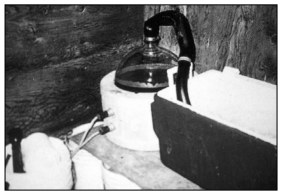
Clandestine Methamphetamine Laboratories Training Program

First Responder
Awareness & Operations
Section A
Welcome,
Course Overview,
Introduction to
Clan
Labs



Drug Lab Definitions

- Lab - general definition
  - Covert or secret illicit operation
  - Combination of apparatus and chemicals
  - Used to make controlled substances

Drug Lab Definitions

- Waste/Abandonment/Disposal Site
  - Location at which apparatus, equipment and chemicals used to make controlled substances have been deposited, disposed of, dumped or stored

Physical Hazards

- Dangerous suspects
  - Armed
  - Under the influence of illicit drugs

Physical Hazards

- Defensive systems
  - Explosive devices
  - Mechanical and electrical security devices
  - Alarm systems
  - Animals

Chemical Hazards

- Unidentified chemicals
  - Flammable/combustible
  - Reactive
  - Corrosive
  - Toxic
- Any/all DOT Hazard Classes

Unsafe Practices, Improvised or Incompatible Equipment

- Incompatible storage
  - Locations
  - Arrangements
- Containers incompatible with contents
- Unsafe electrical devices
- Improper handling practices

Environmental Hazards

- Toxic air emissions
- Soil and water contamination
- Hazardous waste accumulations
- Structures and vehicles
  - Irreversible damage
  - Contamination

First Responder "Awareness"

- Individual likely to witness or discover a hazardous materials release
  - Trained to initiate an emergency response by notifying proper authorities of the release
  - Takes no further action beyond notification

First Responder "Operations"

- Responds as part of initial response
  - Protects persons, environment and property
  - Acts in a defensive fashion
  - Contains release from a safe distance
- Limits of this level:
  - No PPE (usually)
  - Not trained to stop or clean up a release

Clandestine Methamphetamine Laboratories Training Program

First Responder Awareness and Operations

Section B

Recognition of Clandestine Methamphetamine Laboratories

Methods of Production

- Ephedrine reduction with
  - Hydriodic acid and red phosphorus
  - Lithium metal and anhydrous ammonia
  - Thionyl chloride, hydrogen gas, palladium black, and chloroform

Methods of Production

- Phenyl-2-propanone with:
  - Aluminum foil
  - Mercuric chloride
  - Methylamine

Methamphetamine Production Hydriodic Acid Method

- Characteristic Chemicals:
  - Hyriodic Acid
  - Hydrogen Chloride gas
  - Red Phosphorous

Methamphetamine Production Hydriodic Acid Method

- Characteristic Equipment:
  - Triple neck flask
  - Heat source
  - Reflux column

Methamphetamine Production Hydriodic Acid Method

- Characteristic Hazards:
  - Acutely corrosive and toxic atmosphere
  - Flammable, explosive O^2 deficient atmosphere
  - Exposure to phosphine gas

Methamphetamine Production Thionyl Chloride Method

- Characteristic Chemicals:
  - Thionyl Chloride
  - Hydrogen Gas
  - Palladium Black

Methamphetamine Production Thionyl Chloride Method

- Characteristic Hazards:
  - Acutely corrosive atmosphere
  - Catalyst induced
  - Explosions
  - Flammable atmospheres

Methamphetamine Production Phenyl-2-propanone Method

- Characteristic Chemicals:
  - Phenyl-2-Propanone
  - Aluminum Foil
  - Mercuric Chloride

Methamphetamine Production Phenyl-2-propanone Method

- Characteristic Hazards:
  - Flammable, explosive atmospheres
  - Acute toxic chemical exposure
  - Acutely corrosive atmospheres

Methamphetamine Production Nazi Method

- Characteristic Chemicals:
  - Anhydrous Ammonia
  - Sodium or Lithium metal
  - Hydrochloric Acid

Methamphetamine Production Nazi Method

- Characteristic Equipment:
  - Beverage containers
  - Kitchen utensils
  - Cooling apparatus

