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Measles Update — United States, January 1–April 17, 2025

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Abstract

A multistate measles outbreak, predominantly affecting members of close-knit communities with low measles vaccination coverage in New Mexico, Oklahoma, and Texas began in January 2025. As of April 17, a total of 800 cases have been reported in the United States in 2025; 654 (82%) cases in New Mexico, Oklahoma, and Texas have been associated with the ongoing outbreak. These cases represent an approximately 180% increase over the 285 measles cases reported in the United States during all of 2024, and the second highest annual case count in the United States in 25 years. Overall, 771 (96%) patients have been unvaccinated or had unknown vaccination status (77% were unvaccinated, and 14% had unknown vaccination status when excluding 590 cases reported by Texas, which requires explicit consent by law [i.e., opt-in] to enroll in the Texas Immunization Registry), 85 (11%) patients have been hospitalized, and three patients have died. Among 48 (6%) internationally imported cases, 44 (92%) occurred among U.S. residents. Endemic measles was declared eliminated in the United States in 2000 as a direct result of high 2-dose childhood coverage with the measles, mumps, and rubella (MMR) vaccine. However, measles cases and outbreaks continue to occur when travelers with measles return to the United States while they are infectious; larger U.S. outbreaks typically follow importation into close-knit communities with low vaccination coverage. Nationally, risk for widespread measles transmission remains low because of high population-level immunity. To prepare for and prevent measles cases and outbreaks, public health departments should continue working with trusted community messengers on culturally competent community engagement, education, vaccination efforts, and other community infection prevention approaches (e.g., case isolation, contact monitoring, and post-exposure prophylaxis) and coordinating with health care facilities and schools. Increasing national and local MMR vaccination coverage is essential to preventing measles cases and outbreaks.

Introduction

Measles is the most highly contagious febrile rash illness, infecting up to 90% of susceptible close contacts and resulting in serious complications such as pneumonia, encephalitis, and death. Among the 4,056 measles cases reported in the United States during 2001–2022, a total of 727 (18%) were hospitalized, and three deaths were reported*; of the 727 hospitalized patients, 473 (65%) were unvaccinated, and 187 (26%) had unknown vaccination status (*1*). Worldwide, measles vaccination is estimated to have saved 93.7 million lives during 1974–2024 and played a substantial role in reducing childhood

*Two measles deaths were reported in 2003 (one in a child aged 13 years who had chronic granulomatous disease and one in an adult aged 75 years), and one was reported in 2015 in an adult with immunocompromise aged 28 years.

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mortality (*2*) by preventing complications associated with measles and deaths from other infectious diseases as a consequence of measles-related immunosuppression (*3*).

Endemic measles transmission was declared eliminated[†] in the United States in 2000 after a change from a 1-dose to a 2-dose measles, mumps, and rubella (MMR) vaccination schedule in 1989 (*4*). However, a recent resurgence in global measles, resulting from COVID-19 pandemic–related challenges in implementing measles vaccination routine services and campaigns, has increased the risk for imported cases and outbreaks in the United States, particularly when U.S. travelers are exposed to measles abroad and return to the United States while they are infectious (*5*). Although the United States still benefits from high population immunity from routine MMR vaccination, declining immunization rates among school-aged children and communities with already low vaccination coverage threaten a resurgence of measles, along with its potentially serious associated complications. For this report, CDC used national surveillance data to describe the epidemiology of measles cases and outbreaks reported in the United States during the first 16 weeks of 2025.

[†] Measles elimination is defined as the absence of endemic measles transmission for ≥12 months in the presence of an adequate surveillance system.

Methods

Data Source and Case Classification

State health departments notify CDC of confirmed measles cases[§] (*6*) through the National Notifiable Diseases Surveillance System and directly (by email or telephone) to the National Center for Immunization and Respiratory Diseases. Measles vaccination status is ascertained by health departments during each case investigation; patients with written or electronic documentation of receipt of ≥1 dose of a measles-containing vaccine ≥14 days before rash onset are considered vaccinated, and all other patients are classified as unvaccinated or as having unknown measles vaccination status.[¶] Measles cases are classified by the Council of State and Territorial Epidemiologists as internationally imported if 1) at least part of the exposure period (7–21 days before rash onset) occurred outside the United States, 2) rash onset occurred within 21 days of entering the United States, and 3) no known exposure to measles

[§] An acute febrile rash illness with laboratory confirmation (detection of measles virus–specific nucleic acid from a clinical specimen using real-time reverse transcription–polymerase chain reaction or a positive serologic test for measles immunoglobulin M antibody) or direct epidemiologic linkage to a laboratory-confirmed case.

[¶] For residents of Texas, vaccination history is verified in the Texas Immunization Registry (ImmTrac2) or by review of vaccination records; patients with no vaccination records in the registry were considered to have an unverified vaccination history. Texas only disaggregates unvaccinated and unknown vaccination status among hospitalized patients; these records are provider-verified.

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occurred in the United States. All other cases are classified as U.S.-acquired (*6*). For this analysis, patients with imported measles cases were classified as age-eligible for vaccination if they were aged ≥6 months and were not vaccinated according to Advisory Committee on Immunization Practices (ACIP) recommendations (*4*).

Analysis of Outbreaks

A measles outbreak was defined as the occurrence of three or more epidemiologically linked** cases. Unique measles virus sequences are defined as those differing by at least one nucleotide in the N-450 sequence (i.e., the 450 nucleotides encoding the carboxyl-terminal 150 nucleoprotein amino acids) based on standard World Health Organization recommendations for describing sequence variants†† (*7*). Patients with confirmed vaccine reactions (i.e., rash caused by a reaction to vaccine strain virus) were not included as persons with measles cases, as studies have found no confirmed instances of human-to-human transmission of the measles vaccine strain virus (*6*). This activity was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.§§

Results

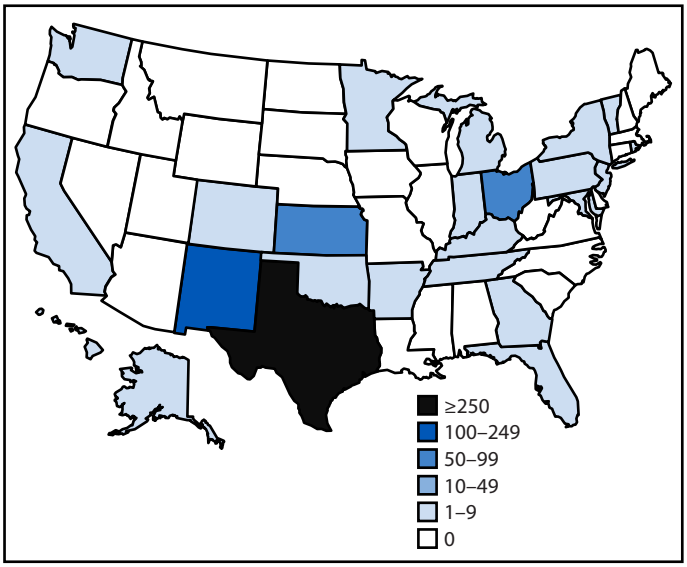
Characteristics of Reported Measles Cases

During January 1–April 17, 2025, a total of 800 confirmed measles cases were reported in 25 U.S. jurisdictions (Figure 1). The highest number of weekly cases (99) was reported during the week ending March 22 (Figure 2). Median patient age was 9 years (IQR = 4–23 years); 249 (31%) patients were aged <5 years, 304 (38%) were aged 5–19 years, 231 (29%) were aged ≥20 years, and age was unknown for 16 (2%) patients (Table). Among all measles patients, 771 (96%) were unvaccinated or their vaccination status was unknown, 10 (1%) had received 1 dose of MMR vaccine, and 19 (2%) had received 2 doses. For Texas cases, it was not possible to disaggregate unvaccinated patients from those with unknown vaccination status because the Texas Immunization Registry requires explicit consent by law (i.e., opt-in) to enroll. Among 210 measles patients (excluding 590 cases reported by Texas), 162 (77%) were unvaccinated, six (3%) had received 1 dose of MMR vaccine, 12 (6%) had received 2 doses, and the vaccination status of 30 (14%) was unknown. Among all 800 cases, 790 (99%) occurred among U.S. residents. Overall, 85 (11%) patients were hospitalized; 56 (66%) of those were unvaccinated, one (1%) had received 1 dose of MMR vaccine, and the vaccination status of 28 (33%) was unknown. Three measles deaths were reported to CDC; two confirmed in Texas in unvaccinated school-aged children with no known underlying medical conditions, and one confirmed in New Mexico in an unvaccinated adult. Most cases (557; 70%) were laboratory-confirmed; among 251 (31%) cases from which specimens were available for molecular sequencing, all were confirmed as wild-type virus strain with 225 (90%) identified as genotype D8 and 26 (10%) as genotype B3.

International Importations

Forty-eight (6%) cases were directly imported from other countries, including 44 (92%) among U.S. residents who had traveled abroad; 752 (94%) cases were U.S.-acquired. Fifteen (31%) importations resulted in secondary cases. Among the 48 internationally imported measles cases, 33 (69%) patients were unvaccinated, one (2%) had received 1 dose of MMR vaccine, four (8%) had received 2 doses, and the vaccination status of 10 (21%) patients was unknown. All 33 of the unvaccinated persons with imported measles were age-eligible for vaccination per ACIP, including 10 infant travelers aged 6–11 months. Source countries of the 48 imported measles cases included Canada (10 cases), Vietnam (10), Mexico (seven), Pakistan (three), the Philippines (two), Saudi Arabia (two), and one imported case each from Afghanistan, Australia, Guinea, Netherlands, Somalia, Spain, and Uganda; a source

FIGURE 1. Reported number of confirmed* measles cases, by state (N = 800) — United States, January 1–April 17, 2025



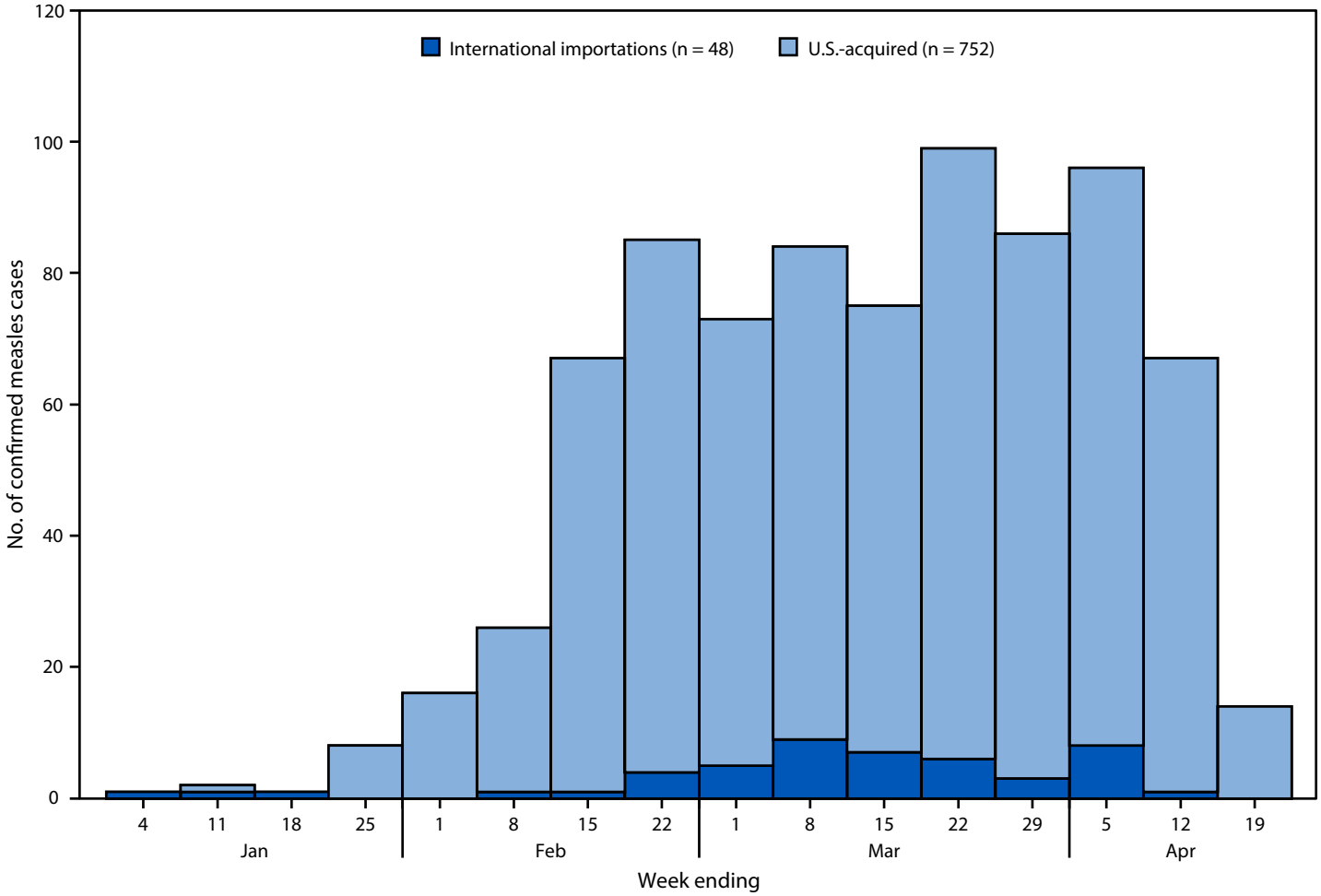
* An acute febrile rash illness with laboratory confirmation of measles or a direct epidemiologic link to a laboratory-confirmed measles case.

