles that families adopt as the result of a member's addiction:

- Enabler or caretaker;
- Hero;
- Scapegoat;
- Mascot; and
- Lost child.

### Enabler

- Protects the person with an addiction
- Makes excuses
- Tries to keep everyone happy
- “Everything is fine here”
- Underlying feelings of inadequacy, fear, and helplessness



5.34

### Say:

The enabler (or caretaker) is the family member who tries to protect the person with an addiction by making excuses for his or her behaviors. The enabler tries to keep everyone happy and the family in balance. He or she attempts to present to people outside the family that “everything is fine here.” The enabler tends to have underlying feelings of inadequacy, fear, and helplessness.

## Slide 5.35

### Hero

- Ignores the problem
- Really tries to be successful, to be good, to help the family
- Underlying feelings of fear, guilt, and shame



5.35

### Say:

The hero is the one who needs to make the family, and family members, look good. The hero tends to ignore the problem and presents things in a positive manner as if the roles within the family did not exist. The hero tries to be successful, to be good, and to help the family. The hero tends to have underlying feelings of fear, guilt, and shame.

### Scapegoat

- Rebels, makes noise, diverts attention
- Is sometimes seen as the problem
- Underlying feelings of shame, guilt, and emptiness



5.36

### Say:

The scapegoat often acts out in front of others. He or she tends to rebel, make noise, and divert attention from the person who is addicted and that person's need for help. The scapegoat sometimes comes to be seen as the problem in the family. The scapegoat tends to have underlying feelings of shame, guilt, and emptiness.

### Mascot

- Is the entertainer
- Diverts attention
- Makes inappropriate, sometimes hurtful jokes
- Underlying feelings of embarrassment, shame, and anger



5.37

### Say:

The mascot's role is that of the entertainer. He or she will often make inappropriate jokes about the family to divert attention. Although he or she brings humor to the family, it is often hurtful humor. The mascot can sometimes hinder addiction recovery. The mascot tends to have underlying feelings of embarrassment, shame, and anger.

### Lost Child

- Is a silent family member
- Is careful not to make problems
- Tries not to be noticed
- Underlying feelings of guilt, loneliness, neglect, and anger

5.38

### Say:

The lost child is a silent family member and is careful not to make problems. He or she gives up his or her own needs and simply tries not to be noticed. The lost child tends to have underlying feelings of guilt, loneliness, neglect, and anger.

### Ask:

How do these role descriptions fit with family structures in your culture? Have you seen this behavior in families you know or have worked with? Have you noticed any exceptions to these roles?

**Teaching Instructions:** Provide the example of a person taking on different roles at different times or in different circumstances.

### What Happens to the Family When Substance Use Stops?

- Stress and loss of emotional security occur from letting go of old roles and responsibilities, no matter how destructive the role
- Uncertainty develops from loss of familiar roles and behaviors
- Family members may have difficulty living joyfully, despite loss of suffering

5.39

#### Say:

*When substance use in the family stops, the family will need to adjust:*

- Stress and loss of emotional security occur from letting go of old roles and responsibilities, no matter how destructive the roles.
- Uncertainty develops because of the loss of familiar roles and behaviors.
- Family members may have difficulty living joyfully, despite the end of suffering.

### Families

Families need help, too!

5.40

#### Say:

Family members often need significant help, both as individuals and as a family. Course 2: Treatment for Substance Use Disorders—The Continuum of Care for Addiction Professionals will address some of the ways in which families can be helped.

In our next and final module, you will have a chance to reflect on everything you've learned in these 3 days of training.

# Resource Page 5.1: Opioids<sup>1</sup> (Narcotics)

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## Origin

Opioids/narcotics are natural, semisynthetic, or synthetic derivatives of the opium poppy:

- Opium is the semidried sap of the plant and is 100 percent natural.
- Two of the most prevalent alkaloids (plant compounds with psychoactive properties) in opium are *morphine* and *codeine*.
- Morphine and codeine can be isolated and processed as separate drugs.
- Heroin is a semisynthetic opioid, meaning that it can be synthesized from opium.
- Other semisynthetic opioids are *hydrocodone*, *oxycodone*, and *hydromorphone*.
- Synthetic opioids are not derived from natural opium but are manufactured to work in similar ways.
- Methadone, fentanyl, and meperidine are synthetic opioids.

Heroin is the most widely abused opioid. Although heroin was originally developed in an attempt to find an effective painkiller with less addictive potential than morphine, it turned out to be five to eight times more powerful than morphine and to act more quickly, making it even more addicting.

## Appearance of Opioids

Opium and heroin are generally sold in tar-like black or brown chunks or blocks. Heroin often is sold as a white or brown powder. Morphine is available as a liquid (for injecting) or tablet. Most synthetic opioids are available as tablets or capsules. Methadone is available in tablets or an oral liquid.

## Modes of Administration of Opioids

Opioids can be taken in a variety of ways:

- Opium is most commonly smoked.
- Heroin can be smoked, inhaled (either as a powder or liquefied in a nasal spray bottle), or injected (intramuscularly or intravenously).
- Other opioids are more commonly taken orally, in tablet form.

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

- When used medically for pain relief, some opioids are administered via slow-release capsules or patches. OxyContin, a slow-release capsule, has become a major problem in some areas of the United States. People break open the capsule, dilute the contents, and inject the solution. Patches are sometimes abused by cutting them open and eating or injecting the contents.

How long an opioid high lasts depends on the specific drug. Some opioids are short acting, and some are long acting. The effects of heroin usually last 3 to 4 hours.

### ***Medical Uses of Opioids***

The primary medical use for opioids is for pain relief. Opioids also can be used to treat severe diarrhea and coughing.

### ***"Desirable" Effects of Opioids***

- Physical pain relief
- Emotional numbness
- Euphoria, followed by a sense of well-being
- Calm drowsiness or sedation
- Alternating wakefulness and drowsiness
- Dreaminess

### ***Side Effects of Opioids***

- Nausea and vomiting
- Confusion
- Slowed breathing
- Constipation
- Blurred or double vision
- "Pinpoint" pupils
- Dizziness, faintness, floating feeling, light-headedness
- Uncoordinated muscle movements, rigid muscles
- Rash, hives, itching
- Facial flushing
- Dry mouth
- Weakness

- Agitation
- Headache
- Appetite loss
- Memory loss

### **Possible Medical Consequences With Chronic Opioid Use**

- Infection of the heart lining and valves
- Liver or kidney disease
- Pulmonary complications, including various types of pneumonia, resulting from the poor health of the user as well as from the depressing effects on respiration
- Intestinal complications resulting from chronic constipation
- Consequences directly associated with injecting, including abscesses and collapsed veins
- Spontaneous abortion

Babies born to women who are opioid addicted may have low birth weight and/or go through withdrawal, with symptoms lasting 5 to 8 weeks. Unlike adults, babies can die from opioid withdrawal.

Overdose is a major risk of opioid abuse. Signs and symptoms of opioid overdose include:

- Cold, clammy skin
- Weak, floppy muscles
- Fluid in the lungs
- Greatly lowered blood pressure and heart rate
- “Pinpoint” or dilated pupils
- Stupor
- Coma
- Slow and difficult breathing
- Bluish-colored fingernails and lips from reduced oxygen intake
- Muscle cramping

Overdose is a particular risk when opioids are combined or are used with other depressant drugs (including alcohol).

## **Withdrawal Syndrome of Opioids**

In addition to intense drug craving, opioid withdrawal symptoms include:

- Restlessness
- Severe muscle, joint, and bone pain
- Muscle cramping
- Sweating and running nose
- Rapid pulse
- Coughing and yawning
- Dilated pupils
- Insomnia
- Diarrhea and vomiting
- Fever and chills with severe shivering and goose bumps
- Kicking movements

Symptoms can begin as early as a few hours after the last drug administration. Major withdrawal symptoms peak between 48 and 72 hours after the last dose and typically subside after about a week. Some individuals may show persistent withdrawal symptoms for months. Withdrawal from opioids is usually not medically dangerous for adults (unless the person is in very poor health) but is extremely painful. For this reason, medically managed withdrawal using medications to control symptoms is more likely to be successful than "just quitting."

