HHE Health Hazard® Evaluation Program

Evaluation of Potential Unintentional Illicit Drug Exposure at a County Jail

HHE Report No. 2018-0175-3359

October 2019

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

Authors: **Jessica F. Li, MSPH**

Kenneth Mead, PhD, PE

Dylan Neu, BS

Field Assistance: Sophia Chiu

Desktop Publisher: Jennifer Tyrawski

Editor: Cheryl Hamilton

Logistics: Donnie Booher, Kevin Moore

Keywords: North American Industry Classification System (NAICS) 922120 (Police Protection), Ohio, Drugs, Illicit Drugs, Opioids, Corrections, Law Enforcement

Disclaimer

The Health Hazard Evaluation Program investigates possible health hazards in the workplace under the authority of the Occupational Safety and Health Act of 1970 [29 U.S.C. § 669(a)(6)]. The Health Hazard Evaluation Program also provides, upon request, technical assistance to federal, state, and local agencies to investigate occupational health hazards and to prevent occupational disease or injury. Regulations guiding the Program can be found in Title 42, Code of Federal Regulations, Part 85; Requests for Health Hazard Evaluations [42 CFR Part 85].

Availability of Report

Copies of this report have been sent to the employer and employees. The state and local health departments and the Occupational Safety and Health Administration Regional Office have also received a copy. This report is not copyrighted and may be freely reproduced.

Recommended Citation

NIOSH [2019]. Evaluation of potential unintentional illicit drug exposure at a county jail. By Li JF, Mead K, Neu D. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Health Hazard Evaluation Report 2018-0175-3359, https://www.cdc.gov/niosh/hhe/reports/pdfs/2018-0175-3359.pdf.

Table of Contents

Main Report

Supporting Technical Information

This page left intentionally blank

Introduction

Request

A Sheriff's Office requested a health hazard evaluation concerning recommendations to minimize the impact of the potential unintentional exposure to illicit drugs at a county jail. None of the jail employees had reported experiencing health effects from any drug exposure. The Sheriff's Office made the request because a nearby county jail was reported to have had a drug exposure incident resulting in health effects among correctional officers and the temporary closing of the facility for decontamination.

Workplace

This Sheriff's Office had approximately 75 employees of which 24 worked at the county jail. At the time of the site visit, the county jail housed 59 inmates. The daily population in 2018 ranged from 56 to 88 inmates. In 2018, the county jail booked 1,539 inmates, and of these, 303 inmates were held at the jail for other agencies.

To learn more about the workplace, go to Section A in the Supporting Technical Information

Our Approach

We did a walkthrough of the jail in October 2018. We completed the following activities during our evaluation:

- Visually assessed ventilation.
- Discussed potential exposure areas with management.
- Discussed the inmate intake process and other work practices.
- Reviewed relevant records and documents.

To learn more about our methods, go to Section B in the Supporting Technical Information

Our Key Finding

Contamination and the potential for unintentional exposure were more likely in certain areas of the jail

- We determined the potential for unintentional exposure to illicit drugs in each area based on who used and had access to the area, along with the likelihood of opioids and other drugs being brought in the area.

- We identified these areas as being higher risk for airborne illicit drug contamination: public lobby, inmate intake area (body scanner and sally port, or secure entryway to the jail), classroom/library, garage, and evidence room.

To learn more about our results, go to Section B in the Supporting Technical Information

Our Recommendations

The Occupational Safety and Health Act requires employers to provide a safe workplace.

Benefits of Improving Workplace Health and Safety:

- ↑ Improved worker health and well-being
- ↑ Better workplace morale
- ↑ Easier employee recruiting and retention
- ↑ Enhanced image and reputation
- ↑ Superior products, processes, and services
- ↑ May increase overall cost savings

The recommendations below are based on the findings of our evaluation. For each recommendation, we list a series of actions you can take to address the issue at your workplace. The actions at the beginning of each list are preferable to the ones listed later. The list order is based on a well-accepted approach called the "hierarchy of controls." The hierarchy of controls groups actions by their likely effectiveness in reducing or removing hazards. In most cases, the preferred approach is to eliminate hazardous materials or processes and install engineering controls to reduce exposure or shield employees. Until such controls are in place, or if they are not effective or feasible, administrative measures and personal protective equipment might be needed. Read more about the hierarchy of controls: https://www.cdc.gov/niosh/topics/hierarchy/.