** Epidemiologic linkages include having known or suspected contact with an infectious measles patient during the exposure period (7–21 days before rash onset) and living in or visiting a geographic area with ongoing measles transmission during the exposure period.

†† Genotyping was performed at CDC and at the Vaccine Preventable Disease Reference Centers of the Association of Public Health Laboratories.

§§ 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

FIGURE 2. Number of reported confirmed* measles cases, by week of rash onset and importation status (N = 800) — United States, January 1–April 17, 2025†



* An acute febrile rash illness with laboratory confirmation of measles or a direct epidemiologic link to a laboratory-confirmed measles case.
† Data are preliminary as of April 17, 2025. Data for the week ending April 19, 2025, are for a partial week.

country could not be determined for seven travelers who visited multiple countries during their exposure period: Tanzania and United Arab Emirates (two cases); China, Japan, and Vietnam (one); France, South Korea, and Vietnam (one); Thailand and Vietnam (one); Indonesia and the Philippines (one); and Southeast Asia (one).

Measles Outbreaks

Ten measles outbreaks have been reported in 2025¶¶; 751 (94%) of all reported confirmed measles cases were outbreak-associated. An imported source was identified for seven outbreaks, and the source of three outbreaks remains unknown. Outbreak-related cases have been reported in 12 states (Georgia, Indiana, Kansas, Kentucky, Michigan, New Jersey, New Mexico, Ohio, Oklahoma, Pennsylvania, Tennessee, and Texas). The largest outbreak began among a close-knit community with low vaccination coverage in Gaines County, Texas in January 2025 and has accounted for 654 (82%) cases reported during 2025 (584 patients in 24 Texas counties, 63 patients in four New Mexico counties, and seven patients in northeastern Oklahoma); the source of this outbreak remains unknown. Thirty-seven confirmed cases in Kansas are suspected to be linked to this outbreak. In addition, an expanding outbreak in Chihuahua, Mexico*** began in late February after a Mexican resident became infected after reported travel to Gaines County, Texas. All 208 genotyped specimens obtained from measles patients in Kansas, New Mexico, and Texas were genotype D8, 196 (94%) of which had identical N-450 sequences; 12 differed by one nucleotide, which can be expected in prolonged outbreaks.

¶¶ At the time of this report, two measles outbreaks have ended, and eight outbreaks are ongoing. A measles outbreak is considered to be over when no new cases have been identified during two incubation periods (42 days) since the rash onset in the last outbreak-related case.

*** https://www.gob.mx/cms/uploads/attachment/file/990598/Aviso_Epidemiologico_Sarampio_n__16_abril_2025.pdf

TABLE. Selected characteristics of patients with reported measles — United States, January 1–April 17, 2025*

Characteristic	No. of measles cases (%)		
	Total	International importations	U.S.-acquired
Total measles cases	**800 (100)**	**48 (6)**	**752 (94)**
Age group, yrs			
<5	**249 (31)**	17 (35)	232 (31)
5–19	**304 (38)**	6 (13)	298 (40)
≥20	**231 (29)**	22 (46)	209 (28)
Unknown	**16 (2)**	3 (6)	13 (2)
Measles vaccination status			
Unvaccinated or unknown	**771 (96)**	43 (90)	728 (97)
Vaccinated, 2 doses	**19 (2)**	4 (8)	15 (2)
Vaccinated, 1 dose	**10 (1)**	1 (2)	9 (1)
Measles vaccination status (excluding Texas residents)			
Unvaccinated	**162 (77)**	30 (68)	132 (80)
Unknown	**30 (14)**	9 (20)	21 (13)
Vaccinated, 2 doses	**12 (6)**	4 (9)	8 (5)
Vaccinated, 1 dose	**6 (3)**	1 (2)	5 (3)
Residency			
U.S. resident	**790 (99)**	44 (92)	746 (99)
Outcome			
Hospitalized	**85 (11)**	15 (31)	70 (9)
Died†	**3 (3.8)**	0 (—)	3 (4.0)
Vaccination status of hospitalized patients§			
Unvaccinated	**56 (66)**	11 (73)	45 (64)
Unknown	**28 (33)**	3 (20)	25 (36)
Vaccinated, 1 dose	**1 (1)**	1 (7)	0 (—)

* Data are preliminary as of April 17, 2025.
† Deaths per 1,000 persons with measles.
§ Percentage among all hospitalized patients.

Discussion

A total of 800 measles cases and 10 outbreaks were reported in the United States during the first 16 weeks of 2025, representing approximately a 180% increase over the 285 measles cases reported in the United States during all of 2024. Most cases have been associated with an ongoing outbreak in close-knit communities with low vaccination coverage in New Mexico, Oklahoma, and Texas.

Overall, 11% of measles patients have been hospitalized, and three deaths have been reported. Similar to previous years (*1*), nearly all (96%) cases occurred in persons who were unvaccinated or whose vaccination status was unknown, and 77% of cases occurred in persons who were unvaccinated when excluding cases reported by Texas. Most (92%) imported cases occurred among U.S. residents returning to the United States while infectious and from all six World Health Organization regions. Adherence to standard measles control measures, including isolation and quarantine, as well as high vaccination coverage locally, prevented secondary transmission from most of these persons who were infectious after returning from travel abroad.

Summary

What is already known about this topic?

Although measles was declared eliminated in the United States in 2000, large outbreaks with 50 or more cases have become more frequent, especially in close-knit communities with low vaccination coverage.

What is added by this report?

During January 1–April 17, 2025, a total of 800 measles cases were reported in the United States, the second highest annual case count in 25 years; 82% were associated with an ongoing outbreak in close-knit communities with low vaccination coverage in New Mexico, Oklahoma, and Texas. Eighty-five (11%) patients were hospitalized, and three have died.

What are the implications for public health practice?

To prepare for and prevent measles cases and outbreaks, health departments should work with trusted messengers on culturally competent community engagement, education, vaccination efforts, and other infection prevention approaches. Increasing national and local measles, mumps, and rubella vaccination coverage is essential to preventing measles cases and outbreaks.

Most cases reported during 2025 have been associated with an ongoing outbreak in close-knit communities in New Mexico, Oklahoma, and Texas, resulting in the second largest outbreak in the United States since elimination was declared in 2000. During 2001–2023, approximately 90% of U.S. measles outbreaks with 50 or more cases occurred in close-knit communities with low vaccination coverage (*8*). Such communities might have frequent communal gatherings and have concerns about engaging with public health and health care systems for testing, treatment, and vaccination. The United States, Canada,††† and Mexico are all experiencing large, expanding outbreaks in similar interconnected communities. Frequent travel among similar communities across multiple states and countries might facilitate the rapid spread of measles outbreaks. The risk for widespread measles transmission in the United States remains low because of high population immunity resulting from high measles vaccination coverage. However, recent increasing global measles incidence in areas frequently visited by U.S. travelers, coupled with declines in MMR vaccination coverage in many U.S. jurisdictions to <95% (the estimated population-level immunity necessary to prevent measles outbreaks), and spread of measles from ongoing domestic outbreaks to other jurisdictions, have increased the risk for ongoing measles transmission within the United States (*8*,*9*).

††† https://health-infobase.canada.ca/measles-rubella/

Limitations

The findings in this report are subject to at least four limitations. First, imported cases were likely underreported because 30% of reported outbreaks had no known source. Second, outbreak-related cases were likely underreported because certain persons in affected communities might not engage with the health care and public health systems. Third, distinguishing unvaccinated patients from patients with unknown measles vaccination status in Texas was not possible; the Texas Immunization Registry legally requires explicit consent, or opt-in, for adults and by parent or guardian for children to enroll.§§§ Persons with no records available are considered to have an unverified vaccination history. Finally, definitive linkages between the large outbreak in New Mexico, Oklahoma, and Texas and cases reported in Kansas could not be identified.

Implications for Public Health Practice

To protect against measles and its complications before traveling internationally, all persons aged ≥12 months should have documented receipt of 2 appropriately spaced doses of MMR vaccine, and infants aged 6–11 months of age should receive 1 dose of MMR vaccine (*10*). Persons residing in or traveling domestically to outbreak areas should follow local public health guidance, which is developed based on review and analysis of the local outbreak epidemiology (*6*). Infants aged <6 months are at high risk for measles complications but are too young to be vaccinated, and therefore depend upon population immunity and passively transferred maternal measles antibodies (from previously vaccinated or infected mothers) to prevent infections and related complications.

Health care providers continue to serve on the front lines to identify measles cases, alert public health departments¶¶¶, ensure recommended testing, and implement measles isolation precautions to prevent health care–associated and community-based transmission. Health care providers should consider measles in the differential diagnosis for all patients (especially those who are unvaccinated) who 1) have fever (temperature ≥101°F [≥38.3°C]) and a generalized maculopapular rash with cough, coryza, or conjunctivitis, 2) have recently traveled outside the country or to a U.S. region with a known measles outbreak, or 3) have other known or suspected exposure to measles (*6*). Although no specific Food and Drug Administration–approved antiviral therapy for measles exists, rapid access to supportive care can help relieve symptoms and treat complications such as pneumonia and secondary bacterial and viral infections. Providers should also offer and encourage vaccination for eligible patients who lack presumptive evidence of immunity to measles (*4*).

Public health departments might benefit from using a CDC checklist**** to help guide their readiness activities such as preparing for laboratory testing and data reporting needs, conducting tabletop exercises, and facilitating early engagement with communities with low vaccination coverage and their trusted messengers before measles and other vaccine-preventable disease outbreaks occur. To identify communities at risk, public health departments should consider using both MMR vaccination coverage data from immunization information systems and kindergarten entry and vaccination exemption data from kindergarten entry records. Standard measles control interventions, including vaccination, isolation, quarantine, and postexposure prophylaxis (i.e., administration of MMR vaccine within 72 hours of exposure or immunoglobulin within 6 days of exposure for certain persons) (*10*), might be challenging to implement in certain communities. Therefore, public health departments should consider partnering with trusted community messengers (e.g., clinicians and religious leaders) on culturally competent community engagement, education, vaccination efforts, and potentially acceptable community infection control approaches. Coordination with health care facilities, early childhood education facilities and schools, and other congregate settings that surround or serve these communities to prepare for measles cases regarding appropriate infection prevention and control, testing, public health follow-up, and early childhood education or school exclusion policies is crucial to limit transmission. Increasing national and local MMR vaccination coverage is essential to preventing measles cases and outbreaks.

§§§ https://www.cdc.gov/iis/policy-legislation/texas.html
¶¶¶ https://libraries.cste.org/after-hours-contact/
**** https://www.cdc.gov/measles/media/pdfs/2025/02/CDC-Public-Health-Checklist_Sept18_FINAL-updatedlinks-508.pdf

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Investigation of Lead and Chromium Exposure After Consumption of Contaminated Cinnamon-Containing Applesauce — United States, November 2023–April 2024

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Abstract

Although lead poisoning can cause detrimental health effects, it is largely preventable. Common exposure sources include contaminated soil, water, and lead-based paint in homes built before the 1978 ban on residential lead-containing paint. In North Carolina, testing for lead is encouraged for all children at ages 1 and 2 years, and is required for children covered by Medicaid. In October 2023, routine pediatric blood lead testing and follow-up investigations conducted by the North Carolina Department of Health and Human Services identified four asymptomatic cases of lead poisoning associated with consumption of cinnamon-containing applesauce packaged in pouches. The Food and Drug Administration (FDA) identified lead in the cinnamon as the source of contamination; chromium was later also detected in the cinnamon. FDA alerted the public on October 28, and the distributor initiated a voluntary recall the following day. To estimate the impact of the event and characterize reported cases, CDC initiated a national call for cases (defined as a blood lead level [BLL] ≥3.5 μg/dL in a person of any age in ≤3 months after consuming a recalled cinnamon-containing applesauce product). During November 22, 2023–April 12, 2024, a total of 44 U.S. states, the District of Columbia, and Puerto Rico reported 566 cases (55% in children aged <2 years, including 20% that were temporally associated with symptoms). The median maximum venous BLL was 7.2 μg/dL (range = 3.5–39.3 μg/dL). The hundreds of children poisoned by this incident highlight the importance of preventing toxic metal contamination of food and promoting routine childhood blood lead testing and follow-up to identify lead exposure sources. Clinicians and public health practitioners should be aware of the potential for exposure to toxic metals from less common sources, including food.