## Resource Page 5.2: Stimulants<sup>1</sup>

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### Origin

Stimulant drugs derive from both natural and synthetic sources:

- The cocaine alkaloid is found in the leaves of the coca bush that grows primarily in the Andes Mountains of Peru.
- Amphetamines are commercially manufactured; they include Adderall, Dexedrine, and biphetamine. Although not as strong, some amphetamine-like drugs have similar effects and are abused to some extent: methylphenidate (Ritalin), fenfluramine, pemoline, and phentermine.
- Methamphetamine is also synthetic. It is commercially manufactured (Desoxyn) but is more typically synthesized in clandestine laboratories.
- MDMA (3,4 methylenedioxymethamphetamine), also known as ecstasy, is a synthetic, psychoactive drug that is chemically similar to both the stimulant methamphetamine and the hallucinogen mescaline, but it is generally classified as a stimulant.

### Appearance of Stimulants

Commercially manufactured amphetamines are available in tablet or capsule form. Cocaine is typically available as a white powdery substance but can be processed into "crack cocaine" (a mixture of cocaine, water, and baking soda that is made into a paste and dried); the hard mixture is then broken up into "rocks," which are smoked. Methamphetamine is typically white or yellowish, odorless, and bitter tasting and is in the form of crystalline powder or chunks.

### Modes of Administration of Stimulants

Stimulants are taken:

- Orally
- By snorting (inhaled nasally after crushing tablets)
- By smoking
- By injecting after dissolving crushed tablets in water

Amphetamine effects generally last from 4 to 6 hours.

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

Cocaine is taken:

- By inhaling powder (snorting)
- By injecting
- By smoking

Cocaine is a relatively short-acting drug, and faster absorption usually means shorter duration of action. The high from inhaling cocaine may last 15 to 30 minutes, but the high from smoking it may last only 5 to 10 minutes. To sustain the high, a person who uses cocaine has to administer the drug again. For this reason, cocaine is sometimes abused in binges—taken repeatedly within a relatively short period, at increasingly higher doses.

Methamphetamine is taken:

- Orally (rarely)
- By smoking
- By inhaling nasally
- By injecting

Methamphetamine effects usually last 4 to 6 hours. When smoked, its effects may last 8 hours or longer.

Ecstasy is taken orally.

### ***Medical Uses of Stimulants***

Amphetamines are most often used to treat narcolepsy (uncontrolled and sudden episodes of sleep), obesity, and attention deficit/hyperactivity disorder (ADHD).

Cocaine is a topical anesthetic, sometimes used to numb nasal passages when inserting a breathing tube, to numb the eye or throat during surgery, and to deaden the pain of chronic sores.

Methamphetamine has been used as a treatment for ADHD and obesity.

There are no medical uses for ecstasy.

### ***"Desirable" Effects of Stimulants***

- Euphoria
- Increased energy and endurance
- Talkativeness
- Increased mental alertness
- Feelings of happiness and power

- Release of social inhibitions
- Unrealistic feelings of cleverness, great competence, and power
- Enhanced sensations of sight, sound, and touch
- Enhanced sexual desire and performance (at low doses)

Those who take ecstasy also experience:

- Heightened feelings of emotional warmth and increased empathy for self and others
- Distortions in time perception
- Heightened sensation
- Visual distortions and hallucinations

### ***Side Effects of Stimulants***

- Dilated pupils
- Increased body temperature, heart rate, and blood pressure
- Headaches
- Restlessness and insomnia
- Anxiety and irritability
- Abdominal pain and nausea
- Decreased appetite
- Increased aggression and violence
- Formication: sensations in the skin that feel like crawling bugs
- Decreased sexual response (at higher doses)
- Feelings of paranoia

*From intranasal inhaling:*

- Loss of the sense of smell
- Chronic nosebleeds
- Problems with swallowing
- Chronically runny nose

*From smoking:*

- Thirst
- Coughing
- Hoarseness

### **Possible Medical Consequences With Chronic Stimulant Use**

- Acute cardiovascular or cerebrovascular emergencies, such as a heart attack or stroke, which may cause sudden death
- A temporary state of full-blown paranoid psychosis
- Severe dental problems, including cracked teeth from extreme jaw clenching when high and severe tooth decay resulting from dry mouth and acidic effects of cocaine or methamphetamine trickling into the mouth from nasal ingestion
- Severe bowel gangrene from ingesting cocaine as a result of reduced blood flow
- Severe allergic reactions at injection sites
- Serious respiratory complications, including pneumonia, hemorrhage, and respiratory failure from smoking
- Facial and body sores from scratching, sometimes leading to infections
- Extreme weight loss and malnutrition
- Strokes
- Heart infections
- Lung disease
- Kidney damage
- Liver damage
- When used by a pregnant woman, increased risk of:
  - Placental separation and hemorrhage
  - Premature birth
  - Birth defects, including cardiac defects, cleft palate, club foot
  - Fetal brain hemorrhage and stroke
- Overdose risk:
  - Seizures
  - Severely elevated body temperature

- Stroke
- Cardiac incidents

Chronic methamphetamine abuse significantly changes how the brain functions. Noninvasive brain imaging studies have shown alterations in brain activity that are associated with reduced motor performance and impaired verbal learning. Severe structural and functional changes also are seen in areas of the brain associated with emotion and memory.

Some of these changes persist long after methamphetamine abuse is stopped, and some reverse after sustained periods of abstinence (e.g., 2 years).

Ecstasy has its own medical risks:

- Severe dehydration (especially when mixed with alcohol), leading to heatstroke, muscle damage, and kidney failure
- Seizures
- In high doses, can interfere with the body's ability to regulate temperature
- On rare but unpredictable occasions, can lead to a sharp increase in body temperature, which can result in liver, kidney, and cardiovascular system failure and death
- Increased heart rate and blood pressure can cause serious cardiovascular problems in susceptible individuals
- Can interfere with its own metabolism (breakdown within the body), allowing potentially harmful levels to be reached by repeated MDMA administration in short periods
- Research in animals indicates that MDMA can be harmful to the brain. One study in nonhuman primates showed that exposure to MDMA for only 4 days caused damage to serotonin nerve terminals that was evident 6 to 7 years later.

### ***Withdrawal Syndrome of Stimulants***

Withdrawal symptoms depend on the dosage and length and frequency of use. Withdrawal from stimulants can be very unpleasant but is not inherently dangerous. A typical withdrawal pattern is as follows:

*Immediately after a binge*

- Extreme lack of energy and motivation and need for sleep
- Depression

*Within a few days of abstinence*

- Symptoms lessen
- Energy returns

*Starting within 5 to 7 days of abstinence and lasting for weeks or months*

- Severe drug cravings
- Energy level drops again
- Anhedonia (lack of feelings of pleasure)
- Increased depression
- Loss of motivation, initiative
- Vivid, unpleasant dreams
- Insomnia
- Psychomotor agitation
- Increased appetite

## Resource Page 5.3: Depressants<sup>1</sup>

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### Origin

The depressant category includes barbiturates (i.e., Nembutal, phenobarbital, seconal), benzodiazepines (i.e., Valium, Xanax, rohypnol), methaqualone (i.e., Quaalude, Sopor), Gamma-hydroxybutyrate (GHB), and alcohol.

Barbiturates were originally synthesized to treat anxiety, insomnia, and seizure disorders but are now rarely used for those purposes as newer medications have taken their place. Methaqualone also was used to treat insomnia but is rarely used now.

Chemically synthesized as an alternative to barbiturates, benzodiazepines were found to be more effective at lowering anxiety than barbiturates but without the oversedating effects of those medications. It was also thought that benzodiazepines had less addictive potential. There are more than 30 benzodiazepines. The most commonly used are alprazolam (Xanax), chlordiazepoxide (Librium), clorazepate (Tranxene), diazepam (Valium), lorazepam (Ativan), oxazepam (Serax), and clonazepam (Klonopin). Flunitrazepam (Rohypnol) and GHB are both associated with sexual assault in the United States.

GHB is a designer drug.

### **Appearance of Depressants**

Tablets and capsules of varied sizes, shapes, and colors. GHB can be produced in clear liquid, white powder, tablet, and capsule forms.

