



OFFICE *of*
INSPECTOR GENERAL
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UNITED STATES DEPARTMENT OF
HOUSING AND URBAN DEVELOPMENT

Carbon Monoxide in HUD-Assisted Housing

2022-OE-0004

October 24, 2023

Date: October 24, 2023

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Subject: Final Report – Carbon Monoxide in HUD-Assisted Housing (2022-OE-0004)

Please see the attached final report on carbon monoxide in U.S. Department of Housing and Urban Development (HUD)-assisted housing. It contains four findings and no recommendations. Our evaluation objectives were to determine

1. HUD's plans and progress in ensuring that all public housing agencies (PHA) and owners of certain HUD-assisted housing comply with the requirements of the Consolidated Appropriations Act of 2021 (the Act) and
2. HUD's progress in developing guidance to PHAs to educate residents on the health hazards of carbon monoxide in accordance with the Act.

In response to our draft report, the Office of Lead Hazard Control and Healthy Homes (OLHCHH) and the Office of Community Planning and Development (CPD) provided technical comments, which we incorporated into the final report as appropriate. We offered the Office of Public and Indian Housing, the Office of Housing, OLHCHH, and CPD the opportunity to provide formal comments. As this report does not contain any recommendations, formal comments were optional. The program offices did not provide formal comments.

I greatly appreciate the assistance you and your staff provided throughout the evaluation. The report will be posted to our website within 3 days. Please contact Christopher Backley, Director of the Program Evaluations Division, at 202-731-9804 or cbackley@hudoig.gov with any questions.

Executive Summary

CARBON MONOXIDE IN HUD-ASSISTED HOUSING | 2022-OE-0004

Why We Did This Evaluation

In the Consolidated Appropriations Act of 2021 (the Act),¹ Congress included a requirement that public housing agencies (PHA) and owners of certain U.S. Department of Housing and Urban Development (HUD)-assisted housing ensure that, by December 27, 2022, their dwelling units had carbon monoxide detectors installed. The Act addresses, in part, the fact that a number of residents had lost their lives due to carbon monoxide poisoning in federally assisted housing. The Act also required the HUD Secretary to provide guidance to PHAs on how to educate residents on health hazards, including carbon monoxide.

We initiated this review to assess (1) HUD's plans and progress in ensuring that all PHAs and owners of certain HUD-assisted housing comply with the Act's requirements and (2) HUD's progress in developing guidance to PHAs to educate residents on the health hazards of carbon monoxide in accordance with the Act. We also interviewed 15 PHAs to learn about their experiences with implementing the requirements for carbon monoxide detector installation in accordance with the Act.

Results of Evaluation

HUD program offices issued departmental notices to inform PHAs and owners of the Act's requirements. In addition, HUD program offices planned to use HUD's revised physical inspection processes to ensure that PHAs and owners complied with the Act, namely under its new National Standards for the Physical Inspection of Real Estate (NSPIRE), which incorporate the Act's requirements into its carbon monoxide standard, to ensure that PHAs and owners complied with the Act. The final NSPIRE rule is effective July 1, 2023, for public housing programs, October 1, 2023, for multifamily housing programs, and October 1, 2024, for the Housing Opportunities for Persons With AIDS program, Housing Choice Voucher Program, and Project-Based Voucher Program. HUD will need up to 3 years to complete NSPIRE inspections for HUD-assisted properties. However, PHAs and owners will self-inspect all units annually.

In addition to previous guidance and training material, HUD provided PHAs with guidance in the Joint Notice PIH [Office of Public and Indian Housing], H [Office of Housing], OLHCHH [Office of Lead Hazard Control and Healthy Homes] 2022-01 about the Act's requirements. The notice provided educational material and initial information and guidance for PHAs, owners, and managers to educate residents on health hazards, including carbon monoxide.

At the time of our interviews, all 15 PHAs expected to have carbon monoxide detectors installed by the statutory deadline of December 27, 2022. The PHAs identified three barriers to completing the required installations: (1) lack of funding to implement the requirements in the Act, (2) residents' tampering with carbon monoxide detectors, and (3) procurement processes for carbon monoxide detectors taking longer than expected.