Introduction

In October 2023, the North Carolina Department of Health and Human Services (NCDHHS) and North Carolina Department of Agriculture and Consumer Services notified the Food and Drug Administration (FDA) of an investigation into lead poisoning identified in four children aged 1–3 years, linked to consumption of cinnamon-containing applesauce (*1*). All cases were identified through routine childhood lead surveillance that detected a blood lead level (BLL) ≥5 μg/dL, resulting in the eligibility of those children for a home lead source investigation (*1*). In North Carolina, blood lead testing is encouraged for all children at ages 1 and 2 years and is required for those covered by Medicaid (*1*). Although lead testing policies differ by state (*2*), NCDHHS conducts home investigations to identify sources of lead exposure when children aged <6 years have two consecutive capillary or venous BLLs ≥5 μg/dL within a 12-month period (*1*). All four affected children were found to have consumed the same brand of cinnamon-containing applesauce. Laboratory testing found lead concentrations in pouches obtained from the affected children's homes ranging from 1.9 to 3.0 parts per million (*1*), nearly 200–300 times the recommended action level for fruit purees and similar products intended for babies and young children (*3*).

FDA issued a public health alert on October 28, and the distributor of the contaminated applesauce initiated a voluntary recall the following day (*4*). Six days later, on November 3, after learning that the product that was sold under the WanaBana brand was also sold under two additional brand names (Schnucks and Weis), FDA expanded the alert to include the additional brands; the distributor later expanded the recall to include 2,998,088 pouches. Because of the known toxic effects of lead exposure on multiple organ systems and associated effects on neurodevelopment (*5*), CDC initiated a national call for cases of lead poisoning associated with consumption of the recalled cinnamon-containing applesauce to estimate the number of persons affected by this contamination event and characterize reported cases. This report summarizes the findings of that investigation.

*These senior authors contributed equally to this report.

Methods

Case Ascertainment and Data Collection

On November 21, 2023, CDC issued an alert† requesting that states collaborate with their childhood lead poisoning prevention program to compile and report all cases of lead poisoning using a standard case definition. A case was defined as a BLL ≥3.5 μg/dL in a blood sample obtained ≤3 months after consumption of a recalled cinnamon-containing applesauce product. CDC requested that states classify cases as suspected, probable, or confirmed, based on type of testing, completion of a follow-up environmental assessment, and identification of other potential sources of lead exposure (Box). CDC uses a blood lead reference value of 3.5 μg/dL to identify children with BLLs higher than most children (i.e., in the top 2.5%) (*6*). The reference value is based on the 97.5th percentile of BLLs among U.S. children aged 1–5 years from the National Health and Nutrition Examination Survey cycles 2015–2016 and 2017–2018. States might use different BLLs to trigger public health action (e.g., follow-up environmental assessments) (*2*).

CDC provided states with a template for collecting information, including the case classification; demographic characteristics; estimated first and last dates of product consumption; BLL test type, date, and result; whether an environmental assessment or home investigation was conducted, and if so, investigation results; reported symptoms§ (Supplementary Box, https://stacks.cdc.gov/view/cdc/177614#tabs-3); and any hospitalizations. States submitted reports biweekly to CDC through a secure website during November 21, 2023–April 12, 2024.

Analysis

After the reporting period, consistency in application of the case definition was ascertained by verifying that the reported information, including the BLL result, BLL test type, whether an environmental assessment was conducted, and the environmental assessment result, aligned with the reported case status. For example, all suspected cases were reviewed to verify that BLLs ≥3.5 μg/dL were detected through capillary (rather than venous) testing. Confirmed cases were reviewed to verify BLLs ≥3.5 μg/dL were detected through venous testing and that an environmental assessment that indicated no other significant sources of lead exposure had been completed. If submitted information did not align with reported case status, CDC contacted states for clarification and, if necessary, reclassified case status. Because information about product consumption dates was incomplete, whether the BLL test was conducted within the appropriate timeframe (i.e., in ≤3 months of consuming a recalled product) was not included in the verification process.

Multiple BLL results could be reported for any person. For this analysis, the maximum venous BLL reported for a given patient was recorded; this maximum value was summarized across all cases to obtain the median value (referred to as the

BOX. Case status classifications used in CDC's national call for cases of lead poisoning associated with the consumption of recalled cinnamon-containing applesauce pouches — United States, November 2023–April 2024

Suspected

BLL of ≥3.5 μg/dL* detected through capillary or unspecified testing (not yet confirmed through venous blood testing) ≤3 months after consuming a recalled product† and after November 2022.§

Probable

BLL of ≥3.5 μg/dL* detected through venous testing ≤3 months after consuming a recalled product† and after November 2022§ and one of the following:

A) a follow-up environmental assessment to rule out other potential sources of lead exposure was not completed; or

B) a follow-up environmental assessment was completed, but the results indicated other potential sources of lead exposure (e.g., lead-based paint)

Confirmed

BLL of ≥3.5 μg/dL* detected through venous testing ≤3 months after consumption of a recalled product† after November 2022§ and

A) a follow-up environmental assessment to determine potential sources of lead exposure was completed; and

B) the environmental assessment results indicated no other significant sources of lead exposure

Abbreviation: BLL = blood lead level.

* CDC uses a blood lead reference value of 3.5 μg/dL to identify children with BLLs that are higher than most children's levels. This level is based on the 97.5th percentile of the blood lead values among U.S. children aged 1–5 years from the 2015–2016 and 2017–2018 National Health and Nutrition Examination Survey cycles. Children with BLLs at or above the blood lead reference value are among the 2.5% of U.S. children with the highest BLLs.

† A list of recalled products can be found on the Food and Drug Administration website https://www.fda.gov/food/outbreaks-foodborne-illness/investigation-elevated-lead-chromium-levels-cinnamon-applesauce-pouches-november-2023 and at https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts/wanabana-recalls-wanabana-weis-and-schnucks-apple-cinnamon-fruit-puree-pouches-cinnamon-apple-sauce.

§ According to the Food and Drug Administration, the recalled products were first sold in November 2022.

† CDC issued this request through the Epidemic Information Exchange.

§ According to FDA, the recalled products were first sold starting in November 2022, and states collected data about symptoms during November 2023–April 2024. Therefore, reported symptoms include those experienced in the shorter term and do not reflect potential longer-term effects.

median within-person maximum) and range. Data were summarized using SAS (version 9.4; SAS Institute). This activity was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.¶

Results

Cases of Lead Poisoning Associated with Consumption of Contaminated Products

As of April 12, 2024, a total of 44 states, the District of Columbia, and Puerto Rico reported 566 cases to CDC (Figure); the largest numbers of cases were reported from New York (65), Missouri (50) and Arizona (38); these states accounted for 27% of all cases reported. Overall, 130 (23%) confirmed, 401 (71%) probable, and 35 (6%) suspected cases were reported (Table).

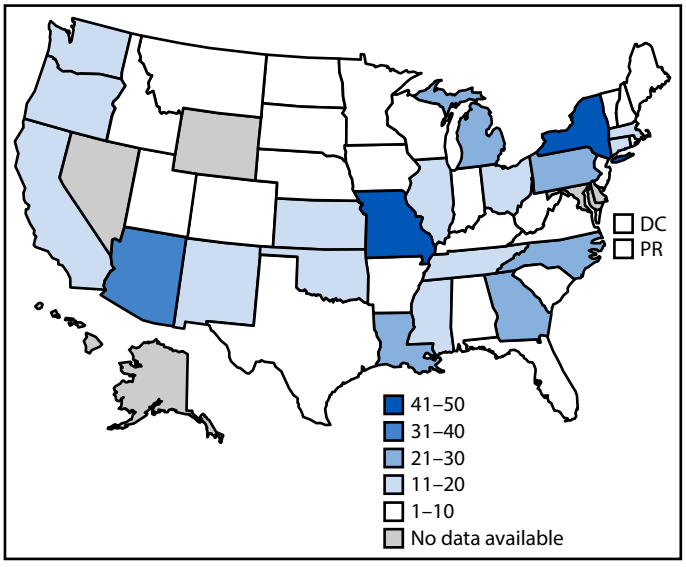
Characteristics of Cases

Children aged <6 years accounted for 542 (96%) cases, 311 (55%) of which were in children aged <2 years. Among probable and confirmed cases, the median within-person maximum venous BLL was 7.2 μg/dL (range = 3.5–39.3 μg/dL; IQR = 5.2–11.3 μg/dL); approximately one third (32%) of values were ≥10 μg/dL. Estimated date ranges during which persons first and last consumed a recalled product were November 1, 2022–January 1, 2024, and December 1, 2022–March 31, 2024, respectively. No hospitalizations were reported. Clinical signs and symptoms were reported in temporal association with 81 cases (approximately 20%) including 55 that were gastrointestinal, and 35 that were developmental or behavioral.

Public Health Response

On November 3, 2023, CDC notified its funded Childhood Lead Poisoning Prevention Programs (CLPPPs)** about the recall and on November 13, issued an alert to clinicians via the CDC Health Alert Network (Supplementary Figure, https://stacks.cdc.gov/view/cdc/177614#tabs-3). On December 5, CDC published a website including recommendations for the public and businesses, which was updated biweekly with case counts. On January 5, 2024, FDA reported recalled products and cinnamon collected from the foreign manufacturer contained high levels of both lead and chromium (*4*). CDC then issued a Clinician Outreach and Community Activity (COCA) Now (https://www.cdc.gov/coca/hcp/about/index.html) report, alerting clinicians about the possibility of chromium exposure. On February 29, 2024, after additional analysis of the cinnamon, FDA reported that the lead and chromium previously detected in the cinnamon were from lead chromate.

FIGURE. Reported number of cases* of lead poisoning associated with consumption of recalled cinnamon-containing applesauce products packaged in pouches, by jurisdiction† (N = 566) — United States, November 2023–April 2024



Abbreviations: BLL = blood lead level; DC = District of Columbia; PR = Puerto Rico.
* Includes the total number of confirmed, probable, and suspected cases. At a minimum, cases were reported to have a BLL ≥3.5 μg/dL detected through venous, capillary, or unspecified testing ≤3 months after consuming a recalled WanaBana, Schnucks, or Weis brand fruit puree product after November 2022.
† Some states have a routine threshold for investigation of BLLs higher than CDC's blood lead reference value of 3.5 μg/dL and would not have done routine investigations for some potential cases before the call for cases. States also had differences in resources available for investigating and reporting cases (especially cases that occurred before the recall in October 2023). In addition, guidelines for routine blood lead testing for children not enrolled in Medicaid and policies encouraging blood lead testing vary by state, with some states recommending universal screening and others recommending targeted screening. For these reasons, the distribution of the number of reported cases across states does not necessarily reflect the true public health impact of the contamination event across states.

Discussion

This investigation identified 566 cases of high BLLs after consumption of applesauce containing cinnamon that was contaminated with lead and chromium. Reported signs and symptoms included abdominal pain, lethargy, and developmental or behavioral symptoms, all of which, although nonspecific, are consistent with lead poisoning (*5*). The long-term implications of this event remain unknown.

Lead can affect nearly every organ system, with central nervous system effects being the primary concern in pediatric

¶ 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

** CLPPP is a CDC-funded program dedicated to eliminating childhood lead poisoning. There are currently 62 state and local childhood lead poisoning prevention programs are in operation (representing 47 U.S. states, the District of Columbia, Puerto Rico, and 13 localities). CLPPP was an ideal mechanism through which to communicate with public health professionals involved in investigating cases of lead poisoning.