### **Mode of Administration of Depressants**

Oral

### **Medical Uses of Depressants**

Barbiturates are sometimes used as adjuncts to general anesthesia and for certain cases of seizure disorder. Benzodiazepines are used:

- To treat anxiety, acute stress reactions, panic attacks, and sleep disorders
- To control seizures
- As muscle relaxants
- In medically managed alcohol withdrawal
- As presurgery sedation

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

## ***"Desirable" Effects of Depressants***

- Relaxation
- Decreased anxiety
- Decreased inhibitions
- Sense of well-being
- Mild euphoria

## ***Side Effects of Depressants***

- Poor concentration
- Muscle weakness
- Lack of coordination
- Slurred speech
- Dizziness
- Slowed reflexes
- Nausea and vomiting
- Impaired judgment
- Mental confusion
- Memory loss
- Emotional blunting

## ***Possible Medical Consequences With Chronic Depressant Use***

- May cause or aggravate depression
- Respiratory depression can occur at high doses or when combined with other depressant drugs, particularly alcohol
- Those who use benzodiazepines chronically may experience paradoxical effects at high doses; these effects include aggressive behavior, agitation, and lack of inhibition instead of the typical sedation and anti-anxiety effects

Depressants are sometimes primary drugs of abuse. However, they are most commonly abused along with other substances to enhance desired effects or to counter undesirable effects. For example:

- Benzodiazepines have effects similar to alcohol, and some people take them when they drink to enhance the effect. This use is highly dangerous because the risk of potentially fatal respiratory depression is greatly increased.

- People who abuse stimulant drugs often take a depressant to “come down” from excess stimulation or to sleep following a stimulant binge. This combination is associated with spasms of coronary heart muscle that can damage the heart.
- People addicted to heroin often use depressants when they can’t get heroin to ease withdrawal symptoms.

### ***Withdrawal Syndrome of Depressants***

Depressant withdrawal can be medically dangerous and difficult to manage, in part because the drugs tend to stay in body tissues for long periods. There are relatively short- and long-acting barbiturates and benzodiazepines, and the timing of expected symptoms varies depending on which type has been abused. Withdrawal symptoms may begin within 1 day for short-acting depressants but may be delayed for up to 5 days with longer acting benzodiazepines. Symptoms tend to last for 7 to 20 days for short-acting drugs and up to 28 days for longer acting drugs. Symptoms include:

- Drug craving
- Headache
- Tremors and muscle twitches
- Nausea and vomiting
- Anxiety
- Restlessness
- Yawning
- Rapid heart rate and increased blood pressure
- Muscle cramps
- Sleep problems
- Hallucinations
- Multiple seizures, which can be fatal

The worst symptoms occur when the drug is stopped abruptly. Depressants need to be carefully tapered over time (up to a month) to avoid severe problems.

## Resource Page 5.4: Hallucinogens<sup>1</sup>

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### Origin

Peyote is a spineless cactus with small protrusions called buttons that have psychoactive properties. Mescaline is the principal active psychedelic compound in peyote (and in a few other varieties of cactus). Mescaline can also be chemically synthesized in a laboratory. Peyote is one of the oldest psychedelic agents known.

Psilocybin mushrooms are fungi that contain the psychoactive compounds psilocybin and psilocin.

LSD (d-lysergic acid diethylamide) is manufactured from lysergic acid, which is found in ergot, a fungus that grows on rye and other grains.

### Appearance of Hallucinogens

Peyote: Small, gray-green buttons

Mescaline: Usually a white or brown powder in capsules

LSD: Manufactured as a liquid, then converted to different forms; tablets or capsules of varying sizes, shapes, and colors; liquid on blotter paper; powder

### Modes of Administration of Hallucinogens

- Peyote buttons or psilocybin mushrooms can be chewed or brewed into tea.
- Mescaline or psilocybin also can be taken orally in capsule form.
- LSD is taken orally.

The psychoactive effects of hallucinogens begin within about 1 hour and last up to 12 hours.

### Medical Uses of Hallucinogens

None

### "Desirable" Effects of Hallucinogens

Effects vary widely based on dose size, setting, and the user's expectations and personality (called "set and setting"):

- Heightened sensory experiences (e.g., brighter colors, sharper visual definition, increased hearing acuity, more distinguished taste)
- Vivid mental images and distorted vision

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

- Altered space and time perception
- Joy, exhilaration
- Distorted sense of body (feeling either weighed down or weightless)
- Loss of sense of reality; melding past experiences with present
- Preoccupation with trivial thoughts, experiences, or objects
- Intense emotions
- Altered sense of time and self
- Synesthesia: Experiences seem to cross over different senses, giving the user the feeling of hearing colors and seeing sounds
- Dreaminess
- Introspection
- Hallucinations

### ***Side Effects of Hallucinogens***

- Intense nausea and vomiting (very common with peyote)
- Appetite suppression
- Elevated body temperature and sweating
- Chills and shivering
- Highly adverse reactions ("bad trip"), including frightening hallucinations, confusion, disorientation, paranoia, agitation, depression, panic, and/or terror
- Difficulty focusing, maintaining attention, concentrating, and thinking
- Dilated pupils
- Increased body temperature
- Increased heart rate and blood pressure
- Sweating
- Loss of appetite
- Sleeplessness
- Dry mouth
- Tremors
- Difficult focusing, maintaining attention, concentrating, and thinking

## **Possible Medical Consequences With Chronic Hallucinogen Use**

- Highly adverse reactions ("bad trip"), including frightening hallucinations, confusion, disorientation, paranoia, agitation, depression, panic, and/or terror
- Impaired reasoning and loss of judgment leading to extremely dangerous behavior
- Worsening symptoms of existing mental illness or causing earlier onset of psychosis in a susceptible individual
- Flashbacks or recurrences of certain aspects of the drug experience; flashbacks occur suddenly, often without warning, and may occur within a few days or more than a year after LSD use; in some individuals, the flashbacks can persist and cause significant distress or impairment in social or occupational functioning, a condition known as hallucinogen-induced persisting perceptual disorder
- Possible prolonged psychotic state similar to that of paranoid schizophrenia in susceptible individuals

## **Withdrawal Syndrome of Hallucinogens**

None

# Resource Page 5.5: Dissociative Anesthetics<sup>1</sup>

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## Origin

Dissociative anesthetics include phencyclidine (PCP) and ketamine. Both are synthetic.

## Appearance of Dissociative Anesthetics

PCP: White crystalline powder; often processed into a liquid, tablets, or capsules

Ketamine: Manufactured as a liquid; typically evaporated into a powder for illicit use

## Modes of Administration of Dissociative Anesthetics

- Oral
- Sprinkled on marijuana and smoked
- Inhaled intranasally

## Medical Uses of Dissociative Anesthetics

PCP and ketamine have been used as anesthetics in veterinary medicine. Ketamine is used in human medicine in some cases. PCP was never approved for human use because of extreme side effects.

## "Desirable" Effects of Dissociative Anesthetics

- Both are dissociative drugs, meaning that they distort perceptions of sight and sound and produce feelings of detachment (dissociation) from the environment and self
- Feelings of strength and power
- Relaxation
- Mild euphoria

## Side Effects of Dissociative Anesthetics

- Mood disturbances: anxiety and depression
- Shallow breathing and increased breathing rate
- Flushing
- Sweating
- Numbness in extremities

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

- Nausea and vomiting
- Loss of coordination
- Decreased pain response
- Blurred vision
- Delirium (hallucinations or disorientation)
- Increased heart rate and blood pressure
- Impaired motor function
- Numbness
- Depression
- Dizziness
- Anger, aggression, and violence

### **Possible Medical Consequences With Chronic Dissociative Anesthetic Use**

- Seizures
- PCP causes symptoms that mimic schizophrenia, such as delusions, hallucinations, paranoia, disordered thinking, and a sensation of distance from one's environment
- Because PCP can have depressant effects, interactions with other depressants, such as alcohol and benzodiazepines, can lead to respiratory depression and coma
- People who have abused PCP for long periods have reported memory loss, difficulties with speech and thinking, depression, and weight loss; these symptoms can persist up to 1 year after stopping PCP abuse
- Severe depression with suicidal thoughts and attempts
- Injuries from accidents and fights

### **Withdrawal Syndrome of Dissociative Anesthetics**

None known

# Resource Page 5.6: Inhalants<sup>1</sup>

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## Origin

Inhalants generally fall into the following four categories:

*Volatile solvents:* Liquids that vaporize at room temperature:

- Industrial or household products, including paint thinners or removers, degreasers, dry-cleaning fluids, gasoline, and lighter fluid
- Art or office supply solvents, including correction fluids, felt-tip marker fluid, electronic contact cleaners, and glue

*Aerosols:* Sprays that contain propellants and solvents:

- Household aerosol propellants in items such as spray paints, hair or deodorant sprays, fabric protector sprays, aerosol computer cleaning products, and vegetable oil sprays

*Gases:* Found in household or commercial products and used as medical anesthetics:

- Household or commercial products, including butane lighters and propane tanks, whipped cream aerosols or dispensers (whippets), and refrigerant gases
- Medical anesthetics, such as ether, chloroform, halothane, and nitrous oxide

*Nitrites:* A special class of inhalants that are used primarily as sexual enhancers

- Organic nitrites are volatiles that include cyclohexyl, butyl, and amyl nitrites, commonly known as "poppers"

## Appearance of Inhalants

Varied

## Mode of Administration of Inhalants

Inhaled in a variety of ways:

- Sniffing fumes directly from the container
- Spraying aerosols directly into the nose or mouth
- Placing an inhalant-soaked rag in the mouth
- Inhaling fumes from a balloon or a plastic or paper bag that contains the inhalant

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

The intoxication produced by inhalants usually lasts just a few minutes. Users often try to extend the "high" by continuing to inhale repeatedly over several hours.