¹ Section 101, Carbon Monoxide Alarms or Detectors in Federally Assisted Housing, of Title I of Division Q, Financial Services Provisions and Intellectual Property, of the Consolidated Appropriations Act, 2021, Public Law 116-260, 134 Stat. 2162 (2020)

Table of Contents

Executive Summary	i
Why We Did This Evaluation	i
Results of Evaluation	i
Introduction	1
Objectives.....	1
Background	1
Findings	4
HUD Issued a Joint Notice To Inform PHAs and Owners of Certain HUD-Assisted Housing of the Act’s Requirements.....	4
HUD’s Final NSPIRE Rule Incorporated the Act’s Requirements Into Its Carbon Monoxide Detector Standard.....	4
HUD Provided PHAs With Some Guidance on Educating Residents on the Hazards of Carbon Monoxide in Accordance With the Act	5
Selected PHAs Expected To Have Carbon Monoxide Detectors Installed by the Act’s Deadline	6
Conclusion	9
Appendixes	10
Appendix A – Agency Comments and OIG Response	10
Appendix B – Scope, Methodology, and Limitations	11
Appendix C – HUD’s Resident Education Resources on Health Hazards of Carbon Monoxide in the Home.....	13
Appendix D – Abbreviations.....	14
Appendix E – Acknowledgements.....	15

Introduction

OBJECTIVES

Our evaluation objectives were to assess

1. The U.S. Department of Housing and Urban Development's (HUD) plans and progress in ensuring that all public housing agencies (PHA) and owners of certain HUD-assisted housing comply with the requirements of the Consolidated Appropriations Act of 2021 (the Act) and
2. HUD's progress in developing guidance for PHAs to educate residents on the health hazards of carbon monoxide in accordance with the Act.

BACKGROUND

Carbon monoxide is an odorless, colorless, and toxic gas released when fossil fuels burn incompletely. Exposure to high levels of carbon monoxide can lead to loss of consciousness or even death. According to the Centers for Disease Control and Prevention (CDC), every year in the United States, at least 420 people die, and about 100,000 people visit emergency departments due to carbon monoxide poisoning. The CDC also states that carbon monoxide poisoning is entirely preventable and recommends that households install carbon monoxide detectors² to prevent exposure.

HUD Had Taken Actions Addressing Carbon Monoxide in HUD-Assisted Housing Before Congress Enacted the Act

On March 25, 2019, HUD's Real Estate Assessment Center (REAC) issued Inspector Notice 2019-01, which required all Uniform Physical Condition Standards (UPCS) inspectors to collect data to determine the prevalence of carbon monoxide detectors at HUD properties subject to UPCS inspections. Inspector Notice 2019-01 required UPCS inspectors also to collect data on the presence of a source of carbon monoxide, such as fossil fuel burning appliances. The data collection was intended to gather data on the total number of carbon monoxide detectors that were working, not working, or missing; however, the status of a carbon monoxide detector did not affect a property's inspection score.

On April 18, 2019, the Office of Public and Indian Housing (PIH), Office of Housing (Housing or H), and Office of Lead Hazard Control and Healthy Homes (OLHCHH) issued Joint Notice PIH, H, OLHCHH 2019-01 regarding carbon monoxide detectors in HUD-assisted housing. The notice described the need for carbon monoxide detectors to prevent carbon monoxide poisoning. The notice reminded owners, managers, and agents of certain HUD-assisted housing to have operational carbon monoxide detectors if required by State or local law, code, or other regulation and strongly encouraged them even if not required to do so if a nearby fuel source could affect HUD-assisted units.

² A carbon monoxide alarm is a single or multiple station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. A carbon monoxide detector is a device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit. In this report, carbon monoxide detectors refer to both carbon monoxide alarms and detectors. According to the 2021 International Fire Code (IFC), combination carbon monoxide and smoke detectors are an acceptable alternative to carbon monoxide detectors.