TABLE. Characteristics* of persons with lead poisoning associated with the consumption of recalled cinnamon-containing applesauce packaged in pouches reported to CDC (N = 566) — United States, November 2023–April 2024

Case status	No. (%)
Confirmed†	130 (23.0)
Probable§	401 (70.8)
Suspected¶	35 (6.2)
Age group, yrs	
<2	311 (55.2)
2–5	231 (41.0)
≥6	21 (3.7)
Sex at birth	
Female	253 (47.6)
Male	278 (52.4)
Race and ethnicity	
Black or African American, non-Hispanic	76 (19.9)
White, non-Hispanic	216 (56.7)
Hispanic or Latino, any race	64 (16.8)
Other, non-Hispanic	25 (6.6)
Maximum venous BLL (μg/dL) ≤3 months after consumption of a recalled product after November 2022 (among 531 probable and confirmed cases)**	
Mean (SD)	9.2 (5.85)
Median	7.2
Range	3.5–39.3
IQR	5.2–11.3
Range of maximum venous BLL (μg/dL) ≤3 months after consumption of a recalled product after November 2022 (among 531 probable and confirmed cases)	
3.5 to <5	103 (19.4)
5 to <10	260 (49.0)
10 to <15	98 (18.5)
15 to <20	34 (6.4)
20 to <25	20 (3.8)
25 to <30	11 (2.1)
30 to <35	3 (0.6)
≥35	2 (0.4)
Date of first consumption (n = 341)	
Median	Jun 1, 2023
Range	Nov 1, 2022–Jan 1, 2024
Date of last consumption (n = 458)	
Median	Oct 31, 2023
Range	Dec 1, 2022–Mar 31, 2024
Date of first BLL ≥3.5 μg/dL ≤3 months after consumption of a recalled product after November 2022††	
Median	Oct 20, 2023
Range	Nov 2, 2022–Mar 28, 2024
Environmental assessment conducted	245 (44.1)
Signs or symptoms reported	
Any reported sign or symptom	81 (20.0)
Any gastrointestinal sign or symptom§§	55 (13.6)
Abdominal pain§§	17 (4.2)
Constipation§§	15 (3.7)
Vomiting/Nausea§§	16 (4.0)
Diarrhea§§	10 (2.5)
Other gastrointestinal sign or symptom§§	21 (5.2)
Any developmental or behavioral sign or symptom§§	35 (8.6)
Altered mood or behavior§§	23 (5.7)
Developmental delay sign or symptom§§	18 (4.4)
Lethargy/fatigue§§	17 (4.2)
Headaches§§	10 (2.5)
Other signs or symptoms§§,¶¶	22 (5.4)

TABLE. (*Continued*) Characteristics* of persons with lead poisoning associated with the consumption of recalled cinnamon-containing applesauce packaged in pouches reported to CDC (N = 566) — United States, November 2023–April 2024

Abbreviations: BLL = blood lead level; SD = standard deviation.

* The following variables had missing data: age (three); sex (35); race and ethnicity (185); maximum venous BLL (35); date of first consumption (225); date of last consumption (108); environmental assessment (10); and reported signs or symptoms (161).

† A person with a confirmed case status had to meet each of the following criteria: 1) BLL of ≥3.5 μg/dL confirmed through venous testing ≤3 months after consuming a recalled WanaBana, Schnucks, or Weis brand fruit puree product after November 2022 and 2) a follow-up environmental assessment indicated no other significant sources of lead exposure.

§ A person with a probable case status had to have a BLL of ≥3.5 μg/dL confirmed through venous testing ≤3 months after consuming a recalled WanaBana, Schnucks, or Weis brand fruit puree product after November 2022 and had to meet one of the following two criteria: 1) a follow-up environmental assessment was not conducted or 2) a follow-up environmental assessment was conducted, but the environmental assessment results indicated other likely potential sources of lead exposure.

¶ A person with a suspected case had to have a BLL of ≥3.5 μg/dL detected through capillary or unspecified testing, not yet confirmed via venous blood testing, ≤3 months after consuming a recalled WanaBana, Schnucks, or Weis brand fruit puree product after November 2022.

** The maximum reported BLL measured through venous testing ≤3 months after consumption of a recalled product after November 2022 was calculated for each person with a reported case (potentially among several reported BLL results). The maximum reported venous lead level was missing for persons who only received capillary tests.

†† The earliest date of a blood lead test exceeding the threshold was the earliest date on which the person had a blood lead test result of ≥3.5 μg/dL (either capillary or venous) in ≤3 months of consuming a recalled product after November 2022.

§§ Among those for whom symptom information was available (not missing). Signs or symptoms were reported in a single open-text field. Persons could report multiple signs or symptoms. Reported signs or symptoms were reviewed and categorized.

¶¶ Other reported signs or symptoms included anemia (one), canker sores (one), fever (three), unspecified cramps (one), muscle spasms (one), crossed eyes (one), white stools (one), weight loss (six), difficulty sleeping (four), failure to thrive (two), balance problems (one), pain (one), and muscle or joint pain (one).

exposures, causing harm that might not be immediately apparent and that might be lifelong (*5*). The presence of lead in blood is associated with declines in cognitive and neuromotor and neurosensory function. Although exact levels at which this occurs in acute poisoning events is unclear (*5*), there is no safe BLL in children (*5*). Health effects of eating food contaminated with chromium (VI) (hexavalent chromium), the form found in lead chromate, are not well understood. Most data on health effects of hexavalent chromium come from inhalational and dermal exposures in the workplace, where long-term exposures have resulted in lung disease, ulceration of mucous membranes, and cancer (*7*). CDC did not recommend for or against testing chromium levels in blood, serum, or urine among persons affected by this event. Chromium levels only reflect recent exposures, because chromium is rapidly eliminated from the body. Results are difficult to interpret and do not guide clinical management, because the levels at which chromium causes harm are not well established. CDC did recommend blood

Summary

What is already known about this topic?

In October 2023, the Food and Drug Administration was alerted to several cases of lead poisoning linked to consumption of applesauce containing cinnamon contaminated with lead and chromium.

What is added by this report?

In November 2023, CDC initiated a national call for cases and identified 566 cases of lead poisoning after consumption of cinnamon-containing applesauce in 44 U.S. states, the District of Columbia, and Puerto Rico. Symptoms potentially consistent with lead poisoning were reported in temporal association with consumption of the applesauce in approximately 20% of cases.

What are the implications for public health practice?

This incident highlights the importance of preventing toxic metal contamination of food; childhood blood lead testing and follow-up to identify lead poisoning events; and educating clinicians and public health practitioners about the potential for toxic metal exposure from less well-known sources, including food.

lead testing for children who consumed a recalled product because results can guide follow-up actions for prevention and medical treatment.

This investigation highlights the importance of primary prevention, i.e., preventing toxic exposures before they occur. Increased product testing is essential to identifying contaminated products and preventing them from entering the food supply. However, the globalized food and consumer good supply chain might increase the potential for outbreaks of lead poisoning and underscores the continued need for childhood blood lead testing and resources to support follow-up investigations and referrals for services to protect health. CDC's CLPPP has helped build capacity for state and local childhood lead poisoning prevention programs, which were essential throughout this investigation. In North Carolina, where the first cases were identified, CDC had provided nearly three decades of support to CLPPP and the state has a cadre of highly experienced and skilled public health professionals who were able to quickly identify and act on those cases.

The most common sources of lead exposure include lead-contaminated paint, soil, and water; however, this investigation highlights the importance of considering lesser known sources of toxic metal exposures. FDA determined that cinnamon ground in Ecuador was the source of the contamination, through finished product testing and testing of the cinnamon ingredient. FDA analyzed ground cinnamon samples and found lead chromate, using an internally validated method. Although the source of lead chromate is unknown, the presence of this compound is indicative of economic adulteration (*4*). Economically motivated adulteration, also known as food fraud, is designed to avoid detection. Adulteration of spices, such as paprika and turmeric, with lead chromate and other lead-containing compounds to enhance weight and color has been reported (*8*–*10*). Lead has also been found in candies and nonfood products imported from other countries, such as ceramic and glassware products, cosmetics, and traditional medicines.[††]

Limitations

The findings in this report are subject to at least six limitations. First, cases were almost certainly underreported, with the degree of underreporting likely varying by time (e.g., persons who last consumed the product before the recall in late October 2023 were more likely to be underreported), age (e.g., persons aged ≥2 years are less likely to undergo routine BLL testing)[§§] (*2*), and state (e.g., guidelines for routine blood lead testing for children not enrolled in Medicaid and policies encouraging blood lead testing vary by state, with some states recommending universal testing and others recommending targeted testing) (*2*). Second, data on the amount of product consumed were not collected in a standardized way. Third, reported signs and symptoms were collected through an open-text field that was often left blank. Fourth, dates of first or last consumption were often left blank, possibly as a result of difficulty in remembering the date of last consumption. Fifth, although CDC verified whether submitted data aligned with reported case classification for most elements, verifying whether BLL tests were conducted within the appropriate time frame was not possible because a high percentage of consumption dates were missing. Finally, additional sources of lead exposure contributing to cases cannot be completely excluded (i.e., some persons might have had BLLs ≥3.5 μg/dL and consumed a recalled product in ≤3 months but had lead exposure from another source, such as paint).

Implications for Public Health Practice

This investigation found that at least 542 children aged <6 years had high BLLs after consuming applesauce containing lead- and chromium-contaminated cinnamon. Primary prevention (i.e., stopping toxic metal exposure before it occurs) remains the best way to prevent lead and chromium poisoning, though childhood blood lead testing and follow-up remain critical secondary prevention strategies when primary

[††] https://www.cdc.gov/lead-prevention/prevention/foods-cosmetics-medicines.html

[§§] Routine lead testing is typically done for children aged <72 months at high risk, based on age of housing and sociodemographic risk factors (most commonly at age 12–24 months; blood lead testing is required for all children enrolled in Medicaid at ages 12 and 24 months) and for adults at risk for occupational lead exposure.

lead prevention efforts fail. This national lead poisoning outbreak from an adulterated spice underscores the importance of clinicians and public health practitioners maintaining a high index of suspicion for toxic metal exposures from lesser-known sources. This investigation highlights the importance of coordination among CDC, FDA, and state public health partners in responding to a large-scale foodborne outbreak, leading to the recall of a nationally distributed lead- and chromium-contaminated food product marketed primarily to young children.

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Tobacco-Related Clinical Services and Tobacco-Free Policies in Behavioral Health Treatment Facilities — United States, 2023

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Abstract

Evidence-based cessation treatments and tobacco-free policies support and increase smoking cessation, which has positive physical health impacts and is associated with positive behavioral health outcomes. Implementation of these strategies in substance use and mental health treatment facilities (behavioral health treatment facilities) could help decrease tobacco use among persons with behavioral health conditions. Data from the 2023 National Substance Use and Mental Health Services Survey were analyzed to ascertain the number and percentage of behavioral health treatment facilities that offered tobacco-related clinical services and had tobacco-free policies. In 2023, tobacco cessation counseling was the most commonly offered cessation service in facilities treating mental health conditions (53.1%) and substance use disorders (69.9%). Fewer than one half of facilities offered nicotine replacement therapy (35.0% of mental health and 40.2% of substance use facilities) or non-nicotine cessation medication (33.6% of mental health and 35.3% of substance use facilities). Policies prohibiting both smoking and vaping were reported by 53.9% of mental health and 33.9% of substance use facilities. Among facilities with a tobacco-free policy, 64.4% of mental health and 81.8% of substance use facilities offered at least one cessation service. Opportunities remain to improve cessation supports in behavioral health treatment facilities, including tobacco-free policies and integrated tobacco cessation treatment services. These strategies could help decrease tobacco-related disease and improve behavioral health outcomes.

Introduction

Persons with mental health conditions or substance use disorders (i.e., behavioral health conditions) have a disproportionately high prevalence of commercial tobacco product* use and are more likely to experience smoking-related illness than are those without such conditions (*1*–*3*). Cigarette smoking causes numerous diseases and is associated with negative behavioral health outcomes (*3*). Quitting smoking has substantial positive physical health impacts and is associated with positive behavioral health outcomes (*3*–*7*).

Smoking cessation can be supported and increased through provision and use of evidence-based treatments (behavioral counseling and pharmacotherapy) and implementation of smoke-free policies (*4*). Pairing smoke-free policies with the availability of tobacco cessation treatment might further support cessation (*4*). However, access to these types of cessation supports in behavioral health treatment settings has been limited. In 2016, fewer than one half of U.S. substance use and mental health treatment facilities provided tobacco cessation treatments or had policies prohibiting smoking in all indoor and outdoor areas (*8*). This might be partly explained by the historical normalization of smoking in behavioral health settings, tobacco industry influence (e.g., industry provision of reduced-cost or free cigarettes to treatment facilities), and persistence of misinformation regarding the potential of smoking cessation to negatively impact behavioral health outcomes (*3*,*5*,*9*,*10*). To update and expand upon previous estimates of cessation supports in substance use and mental health treatment facilities in the United States, CDC and the Substance Abuse Mental Health Service Administration (SAMHSA) analyzed data from the 2023 National Substance Use and Mental Health Services Survey (N-SUMHSS).

Methods

Data Source

SAMHSA conducts N-SUMHSS annually among all facilities that provide mental health or substance use treatment services across 50 states, seven territories, and the District of Columbia (DC).† The overall response rate for the 2023 N-SUMHSS was 85%. Estimates for substance use and mental health facilities are not mutually exclusive because some facilities offer both types of services.

Analysis

The number and percentage of facilities that offer tobacco-related clinical services and that have tobacco-free policies were assessed. Tobacco-related clinical services included tobacco use screening, tobacco cessation counseling, nicotine replacement therapy (NRT), and non-nicotine cessation medications

*Commercial tobacco refers to tobacco products that are made and sold by companies. This definition does not include traditional tobacco used by some Indigenous groups for religious or ceremonial purposes. In this report, the term "tobacco" refers to commercial tobacco products including combustible products and e-cigarettes.