### ***Medical Uses of Inhalants***

Mostly none, although:

- Amyl nitrite is still used in certain diagnostic medical procedures
- Nitrous oxide is used as an anesthetic, particularly for dental procedures

### ***"Desirable" Effects of Inhalants***

- Euphoria
- Giddiness
- Lessened inhibition and anxiety
- Hallucinations

### ***Side Effects of Inhalants***

- Headache
- Confusion
- Nausea and vomiting
- Drowsiness
- Slurred speech
- Lack of coordination

### ***Possible Medical Consequences With Chronic Inhalant Use***

- Hearing loss (spray paints, glues, de-waxers, dry-cleaning chemicals, correction fluids)
- Peripheral neuropathies or limb spasms (glues, gasoline, whipped cream dispensers, gas cylinders)
- Central nervous system or brain damage (spray paints, glues, de-waxers)
- Bone marrow damage (gasoline)
- Liver and kidney damage (correction fluids, dry-cleaning fluids)
- Blood oxygen depletion (varnish removers, paint thinners)

Long-term inhalant abuse can also break down myelin, a fatty tissue that surrounds and protects some nerve fibers. Damage to myelin can lead to muscle spasms and tremors or permanent difficulty with basic actions such as walking, bending, and talking. Sniffing highly concentrated amounts of the chemicals in solvents, butane, propane, or aerosol sprays can directly induce heart failure and death within minutes of a session of repeated inhalation, even in a single session by an otherwise healthy young person. High concentrations of inhalants may also cause death from suffocation by displacing oxygen in the lungs, causing the user to lose consciousness and stop breathing. Deliberately inhaling from a paper or plastic bag or in a closed area greatly increases the chances of suffocation.

### ***Withdrawal Syndrome of Inhalants***

None

## Resource Page 5.7: Marijuana and Hashish<sup>1</sup>

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### **Origin**

Natural; derived from the plant *Cannabis sativa*

### **Appearance of Marijuana and Hashish**

Marijuana: Dry, shredded green and brown mix of flowers, stems, seeds, and leaves

Hashish: The concentrated, sticky resin of marijuana; can be pressed into cakes or further concentrated into oil

### **Modes of Administration of Marijuana and Hashish**

- Smoked (in a pipe or rolled into cigarette papers or cigars). Hashish oil is typically dripped onto dry marijuana to increase potency. The effects of smoking are typically felt within a few minutes and generally wear off within 2 to 3 hours.
- Oral (mixed with food or brewed into tea). When substance is eaten, effects typically do not appear for 30 to 60 minutes but can last up to 6 hours.

### **Medical Uses of Marijuana and Hashish**

In some countries, Marinol (a tablet) or smoking marijuana is sometimes used to treat glaucoma because it reduces pressure in the eyes. It is used to decrease nausea in patients receiving chemotherapy and to increase appetite in AIDS patients.

### **"Desirable" Effects of Marijuana and Hashish**

- Physical relaxation, sedation
- Exaggerated mood
- Heightened empathy for others
- Heightened suggestibility
- Heightened novelty: even mundane objects seem interesting
- Giddiness
- Changes in sensory and time perception
- "Trailing" phenomenon (seeing afterimages of a moving object)
- Increased appetite

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

## ***Side Effects of Marijuana and Hashish***

- Increased heart rate and blood pressure
- Bloodshot eyes (resulting from increased blood flow through mucous membranes in the eyes)
- Decreased muscular coordination
- Poor depth perception and tracking (ability to follow a moving object)
- Lung irritation and coughing
- Difficulty thinking and solving problems
- Panic reactions (pounding heart, extreme anxiety and fear, sweating, dizziness)

## ***Possible Medical Consequences With Chronic Marijuana and Hashish Use***

- Respiratory problems (most severe in those who also smoke cigarettes), including:
  - Chronic cough and bronchitis
  - Damaged lung tissue
  - Increased phlegm production and reduced ability to clear it
  - Frequent respiratory illnesses
- Decreased cognitive/intellectual functioning
- Delayed emotional development
- Suppressed immune function that can lead to increased susceptibility to viral and bacterial infections and can accelerate progression of HIV/AIDS
- Problems with short-term memory and learning that can last for days or weeks after last use
- At high doses, acute psychotic reactions in susceptible individuals, including triggering chronic schizophrenia in those genetically predisposed
- Long-term use may lead to amotivational syndrome: reduced energy and ability to concentrate, reduced desire to work, reduced interest in social or other activities
- At high doses, marijuana may worsen clinical depression

## ***Withdrawal Syndrome of Marijuana and Hashish***

In addition to drug craving, people who use marijuana over a long term report:

- Irritability
- Sleeplessness
- Decreased appetite

Symptoms begin within about 1 day following abstinence, peak at 2 to 3 days, and subside within 1 or 2 weeks.

Withdrawal from marijuana is not physically dangerous and does not require treatment.

## Resource Page 5.8: Mira<sup>1</sup> (Khat)

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### Origin

Miraa is a plant containing cathinone and cathine, the active chemicals that alter the mood of the user.

### Appearance of Miraa

Miraa/Khat (*Catha edulis* Forsk, Celastraceae family) is a leafy green shrub that can grow to tree size.

### Modes of Administration of Miraa

- Fresh leaves and soft twigs are chewed
- Less commonly, it can be consumed as a tea or smoked

### Medical Uses of Miraa

None

### "Desirable" Effects of Miraa

- Mild euphoria
- Alertness
- Excitement
- Energy

### Side Effects of Miraa

- Loss of appetite
- Sexual dysfunction
- Insomnia
- Gastrointestinal problems (such as constipation)
- Oral inflammation

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<sup>1</sup>. Australian Drug Foundation Drug Info Clearinghouse <http://www.druginfo.adf.org.au/drug-facts/drug-facts>  
United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from <http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>  
U.S. National Institute on Drug Abuse. (n.d.). Drugs of abuse information. Bethesda, MD: Author. Retrieved March 22, 2017, from [http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.drugabuse.gov/drugpages/U.S. University of Maryland Center for Substance Abuse Research http://www.cesar.umd.edu/cesar/drug_info.asp)

## **Possible Medical Consequences With Chronic Miraai Use**

- Oral cancer
- Depression
- Increase in severity of psychological problems
- If khat is used during pregnancy, the baby may be born smaller than other babies
- Chewing khat appears to reduce breast milk production

## **Withdrawal Syndrome of Miraai**

Heavy khat chewers have been shown to experience withdrawal symptoms such as:

- Minor laziness
- Mild depression
- Nightmares
- Slight tremor
- Extreme tiredness and lack of energy
- Difficulty performing normal daily activities
- Slight trembling several days after having stopped chewing khat

## Resource Page 5.9: Substances of Abuse, Summary

Substances: Category and Name	How Administered	Intoxication Effects/Potential Health Consequences
<b>Category: Depressants</b>		
Barbiturates Amytal Nembutal Phenobarbital Seconal	Swallowed, injected	Reduced anxiety, feeling of well-being, lowered inhibitions, slowed pulse and breathing, lowered blood pressure, poor concentration/Fatigue; confusion; impaired coordination, memory, and judgment; addiction; respiratory depression and arrest; death
Benzodiazepines Ativan Halcion Librium Rohypnol Valium Xanax	Swallowed, injected (Rohypnol can be snorted)	For barbiturates—Sedation, drowsiness/Depression, unusual excitement, fever, irritability, poor judgment, slurred speech, dizziness, life-threatening withdrawal  For benzodiazepines—Sedation, drowsiness/Dizziness  For GHB—Drowsiness/Nausea and vomiting, headache, loss of consciousness, loss of reflexes, seizures, coma, death
Gamma-Hydroxybutyrate (GHB)	Swallowed	For methaqualone—Euphoria/Depression, poor reflexes, slurred speech, coma
Methaqualone Parest Quaalude Sopor	Swallowed, injected	
<b>Category: Hallucinogens</b>		
Lysergic acid diethylamide (LSD)	Swallowed, absorbed through mouth tissues	Altered states of perception and feeling, nausea/Persisting perception disorder (flashbacks)
Mescaline Peyote	Swallowed, smoked	For LSD and mescaline—Increased body temperature, heart rate, and blood pressure; loss of appetite; sleeplessness; numbness; weakness; tremors
Psilocybin "Magic mushroom"	Swallowed	For LSD—Persistent mental disorders  For psilocybin—Nervousness, paranoia