The Act Requires the Installation of Carbon Monoxide Detectors in Certain HUD-Assisted Housing

In response to a number of deaths caused by carbon monoxide poisoning in federally assisted housing, Congress passed carbon monoxide detector requirements for HUD-assisted housing in December 2020.³ The Act requires PHAs and owners of certain HUD-assisted housing to ensure that their dwelling units had carbon monoxide alarms or detectors installed “in a manner that meets or exceeds the standards described in chapters 9 and 11 of the International Fire Code [IFC] or any other standards as may be adopted by the Secretary by December 27, 2022.”⁴ In addition, the Act requires the HUD Secretary to provide guidance to PHAs on how to educate residents on health hazards in the home, including, among other things, carbon monoxide.

PHAs and owners of certain HUD-assisted housing participating in the following six HUD programs within PIH, Housing, and Office of Community Planning and Development (CPD) are now required to have carbon monoxide detectors installed in their dwelling units. Below are brief descriptions of the six HUD programs covered by the Act and the number of households they serve.

PIH Programs

1. Public Housing Programs

HUD established its public housing programs to provide decent and safe rental housing for eligible families with low incomes, the elderly, and persons with disabilities. In these programs, local PHAs, which own the properties, receive allocations of HUD funding to build, operate, or improve housing. About 917,000 households are living in public housing units managed by some 3,300 PHAs nationally.

2. Tenant-Based Assistance

Tenant-based assistance is the most prevalent form of housing assistance HUD provides. One example of tenant-based assistance is the Housing Choice Voucher Program (HCV). PHAs administer housing choice vouchers locally and receive Federal funds from HUD to administer the program. Through these programs, residents receive housing assistance in the form of a rental subsidy, such as rent and security deposits, to cover housing costs. HCV provides housing assistance to more than 2.3 million American families.

Housing Programs

1. Section 8 Project-Based Rental Assistance Programs

Project-based assistance programs, more generally referred to as Multifamily assisted programs, provide subsidies to private landlords who enter into contracts with HUD. These subsidies pay the difference between the tenant’s rent and total rental costs, thus reducing the burden on the renter. The Section 8 Project-Based Rental Assistance program provides housing assistance to more than 1.2 million low-income American families.

³ Section 101, Carbon Monoxide Alarms or Detectors in Federally Assisted Housing, of Title I of Division Q, Financial Services Provisions and Intellectual Property, of the Consolidated Appropriations Act, 2021, Public Law 116–260, 134 Stat. 2162 (2020)

⁴ HUD adopted the 2018 IFC as its standards for installing carbon monoxide detectors.

2. Section 202 Supportive Housing for the Elderly

Section 202 Supportive Housing for the Elderly (Section 202) provides direct, interest-free Federal loans to assist eligible recipients for the purpose of serving the elderly or physically handicapped, developmentally disabled, or chronically mentally ill adults. In addition, Section 202 provides capital advance funding and project rental subsidies for the supportive rental housing to maintain ongoing affordability. Section 202 provides approximately 350,000 units, primarily serving elderly residents.

3. Section 811 Supportive Housing for Persons With Disabilities

Section 811 Supportive Housing for Persons With Disabilities (Section 811) provides interest-free capital advance funding and operating subsidies to nonprofit developers of affordable housing for persons with disabilities and provides project rental assistance to State housing agencies. The assistance to State housing agencies can be applied to new or existing multifamily housing complexes funded through different sources, such as Federal Low-Income Housing Tax Credits; Federal HOME funds; and other Federal, State, and local programs. Section 811 has generated approximately 35,000 housing units for very low-income, nonelderly persons with disabilities.

CPD Programs

Housing Opportunities for Persons With AIDS

Housing Opportunities for Persons With AIDS program (HOPWA) provides formula allocations and competitively awarded grants to eligible entities, including States, cities, and nonprofit organizations. HOPWA provides rental housing assistance to meet the housing needs of low-income persons and their families living with HIV/AIDS. The recipients can use their grants to provide a variety of forms of rental housing assistance, including emergency and transitional housing, shared housing arrangements, community residences, and single-room-occupancy dwellings. As of June 30, 2021, program data showed that 29,514 households received facility-based housing and tenant-based rental assistance, and these units must undergo inspections to ensure their compliance with the habitability standards.