† https://www.samhsa.gov/data/

(bupropion and varenicline). Tobacco-free policies prohibit both smoking (smoke-free policies) and vaping (vape-free policies) in all facility indoor and outdoor areas.

Results were stratified by jurisdiction (50 states, DC, and Puerto Rico), facility operation (private for-profit, private nonprofit, and public agency), and service setting (24-hour hospital inpatient, outpatient, partial hospitalization or day treatment, and 24-hour residential for mental health facilities; hospital inpatient, outpatient, and residential for substance use facilities).[§] In addition, the percentage of facilities that provided at least one cessation service (counseling, NRT, or non-nicotine medications) among facilities with tobacco-free policies was assessed nationally and by jurisdiction. Analyses were conducted using Python (version 3.12.2; Python Software Foundation). Facilities with missing data were excluded from prevalence calculations only for the measures for which data were missing. This activity was reviewed by SAMHSA, deemed not research, and was conducted consistent with applicable federal law[¶]; CDC deferred to SAMHSA's determination.

Results

Tobacco-Related Clinical Services

The study sample included 9,856 mental health facilities and 14,620 substance use facilities. Tobacco use screening was offered at 6,796 (69.2%) mental health and 11,978 (82.3%) substance use facilities (Table). Tobacco cessation counseling was the most commonly offered cessation service (53.1% of mental health and 69.9% of substance use facilities). Fewer than one half of facilities offered NRT (35.0% of mental health and 40.2% of substance use facilities) or non-nicotine cessation medications (33.6% of mental health and 35.3% of substance use facilities). The highest percentages of facilities offering tobacco-related clinical services were public agency–operated facilities (when stratified by facility operation) and hospital inpatient facilities (when stratified by service setting), irrespective of facility type or service.

The percentage of facilities offering cessation counseling varied by jurisdiction; ranging, among mental health facilities, from 30.3% in Idaho to 88.4% in South Carolina and, among substance use facilities, from 51.0% in Idaho to 93.5% in New York. NRT provision also varied by jurisdiction, ranging from 14.0% in South Carolina to 65.0% in New Hampshire among mental health facilities, and from 11.3% in Puerto Rico to 75.8% in New York among substance use facilities.

Tobacco-Free, Smoke-Free, and Vape-Free Policies

Tobacco-free policies were reported by 53.9% of mental health and 33.9% of substance use facilities. More vape-free policies (57.9% of mental health and 43.6% of substance use facilities) were reported than were smoke-free policies (54.6% of mental health and 34.9% of substance use facilities). The highest percentages of vape-free and smoke-free policies were reported by public agency–operated facilities (when stratified by facility operation), irrespective of facility type. Among mental health facilities, the highest percentages of vape-free and smoke-free policies were reported by hospital inpatient facilities (when stratified by service setting). Among substance use facilities, hospital inpatient facilities had the highest percentage of vape-free policies; outpatient and hospital inpatient facilities reported similar percentages of smoke-free policies.

Smoke-free policies varied by jurisdiction. Among mental health facilities, prevalences ranged from 29.9% in Nevada to 95.3% in South Carolina. Among substance use facilities, prevalences ranged from 9.2% in Kentucky to 87.9% in Oklahoma. The percentage of facilities with vape-free policies also varied by jurisdiction; ranging, among mental health facilities, from 36.4% in Nevada to 98.8% in South Carolina and, among substance use facilities, from 17.4% in Kentucky to 90.9% in Oklahoma.

Tobacco Cessation Services Offered Among Facilities with Tobacco-Free Policies

Nationally, among facilities with tobacco-free policies, 64.4% of mental health and 81.8% of substance use facilities offered at least one tobacco cessation service (Supplementary Table, https://stacks.cdc.gov/view/cdc/177493#tabs). In 23 jurisdictions, more than 70% of mental health facilities with a tobacco-free policy offered at least one cessation service (Figure). In 46 jurisdictions, more than 70% of substance use facilities with a tobacco-free policy offered at least one cessation service.

Discussion

These findings suggest progress and continued opportunity for improvement in the availability of tobacco cessation supports in behavioral health treatment settings. For example, in 2016, 48.9% of mental health and 64.0% of substance use facilities reported tobacco-use screening, and 37.6% of mental health and 47.4% of substance use facilities reported offering counseling (*8*). In 2023, 69.2% of mental health and 82.3% of substance use facilities reported offering screening, and 53.1% of mental health and 69.9% of substance use facilities reported offering counseling. Although recent data might not be directly comparable to those from earlier years because of survey design

[§] Service setting categories are not mutually exclusive; partial hospitalization or day treatment facilities provide only partial day services to ambulatory clients, typically in sessions of ≥3 hours, on a regular schedule. https://www.samhsa.gov/data/system/files/media-puf-file/N-SUMHSS-2023-DS0001-info-codebook_v1.pdf

[¶] 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

TABLE. Percentage and number of behavioral health treatment facilities that offer tobacco screening or cessation treatment, or that prohibit smoking or vaping in all indoor and outdoor areas, by facility type* — National Substance Use and Mental Health Services Survey, United States, 2023

Facility type/ Characteristic/Jurisdiction	Facilities, no.	Facilities with tobacco cessation services offered or tobacco-free policies in place, % (no.)						
		Tobacco use screening†	Tobacco cessation counseling§	Nicotine replacement therapy¶	Non-nicotine cessation medications**	Smoke-free policy††	Vape-free policy§§	Tobacco-free policy¶¶
Mental health treatment facilities								
Overall	**9,856**	**69.2 (6,796)**	**53.1 (5,212)**	**35.0 (3,439)**	**33.6 (3,301)**	**54.6 (5,374)**	**57.9 (5,694)**	**53.9 (5,306)**
Facility operation								
Private for-profit	2,295	53.2 (1,216)	45.6 (1,041)	29.2 (667)	26.8 (611)	37.7 (865)	43.8 (1,001)	37.1 (849)
Private nonprofit	5,876	70.7 (4,148)	50.3 (2,948)	32.6 (1,909)	31.5 (1,849)	56.1 (3,298)	58.7 (3,449)	55.4 (3,253)
Public agency or department	1,675	85.5 (1,430)	73.0 (1,220)	51.5 (860)	50.2 (839)	72.2 (1,210)	74.2 (1,243)	71.8 (1,203)
Service setting***								
24-hr hospital inpatient	1,184	91.0 (1,074)	81.0 (956)	80.8 (954)	69.8 (824)	84.8 (1,003)	91.1 (1,077)	84.4 (998)
Outpatient	7,971	69.8 (5,560)	53.2 (4,231)	32.4 (2,579)	32.4 (2,575)	52.9 (4,214)	55.2 (4,396)	52.2 (4,155)
Partial hospitalization or day treatment	1,437	66.7 (957)	52.0 (745)	37.2 (533)	34.3 (491)	50.2 (721)	55.6 (799)	49.8 (716)
24-hr residential	1,611	58.3 (933)	44.7 (714)	32.6 (520)	29.2 (467)	51.9 (835)	58.6 (944)	51.1 (822)
Jurisdiction								
Alabama	126	70.6 (89)	46.8 (59)	35.7 (45)	33.3 (42)	45.2 (57)	48.4 (61)	45.2 (57)
Alaska	81	76.5 (62)	45.7 (37)	41.3 (33)	33.8 (27)	63.0 (51)	65.4 (53)	63.0 (51)
Arizona	361	66.1 (238)	54.2 (195)	30.4 (109)	34.5 (124)	31.4 (113)	36.7 (132)	30.8 (111)
Arkansas	150	58.7 (88)	56.0 (84)	32.7 (49)	28.7 (43)	42.0 (63)	44.0 (66)	40.0 (60)
California	804	50.4 (404)	33.1 (265)	21.1 (169)	18.1 (145)	47.8 (383)	51.9 (416)	47.2 (378)
Colorado	149	85.1 (126)	53.4 (79)	31.8 (47)	36.5 (54)	47.0 (70)	48.3 (72)	47.0 (70)
Connecticut	181	73.9 (133)	61.7 (111)	46.7 (84)	43.3 (78)	68.0 (123)	71.3 (129)	67.4 (122)
Delaware	35	72.7 (24)	45.5 (15)	42.4 (14)	39.4 (13)	54.3 (19)	57.1 (20)	54.3 (19)
District of Columbia	16	50.0 (8)	50.0 (8)	37.5 (6)	37.5 (6)	50.0 (8)	75.0 (12)	50.0 (8)
Florida	374	59.1 (220)	42.5 (158)	35.2 (131)	30.4 (113)	52.0 (194)	56.8 (212)	51.5 (192)
Georgia	178	79.2 (141)	62.9 (112)	34.8 (62)	33.7 (60)	52.8 (94)	55.6 (99)	52.2 (93)
Hawaii	19	84.2 (16)	78.9 (15)	52.6 (10)	73.7 (14)	42.1 (8)	63.2 (12)	42.1 (8)
Idaho	76	48.7 (37)	30.3 (23)	26.3 (20)	23.7 (18)	34.2 (26)	36.8 (28)	34.2 (26)
Illinois	317	59.2 (187)	38.0 (120)	29.7 (94)	28.5 (90)	49.5 (157)	55.5 (176)	49.2 (156)
Indiana	279	91.8 (256)	70.6 (197)	53.0 (148)	53.4 (149)	76.0 (212)	73.5 (205)	72.4 (202)
Iowa	113	67.0 (75)	35.7 (40)	22.3 (25)	25.0 (28)	54.0 (61)	55.8 (63)	53.1 (60)
Kansas	93	83.9 (78)	63.4 (59)	32.3 (30)	50.5 (47)	67.4 (62)	69.6 (64)	67.4 (62)
Kentucky	204	78.4 (160)	56.9 (116)	41.7 (85)	35.3 (72)	38.2 (78)	41.2 (84)	38.2 (78)
Louisiana	130	69.2 (90)	76.2 (99)	56.9 (74)	52.3 (68)	54.6 (71)	64.6 (84)	53.8 (70)
Maine	133	66.9 (89)	44.4 (59)	27.1 (36)	25.6 (34)	66.2 (88)	66.9 (89)	65.4 (87)
Maryland	218	59.6 (130)	45.9 (100)	32.1 (70)	27.1 (59)	43.6 (95)	46.3 (101)	42.2 (92)
Massachusetts	214	75.0 (159)	60.4 (128)	39.2 (83)	40.1 (85)	64.8 (138)	67.1 (143)	64.3 (137)
Michigan	303	73.9 (224)	66.0 (200)	40.3 (122)	39.3 (119)	58.4 (177)	67.0 (203)	58.4 (177)
Minnesota	229	72.4 (165)	49.6 (113)	45.4 (104)	34.2 (78)	50.0 (114)	52.2 (119)	50.0 (114)
Mississippi	135	59.7 (80)	42.5 (57)	21.6 (29)	15.7 (21)	38.5 (52)	43.0 (58)	38.5 (52)
Missouri	181	83.4 (151)	70.9 (127)	49.7 (89)	48.0 (86)	65.7 (119)	66.9 (121)	65.2 (118)
Montana	78	67.9 (53)	64.1 (50)	16.7 (13)	12.8 (10)	55.1 (43)	47.4 (37)	47.4 (37)
Nebraska	128	74.2 (95)	56.7 (72)	25.2 (32)	26.8 (34)	52.3 (67)	57.0 (73)	52.3 (67)
Nevada	77	61.8 (47)	40.8 (31)	26.3 (20)	26.3 (20)	29.9 (23)	36.4 (28)	29.9 (23)
New Hampshire	60	85.0 (51)	76.7 (46)	65.0 (39)	71.7 (43)	70.0 (42)	78.3 (47)	65.0 (39)
New Jersey	255	60.7 (153)	43.0 (108)	26.4 (66)	25.6 (64)	37.3 (95)	42.9 (109)	37.0 (94)
New Mexico	81	76.5 (62)	69.1 (56)	21.0 (17)	27.2 (22)	37.0 (30)	43.2 (35)	35.8 (29)
New York	565	91.7 (517)	78.7 (443)	55.8 (314)	57.5 (324)	76.2 (430)	77.7 (438)	75.9 (428)
North Carolina	235	60.4 (142)	52.8 (124)	33.6 (79)	32.5 (76)	74.8 (175)	78.7 (181)	75.2 (173)
North Dakota	25	76.0 (19)	60.0 (15)	36.0 (9)	36.0 (9)	84.0 (21)	84.0 (21)	84.0 (21)
Ohio	567	63.7 (361)	45.1 (256)	31.2 (177)	26.8 (152)	48.7 (276)	52.2 (296)	48.7 (276)
Oklahoma	123	95.0 (115)	86.0 (104)	60.3 (73)	40.5 (49)	91.9 (113)	92.7 (114)	91.9 (113)
Oregon	147	59.9 (88)	43.5 (64)	22.6 (33)	25.3 (37)	56.5 (83)	58.5 (86)	55.8 (82)
Pennsylvania	415	74.8 (309)	49.2 (203)	34.1 (141)	34.5 (143)	51.1 (212)	53.6 (222)	51.0 (211)
Puerto Rico	47	52.2 (24)	45.7 (21)	17.4 (8)	23.9 (11)	74.5 (35)	83.0 (39)	72.3 (34)
Rhode Island	41	75.6 (31)	58.5 (24)	39.0 (16)	24.4 (10)	31.7 (13)	41.5 (17)	31.7 (13)
South Carolina	86	90.7 (78)	88.4 (76)	14.0 (12)	9.3 (8)	95.3 (82)	98.8 (84)	95.3 (81)
South Dakota	32	65.6 (21)	50.0 (16)	46.9 (15)	46.9 (15)	62.5 (20)	62.5 (20)	62.5 (20)
Tennessee	233	72.7 (168)	51.9 (120)	37.2 (86)	40.5 (94)	52.8 (123)	54.1 (126)	51.9 (121)

See table footnotes on page 249.