Methamphetamine Production Nazi Method

- Characteristic Hazards:
  - Flammable, explosive atmospheres
  - Acutely reactive metals
  - Acutely corrosive atmospheres

Phenyl-2-Propanone Production Phenyl Acetic Acid Method

- Characteristic Chemicals:
  - Phenyl Acetic Acid
  - Acetic Anhydride
  - Sodium Acetate

Phenyl-2-Propanone Production Phenyl Acetic Acid Method

- Characteristic Hazards:
  - Flammable atmosphere
  - Acute toxic chemical exposure
  - May involve exposure to suspect carcinogens

Phenyl-2-Propanone Production Benzyl Cyanide Method

- Characteristic Chemicals:
  - Benzyl Cyanide
  - Sodium Metal
  - Ethyl Acetate

Phenyl-2-Propanone Production Benzyl Cyanide Method

- Characteristic Hazards:
  - Waste reactive metal (fire, explosion)
  - Flammable atmosphere
  - Acutely corrosive atmospheres
  - Exposure to ammonia

Phenyl-2-Propanone Production Benzaldehyde Method

- Characteristic Chemicals:
  - Benzaldehyde
  - Nitroethane
  - Iron fillings

Phenyl-2-Propanone Production Benzaldehyde Method

- Characteristic Hazards:
  - Flammable and explosive atmosphere
  - Exposure to strong corrosives
  - Exposure to highly toxic amine compounds
  - Exposure to suspect carcinogen

Phenyl-2-Propanone Production Lead Acetate Method

- Characteristic Chemicals:
  - Lead Acetate
- Characteristic Equipment:
  - Flask
  - Distillation column
  - Heat source

Phenyl-2-Propanone Production Lead Acetate Method

- Characteristic Hazard:
  - Exposure to suspect carcinogen

Drug Lab Locations

- Common locations:
  - In urban areas
  - In rural areas
  - Along transportation routes
  - Inside vehicles and conveyances

Common Facilities

- Buildings:
  - Industrial and commercial complexes
  - U-store-it buildings
  - Residences

Common Facilities

- Transportation vehicles:
  - Passenger, recreational and commercial vehicles
  - Recreational and commercial vessels

Drug Lab Locations

- Other:
  - Tunnels, mine shafts, and other subterranean areas
  - Remote disposal sites

Exterior Recognition Clues

- Unusual structures
- Assemblages of equipment
- Accumulations of wastes

Exterior Recognition Clues

- Fortifications
- Unusual security systems or devices
- Efforts at camouflage or concealment

Exterior Recognition Clues

- Discoloration
  - Structures
  - Pavement
  - Soils
- Bleached, tarnished, rusted/corroded

Exterior Recognition Clues

- Strong or unusual chemical odors
  - Ether-like (anesthetic, sweet), common solvent, vinegar-like, ammonia, pungent, acrid or sour
- May cause nose, eye, or throat irritation

Chemicals and Associated Wastes

- Precursor and essential ingredients:
  - Chemical/physical properties
  - Common colors
  - Common odors

Chemicals and Associated Wastes

- Catalysts, reagents and solvents:
  - Chemical/physical properties
  - Common colors
  - Common odors

Chemicals and Associated Wastes

- Hazardous wastes
  - Chemical/physical properties
  - Common colors
  - Common odors
- Municipal solid waste
- Sewage

Clandestine Methamphetamine Laboratories Training Program

First Responder Awareness & Operations

Section D

First Responder Actions

Protective Equipment

- Routes of entry
  - Inhalation
  - Absorption
  - Ingestion
  - Injection

Responder Limitation

- Number one responder limitation:
  - Lack of chemical protective clothing

Responder Limitation

- Firefighter turnouts are not CPC
  - Even with SCBA they are Level D
- Police equipment may absorb Haz Mats
  - Leather gear and ballistic protection

Health Effects "Acute" vs. "Chronic"

- Acute: One time, limited, or short term
  - May not manifest immediately
- Chronic: Repeated or long term