HUD's New Physical Inspection Standards Have Carbon Monoxide Detector Requirements for HUD-Assisted Housing

HUD conducts physical inspections of HUD-assisted properties to ensure that they are in a condition that is decent, safe, sanitary, and in good repair. On July 1, 2023, HUD implemented the National Standards for the Physical Inspection of Real Estate (NSPIRE) physical inspection standards for public housing programs. NSPIRE includes a standard for the installation of carbon monoxide detectors in HUD-assisted housing.

Findings

HUD ISSUED A JOINT NOTICE TO INFORM PHAS AND OWNERS OF CERTAIN HUD-ASSISTED HOUSING OF THE ACT'S REQUIREMENTS

In January 2022, PIH, Housing, and OLHCHH issued Joint Notice PIH, H, OLHCHH 2022-01, notifying PHAs and owners that HUD would enforce the Act's requirement that they install carbon monoxide detectors by December 27, 2022. On December 8, 2022, CPD issued Notice CPD-22-15 and informed grantees and project sponsors of the same requirement.

Congress authorized the appropriation of about \$101 million annually for fiscal years 2021 to 2023 for HUD to meet the requirements of the Act. Officials from PIH and OLHCHH informed us that Congress did not appropriate funds under that authorization. However, HUD has received funding that can be used to further the purposes of the Act and, in Joint Notice PIH, H, OLHCHH 2022-01, HUD advised PHAs, property owners, and landlords about various streams of funding available to meet the requirements of the Act. The notice outlined how PHAs may fund the installation of carbon monoxide detectors in public housing units through the use of operating funds or capital funds for the purchase, installation, and maintenance of the detectors. Further, the Public Housing Capital Fund program⁵ conducts competitions to provide additional funds for carbon monoxide detectors. For HCV and the Project-Based Voucher Program (PBV), property owners and landlords are responsible for the cost of carbon monoxide detectors. Owners of properties that receive assistance through HUD's Project-Based Rental Assistance program, Section 202, and Section 811 do not receive additional funds to cover the installation cost of carbon monoxide detectors but may use the property's reserve to cover the cost of installation.

In addition to the January 2022 joint notice, PIH issued Notice PIH 2023-10 in April 2023, announcing the availability of Public Housing Capital Fund Emergency Safety and Security Grants (ESSG) to fund safety and security emergencies, including the mitigation of carbon monoxide poisoning threats, and providing guidance to PHAs on how to apply for ESSG.

HUD'S FINAL NSPIRE RULE INCORPORATED THE ACT'S REQUIREMENTS INTO ITS CARBON MONOXIDE DETECTOR STANDARD

On January 13, 2021, HUD published the proposed NSPIRE rule, entitled "Economic Growth Regulatory Relief and Consumer Protection Act: Implementation of National Standards for the Physical Inspection of Real Estate." HUD published the final NSPIRE rule on May 11, 2023, in the Federal Register.⁶ On June 22, 2023, the final NSPIRE inspection standards notice was published in the Federal Register,⁷ and the standards are available on HUD's website. NSPIRE consolidated 14 dispersed program regulations governing prior inspection standards and created a unified inspection protocol for the public housing program, certain programs administered under Multifamily, HCV, and HOPWA. The final NSPIRE rule's effective date is July 1, 2023, for public housing programs, October 1, 2023, for multifamily housing programs, and October 1, 2024, for HOPWA, HCV, and PBV. Additionally, HUD stated that it had

⁵ The Public Housing Capital Fund program provides financial assistance in the form of grants to PHAs to carry out capital and management activities.

⁶ 88 Federal Register (FR). 30442 (May 11, 2023)

⁷ 88 FR 40832 (June 22, 2023)

conducted 15 “Get Ready Sessions” across the country to provide PHAs with guidance on the implementation of NSPIRE.

HUD incorporated the Act’s carbon monoxide detector standards into NSPIRE. NSPIRE’s carbon monoxide detector standard includes three deficiencies related to carbon monoxide detectors:

1. Carbon monoxide detector is missing, not installed, or not in a proper location.
2. Carbon monoxide detector is obstructed.
3. Carbon monoxide detector does not produce an audio or visual alarm when tested.