TABLE. (*Continued*) Percentage and number of behavioral health treatment facilities that offer tobacco screening or cessation treatment, or that prohibit smoking or vaping in all indoor and outdoor areas, by facility type* — National Substance Use and Mental Health Services Survey, United States, 2023

Facility type/ Characteristic/Jurisdiction	Facilities, no.	Facilities with tobacco cessation services offered or tobacco-free policies in place, % (no.)						
		Tobacco use screening†	Tobacco cessation counseling§	Nicotine replacement therapy¶	Non-nicotine cessation medications**	Smoke-free policy††	Vape-free policy§§	Tobacco-free policy¶¶
Texas	312	76.6 (239)	68.3 (213)	42.6 (133)	42.9 (134)	69.9 (218)	76.6 (239)	68.9 (215)
Utah	269	52.0 (140)	46.1 (124)	24.6 (66)	28.0 (75)	60.6 (163)	61.3 (165)	59.1 (159)
Vermont	54	79.6 (43)	48.1 (26)	43.4 (23)	37.0 (20)	81.5 (44)	83.3 (45)	81.5 (44)
Virginia	215	57.5 (123)	52.8 (113)	30.8 (66)	29.9 (64)	39.5 (85)	39.1 (84)	38.1 (82)
Washington	279	77.1 (215)	40.9 (114)	33.7 (94)	27.6 (77)	38.7 (108)	40.9 (114)	38.0 (106)
West Virginia	110	64.5 (71)	51.8 (57)	43.6 (48)	48.2 (53)	43.6 (48)	44.5 (49)	43.6 (48)
Wisconsin	278	59.6 (165)	50.9 (141)	30.0 (83)	27.6 (76)	61.5 (171)	65.5 (182)	61.2 (170)
Wyoming	42	83.3 (35)	45.2 (19)	19.0 (8)	19.0 (8)	50.0 (21)	47.6 (20)	47.6 (20)
Substance use treatment facilities								
Overall	**14,620**	**82.3 (11,978)**	**69.9 (10,192)**	**40.2 (5,857)**	**35.3 (5,145)**	**34.9 (5,092)**	**43.6 (6,356)**	**33.9 (4,945)**
Facility operation								
Private for-profit	6,393	77.1 (4,908)	65.1 (4,140)	36.2 (2,302)	31.8 (2,021)	21.2 (1,353)	27.2 (1,735)	20.1 (1,284)
Private nonprofit	6,962	85.6 (5,932)	73.1 (5,085)	42.1 (2,925)	36.7 (2,545)	43.2 (3,006)	54.9 (3,817)	42.2 (2,933)
Public agency or department	1,250	90.7 (1,127)	76.6 (954)	50.4 (627)	46.0 (572)	58.6 (732)	64.2 (803)	58.2 (727)
Service setting***								
Hospital inpatient	1,068	88.3 (941)	84.3 (896)	79.7 (850)	61.1 (651)	36.3 (388)	56.4 (601)	35.6 (379)
Outpatient	12,166	82.1 (9,961)	68.6 (8,327)	35.6 (4,319)	33.4 (4,049)	36.5 (4,441)	41.6 (5,055)	35.5 (4,306)
Residential	3,503	81.8 (2,834)	75.6 (2,639)	61.0 (2,130)	45.8 (1,597)	24.6 (862)	50.2 (1,755)	24.2 (845)
Jurisdiction								
Alabama	141	75.7 (106)	63.8 (90)	26.2 (37)	23.4 (33)	21.9 (30)	26.3 (36)	21.2 (29)
Alaska	85	91.8 (78)	72.9 (62)	36.9 (31)	25.0 (21)	56.5 (48)	60.0 (51)	56.5 (48)
Arizona	430	79.0 (338)	59.4 (255)	51.3 (220)	46.4 (199)	25.9 (111)	33.6 (144)	25.2 (108)
Arkansas	127	78.0 (99)	69.3 (88)	30.7 (39)	33.9 (43)	29.9 (38)	32.3 (41)	20.5 (26)
California	1,478	78.1 (1,149)	63.6 (935)	36.7 (539)	31.8 (467)	25.5 (377)	36.1 (532)	24.2 (357)
Colorado	309	82.8 (255)	64.1 (198)	31.2 (96)	34.4 (106)	35.9 (111)	37.2 (115)	34.3 (106)
Connecticut	171	91.1 (153)	77.2 (132)	58.8 (100)	60.0 (102)	44.7 (76)	55.0 (94)	44.7 (76)
Delaware	41	90.2 (37)	82.5 (33)	46.3 (19)	56.1 (23)	41.5 (17)	41.5 (17)	39.0 (16)
District of Columbia	29	72.4 (21)	72.4 (21)	31.0 (9)	31.0 (9)	27.6 (8)	48.3 (14)	27.6 (8)
Florida	625	80.4 (502)	67.3 (419)	43.3 (270)	38.0 (237)	30.9 (193)	37.3 (233)	29.6 (185)
Georgia	285	72.0 (203)	58.5 (166)	29.9 (85)	27.1 (77)	31.6 (90)	47.7 (136)	31.2 (89)
Hawaii	98	86.7 (85)	82.7 (81)	12.2 (12)	11.2 (11)	60.2 (59)	68.4 (67)	60.2 (59)
Idaho	104	72.1 (75)	51.0 (53)	18.4 (19)	25.2 (26)	14.4 (15)	21.2 (22)	13.5 (14)
Illinois	604	74.7 (448)	54.8 (330)	29.4 (177)	23.5 (141)	27.6 (167)	39.0 (235)	26.2 (158)
Indiana	482	84.4 (401)	71.2 (343)	39.1 (188)	44.9 (215)	47.0 (226)	48.3 (232)	43.8 (210)
Iowa	199	90.9 (180)	70.9 (141)	34.7 (69)	25.6 (51)	61.3 (122)	62.8 (125)	60.3 (120)
Kansas	144	75.7 (109)	62.5 (90)	26.4 (38)	18.8 (27)	38.2 (55)	44.4 (64)	38.2 (55)
Kentucky	524	70.5 (368)	63.4 (332)	44.6 (233)	35.4 (185)	9.2 (48)	17.4 (91)	8.2 (43)
Louisiana	188	87.8 (165)	73.3 (137)	50.3 (94)	46.3 (87)	26.1 (49)	42.6 (80)	25.5 (48)
Maine	136	95.5 (128)	71.1 (96)	30.6 (41)	29.9 (40)	41.2 (56)	48.5 (66)	41.2 (56)
Maryland	507	85.2 (426)	65.7 (327)	30.7 (154)	28.1 (141)	20.6 (104)	30.0 (151)	20.3 (102)
Massachusetts	388	94.6 (365)	87.6 (340)	47.9 (186)	43.8 (170)	43.0 (167)	53.1 (206)	42.5 (165)
Michigan	395	75.8 (297)	60.1 (236)	33.4 (131)	27.8 (109)	34.2 (135)	49.1 (194)	33.2 (131)
Minnesota	369	78.3 (289)	62.2 (229)	33.1 (121)	25.4 (93)	19.8 (73)	34.7 (128)	19.8 (73)
Mississippi	99	78.8 (78)	66.7 (66)	32.3 (32)	28.3 (28)	30.3 (30)	41.4 (41)	30.3 (30)
Missouri	246	83.7 (205)	73.0 (178)	53.1 (130)	51.4 (126)	38.2 (94)	48.4 (119)	38.2 (94)
Montana	85	81.2 (69)	75.0 (63)	21.4 (18)	20.2 (17)	39.3 (33)	36.9 (31)	36.9 (31)
Nebraska	103	86.4 (89)	59.2 (61)	29.1 (30)	31.1 (32)	38.8 (40)	56.3 (58)	38.8 (40)
Nevada	116	74.8 (86)	73.0 (84)	40.9 (47)	40.9 (47)	28.4 (33)	31.0 (36)	25.0 (29)
New Hampshire	91	95.6 (87)	80.2 (73)	54.9 (50)	54.9 (50)	44.4 (40)	44.0 (40)	41.1 (37)
New Jersey	374	86.9 (325)	76.6 (285)	39.6 (147)	33.5 (124)	21.7 (81)	31.8 (119)	20.3 (76)
New Mexico	151	80.8 (122)	56.3 (85)	35.1 (53)	35.1 (53)	35.8 (54)	48.3 (73)	35.1 (53)
New York	759	96.4 (730)	93.5 (705)	75.8 (574)	64.2 (486)	76.8 (582)	84.0 (637)	76.0 (576)
North Carolina	514	80.9 (415)	74.1 (380)	45.0 (231)	39.6 (203)	52.7 (271)	57.9 (296)	51.1 (261)
North Dakota	59	93.2 (55)	69.5 (41)	40.7 (24)	37.3 (22)	37.3 (22)	55.9 (33)	32.2 (19)
Ohio	677	81.7 (552)	70.3 (475)	46.4 (314)	39.4 (267)	21.6 (146)	29.6 (200)	21.6 (146)
Oklahoma	165	95.7 (157)	90.3 (149)	42.7 (70)	24.5 (40)	87.9 (145)	90.9 (150)	87.9 (145)

See table footnotes on the next page.

TABLE. (*Continued*) Percentage and number of behavioral health treatment facilities that offer tobacco screening or cessation treatment, or that prohibit smoking or vaping in all indoor and outdoor areas, by facility type* — National Substance Use and Mental Health Services Survey, United States, 2023

Facility type/ Characteristic/Jurisdiction	Facilities, no.	Facilities with tobacco cessation services offered or tobacco-free policies in place, % (no.)						
		Tobacco use screening†	Tobacco cessation counseling§	Nicotine replacement therapy¶	Non-nicotine cessation medications**	Smoke-free policy††	Vape-free policy§§	Tobacco-free policy¶¶
Oregon	213	93.4 (199)	81.5 (172)	34.8 (73)	30.0 (63)	54.0 (115)	63.8 (136)	53.1 (113)
Pennsylvania	553	83.3 (459)	65.9 (363)	36.2 (200)	29.0 (160)	22.8 (126)	35.4 (196)	22.4 (124)
Puerto Rico	62	45.2 (28)	56.5 (35)	11.3 (7)	14.5 (9)	41.9 (26)	87.1 (54)	41.9 (26)
Rhode Island	60	80.0 (48)	76.7 (46)	33.3 (20)	18.3 (11)	38.3 (23)	41.7 (25)	36.7 (22)
South Carolina	105	74.3 (78)	72.4 (76)	22.9 (24)	11.4 (12)	41.0 (43)	42.3 (44)	38.5 (40)
South Dakota	46	87.0 (40)	76.1 (35)	39.1 (18)	26.1 (12)	41.3 (19)	54.3 (25)	41.3 (19)
Tennessee	319	83.3 (265)	70.2 (224)	44.2 (141)	35.1 (112)	23.2 (74)	35.5 (113)	22.6 (72)
Texas	497	86.1 (426)	82.9 (411)	29.4 (146)	26.0 (129)	43.1 (214)	54.3 (270)	42.3 (210)
Utah	287	79.4 (224)	72.7 (208)	51.8 (147)	46.7 (133)	36.6 (105)	38.7 (111)	35.5 (102)
Vermont	51	96.1 (49)	88.2 (45)	56.9 (29)	52.9 (27)	66.7 (34)	70.6 (36)	66.7 (34)
Virginia	339	72.5 (242)	62.8 (213)	43.2 (146)	35.5 (120)	23.7 (80)	27.5 (93)	23.4 (79)
Washington	350	92.3 (322)	76.0 (266)	31.6 (110)	25.0 (87)	30.9 (108)	38.6 (135)	30.6 (107)
West Virginia	143	82.5 (118)	72.7 (104)	51.0 (73)	42.7 (61)	30.8 (44)	36.4 (52)	30.8 (44)
Wisconsin	236	76.6 (180)	70.2 (165)	30.9 (73)	31.8 (75)	46.8 (110)	53.6 (126)	46.8 (110)
Wyoming	56	91.1 (51)	83.9 (47)	38.2 (21)	47.3 (26)	42.9 (24)	53.6 (30)	41.1 (23)