(continued on next page)

Substances: Category and Name	How Administered	Intoxication Effects/Potential Health Consequences
<b>Category: Narcotics—Opioids and Morphine Derivatives</b>		
Codeine Empirin with codeine Fiorinal with codeine Robitussin A-C Tylenol with codeine	Injected, swallowed	Pain relief, euphoria, drowsiness/Nausea, constipation, confusion, sedation, respiratory depression and arrest, tolerance, unconsciousness, coma, death  For codeine—Less analgesia, sedation, respiratory depression than morphine
Fentanyl and fentanyl analogs Actiq Duragesic Sublimaze	Injected, smoked, snorted	For heroin—Staggering gait
Diacetyl-morphine Heroin	Injected, smoked, snorted	
Morphine Roxanol, Duramorph	Injected, swallowed, smoked	
Opium Laudanum Paregoric	Swallowed, smoked	
Oxycodone HCl OxyContin	Swallowed, snorted, injected	
Hydrocodone bitartrate, acetaminophen Vicodin	Swallowed	

(continued on next page)

Substances: Category and Name	How Administered	Intoxication Effects/Potential Health Consequences
<b>Category: Stimulants</b>		
Amphetamine Biphetamine Dexedrine	Injected, swallowed, smoked, snorted	<i>Increased heart rate, blood pressure, and metabolism; feelings of exhilaration and energy; increased mental alertness/Rapid or irregular heartbeat, reduced appetite, weight loss, heart failure, nervousness, insomnia</i>
Cocaine	Injected, smoked, snorted	<i>For amphetamine—Rapid breathing/Tremors, loss of coordination, irritability, anxiousness, restlessness, delirium, panic, paranoia, impulsive behavior, aggressiveness, tolerance, addiction, psychosis</i>
M D (methylene dioxy methamphetamine) Ecstasy	Swallowed	<i>For cocaine—Increased temperature/Chest pain, respiratory failure, nausea, abdominal pain, strokes, seizures, headaches, malnutrition, panic attacks</i>
Methamphetamine Desoxy	Injected, swallowed, smoked, snorted	<i>For MDMA—Mild hallucinogenic effects, increased tactile sensitivity, empathetic feelings/Impaired memory and learning, hyperthermia, cardiac toxicity, renal failure, liver toxicity</i>
Methylphenidate Ritalin	Injected, swallowed, snorted	<i>For methamphetamine—Aggression, violence, psychotic behavior/ Memory loss, cardiac and neurological damage, impaired memory and learning, tolerance, addiction</i>
Nicotine	Smoked, snorted, taken in snuff and chew/spit tobacco	<i>For nicotine—Adverse pregnancy outcomes, chronic lung disease, cardiovascular disease, stroke, cancer, tolerance, addiction</i>
Caffeine	Swallowed	

(continued on next page)

Substances: Category and Name	How Administered	Intoxication Effects/Potential Health Consequences
<b>Category: Other</b>		
Inhalants Gases (butane, propane, aerosol propellants, nitrous oxide) Nitrites (isobutyl, cyclohexyl) Solvents (paint thinners, gasoline, glues)	Inhaled through nose or mouth	Stimulation, loss of inhibition, headache, nausea or vomiting, slurred speech, loss of motor coordination, wheezing/Unconsciousness, cramps, weight loss, muscle weakness, depression, memory impairment, damage to cardiovascular and nervous systems, sudden death
Cannabinoids Hashish Marijuana	Swallowed, smoked	Euphoria, slowed thinking and reaction time, confusion, impaired balance and coordination/Cough and frequent respiratory infections, impaired memory and learning, increased heart rate, anxiety, panic attacks, tolerance, addiction
Dissociative anesthetics Ketalar SV Ketamine	Injected, smoked, inhaled	Increased heart rate and blood pressure, impaired motor function/ Memory loss, numbness, nausea and vomiting
Dissociative anesthetics Phencyclidine (PCP) and analogs	Swallowed, smoked	For ketamine (at high doses)—Delirium, depression, respiratory depression and arrest  For PCP and analogs—Possible decrease in blood pressure and heart rate, panic, aggression, violence/Loss of appetite, depression
Miraa Khat	Chewed, swallowed	Excitement and alertness/Rapid heart rate, increased blood pressure, chronic constipation, dehydration, forgetfulness, talkativeness, sexual dysfunction

# **MODULE 6**

## **INTEGRATING LEARNING INTO PRACTICE**

Introduction and exercise: Developing a practice integration plan .....	291
Learning assessment competition .....	294
Day 3 and overall training evaluations .....	296
Program completion ceremony and socializing .....	297



## **Module 6 Preparation Checklist**

- Review Getting Started for general preparation information.
- Preview Module 6, including Resource Page 6.1.
- Be prepared to give participants the date of the followup training.
- Make copies of the list of local resources (see Getting Started) you prepared for further participant training and support.
- Prepare a sheet of newsprint with the following written on it:
  - Easy question: 1 point;
  - Moderate question: 2 points; and
  - Difficult question: 5 points
- Copy one Daily Evaluation form and one Overall Training Evaluation form for each participant.
- Bring to the session:
  - A box or other container to collect quiz questions;
  - Beans, small candies, or other small items to use as point counters for the learning assessment competition;
  - A personalized Training Completion Certificate for each participant;
  - An appropriate music CD to play during the completion ceremony; and
  - Beverages and snacks for socializing after the completion ceremony (optional).

<b>Content and Timeline</b>		
<b>Activity</b>	<b>Time</b>	<b>Person Responsible</b>
Introduction and exercise: Developing a practice integration plan	75 minutes	
Break	15 minutes	
Learning assessment competition	30 minutes	
Day 3 and overall training evaluations	15 minutes	
Program completion ceremony and socializing	30+ minutes	

## ***Module 6 Goals and Objective***

### **Training goals**

- To encourage participants to think about resources, barriers, and strategies for change; and
- To provide an opportunity to develop a personal practice integration plan.

### **Learning objective**

Participants who complete Module 6 will have developed a personal practice integration plan.



75 minutes

## Introduction and exercise: Developing a practice integration plan

### Say:

Training is valuable only if it leads to changes in practice. Making a commitment and writing it down can help people make changes. We will take some time this afternoon for you to think about what you have learned during these 3 days of training and for you to develop a written plan for integrating new learning into your practice.

Completing a personal practice integration plan will help you commit to making changes in how you work, based on the training.



### Say:

Please turn to Resource Page 6.1 in your manuals.

**Teaching Instructions:** Review the elements of the Practice Integration Plan, and ensure that participants understand the task.

### Say:

Please feel free to talk to others at your table and help one another by sharing ideas for overcoming barriers, identifying possible resources (including one another), and so on. You will have 45 minutes to complete your plans, beginning now.

**Teaching Instructions:** Provide 10- and 2-minute warnings.



**Say:**

Please select a partner. I'd like you to share your plan with your partner and to listen to your partner's plan. Listen carefully to each other. Ask questions or make suggestions as appropriate. You will have 15 minutes for sharing ideas.

**Teaching Instructions:** Provide a 7-minute warning.

**Say:**

I hope that was a useful exercise for you. Try to look at your plan again in a month or so to evaluate how you're doing with it.



15 minutes

## Break



Next, we're going to play a learning assessment game. But first, let's take a 15-minute break.



30 minutes

## Learning assessment competition



We're going to play a game to review and assess your learning. But first: Congratulations for successfully completing all 3 days of training! Give yourselves a hand!



**Teaching Instructions:** Display the newsprint sheet you prepared with "Easy question..." and so on written on it, and put the box or other container in a central location.