Under NSPIRE’s carbon monoxide detector standard, the lack or inoperability of a carbon monoxide detector is considered a deficiency and determined to be a life-threatening health and safety concern. All life-threatening health and safety concerns must be corrected within 24 hours. In its scoring notice for NSPIRE, HUD stated that it would not score carbon monoxide detector-related defects because residents often disable carbon monoxide detectors, which would lead to many properties’ failing their physical inspections or receiving a score of zero.

Under NPSIRE, PHAs and owners will self-inspect all units annually, which will allow PHAs and owners to identify units with missing or inoperable carbon monoxide detectors. HUD will not, however, receive the self-inspection results for PHAs with a physical inspection score of 60 or higher. Instead, PHAs and owners will maintain their self-inspection results for 3 years. Under NPSIRE, it may take HUD up to 3 years to conduct inspections on all properties.⁸ Until properties are inspected under NSPIRE, HUD must rely on the self-inspection process to ensure that carbon monoxide detectors are installed and operable.

HUD PROVIDED PHAS WITH SOME GUIDANCE ON EDUCATING RESIDENTS ON THE HAZARDS OF CARBON MONOXIDE IN ACCORDANCE WITH THE ACT

The Act states that HUD must provide guidance to PHAs on how to educate tenants on health hazards in the home, including carbon monoxide poisoning, lead poisoning, asthma induced by housing-related allergens, and other housing-related preventable outcomes, to help advance primary prevention and prevent future deaths and other harms. In its fiscal year 2022 Report to Congress on its efforts to meet the Act’s requirements, HUD stated that each year, it provides written guidance, technical assistance, and training to educate people on identifying and reducing health hazards in the home. In 2023, OLHCHH reserved funding in the Community Compass Technical Assistance Capacity Building (Community Compass) Program for guidance on carbon monoxide, which includes a webinar that will be posted to the HUD Exchange website. The webinar will address common causes of carbon monoxide intrusion, signs of exposure, and proper installation of carbon monoxide detectors.

In addition, HUD’s website provides outreach materials related to home health hazards, including carbon monoxide, some of which predate the Act.⁹ For example, in August 2016, OLHCHH published outreach

⁸ REAC will begin performing physical inspections using the NSPIRE standards after the effective date of the NSPIRE rule for each program.

⁹ Outreach material about home health hazards can be found on the OLHCHH website: https://www.hud.gov/program_offices/healthy_homes/outreach_materials_publications. OLHCHH has also produced [The Healthy Homes Program Guidance Manual \(July 2012\)](#).

material for residents and stakeholders assisting families with housing on maintaining or improving safety and wellbeing in their homes, including risks and mitigating measures related to carbon monoxide.¹⁰ In February 2018, the Office of Housing Counseling issued a guide for housing counselors, including health hazards of carbon monoxide and a carbon monoxide pamphlet that housing counselors could use to educate home buyers about the importance of installing carbon monoxide detectors.¹¹

PIH, Housing, and OLHCHH provided some guidance to PHAs on educating residents on health hazards in the home, including carbon monoxide poisoning, as the Act requires. PIH, Housing, and OLHCHH issued Joint Notice PIH, H, OLHCHH 2022-01 on January 31, 2022, to provide initial information and guidance for PHAs, owners, and managers to educate residents on health hazards, including carbon monoxide. The notice stated that

- HUD was developing educational materials on carbon monoxide for property management to support its educational activities,
- HUD would use notices and supplemental documents to inform owners and managers of their responsibilities under the Act, and
- HUD would make complimentary educational materials available for download.

According to the notice, PIH would develop additional materials for residents to promote healthy housing and prevent carbon monoxide exposure. For example, the notice indicated that PIH planned to develop a “highly graphic” flyer using plain language tailored to federally assisted housing owners and residents.¹² In addition, OLHCHH would conduct outreach by providing webinars and technical assistance through the Community Compass Program.