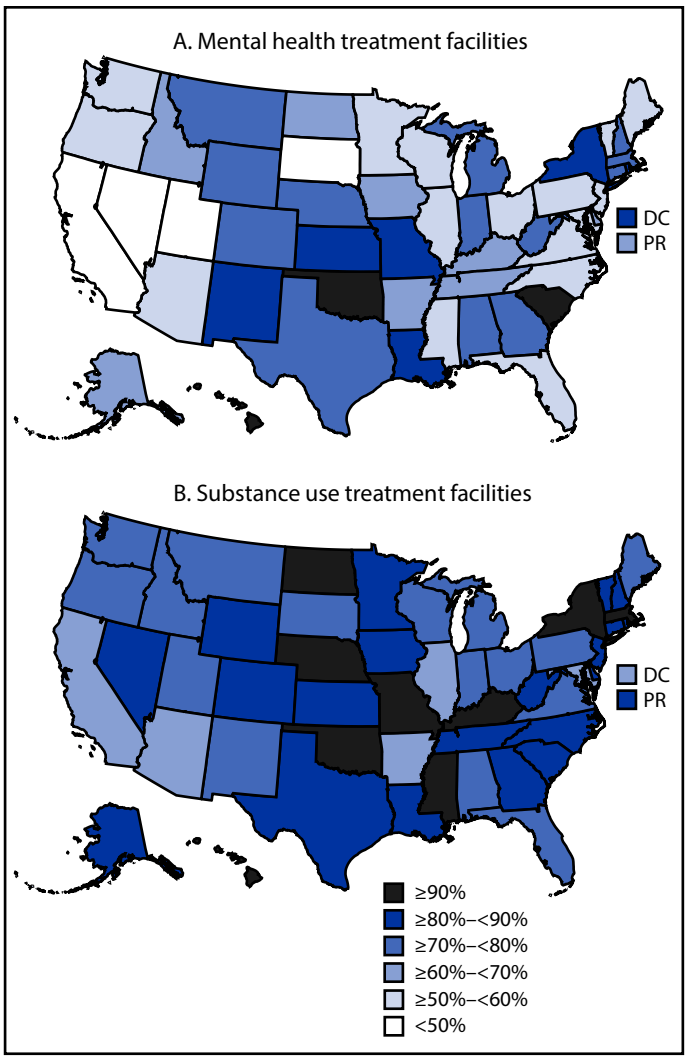
* Estimates for mental health and substance use treatment facilities are not mutually exclusive because they each include facilities offering both substance use and mental health treatment services. Caution should be exercised when comparing and interpreting findings across facility types.
† Data for tobacco use screening were missing for 30 mental health treatment facilities (ranging by jurisdiction from zero to three facilities) and 69 substance use treatment facilities (ranging by jurisdiction from zero to seven facilities).
§ Data for tobacco cessation counseling were missing for 35 mental health treatment facilities (ranging by jurisdiction from zero to four facilities) and 48 substance use treatment facilities (ranging by jurisdiction from zero to nine facilities).
¶ Data for nicotine replacement therapy were missing for 40 mental health treatment facilities (ranging by jurisdiction from zero to five facilities) and 56 substance use treatment facilities (ranging by jurisdiction from zero to eight facilities).
** Data for non-nicotine cessation medications were missing for 41 mental health treatment facilities (ranging by jurisdiction from zero to five facilities) and 65 substance use treatment facilities (ranging by jurisdiction from zero to 10 facilities).
†† Data for smoke-free policies were missing for nine mental health treatment facilities (ranging by jurisdiction from zero to two facilities) and 19 substance use treatment facilities (ranging by jurisdiction from zero to four facilities).
§§ Data for vape-free policies were missing for 17 mental health treatment facilities (ranging by jurisdiction from zero to five facilities) and 28 substance use treatment facilities (ranging by jurisdiction from zero to five facilities).
¶¶ Data for tobacco-free policies were missing for 17 mental health treatment facilities (ranging by jurisdiction from zero to five facilities) and 31 substance use treatment facilities (ranging by jurisdiction from zero to five facilities).
*** Service setting categories are not mutually exclusive.

changes in 2021,** the current findings suggest increases in availability of cessation supports. This progress is likely related to coordinated public health efforts. For example, since 2018, SAMHSA has funded a National Center of Excellence for Tobacco-Free Recovery to increase tobacco cessation supports in behavioral health care.†† In 2020, CDC's National Tobacco Control Program§§ began requiring state health departments to address tobacco use among persons with behavioral health conditions.¶¶ Several jurisdictions have focused on treatment settings as part of this work.***

South Carolina, for example, developed interagency partnerships to support implementation of initiatives to reduce tobacco use among persons with behavioral health conditions.††† As a result, 100% of community mental health centers and 59% of local Alcohol and Drug Abuse Commissions in South Carolina have adopted tobacco-free policies. In addition, South Carolina has observed an increase in the number of providers diagnosing tobacco use disorder and in quitline callers enrolled in cessation counseling tailored for persons with behavioral health conditions.

** https://www.samhsa.gov/data/data-we-collect/n-sumhss-national-substance-use-and-mental-health-services-survey
†† SAMHSA's National Center of Excellence for Tobacco-Free Recovery provides technical assistance, training, and resources to promote integration of tobacco treatment and adoption of tobacco-free policies into behavioral health treatment settings. As part of this work, the center convenes State Leadership Academies for Tobacco-Free Recovery to develop and implement statewide action plans to address tobacco use in behavioral health population groups. https://www.samhsa.gov/resource/tta/national-center-excellence-tobacco-free-recovery-coe-tfr
§§ CDC's National Tobacco Control Program provides funding and technical assistance to state and territorial tobacco control programs. https://www.cdc.gov/tobacco/php/tobacco-control-programs/index.html
¶¶ Tobacco control programs subject to this requirement were those in states where the proportion of behavioral health treatment facilities offering tobacco use screening and smoke-free policies fell below the 2016 national average based on data from the National Survey of Substance Abuse Treatment Services and the National Mental Health Services Survey.
*** Based on the internal National Tobacco Control Program Evaluation Report, years 1 and 2, National Tobacco Control Program Awards Management Platform.
††† Based on the internal National Tobacco Control Program Impact Statement: South Carolina.

FIGURE. Percentage of behavioral health treatment facilities with a tobacco-free policy that offer at least one tobacco cessation service, by facility type — National Substance Use and Mental Health Services Survey, 52 jurisdictions, United States, 2023



Abbreviations: DC = District of Columbia; PR = Puerto Rico.

In Indiana, tobacco-free recovery grants have focused on system-level strategies.[§§§] Leveraging multisector relationships, Indiana established learning collaboratives focused on implementing tobacco-free policies and tobacco treatment and referral protocols in behavioral health settings. As a result of these efforts, more than 80% of state-funded behavioral health agencies reported routinely incorporating tobacco dependence treatment into their treatment planning processes in 2023, an increase from approximately 40% in 2017.

[§§§] Based on the internal National Tobacco Control Program Impact Statement: Indiana.

Summary

What is already known about this topic?

Incorporation of tobacco cessation treatments and tobacco-free policies into substance use and mental health treatment facilities could help decrease tobacco use among persons with behavioral health conditions.

What is added by this report?

In 2023, counseling was the most commonly offered tobacco cessation service in mental health (53.1%) and substance use (69.9%) treatment facilities. Fewer than one half of facilities offered tobacco cessation pharmacotherapy. Tobacco-free policies were reported by 53.9% of mental health facilities and 33.9% of substance use facilities.

What are the implications for public health practice?

Integrating tobacco treatment services into behavioral health care and making treatment settings tobacco-free could support cessation and help decrease tobacco-related disease, and might improve behavioral health outcomes.

Opportunities remain to further expand the availability of cessation supports in behavioral health treatment settings, particularly given that fewer than one half of treatment facilities offered cessation pharmacotherapy in 2023. Continued efforts to educate behavioral health professionals about cessation treatment strategies and the benefits of smoking cessation for behavioral health outcomes might be warranted. In addition, health systems–based strategies, such as implementation of treatment protocols and clinical workflows, can help reduce the strain on clinical staff and systematize screening and treatment (*4*). Legislative and regulatory strategies are also being used by states, including laws or regulations mandating tobacco-free policies[¶¶¶] or requiring the availability of tobacco cessation treatment in mental health and substance use facilities.[****]

Many persons with behavioral health conditions want to quit smoking and can quit (*3*,*4*). Quitting smoking is associated with positive mental health outcomes, including decreased anxiety, depressive symptoms, and stress, as well as improved substance use recovery outcomes (*3*–*7*). Quitting does not interfere with behavioral health treatment or impede substance use recovery (*3*–*5*). Evidence-based treatments can help persons with behavioral health conditions quit, although some studies

[¶¶¶] As of July 2024, 18 states and DC had laws or regulations mandating tobacco-free policies for most mental health facilities and 19 states had similar requirements for most substance use facilities. https://www.publichealthlawcenter.org/sites/default/files/resources/Tobacco-Free-State-Policies-Mental-Health-Substance-Use-Facilities.pdf

[****] As of September 2024, seven states required the availability of tobacco cessation treatment in mental health facilities and nine states in substance use facilities. https://www.publichealthlawcenter.org/sites/default/files/resources/Tobacco-Cessation-Treatment-State-Policies.pdf

suggest that these persons might require longer duration or more intensive treatments (*4*). Research is needed to better understand how to maximize the impact and effectiveness of cessation treatments tailored to this group.

Limitations

The findings in this report are subject to at least three limitations. First, responses were self-reported and subject to reporting bias. Second, the analysis did not include nonresponse adjustments to minimize nonresponse bias for facilities that did not respond to the survey. Finally, the survey did not assess delivery or use of cessation services or implementation or enforcement of tobacco-free policies.

Implications for Public Health Practice

Supporting tobacco cessation in behavioral health treatment settings is an important component of a comprehensive approach to reducing tobacco use and related health outcomes among persons with behavioral health conditions. This analysis identified substantial gaps in the availability of tobacco cessation treatments and tobacco-free policies at behavioral health treatment facilities. Increasing implementation of tobacco-free policies and integrating tobacco cessation treatment into behavioral health care could support cessation and help decrease tobacco-related disease and might improve behavioral health outcomes.

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Notes from the Field

Assessment of Awareness, Use, and Access Barriers to Cooling Centers in Maricopa County, Arizona — August 1–September 15, 2023

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Heat-related deaths* in Maricopa County, Arizona (population approximately 4.5 million) increased approximately tenfold from 61 in 2014 to 645 in 2023 (*1*), and the number of cooling centers (volunteer facilities such as libraries, places of worship, and community centers that provide daytime air-conditioned space and water to members of the public)† doubled from 56 (*2*) to 112 (C. Warner, Maricopa Association of Governments, personal communication, October 2023). During 2019–2023, the county experienced an annual average of 36 days with a daily high temperature ≥110°F (≥ 43.3°C) (*3*). Drug and alcohol use, homelessness, living alone, and increased age have been identified as risk factors for heat-related deaths in Maricopa County (*1*). Maricopa County Department of Public Health (MCDPH) conducted a survey to evaluate awareness, use of, and barriers to accessing cooling centers among cooling center visitors (visitors) and potential visitors (the public). This activity was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.§

Investigation and Outcomes

During August 1–September 15, 2023, MCDPH surveyed visitors and the public, using a 40-question Research Electronic Data Capture survey¶ (version 14.1.1; Vanderbilt University). The visitor and public surveys were conducted in English and Spanish using Internet-based and paper formats. At least one cooling center was selected from each of the five MCDPH geographic regions** in a zip code with high heat illness or deaths and higher Social Vulnerability Index (*4*) for that region.

The survey of visitors was conducted by trained MCDPH personnel and volunteers; respondents received a heat-relief kit†† for their participation. Outreach for the public survey included social media posts and press releases with direct links to the survey website. A community organization that serves older adults and persons of lower socioeconomic status, groups at increased risk for heat-related outcomes (*5*), administered the survey in-person to ensure inclusion of persons potentially at risk for heat-related illnesses or deaths who might not have online survey access. The study sample included 944 visitors to 15 cooling centers and 1,260 members of the public, 60% of whom completed the survey online and 40% in-person. Median per-question skip rates for the visitor and general survey were 9% (range = 2%–38%) and 4% (range = 1%–23%) respectively; missing data were excluded from the analyses at the question level. The average daily high temperature during the study period was 108°F (42.2°C) (SD = 6.2) with 21 days 110°F (43.3°C) or higher (*3*).