Now I'd like you to take 10 minutes to think about the past 3 days and come up with three quiz questions. Please think of one easy question, write it on a piece of paper, and write "1 point" under it. Then, think of a moderately difficult question, write it on a second piece of paper, and write "2 points" under it. Finally, think of a difficult question, write it on a third piece of paper, and write "5 points" under it.

When you finish writing down your questions, fold the pieces of paper up and put them in the box.

**Teaching Instructions:** Provide a 2-minute warning. When the 10 minutes are up, ask all participants to put their questions in the box if they have not already done so.



I'll be selecting questions at random from the box and reading them aloud. If you know the answer, raise your hand as quickly as possible. The first person to raise a hand gets to answer the question.

If that person answers correctly, he or she will receive the same number of counters as the points listed with the question. If that person does not answer correctly, I'll ask the question again.

**Teaching Instructions:** Ask as many questions as possible in 15 minutes. It is most efficient if one co-trainer asks the questions and the other hands out the counters.

After 15 minutes, ask participants to add up their counters. In case of ties, ask participants for tie-breaking ideas (e.g., who can stand on one foot the longest).

While the winners are being determined, one of the trainers should distribute the Daily Evaluation and Overall Training Evaluation forms.

Ask the winners to stand up and take a bow, and call for a round of applause.



15 minutes

## Day 3 and overall training evaluations



Before we have our certificate of completion ceremony, please complete the *Daily Evaluation form* and the *Overall Training Evaluation form*. Please take some time to complete both. Your input is very important and will help us improve the training for the next group.

**Teaching Instructions:** When all participants have completed the evaluation forms, ask whether anyone has final thoughts or questions. Give participants the list of resources for additional training and support you prepared before the session.



30+ minutes

## Program completion ceremony and socializing



*Thank you for actively participating in the training. Your commitment to enhancing your practice is admirable, and you deserve this completion ceremony.*

**Teaching Instructions:** Start the music CD. Call each participant by name, and present each participant with a personalized Training Completion Certificate. As each participant receives his or her certificate, ask the person to tell the group the response to statement one on his or her practice integration plan: *The most important thing I learned from this training, and don't want to forget, is...*

Encourage participants to applaud one another.

Invite participants to stay for refreshments and socializing.

## Resource Page 6.1: Practice Integration Plan

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1. The most important thing I learned from this training, and don't want to forget, is:

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2. Changes I will make in my practice based on what I have learned are:

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3. Some things that could interfere with my plans are (e.g., anticipated barriers):

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4. Ways I could overcome these barriers include:

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5. The following people (include supervisors, potential mentors, and so on) and resources (further training, reading) could help me in the following ways:

Person or Resource	Possible Ways To Help

# **APPENDIX A—ENERGIZERS**

Energizers on this list are from <http://www.wilderdom.com/games/> unless otherwise indicated. Wilderdom.com encourages sharing!

Some energizers are cooperative; some are competitive. It is best to use each type and to base your choice on the mood and functioning of the group.

## **Balloon Juggle and Sort**

Supplies: Balloons (one+ per person)

Challenge participants to keep all balloons in the air. This gets the group moving and cooperating. Once participants get the hang of it, make it harder by adding more balloons, placing restrictions (e.g., no hands to keep balloons up), or asking participants to keep juggling the balloons.

## **Balloon Frantic**

Supplies: Balloons (two or three per person)

Stopwatch or watch with a second hand

Give each person one balloon, with the rest in a nearby pile. Everyone begins bouncing the balloons in the air. Every 5 seconds, another balloon is added. See how long the group can keep the balloons bouncing before it receives six penalties. A penalty is announced loudly (to create stress!) by the energizer leader when a balloon hits the floor (or, once on the floor, if it is not back in play within 5 seconds). The leader keeps a cumulative penalty score by shouting out "one," "two," and so on. When the leader calls "six," time is stopped. After some discussion, the group tries to improve its record with another attempt.

### **Balloon Games**

Balloons work best for games at about 85 percent of inflation capacity. Eighty-five percent inflation also allows a handy distance for tying a thumb-knot in the neck of the balloon.

You can turn the ideal inflation into a game and demonstration: Show the ideal inflation, and walk around coaching people as they inflate their balloons. Some participants may need help tying the balloon; encourage cooperation among participants rather than do it yourself.

A hygienic alternative is to use a balloon pump for inflation.

## **Ha-Ha**

Supplies: None

This is a short, fun, physically engaging energizer and laughter-generating activity. However, know your audience! Some people may not be comfortable with it.

Each person lies on the floor, placing his or her head on another person's tummy so that everyone is connected. The facilitator should set a mock serious tone to start. The first person says "Ha," the second person says "Ha-Ha," and so on. The goal is to get all the way through the group without anyone laughing. It is almost impossible!

## **Musical Chairs**

(Classic game; original source unknown)

Supplies: Chairs (one chair per person)

Music CD and player

Place chairs in a circle, and ask each person to stand in front of one. Remove one chair. Tell participants that when the music starts, they are to start walking in a circle around the chairs. When the music stops, they are to try to sit. The person left without a chair is out of the game. Continue removing chairs and playing until only one person is left. Give this person a round of applause.

## **Musical Chairs Variation**

Supplies: Chairs (one chair per person)

Place chairs in a tight circle (chairs touching one another), seats facing toward the center of the circle. Have participants sit in the chairs; then have one person stand in the middle—there is now a vacant chair. The person in the middle tries to sit in an empty seat. The group prevents the person from sitting by people moving from seat to seat, creating a new vacant seat. The game moves fast—because of the strategic "bum-shuffling" by the group, the place of the empty seat is in constant movement, like a wave, changing directions, tempting, then moving fast. Eventually the person in the middle makes a successful lunge for a seat (it can get very dramatic), and the group member who was aiming for the seat (group consensus) now goes in the middle. And so on. Give the last person sitting a round of applause. As an alternative, once four or five people are "out," stop the game and have the group come up with a "punishment" for those people.

## **Chicken Stretch**

Supplies: None

**IMPORTANT!!** Do not reveal the name of this activity until afterward! It relies on an element of surprise.

Have participants form a circle and explain that it is important to warm up one's body from head to toe before participating in physical games and activities. Starting with legs, ask people to try to get one of their knees to touch their chin. Try each leg alternately. Ask for 10 knee-to-chin touches. It is not easy: some can do it, many can't.

Then move on to the arms. One side at a time, stick a thumb under the armpit and move the elbow up and down and do a side stretch. Do this three times on each side.

Then explain that it's important to warm up one's vocal cords for group games. Grab the skin on your neck to demonstrate and waggle it side to side. Ask for some guttural noises, as much as possible; then ask for some animal noises.

Finally, have participants put it all together—walking around raising knees in air, flapping both arms, and making animal noises (at some point start encouraging the chicken noises), and you have a clucking and squawking chicken yard. Very funny.

## **Simon Says**

(Classic game; original source unknown)

Supplies: None

The trainer is "Simon" (use your own name). "Simon" instructs participants to follow his or her instructions, but ONLY if he or she says "Simon says" first. Simon can have the group do anything possible and safe (e.g., "Simon says raise your right leg" or "Simon says turn in a circle"). If a participant follows an instruction made without "Simon says" preceding it or doesn't follow a "Simon says" instruction, that participant is out. Continue the game until four or five participants are out, then stop the game, and have the group come up with a "punishment" for those people.

## **Blob Tag**

[http://www.funattic.com/game\\_tag.htm](http://www.funattic.com/game_tag.htm)

Supplies: None

Note: You will need a fair amount of open space for this one.

Start this tag game with two people as the blob. They have to lock their arms together and cannot come apart. Once the blob tags someone, that person becomes part of the blob and adds to the end. The blob becomes bigger and bigger. Only the people on either end of the blob can tag someone, so players can run through the blob, if possible without getting tagged. Give the last person standing a round of applause.

## **Hot Pepper**

<http://www.reproline.jhu.edu/english/5tools/5icebreak/icebreak3.htm>

Supplies: None

Participants sit or stand in a circle away from tables and close their eyes. The trainer gives a small ball to one participant, who is instructed to pass the ball quickly to the next person, saying "Hot!" Participants continue to pass the ball around the group. As the ball is passed from participant to participant, the trainer turns his or her back, closes eyes, and calls out "Pepper!" The person who is holding the ball when "Pepper!" is called is removed from the circle. The ball continues to be passed until only one person is left.