SELECTED PHAS EXPECTED TO HAVE CARBON MONOXIDE DETECTORS INSTALLED BY THE ACT’S DEADLINE

To assess PHAs’ experience, including any barriers, in implementing the Act’s requirements, we interviewed the 10 largest PHAs in the United States and 5 randomly selected PHAs from States without preexisting State or local laws, codes, or regulations requiring carbon monoxide detector installation in dwelling units. Most PHAs became aware of the Act’s requirements from Joint Notice PIH, H, OLHCHH 2022-01, HUD field offices, or other PHAs. Nine of the 15 PHAs interviewed became aware of the Act’s requirements through the notice. Two PHAs said they became aware of the Act by receiving emails from HUD field offices. One PHA became aware of the Act’s requirements in a meeting with other PHAs’ executive directors. One PHA became aware of the requirements by receiving an email, but the executive director did not remember the sender. Another PHA did not know how it was notified of the Act. However, 1 of the 15 PHAs was unaware of the Act until we contacted its staff to request an interview in August 2022, 7 months after the notice was issued. According to its executive director, the PHA did not have State or local requirements for installing carbon monoxide detectors, and HUD did not inform the PHA of the Act’s requirements. The executive director told us that the PHA ordered carbon monoxide detectors upon receiving our interview request. As a small PHA with 46 public housing units, the PHA said

¹⁰ “Everyone Deserves a Safe and Healthy Home” guides for consumers and stakeholders, available at https://www.hud.gov/program_offices/healthy_homes/outreach_materials_publications

¹¹ Office of Housing Counseling. HUD. [Healthy Housing Toolkit for Housing Counselors \(hudexchange.info\)](https://www.hudexchange.info) (2018)

¹² See table 2, Resources for additional information, in appendix C.

it did not experience any barriers to installing carbon monoxide detectors by December 27, 2022, in accordance with the Act.

At the time of our interviews, all 15 PHAs expected to have carbon monoxide detectors installed by December 27, 2022, as required by the Act. Eight of the 15 PHAs interviewed said that the Act did not impact their operations because they already had carbon monoxide detectors installed in accordance with preexisting State or local laws and regulations. Two PHAs located in localities with preexisting State or local laws and regulations said that they still had to install carbon monoxide detectors in additional areas in their public housing units or conduct inspections to identify those units missing carbon monoxide detectors to comply with the requirements of the Act. Five PHAs were in locations without preexisting State or local laws and regulations that required them to install carbon monoxide detectors in their public housing units. However, two of these five PHAs said that only a few of their public housing units had gas appliances and most had electric appliances. Further, the two PHAs said that they had already installed or planned to install carbon monoxide detectors in their public housing units with gas appliances by December 27, 2022.¹³ Table 1 below shows which of the 15 PHAs interviewed are in locations with or without State or local regulations for carbon monoxide detectors.

Table 1. PHAs with preexisting State or local regulations for carbon monoxide detectors

PHAs with preexisting State or local regulations for carbon monoxide detectors		PHAs without preexisting State or local regulations for carbon monoxide detectors
<ul style="list-style-type: none"> • New York City Housing Authority (HA) • Chicago HA • Philadelphia HA • HA of the City of Los Angeles • Miami Dade Public Housing & Community Development 	<ul style="list-style-type: none"> • Boston HA • District of Columbia HA • Opportunity Home San Antonio • HA of St. Louis County • Newark HA 	<ul style="list-style-type: none"> • Puerto Rico HA • Webb City HA • Linton HA • Anthony HA • Green Leaf HA

Some PHAs identified barriers to installing carbon monoxide detectors in their public housing units; however, all PHAs expected to complete the installation by December 27, 2022, in accordance with the Act. Two of the 15 PHAs interviewed said a lack of funding was one of their main barriers to installing and maintaining carbon monoxide detectors in their public housing units in accordance with the Act. In addition, three PHAs said HUD could further assist them by providing additional funding for installing carbon monoxide detectors. Two PHAs identified residents’ tampering with carbon monoxide detectors as a barrier to implementing the requirements of the Act. According to these PHAs, when residents tamper with carbon monoxide detectors, PHAs have to replace the detectors before the end of their expected lifespan. Also, carbon monoxide detectors may become inoperable, increasing the residents’ risk of carbon monoxide poisoning. Two PHAs reported that their procurement process for carbon monoxide detectors took longer than expected. In addition, two PHAs experienced difficulty in accessing their public housing units to install carbon monoxide detectors because some residents did not want the

¹³ We did not independently verify that the PHAs had installed carbon monoxide detectors in their public housing units.