Compared with the public, a higher percentage of cooling center visitors reported experiencing homelessness (65% versus 12%), were persons of color §§ (43% versus 32%), reported having a disability (18% versus 11%), and using nonprescription or street drugs (21% versus 4%), whereas a higher percentage of the public than cooling center visitors were aged ≥65 years (45% versus 16%) (Table). Many cooling center visitors (68%) and public respondents (61%) were aware of cooling centers before the survey (some visitors were unaware of cooling centers as a formal designation before taking the survey). Visitors were more likely than members of the public to have heard about cooling centers through word of mouth (47% versus 13%); the public were more likely than visitors to hear about the centers from television or radio announcements (36% versus 4%). Street signs were considered effective advertisement by both groups (56% visitors; 69% public).

* Heat-associated mortality cases were identified using *International Classification of Diseases, Tenth Revision* codes X30 (exposure to excessive natural heat), T67.X (effects of heat and light), and P81.0 (environmental hyperthermia of newborn) or by the key phrases of heat exposure, environ, exhaustion, sun, heat stress, heat stroke, and hyperthermia on part I or II of death certificates.

† In 2023, cooling centers, which included respite centers, operated during May 1–September 30, did not track visitor counts, and did not operate under standardized protocols. Hours of operation were generally 9 a.m.–5 p.m. weekdays. Respite centers later became an official heat relief site type distinguished from cooling centers. https://azmag.gov/Programs/Heat-Relief-Network/Resources

§ 45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

¶ Visitor and public surveys are available as report appendices at https://www.maricopa.gov/DocumentCenter/View/92027/Cooling-Center-Visitor-Survey-Community-2023-Report and https://www.maricopa.gov/DocumentCenter/View/92026/Cooling-Center-General-Survey-Community-2023-Report

** Maricopa County is divided into five regions (Northwest, Northeast, Southwest, Southeast, and Central) for its community health assessment. For specific boundaries, visit https://maricopa.maps.arcgis.com/apps/instant/basic/index.html?appid=b86a52f0a4fe4802b503ec22b251be9d.

†† Heat-relief kits included a cooling towel, hygiene-related items, sunscreen, aloe vera, and socks.

§§ A person of color for this analysis was anyone who selected their race and ethnicity as Alaska Native, American Indian, or Native American, Asian, Black or African American, Hispanic or Latino, Middle Eastern or North African, or Native Hawaiian or Pacific Islander.

TABLE. Maricopa County Department of Public Health assessment of awareness, use, and access barriers to cooling centers — Maricopa County, Arizona, August 1–September 15, 2023

Respondents	No. (%)* Cooling center visitors	Public
Total	**944**	**1,260**
Populations within Maricopa County†,§		
Total responses	**812**	**1,219**
Immigrant	31 (4)	118 (10)
Lives alone	126 (16)	233 (19)
Person with disabilities	148 (18)	130 (11)
Refugee	11 (1)	45 (4)
Total responses¶	**788**	**1,201**
Person who uses drugs¶	163 (21)	54 (4)
Persons experiencing homelessness**		
Total responses	**944**	**1,260**
Reported experiencing homelessness	373 (40)	55 (4)
Reported having unstable residence	575 (61)	136 (11)
Either	618 (65)	148 (12)
Race or ethnicity		
Total responses	**836**	**1,153**
Alaska Native, American Indian, or Native American	62 (7)	21 (2)
Asian	15 (2)	25 (2)
Black or African American	117 (14)	49 (4)
Middle Eastern or North African	—††	—††
Native Hawaiian or Pacific Islander	—††	—††
White	351 (42)	708 (61)
Hispanic or Latino	157 (19)	272 (24)
Multiracial	115 (14)	56 (5)
I don't know	11 (1)	10 (1)
Age group, yrs		
Total responses	**780**	**1,183**
18–34	205 (26)	170 (14)
35–49	251 (32)	220 (19)
50–64	202 (26)	257 (22)
65–74	96 (12)	331 (28)
≥75	26 (3)	203 (17)
Age, yrs; median (IQR)	45 (34–59)	62 (43–72)
Were you aware that cooling centers exist in Maricopa County before taking this survey?		
Total responses	**890**	**1,244**
Yes	605 (68)	765 (61)
No	285 (32)	479 (39)
How did you find out about cooling centers?†		
Total responses	**886**	**1,239**
I was unaware before taking this survey§§	148 (17)	403 (33)
I have known about cooling centers for a long time	59 (7)	84 (7)
I heard about them through someone I know (word of mouth)	415 (47)	161 (13)
I heard about them through the county or my city, a local organization, nonprofit or a community-based organization	159 (18)	272 (22)
I saw an advertisement from the street (saw a sign)	102 (12)	100 (8)
Maricopa Association of Governments website/Heat Relief Network	30 (3)	64 (5)
Newspaper	21 (2)	89 (7)
Online article or social media (e.g., Facebook, Twitter, or Instagram)	27 (3)	217 (18)
Television or radio	39 (4)	448 (36)
Other	61 (7)	15 (1)
What do you think are the best ways to notify people about the locations of cooling centers?†		
Total responses	**894**	**1,237**
Advertisement from the street (e.g., cooling center sign)	503 (56)	853 (69)
Email	122 (14)	254 (21)
Internet or social media	349 (39)	740 (60)
Newspaper or online articles	191 (21)	388 (31)
Television or radio	266 (30)	751 (61)
Word of mouth	540 (60)	538 (43)
Other	122 (14)	105 (8)
In the last 30 days, how often have you visited a cooling center to get away from the heat?¶¶		
Total responses	**923**	**116**
This is my first visit	202 (22)	NA
1–4 times	NA	24 (21)
2–4 times	218 (24)	NA
5–7 times	91 (10)	7 (6)
8–10 times	70 (8)	—††
≥11 times	240 (26)	—††
Never	102 (11)	75 (65)
If you visited a cooling center before today, how much time do you typically spend at a cooling center to get away from the heat?		
Total responses	**759**	**39**
This is my first time using a cooling center to get away from the heat	101 (13)	NA
<1 hr	111 (15)	—††
1–4 hrs	278 (37)	21 (54)
>4 hrs	269 (35)	—††
What time of the day do you think that cooling centers should be open?		
Total responses	**581**	**NA*****
Start time, median (IQR)	9 a.m. (7 a.m.–10 a.m.)	NA
End time, median (IQR)	7 p.m. (6 p.m.–8 p.m.)	NA
How do you normally travel or how would you travel to a cooling center?†,†††		
Total responses	**903**	**1,211**
Agency pickup (e.g., dial-a-ride or shuttle)	59 (7)	47 (4)
Bike	145 (16)	120 (10)
Drive myself	184 (20)	920 (76)
Friend, family member, or neighbor	62 (7)	191 (16)
Public transportation (bus or light rail)	364 (40)	209 (17)
Uber, Lyft, or taxi	39 (4)	80 (7)
Walk	492 (54)	288 (24)
Other	26 (3)	19 (2)
Have any of the following kept you from visiting a cooling center when you wanted to?†		
Total responses§§§	**653**	**762**
Concerns about feeling welcome	42 (6)	30 (4)
Concerns about safety	72 (11)	81 (11)

See table footnotes on the next page.

TABLE. (*Continued*) Maricopa County Department of Public Health assessment of awareness, use, and access barriers to cooling centers — Maricopa County, Arizona, August 1–September 15, 2023

Respondents	No. (%)* Cooling center visitors	Public
Cooling centers are not open when I can access them	93 (14)	45 (6)
Do not want to be seen at a cooling center	15 (2)	9 (1)
I do not know how to find the location of a cooling center	114 (17)	170 (22)
I do not want to transport my belongings	53 (8)	17 (2)
I go somewhere else to cool off instead	50 (8)	157 (21)
Need to care for family or friends	29 (4)	26 (3)
No transportation	203 (31)	62 (8)
Wasn't aware cooling centers exist	236 (36)	374 (49)
Pets might not be allowed	47 (7)	89 (12)
There is nowhere to store my belongings	67 (10)	28 (4)
Too crowded	90 (14)	41 (5)
Other	44 (7)	17 (2)
Do you have any pets or service animals that you would want to bring with you to a cooling center if you visited?		
Total responses	**815**	**1,227**
No	688 (84)	751 (61)
Yes	127 (16)	476 (39)
Would bring a pet or emotional support animal†	78 (10)	409 (33)
Would bring an Americans with Disabilities Act service animal†	31 (4)	45 (4)

Abbreviation: NA = not applicable.

* Missing values have been excluded from totals. Median per-question skip rates for the visitor and general survey were 9% (range = 2%-38%) and 4% (range = 1%–23%) respectively.

† Question allowed more than one response; totals might exceed 100%.

§ The full list of response options for this question includes populations at higher risk and those that are underserved from the CDC Health Disparities Grant OT21–2103, as well as those listed in the Maricopa County Department of Public Health Community Health Needs Assessment. Data for additional response options (e.g. military member or veteran) are available online at https://www.maricopa.gov/DocumentCenter/View/92027/Cooling-Center-Visitor-Survey-Community-2023-Report and https://www.maricopa.gov/DocumentCenter/View/92026/Cooling-Center-General-Survey-Community-2023-Report

¶ A separate survey question ascertained respondents' drug use.

** Respondents who reported experiencing homelessness or who indicated they have unstable housing were classified as persons experiencing homelessness.

†† Suppression rules applied for counts fewer than five to protect identity.

§§ Survey design allowed all respondents to answer this question and the previous question. Counts might not align across question responses because respondents might have been unaware of cooling centers as a formal designation before taking the survey, but recalled learning via word of mouth or from organizations about places where they might go to stay cool.

¶¶ Response options for this question differed between cooling center visitors and the public. Because public survey respondents were not surveyed at cooling centers, the response, "This is my first visit" was not relevant to public respondents and therefore not provided as an option. The first range for the public survey was one to four times.

*** The question was not posed to the public because it was replaced with another question.

††† Visitors were asked how they normally travel to cooling centers; public respondents were asked how they would travel to cooling centers.

§§§ Respondents who indicated they do not experience barriers to visiting a cooling center (174 visitors; 207 public) were removed from the denominator to maintain focus on those who experience barriers.

Summary

What is already known about this topic?

Heat-related fatalities in Maricopa County, Arizona increased from 61 deaths in 2014 to 645 in 2023. During this period, the number of cooling centers doubled to 112.

What is added by this report?

In this cooling center evaluation involving 944 cooling center visitors and 1,260 general public respondents in Maricopa County during summer 2023, street signage was considered the best way to advertise cooling centers by 56% of visitors and 69% of general public respondents. A majority of visitors indicated they would like centers to be open until at least 7 p.m. Lack of transportation to centers was the most common barrier to use, described by 31% of visitors.

What are the implications for public health practice?

To increase access to cooling centers, Maricopa County will focus on increasing street signage, expanding operating hours, and reducing transportation barriers.

The median time visitors recommended that cooling centers stay open until was 7 p.m. (IQR = 6 p.m.–8 p.m.) Among persons who reported visited cooling centers for heat relief during the previous 30 days, 49% of visitors and 41% of the public visited five or more times. Approximately one half of visitors (54%) walked to reach the center, and 40% used public transportation; approximately three quarters of public respondents reported they would drive (76%). Common barriers to accessing cooling centers included lack of awareness (36% visitors; 49% public), uncertainty of locations (17% visitors; 22% public), and transportation challenges for visitors (31%). Visitors (10%) and the public (33%) indicated a desire to bring pets or emotional support animals to cooling centers. Unlike service animals, these animals can represent barriers because not all centers allow pets or emotional support animals.¶¶

Preliminary Conclusions and Actions

The results included in this report highlight diversity of current and potential cooling center users, underscoring the need for inclusive strategies in increasing awareness and accessibility. To increase awareness and visibility of and access to cooling centers, MCDPH incorporated the following into its community heat action plan: expanding operation hours until 7 p.m. or later at 17 centers, making additional street signage available, and funding a heat-relief call center staffed by bilingual health workers to facilitate location of and transportation to and from cooling centers.

¶¶ By law, only Americans with Disabilities Act service animals have protected access to public places, including cooling centers.

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Erratum

Vol. 74, No. 12

The report, "Routes of Marijuana Use — Behavioral Risk Factor Surveillance System, 22 U.S. States and Two Territories, 2022" contained several errors.

On page 198, the first two sentences of the Introduction should have read, "**At the federal level, cannabis remains classified as a Schedule I substance under the Controlled Substances Act, making distribution of cannabis a federal offense. However, as of April 2025, 39** states, three territories, and the District of Columbia (DC) have legalized cannabis* use for state-defined qualifying medical conditions, and 24 states, two territories, and DC have legalized nonmedical adult cannabis use (*1*)."

On page 201, in Table 1, under the column heading "Daily or near-daily marijuana use," under the subheading "No.," the values for "Age group, yrs" should have read, "**779**; **1,345**; **1,370**; **1,035**; **1,145**; and **1,174**."

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