## **Hidden Surprise**

[http://www.funattic.com/game\\_circle.htm#anchor2](http://www.funattic.com/game_circle.htm#anchor2)

Supplies: Pill bottle or other container

Tape

Newspaper

Dice

Take the empty pill bottle or other container and place money or a prize in it. Wrap it up with layers of newspaper and duct tape or any other kind of tape. You can even layer it with different types and make a huge tape ball. Have everyone stand in a circle. Take a set of dice and place them in a flat box. The first participant to roll a double goes inside the circle and starts working on getting the tape ball apart. That person continues unwrapping until the next person rolls a double. The process keeps going until someone successfully opens the container.

# APPENDIX B—LEARNER-CENTERED TRAINER SKILLS: A BRIEF OVERVIEW

When delivering this course in a way that matches adult learning theory, trainers need to know and use both “platform” skills and “facilitation” skills.

## ***Platform Skills***

*Platform* skills include how one presents, both verbally and visually.

Verbal platform skills for good trainers include the following:

- Eliminate weak words/phrases, such as “sorta” and “later.”
- Replace nonwords (like “um,” “ah,” and “er”) with pauses.
- Use vivid language.
- Use simple and direct language.
- Emphasize beginnings and endings; transitions are important.
- Project your voice so everyone can hear, but not too loud.
- Vary vocal pitch and inflection for emphasis.
- Vary vocal pace and rhythm to keep participants’ attention.
- Use pauses for emphasis and to allow participants to think about what was just said.
- Enunciate clearly.
- Practice breath control for smooth delivery.
- Be natural; loosen up (keep training serious, but also fun).

Visual platform skills include the following:

- Stand up straight and confidently.
- Move around the room to talk with all participants, but don’t move so much that it is distracting.
- If it is culturally appropriate, use eye contact to keep participants’ attention.
- Use hand gestures for emphasis, but not to the point of distraction.
- Vary facial expressions for emphasis and to indicate your own interest.
- Maintain a “match” between visual and verbal elements.

## **Facilitation Skills**

Rather than simply provide information and give answers to questions, *facilitating* trainers create a positive and productive environment that supports learning. The good facilitator:

- Defines his or her role for participants;
- Is positive;
- Doesn't judge;
- Focuses participants' energy on a task;
- Suggests methods or procedures for accomplishing the task;
- Protects individuals and their ideas from attack;
- Helps find win/win solutions by seeking agreement on problems and process;
- Gives everyone an opportunity to participate;
- Resists the temptation to give immediate advice and offer solutions by redirecting questions back to the group; and
- Is not afraid to make mistakes.

Effective communication skills for facilitators include:

- Listening with full focus on the speaker;
- Focusing the training group's attention;
- Recognizing progress;
- Scanning/observing;
- Modeling;
- Summarizing; and
- Using silence appropriately.

The "ideal" facilitator was defined by Karger.<sup>1</sup> Although he was writing about facilitating marketing focus groups, his principles are apt for training facilitation as well. His definition (with terms modified slightly) is as follows:

The best facilitator has unobtrusive chameleon-like qualities; gently draws group members into the process; deftly encourages them to interact with one another for optimum synergy; lets the dialogue flow naturally with a minimum of intervention; listens openly and deeply; uses silence well; plays back group member statements in a distilling way that brings out more refined thoughts or explanations; and remains completely nonauthoritarian and nonjudgmental. Yet the facilitator will subtly guide the proceeding when necessary and intervene to cope with various kinds of troublesome participants who may impair the productive group process. (p. 54)

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<sup>1</sup>Karger, T. (1987). Focus groups are for focusing, and for little else. *Marketing News*, (21), 52–57.

# APPENDIX C—DEALING WITH DIFFICULT PARTICIPANTS DURING TRAINING

During the course of training, you may encounter participants who display difficult or challenging behavior. As the trainer, you have the responsibility of ensuring a comfortable and safe environment for the other members of the group. Remember the following points:

- Project confidence and good humor.
- Be prepared.
- Don't take it personally.
- Use effective communication skills.
- Avoid an authoritarian/lecturing approach.
- Have clear guidelines for the group.
- Avoid sarcasm.
- Be patient and polite.
- Redirect.
- Assess whether you need to change your approach.
- Ignore "bad" attitude.

You will encounter a range of learning styles across the group. If possible, try to establish the expectations of the participants and incorporate different strategies to meet these expectations in a range of ways to engage all learning styles.

## ***Prevention and Early Interventions***

- Make the environment comfortable and the program interesting.
- Explore participants' motivations for being in the group.
- Establish group rules and boundaries.
- Involve participants in decision-making.
- Establish a positive relationship and encourage relationships in the group—modeling.

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Source: Government of Queensland, Australia, Brisbane North Institute of Technical and Further Education.

- Aim your intervention at the *behavior and consequences*, not at the person (the same principle applies for groups and individuals).
- The intention isn't to apportion blame; it's to resolve the problem.

## Coping Strategies

- Assess the situation—keep yourself and participants safe.
- Ignore negative or nondamaging behavior.
- Remain calm—don't argue with the other person or make accusations; be discreet.
- Avoid ultimatums.
- Use active *listening skills* to check your understanding of the situation.
- Refer back to group rules set up at the beginning of the session—what behavior will or will not be accepted—and don't get pushed beyond this limit.
- Be persistent and consistent in your response, which conveys to the difficult person that you mean what you say.
- Provide an opportunity for time out or a private chat.
- Believe in yourself and your ability to deal with others.
- Look for ways to reduce the causes of the behavior.
- Monitor the effectiveness of your coping strategy, modifying it where appropriate.
- Assess the impact on others.
- Seek advice if necessary.

<b>Behavior</b>	<b>Possible Reasons</b>	<b>What To Do</b>
<b>The participant is:</b>	<b>The participant may be:</b>	
Overly talkative—to the extent that others do not have an opportunity to contribute.	<ul style="list-style-type: none"> <li>■ An “eager beaver.”</li> <li>■ Exceptionally well informed.</li> <li>■ Naturally wordy.</li> <li>■ Nervous.</li> </ul>	<ul style="list-style-type: none"> <li>■ Interrupt with “That’s an interesting point. Let’s see what everyone else thinks.”</li> <li>■ Directly call on others.</li> <li>■ Suggest, “Let’s put others to work.”</li> <li>■ When the person stops for a breath, thank him or her, restate pertinent points, and move on.</li> </ul>

<b>Behavior</b> <i>The participant is:</i>	<b>Possible Reasons</b> <i>The participant may be:</i>	<b>What To Do</b>
Argumentative—to the extent that others' ideas or opinions are rejected or others are treated unfairly.	<ul style="list-style-type: none"> <li>■ Seriously upset about the issue under discussion.</li> <li>■ Upset by personal or job problems.</li> <li>■ Intolerant of others.</li> <li>■ Lacking in empathy.</li> <li>■ A negative thinker.</li> </ul>	<ul style="list-style-type: none"> <li>■ Keep your temper in check.</li> <li>■ Try to find some merit in what's being said; get the group to see it, too; then move on to something else.</li> <li>■ Talk to the person privately and point out what his or her actions are doing to the rest of the group.</li> <li>■ Try to gain the person's cooperation.</li> <li>■ Encourage the person to concentrate on positives, not negatives.</li> </ul>
Engaging in side conversations with others in the group.	<ul style="list-style-type: none"> <li>■ Talking about something related to the discussion.</li> <li>■ Discussing a personal matter.</li> <li>■ Uninterested in the topic under discussion.</li> </ul>	<ul style="list-style-type: none"> <li>■ Direct a question to the person.</li> <li>■ Restate the last idea or suggestion expressed by the group, and ask for the person's opinion.</li> </ul>
Unable to express himself or herself so that everyone understands.	<ul style="list-style-type: none"> <li>■ Nervous, shy, excited.</li> <li>■ Not used to participating in discussions.</li> </ul>	<ul style="list-style-type: none"> <li>■ Rephrase, restating what the person said and asking for confirmation of accuracy.</li> <li>■ Allow the person ample time to express himself or herself.</li> <li>■ Help the person along without being condescending.</li> </ul>