We encourage the jail to use a health and safety committee to discuss our recommendations and develop an action plan. Both employee and management representatives should be included on the committee. Helpful guidance can be found in "*Recommended Practices for Safety and Health Programs*": https://www.osha.gov/shpguidelines/index.html.

Recommendation 1: Optimize building ventilation systems to reduce the likelihood of airborne contamination

Why? Proper ventilation and pressurization are vital for maintaining building temperature and humidity, controlling the directions of airflow, and preventing the spread of airborne contaminants. In controlled environments, such as hospitals and correctional facilities, the flow of air between areas should be based on who can access the area and its function. Controlling airflow in these environments is important for preventing illness and exposure to biological and chemical contaminants.

How? At your workplace, we recommend these specific actions:

Maintain appropriate pressurization in the jail.

- In general, air in the jail should flow from areas that are less likely to be contaminated to the areas that are more likely to be contaminated. This will help prevent the spread of contamination from these higher risk areas to other areas.
    - To accomplish this, higher risk areas of exposure should be negatively pressurized compared to lower risk areas.
- Maintain the lobby at a negative pressure relative to adjacent areas. This means that air from adjacent areas should flow into the lobby, and any contaminant released in the lobby should not migrate into adjacent areas.
    - Seal unnecessary openings between the lobby and adjacent administrative areas to maintain pressurization.
- Add a partition between the booking area and the booking window and positively pressurize the booking area with clean supply air. This would prevent air from the lobby moving into the booking desk area.
- Maintain the classroom/library at a negative pressure relative to the adjacent hallway. Air should flow from the adjacent hallway into the classroom/library.
- Maintain the maintenance office in the garage at a positive pressure relative to the garage bays. Air should flow from the maintenance office into the garage bays. This will prevent air from the garage from impacting the maintenance office.
- Maintain the secure evidence storage and bagging areas at a negative pressure relative to the evidence office area. Maintain the evidence office area at a negative pressure relative to the adjacent hallway and at a positive pressure relative to the garage.

Add centralized high-efficiency filtration for air handlers that serve areas likely to have illicit drug contamination.

- Work with a ventilation engineer to determine if the existing ventilation systems can handle the higher pressure required for a high efficiency particulate air (HEPA) filter. Modifications to the existing ventilation systems may be needed.
- Enhanced filtration would help to capture and remove aerosol contaminants released into these areas. The air handlers serving the public lobby and evidence room (Air Handler 2) and the inmate intake area (Air Handler 3), and the inmate classroom/library (Air Handler 4) were those deemed to be at higher risk.

Activate the garage exhaust system when a vehicle is running or being searched in the garage.

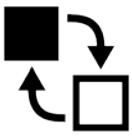
Recommendation 2: Use precautions to protect employees handling evidence in the evidence room

Why? Officers handle evidence that may contain hazardous substances capable of causing harmful health effects. It is important to protect these officers and other employees from exposure to these substances. Local exhaust ventilation systems protect employees from exposure to hazardous substances by capturing and removing them where they are released.

How? At your workplace, we recommend these specific actions:

Use local exhaust ventilation when handling evidence.

- Work with a ventilation engineer to install a local exhaust system designed for evidence processing, such as a benchtop ventilated enclosure (fume hood or containment ventilated enclosure) with HEPA-filtered exhaust.
- Air from the local exhaust ventilation should be filtered and exhausted outdoors.
- To insure this ventilation system is used, hardwire the exhaust fan to the light switch so that when the lights are turned on, the ventilation system also turns on.



Use disposable work surface coverings when handling evidence. Dispose of these coverings after each case.

Use work practices that minimize the possible aerosolization of powders.

Require all employees wear disposable nitrile gloves when handling evidence.

Recommendation 3: Evaluate Sheriff's Office policies and procedures

Why? It is important to prepare and train employees for both routine and nonroutine exposure to hazardous drugs that may occur. Developing and practicing these responses will decrease the potential for contaminant migration and employee exposure.