Health Effects "Acute" vs. "Chronic"

- Acute effects
  - Range from no immediate effects to death within minutes
  - Could cause death, injury, illness, or systemic damage

Health Effects "Acute" vs. "Chronic"

- Chronic effects
  - May not be detectable for years
  - Could cause death, injury, illness, or systemic damage

Health Effects

- Haz Mats harm/kill via chemical reaction to "toxic end points"
  - (i.e., target organs)

Health Effects

- Carcinogenicity (cancer)
- Hepatotoxicity (liver damage)
- Neurotoxicity (nervous system damage)
- Nephrotoxicity (kidney damage)

Toxicology Variables

- Type of material
- Pathway
- Dose (concentration) received
- Duration and frequency of exposure

Toxicology Variables

- Personal tolerances
- Variable sensitivities
  - Age, medical history, gender, general state of health, personal habits, medications taken, etc.

Acute and Chronic Health Effects of Chemicals Involved in Production

Chemical	Acute	Chronic
Acetone	Nose, throat, eye irritation	Kidney, liver, nerve damage; Increased birth defects
Anhydrous NH_3	Burns to skin, eyes, coughing blindness, lung damage, death	Chronic respiratory & eye damage, asthma & fibrosis

Acute and Chronic Health Effects of Chemicals Involved in Production

Chemical	Acute	Chronic
Benzene	Drowsiness, dizziness, headaches, convulsions, death	Anemia, immune system alterations & leukemia
Chloroform	Dizziness, fatigue, headaches, liver/kidney damage, birth defects	Possible carcinogen

Acute and Chronic Health Effects of Chemicals Involved in Production

Chemical	Acute	Chronic
Hydriodic acid	Irritation to skin, eyes, throat labored breathing, burns & blisters to skin on contact	Digestive disorders
Phosphorus	Irritation to throat & lungs; poor wound healing in mouth, death	Liver, heart, kidney damage

Initial Response Actions

- Preserve evidence

Initial Response Actions

- Hazards of laboratory processes
- Three "strategies" to stabilize an event
  - Non-Intervention
  - Defensive/Contain
  - Offensive/Control

Initial Response Actions

- Non-Intervention
  - No direct actions other than S.I.N.
- Defensive/contain
  - Slows and restricts Haz Mat spread (FROs)
- Offensive/control
  - Stops Haz Mat release (Techs or Specs)

Initial Response Actions

- Move from:
  - No fight, to defensive, to offensive
    - When level, resources and capabilities of responders are in line with strategy

When to Not Intervene?

- Unsafe
- Threat to life
- Lack resources
- Lack PPE, etc.

Methods of Non-intervention

- Isolate and deny entry
- Retention
  - (E.G. let collect in natural low area or sump)

Protective Actions

- Types of protective actions
  - Evacuation
  - In-place protection (shelter-in-place)

Criteria for Selecting

- Materials involved
- Population threatened
- Responder resources and capabilities
- Time factors involved
- Current and predicted weather
- Ability to communicate with public

Type of Contamination

- Type of material
- Physical state of material

Types of Decontamination

- Full or routine decontamination
  - Primary (Hasty) – done on site, during the incident
  - Secondary (Technical) – done off site, post incident
- Emergency decontamination

Types of Decontamination

- Emergency decontamination
  - Move the victim to a safe refuge
  - Flush off gross contamination
  - Remove all contaminated clothing
  - Flush victim again
    - With copious amounts of water

Considerations

- Absorption:
  - Clothing
  - Draperies
  - Carpeting
  - Bedding
- Adsorption:
  - Wooden surfaces
  - Walls
  - Floors
  - All other

Considerations

- Cleanup is the responsibility of the owner.
- Dispose of anything that cannot be cleaned.
- Wash with detergent and water. Test water to determine whether treatment is needed before disposal.
- Kilz

Drug Enforcement Administration

Guidelines for Law Enforcement for the Cleanup of Clandestine Drug Laboratories

2005 Edition