<b>Behavior</b>	<b>Possible Reasons</b>	<b>What To Do</b>
<b>The participant is:</b>	<b>The participant may be:</b>	
Always seeking approval.	<ul style="list-style-type: none"> <li>■ Looking for advice.</li> <li>■ Trying to get the trainer to support his or her point of view.</li> <li>■ Trying to put the trainer on the spot.</li> <li>■ Having low self-esteem.</li> </ul>	<ul style="list-style-type: none"> <li>■ Avoid taking sides, especially if the group will be unduly influenced by your point of view.</li> <li>■ Show support without favoritism.</li> </ul>
Bickering with another participant.	<ul style="list-style-type: none"> <li>■ Carrying on an old grudge.</li> <li>■ Feeling very strongly about the issue.</li> </ul>	<ul style="list-style-type: none"> <li>■ Emphasize points of agreement and minimize points of disagreement.</li> <li>■ Direct participants' attention to the objectives of the session.</li> <li>■ Mention time limits of the session.</li> <li>■ Ask participants to shelve the issue for the moment.</li> </ul>
Uninvolved and unwilling to commit to new tasks.	<ul style="list-style-type: none"> <li>■ Lazy.</li> <li>■ Too busy already.</li> <li>■ Feel he or she should not have been made to attend the session in the first place.</li> <li>■ Unaware of his or her own skills and abilities.</li> </ul>	<ul style="list-style-type: none"> <li>■ Ask the person to volunteer for tasks (others in group must volunteer as well).</li> <li>■ Clearly explain the purpose of the training and the benefits to individuals and the organization.</li> <li>■ Identify how the outcomes can be applied in the workplace.</li> <li>■ Privately ask why the person won't become involved and is unwilling to commit to new tasks.</li> <li>■ Provide constructive feedback and provide reassurance and encouragement.</li> </ul>

Dealing with difficult behavior can be emotionally tiring. Caring for yourself during this time is vital to the effective management of the situation:

- Recognize the effect an interaction has on you.
- Allow yourself recovery time.
- Be aware of things that help you recover effectively and quickly.
- Use your co-trainer for support.



# APPENDIX D—GLOSSARY

addiction	A chronic, relapsing brain disease characterized by compulsive drug seeking and use, despite harmful consequences; also known as psychological dependence.
blood-brain barrier	A protective barrier made up of a series of tightly pressed-together cells that allows for the passage of only certain chemicals into the brain.
central nervous system	That part of the nervous system that consists of the brain and spinal cord.
chronic disease	A disease that is long lasting and that cannot be cured but can be managed.
detoxification	The process of eliminating all psychoactive substances from a person's body.
disease	Any alteration of the normal structure or function of any body part, organ, or system that can be identified by a characteristic set of symptoms and signs.
etiological agent	The cause (or one of the causes) of a disease.
family system	The unique interaction and relationship of each family member to one another; perhaps the most complex social system humans have.
half-life	The amount of time it takes to eliminate half of the original dose of a substance from the body.
lapse or slip	A brief, often one-time, return to drug use.
neuron	A nerve cell in the brain that sends messages to and receives messages from other cells.
neurotransmitters	Chemicals that send messages from one neuron to another in the brain.
pathogenesis	The progression of a disease from its origins through its critical development and expected outcomes.
peripheral nervous system	Includes all the nerves going to your arms, legs, hands, and feet; basically all of the nerve systems outside the central nervous system.
pharmacology	A branch of science that studies the effect of psychoactive substances on the brain and body.

physiological dependence	A state of adaptation to a specific psychoactive substance characterized by the emergence of a withdrawal syndrome during abstinence, which may be relieved in total or in part by taking more of the substance.
psychoactive substances	Drugs or medicines that affect the body's central nervous system and change how people behave or perceive what is happening around them.
relapse	A complete return to using psychoactive substance in the same way the person did before he or she quit.
reward circuit	A linked group of brain structures that provide reward (including pleasure) for life-sustaining activities (like eating), ensuring that these activities are repeated.
social stigma	Severe social disapproval of personal characteristics or beliefs that are against cultural norms; <sup>1</sup> social stigma often leads to status loss, discrimination, and exclusion from meaningful participation in society.
Substance use disorders	occur when the recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home
synapse or synaptic cleft	The space between neurons; neurotransmitters pass through this space in the process of moving from one neuron to another.
tolerance	The decreased effect produced after the same amount of a psychoactive substance is repeatedly administered or when increasingly larger amounts are needed to get the same effect experienced with the original amount of a psychoactive substance.
withdrawal syndrome	Signs and symptoms that occur when a person stops using a psychoactive substance on which he or she is dependent.

<sup>1</sup>Wikipedia. Retrieved October 24, 2010, from [http://en.wikipedia.org/wiki/Social\\_stigma](http://en.wikipedia.org/wiki/Social_stigma)

# **APPENDIX E—RESOURCES**

## **Global Drug Use Statistics**

United Nations Office on Drugs and Crime. (2016). *World drug report 2016*. New York: United Nations.

[http://www.unodc.org/doc/wdr2016/WORLD\\_DRUG\\_REPORT\\_2016\\_web.pdf](http://www.unodc.org/doc/wdr2016/WORLD_DRUG_REPORT_2016_web.pdf)

World Health Organization. (2010). *Management of substance abuse: The global burden*. Geneva: Author. Retrieved December 10, 2010, from  
[http://www.who.int/substance\\_abuse/facts/global\\_burden/en/index.html](http://www.who.int/substance_abuse/facts/global_burden/en/index.html)

World Health Organization. (2011). *Management of substance abuse: Facts and figures*. Geneva: Author. Retrieved December 10, 2010, from  
[http://www.who.int/substance\\_abuse/facts/en/](http://www.who.int/substance_abuse/facts/en/)

## **The Science of Addiction**

Inaba, D., & Cohen, W. E. (2007). *Uppers, downers, all arounders: Physical and mental effects of psychoactive drugs* (8th ed.). Medford, OR: CNS Productions.

U.S. National Institute on Drug Abuse. (2014 revision). *Drugs, brains, and behavior: The science of addiction*. Bethesda, MD: Author. Retrieved March 22, 2017 from  
<http://www.nida.nih.gov/scienceofaddiction/sciofaddiction.pdf>

U.S. National Institute on Drug Abuse. (n.d.). *Addiction science: From molecules to managed care*. Bethesda, MD: Author. Retrieved March 22, 2017 from  
<http://www.nida.nih.gov/pubs/teaching/Teaching6/Teaching.html>

World Health Organization. (2004). *Neuroscience of psychoactive substance use and dependence*. Geneva: Author. Retrieved March 22, 2017 from  
[http://www.who.int/substance\\_abuse/publications/en/Neuroscience.pdf](http://www.who.int/substance_abuse/publications/en/Neuroscience.pdf)

## **Drug Classes/Drug Facts**

Australian Drug Foundation Drug Info Clearinghouse  
<http://www.druginfo.adf.org.au/drug-facts/drug-facts>

United Nations Office on Drugs and Crime. (2016). Terminology and Information on Drugs. United Nations, New York. Retrieved March 22, 2017, from  
<http://www.unodc.org/drugs/en/get-the-facts/types-of-drugs.html>

U.S. National Institute on Drug Abuse. (n.d.). *Drugs of abuse information*. Bethesda, MD: Author. Retrieved March 22, 2017, from  
<http://www.drugabuse.gov/drugpages/>

U.S. University of Maryland Center for Substance Abuse Research  
[http://www.cesar.umd.edu/cesar/drug\\_info.asp](http://www.cesar.umd.edu/cesar/drug_info.asp)

World Health Organization. (2010). *Management of substance abuse: Other psychoactive substances*. Geneva: Author. Retrieved March 22, 2017, from [http://www.who.int/substance\\_abuse/facts/psychoactives/en/index.html](http://www.who.int/substance_abuse/facts/psychoactives/en/index.html)

## Women

U.S. Center for Substance Abuse Treatment. (2009). *Substance abuse treatment: Addressing the specific needs of women*. Treatment Improvement Protocol Series 51. HHS Publication No. (SMA) 09-4426. Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved March 22, 2017, from <http://www.ncbi.nlm.nih.gov/books/NBK26013/>

Hernandez-Avila, C. A., Rounsaville, B. J., & Kranzler, H. R. (2004). *Opioid-, cannabis- and alcohol-dependent women show more rapid progression to substance abuse treatment*. Drug and Alcohol Dependence, 74(3), 265.

## Family

U.S. Center for Substance Abuse Treatment. (2001). *Substance abuse treatment and family therapy*. Treatment Improvement Protocol Series 39. HHS Publication No. (SMA) 04-3957. Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved March 22, 2017, from <http://www.ncbi.nlm.nih.gov/books/NBK14505/>