How? At your workplace, we recommend these specific actions:

Develop policies and procedures for emergency situations.

- Define the types of emergency situations being planned for.
- Train employees at least annually on how to respond to an emergency in the jail.
    - Include details concerning when evacuation is an appropriate procedure.
    - Identify and practice specific response strategies for the most likely exposure scenarios.
    - Continue following the current naloxone policy and update as needed.
- Determine the feasibility of developing and instituting an emergency ventilation exhaust option as part of the emergency plan for higher risk areas.

Create employee work practice and personal protective equipment use policies and procedures.

- Determine if there are certain tasks and work duties that are more likely to lead to exposure to hazardous drugs.
- Train employees at least annually on these policies and procedures.
- Consider consulting the NIOSH guidance on Preventing Occupational Exposure to Emergency Responders. Although not directly intended for jail employees, it may provide useful information: https://www.cdc.gov/niosh/topics/fentanyl/risk.html.

Supporting Technical Information

Evaluation of Potential Unintentional Illicit Drug Exposure at a County Jail

HHE Report No. 2018-0175-3359

October 2019

Section A: Workplace Information

Jail Building

Size: 47,881 square feet

Jail capacity: 108 cells (4 cells in intake)

Daily average inmate count in 2018: 56–88

Inmates booked in 2018: 1,539 (74% male)

Ventilation systems: The public lobby and the evidence room were served by Air Handler 2. The inmate intake area was served by Air Handler 3. The inmate classroom/library was served by Air Handler 4. The garage was not served by a mechanical heating or cooling system but had a designated exhaust system.

History of Issue at Workplace

This Workplace

No employee illnesses caused by unintentional illicit drug exposure had been reported at this county jail. However, there was concern about such potential drug exposure because of an incident at a nearby facility, described below. We were asked to evaluate this facility and provide recommendations to prevent a similar occurrence from happening. Jail employees had described instances in which drugs or drug paraphernalia were found in the jail and on incoming inmates during the intake process.

Incident Reported at a Nearby Workplace

In 2018, at a nearby county jail, employees were booking an inmate when they were exposed to an unknown white powder. Shortly afterward, four jail employees and the inmate reported symptoms and were transported for medical treatment. This county jail was locked down and closed for approximately 2 hours for investigation and area decontamination. The unknown powder was identified by the forensics lab as methamphetamine.

The morning after the incident, the air handling units in the affected area were turned back on. Several hours later, ten jail employees reported symptoms. The jail closed for over three weeks for decontamination. A statement from the county Sheriff's Office where this incident occurred stated that they believed that air containing the drug powder was recirculated by the air handling unit serving the area.

Process Description

Inmate Arrival

Jail employees are notified when inmates are brought to the jail for intake. However, employees are not notified whether the inmate has been arrested for drug-related charges. Inmates arrive at the jail through the sally port. The transporting officer brings the inmate into the jail. Jail employees meet the inmate in the hallway of the intake area. At the time of our visit this hallway contained a full body scanner that

provided an X-ray image of the body along with any hidden drugs or paraphernalia. Jail employees fill out a pre-screening questionnaire for each inmate to determine if the inmate can be scanned with the body scanner and if the inmate needs further medical clearance or evaluation before booking. The blood alcohol concentration testing room and the work release room, where inmates shower and change for work release, are also accessible from this hallway.

Booking

If inmates are scanned using the body scanner and drugs are identified on the X-ray image, the inmate is asked to voluntarily remove the drugs. If inmates do not comply, they are taken to the hospital for a body cavity search. Inmates returning from work release are patted down and might be scanned with the body scanner.

Following the screening, the inmates are brought to the booking area to be photographed and fingerprinted. The inmates shower in the presence of a jail employee and are given a clean uniform. The jail employee places the inmate's property in a mesh bag in the property room where the property and any mail received are kept until the inmate is released from the jail.

After showering, the inmate is placed into an intake area holding cell for approximately 12 hours before moving to a housing unit in the jail.

Section B: Methods, Results, and Discussion

The objectives of our evaluation were as follows:

- Determine where unintentional illicit drug exposure was likely to occur, and which employees were likely to be affected.
- Determine ways to isolate areas of greatest concern for unintentional illicit drug exposure.
- Evaluate workplace policies for preventing employee drug exposure as well as the procedures for when an exposure occurs.