PHA's staff to enter their homes. However, one PHA was able to resolve this issue after its tenant advisory board provided resident education on the importance of carbon monoxide detectors.

Twelve of the 15 PHAs interviewed administered HCV. One of the 12 PHAs said that educating the property owners is necessary to help them understand the Act's requirements, but it could discourage property owners' voluntary participation in HCV. The PHA did not identify any other barriers to ensuring property owners' compliance with the Act. Another PHA said it did not receive instructions on installing carbon monoxide detectors in dwelling units assisted under HCV. Ten PHAs said property owners were already in compliance with State or local regulations for carbon monoxide detectors or indicated that the property owners would comply with the Act.

Finally, although Joint Notice PIH, H, OLHCHH 2022-01 provided PHAs with initial guidance on educating their residents on the health hazards of carbon monoxide, 10 of the 15 PHAs interviewed were unaware of the guidance. However, 9 of the 15 PHAs interviewed also reported that they learned of the Act's requirement through HUD's joint notice, which included initial resources on educating tenants.

Conclusion

Carbon monoxide is a toxic gas made when fossil fuels burn incompletely. Installing carbon monoxide detectors can prevent carbon monoxide poisoning. The Consolidated Appropriations Act of 2021 requires PHAs and owners of certain HUD-assisted housing to install carbon monoxide detectors. Rather than updating its existing physical inspection standards, HUD incorporated the Act's requirements into its new NSPIRE physical inspection process to ensure that PHAs and owners of certain HUD-assisted housing comply with the requirements. The NSPIRE inspection process is effective July 1, 2023, for public housing programs, October 1, 2023, for multifamily housing programs, and October 1, 2024, for HOPWA, HCV, and PBV. HUD issued initial guidance to help PHAs educate their residents on the health hazards, including carbon monoxide, through Joint Notice PIH, H, OLHCHH 2022-01, and stated that it would issue additional educational material or guidance to the PHAs on how to educate tenants on carbon monoxide poisoning. At the time of our interviews, all 15 PHAs expected to have carbon monoxide detectors installed by December 27, 2022, as required by the Act.

Appendixes

APPENDIX A – AGENCY COMMENTS AND OIG RESPONSE

We provided program offices with an opportunity to submit formal comments in response to our draft report. As this report does not contain any recommendations, formal comments were optional. No program offices submitted formal comments. The Office of Lead Hazard Control and Healthy Homes and the Office of Community Planning and Development provided technical comments, which we incorporated into the final report as appropriate.

APPENDIX B – SCOPE, METHODOLOGY, AND LIMITATIONS

We completed this evaluation under the authority of the Inspector General Act of 1978 as amended and in accordance with the Quality Standards for Inspection and Evaluation issued by the Council of the Inspectors General on Integrity and Efficiency (December 2020).

Scope

We conducted our fieldwork between July and November 2022. The scope of this evaluation was

- The U.S. Department of Housing and Urban Development’s (HUD) departmental plans and progress and the Office of Public and Indian Housing’s (PIH), Office of Housing’s (Housing), and Office of Community Planning and Development’s (CPD) plans and progress made to ensure that public housing agencies’ (PHA) and owners of certain HUD-assisted housing comply with the Consolidated Appropriations Act of 2021’s (the Act) requirements for installing carbon monoxide detectors in their dwelling units by December 27, 2022;
- HUD’s progress in developing guidance to PHAs on educating their residents about the health hazards of carbon monoxide poisoning in accordance with the Act; and
- The 10 largest PHAs’ and 5 randomly selected PHAs’ experience, including any barriers, in installing carbon monoxide detectors in their public housing and HCV units in accordance with the Act.

Methodology

We interviewed HUD officials from PIH, Housing, CPD, and Office of Lead Hazard Control and Healthy Homes (OLHCHH)¹⁴ to understand the departmental and program specific plans and progress to ensure that PHAs and owners of certain HUD-assisted housing installed carbon monoxide detectors by the Act’s effective date of December 27, 2022. In addition, we interviewed officials from the Real Estate Assessment Center (REAC) to determine how REAC’s physical inspection process supports HUD’s efforts to ensure that the requirements of the Act are met.