Methods: Walkthrough and Observations

We conducted a walkthrough of the county jail. For each area or room, we discussed with jail employees the likelihood of illicit drugs being present in the area and routes through which drugs could enter the area. Using this information, we determined the areas with higher risk of airborne drug contamination by considering the area's function, who had access to the area, and the likelihood that drugs could be present in the area.

Results: Walkthrough and Observations

Areas Identified as Higher Risk

Public Lobby

The public lobby was open and accessible to the general public 24 hours per day, 7 days per week. Because it was open to anyone, and access and activity were not closely monitored by jail employees, the lobby was determined to be higher risk. The public lobby was served by Air Handler 2.

Inmate Intake

Inmates passed through this area when they were booked into the jail. Inmates were escorted into the jail by a law enforcement officer through the sally port. Inmates were then screened for drugs and other contraband. When inmates arrived, the arresting officer had already patted down and searched the inmate's clothing and possessions for drugs and other contraband. The inmate intake area was determined to be higher risk because inmates carrying drugs could attempt to discard or hide drugs they had brought into the area. Aside from jail employees and other law enforcement officers, only inmates had access to this area. The inmate intake was served by Air Handler 3.

Jail employees were notified when an incoming inmate was being transported to the jail. Employees assumed that each incoming inmate had the potential to carry drugs with them into the jail. We were told anecdotally that a high percentage of incoming inmates were arrested for drug-related crimes.

Inmate Classroom/Library

The inmate classroom/library was located near the inmate dormitories. Inmates were able to use this area upon request. Books were stored in this room, and inmates reportedly used these books to pass notes and small items among themselves. Along with inmates who requested access, this area was also

accessible by jail employees and program volunteers. The inmate classroom/library was served by Air Handler 4.

Evidence Room

Evidence, which may include drugs and drug paraphernalia, was handled and stored in the evidence room. Officers packaged and processed evidence to be submitted to the forensic lab. There was no local exhaust ventilation or disposable protective covering on the desk where evidence was processed. Access to this area was restricted to only the evidence custodian and an alternate custodian. The evidence room was served by Air Handler 2.

Garage

The garage housed the Sheriff's Office vehicles and impounded vehicles to be searched for evidence related to a crime. Evidence found in searched vehicles could include drugs and drug paraphernalia. The garage was accessible to all Sheriff's Office employees with limited public access (e.g., tow truck drivers). The garage had no building supply ventilation but had an exhaust fan.

Methods: Document Review

We reviewed the following Sheriff's Office documents:

- Pre-screening questionnaires for the body scanner and inmate booking
- Naloxone Policy
- Policy for the Collection and Preservation of Evidence
- Policy for Impounding Vehicles – Inventory and Documentation
- Policy for Searches
- Two incident reports where incoming inmates brought drugs into the jail. One of the incident reports detailed three separate instances of inmates bringing drugs into the jail.

Results: Document Review

Pre-screening Questionnaires

The pre-screening questionnaire for the body scanner asked health-related questions that would disqualify an incoming inmate from going through the body scanner. If the incoming inmate could not be screened using the body scanner, the jail did not accept the subject if they were being housed for another agency. If the subject was under the Sheriff's jurisdiction, the subject was transported to the hospital for a body cavity check by a hospital employee.

The pre-screening questionnaire asked about health issues that might need to be addressed. Additionally, the questionnaire asked if the incoming inmate was going through withdrawal from any type of drugs or alcohol or if the incoming inmate received naloxone within the last two hours. Subjects who had received naloxone within the last two hours had to be cleared by the hospital before acceptance into the jail.

Incident Reports

The first incident report described an incident from September 2017 where a female inmate brought in a pill bottle containing a white rock suspected to be illicit drugs. The inmate stated that the white rock was probably "a crack rock." A field drug test identified the rock as positive for cocaine. The incident report did not describe how the pill bottle was found or how the inmate brought it into the jail. The incident occurred on the same day that the inmate was brought to the jail. It was unclear in the incident report if the pill bottle was discovered by jail staff before or after booking.

The second incident report described three separate incidents. The incident report was written three days following the last of the three incidents, which was in March 2018. The first incident occurred in November 2017. A pack of cigarettes, a lighter, and a piece of plastic were found. It was unknown who brought in and left these items, and the incident report did not describe exactly where they were found. Once discovered, the items were placed in an evidence bin in the booking area. The second incident listed on this report occurred in January 2018. A white folded paper with a crystal substance was found on the floor near the booking counter. Security camera footage was not able to determine who placed these items on the floor. Because the suspect could not be determined, the items were not submitted for testing. The third incident listed on this report occurred in March 2018. A small bag with white residue was found on an inmate during the booking process. The report stated that there was not enough residue to submit for testing.

Sheriff's Office Policies

We reviewed the Sheriff's Office naloxone policy that defined opiates and naloxone, described when and how to use intranasal naloxone, and identified who should administer the naloxone. The policy stated where naloxone was stored in the jail. The policy also described the signs and symptoms of opioid overdose and the procedures to take when using naloxone on a subject. Additionally, the policy defined how to store the naloxone and who was in charge of inspecting, maintaining, and replacing naloxone kits. The policy stated that deputies would receive training administered by the Sheriff's Office, including an annual refresher course, prior to carrying naloxone.

The Sheriff's Office policy for searches defined body cavity searches and strip searches, describing how and when both of these were to be conducted. The policy stated that officers should use caution to avoid concealed sharps when inspecting pockets; linings; fly, waistband, cuffs, seams, collars, and hatband; insides of garments; soles, heels, and inside of shoes; and socks (inside and outside). The policy did not contain information related to potential drug exposure and precautions and personal protective equipment (PPE) to use when conducting searches of subjects.

The policy on impounding vehicles and the policy on the collection and preservation of evidence did not contain information related to potential employee drug exposure or what PPE to use when conducting those tasks.

Discussion

During our site visit, we identified different areas that could become contaminated by illicit drugs brought into the jail by inmates. We determined that the employees most likely to be affected by an

illicit drug contamination event are the employees who work in these areas, which include corrections officers and nurses, along with the law enforcement officers who transport incoming inmates to the jail.

We recommended potential changes to the ventilation systems that could help minimize the possibility of illicit drugs being dispersed through the ventilation systems from the higher risk areas. These ventilation recommendations should help contain any contamination that might occur in the higher risk areas, so that fewer people and areas are impacted. To achieve this, air in the jail should flow from areas that are less likely to be contaminated to the areas that are more likely to be contaminated. For example, air should flow into the public lobby and then be exhausted outside. Adding high-efficiency filtration to the air handlers that serve the higher risk areas would help to prevent the spread of contaminants into other areas of the jail and outside. This would decrease the risk of exposure to other jail employees and to the public.

In addition to changes to the ventilation systems, we also recommended engineering and administrative controls to prevent illicit drugs from being present in the air or on surfaces in the evidence room. The Sheriff's Office is currently revising their policies and procedures for situations in which an evacuation and/or an emergency exhaust option might be needed.

Limitations

There was limited documentation on incidents where illicit drugs had been brought into the jail. In many of these incidents, the route of entry into the jail was not identified in the incident report.

Conclusions

We provided recommendations to a county jail to reduce the likelihood of airborne illicit drug exposure to jail employees. We recommended making changes to the ventilation systems and adding controls to prevent exposure to illicit substances in the evidence room. We also recommended developing or revising other types of policies and procedures focused on preventing illicit drug exposure and responding to such an exposure event if it was to occur.

Section C: References

CFR [2019]. Code of Federal Regulations. Washington, DC: U.S. Government Printing Office, Office of the Federal Register, https://www.ecfr.gov/cgi-bin/ECFR?page=browse.

Delivering on the Nation's promise: Promoting productive workplaces through safety and health research

Get More Information

Find NIOSH products and get answers to workplace safety and health questions:

1-800-CDC-INFO (1-800-232-4636) | TTY: 1-888-232-6348
CDC/NIOSH INFO: cdc.gov/info | cdc.gov/niosh
Monthly *NIOSH eNews*: cdc.gov/niosh/eNews