To determine whether HUD established milestones for the Act, we reviewed planning documents from PIH, Housing, CPD, and OLHCHH. We also reviewed and compared NSPIRE’s carbon monoxide standard with the IFC’s carbon monoxide standards adopted by the Act.

To determine 15 sampled PHAs’ experience in implementing the Act, we interviewed the 10 largest PHAs in the United States and 5 randomly selected PHAs from States without preexisting State or local laws, codes, or regulations requiring carbon monoxide detector installation in dwelling units.

¹⁴ The Act does not cover an OLHCHH program; however, OLHCHH works closely with other HUD program offices in carrying out the requirements in the Act.

Limitations

We had no limitations associated with this evaluation.

APPENDIX C – HUD’S RESIDENT EDUCATION RESOURCES ON HEALTH HAZARDS OF CARBON MONOXIDE IN THE HOME

In the Act, Congress directed the U.S. Department of Housing and Urban Developments (HUD) to provide guidance to public housing agencies (PHA) on how to educate tenants on health hazards in the home, including carbon monoxide poisoning, to help prevent future deaths and other harm. Table 2 lists additional resources provided in Joint Notice PIH [Office of Public and Indian Housing], H [Office of Housing], OLHCHH [Office of Lead Hazard Control and Healthy Homes] 2022-01, issued to address the Act’s requirements.

Table 2. Resources for additional information

HUD program office or other government agency	Carbon monoxide-related information	Link to the information
Office of Lead Hazard Control and Healthy Homes	<ul style="list-style-type: none"> Causes of carbon monoxide poisoning Tips for preventing carbon monoxide poisoning 	<ul style="list-style-type: none"> https://www.hud.gov/program-offices/healthy_homes/healthyhomes/carbonmonoxide
Centers for Disease Control and Prevention	<ul style="list-style-type: none"> Preventing carbon monoxide poisoning Carbon monoxide fact sheet Frequently asked questions on carbon monoxide 	<ul style="list-style-type: none"> https://www.cdc.gov/co/default.htm
U.S. Consumer Product Safety Commission	<ul style="list-style-type: none"> Carbon monoxide fact sheet: how it is produced and symptoms of carbon monoxide poisoning Carbon monoxide poisoning prevention How to install a carbon monoxide detector Carbon monoxide safety tips 	<ul style="list-style-type: none"> Carbon Monoxide Fact Sheet CPSC.gov
Environmental Protection Agency	<ul style="list-style-type: none"> Printable PDF carbon monoxide factsheet Carbon monoxide poisoning symptoms Carbon monoxide detectors 	<ul style="list-style-type: none"> https://www.epa.gov/indoor-air-quality-iaq/protect-your-family-and-yourself-carbon-monoxide-poisoning
U.S. Fire Administration	<ul style="list-style-type: none"> Symptoms of carbon monoxide poisoning Outreach materials on carbon monoxide safety 	<ul style="list-style-type: none"> https://www.usfa.fema.gov/prevention/outreach/carbon_monoxide.html

APPENDIX D – ABBREVIATIONS

Abbreviation	Definition
CDC	Centers for Disease Control and Prevention
CPD	Office of Community Planning and Development
ESSG	Emergency Safety and Security Grant
FR	Federal Register
HA	Housing Authority
HCV	Housing Choice Voucher Program
Housing (or H)	Office of Housing
HOPWA	Housing Opportunities for Persons With AIDS program
HUD	U.S. Department of Housing and Urban Development
IFC	International Fire Code
NSPIRE	National Standards for the Physical Inspection of Real Estate
OLHCHH	Office of Lead Hazard Control and Healthy Homes
PBV	Project-Based Voucher Program
PIH	Office of Public Indian and Housing
PHA	public housing agency
REAC	Real Estate Assessment Center
Section 202	Section 202 Supportive Housing for Elderly
Section 811	Section 811 Supportive Housing for Persons With Disabilities
UPCS	Uniform Physical Condition Standards

APPENDIX E -ACKNOWLEDGEMENTS

This report was prepared under the direction of Brian T. Pattison, Assistant Inspector General for Evaluation; Christopher Backley, Director, Program Evaluations Division; and Heidi Kim, Assistant Director. The Office of Evaluation staff members who contributed are recognized below.

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