

Characteristics of Sudden Unexpected Infant Deaths — United States, 2020–2024

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Abstract

Sudden unexpected infant death (SUID) accounts for approximately 3,400 deaths among infants aged <1 year in the United States annually. To reduce SUID risk, the American Academy of Pediatrics recommends that infants be placed to sleep supine on a flat, firm, nonshared surface, without soft bedding. SUID vital statistics data do not include details on sleep environment and other contextual factors that are critical for SUID surveillance and prevention. CDC's SUID and Sudden Death in the Young Case Registry (case registry) helps fill this gap. The case registry, a multijurisdictional, population-based active surveillance system, builds on child death review programs, compiling detailed information on deaths in persons aged 0–18 years from multiple data sources. CDC analyzed 2020–2024 case registry data to describe 1) SUID by sociodemographic and sleep environment characteristics, 2) the case registry classification algorithm SUID categories, and 3) death investigation components. Among the 4,861 SUIDs included in this analysis, most decedents were aged 0–3 months, male, Black or African American or White, born full-term, and insured by Medicaid. Unsafe sleep factors were present in at least three fourths of SUIDs. Almost all infants had an autopsy and death investigation, although completed components varied. This newly reported, detailed case registry information can be used by public health professionals and clinicians to improve death investigations, increase understanding of etiologies and risk factors, and enhance focused prevention efforts to reduce SUIDs.

Introduction

Sudden unexpected infant death (SUID) includes sudden infant death syndrome (SIDS), accidental suffocation and strangulation in bed, and unknown causes of death. [SUID](#)

[accounts for approximately 3,400 deaths in infants](#) (children aged <1 year) in the United States annually and disproportionately [affects Black or African American \(Black\) and American Indian or Alaska Native infants](#). (Persons of Hispanic or Latino [Hispanic] origin might be of any race but are categorized as Hispanic; all racial groups are non-Hispanic.) To reduce SUID risk, the American Academy of Pediatrics (AAP) recommends that infants be placed to sleep supine on a flat, firm, nonshared sleep surface (i.e., crib or bassinet [crib]), without soft bedding (*1*). National vital statistics data demonstrate declines in SUID rates (number of SUIDs per 100,000 live births) during the 1990s, from 154.6 in 1990 to 93.9 in 1999. These declines were attributed to clinical guidance and public health campaigns about safe infant sleep practices (*1*); however, progress has stalled, and from 2020 to 2022, [SUID rates increased from 92.9 to 100.9](#).

Vital statistics data are best for monitoring national SUID rates and exploring information available on birth and death certificates. However, they lack details about death circumstances and often do not contain sufficient information to determine

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SUID subtype (e.g., explained versus unexplained deaths) (2). CDC's [SUID and Sudden Death in the Young \(SDY\) Case Registry](#) (case registry) aims to fill this gap. The case registry, which began with five jurisdictions in 2009, currently includes 32 jurisdictions and captures approximately two in five U.S. SUIDs. The case registry is a multijurisdictional, population-based, active surveillance system that compiles detailed information on sudden deaths in persons aged <20 years from multiple data sources, extending beyond publicly available information (e.g., vital statistics). The case registry builds on existing child death review programs* and uses the Health Resources and Services Administration and CDC-supported National Center for Fatality Review and Prevention's Pediatric National Fatality Review – Case Reporting System. A multidisciplinary child death review team reviews each SUID and develops case-specific prevention recommendations that are used with compiled data to guide SUID prevention locally and statewide. In addition, every SUID is categorized using a CDC-developed classification algorithm to differentiate explained from unexplained deaths, account for incomplete investigation information, and document whether unsafe sleep factors contributed to the death (2). This report describes 2020–2024 case registry SUID data, not previously published or available through vital statistics alone, building on previous evidence (2–6) to improve understanding and prevention of SUID.

*The SUID and SDY Case Registry was built on existing child death review programs and protocols, and data are housed in the Pediatric National Fatality Review-Case Reporting System.

Methods

Data Source

SUIDs[†] that occurred during 2020–2024 among residents of 31 jurisdictions[§] participating in the case registry and that met [case registry data quality criteria](#) (4,861) were included in this analysis.

Analysis

A descriptive analysis was conducted. SAS (version 9.4; SAS Institute) was used to calculate frequencies and percentages of sociodemographic characteristics, sleep environment characteristics, classification categories (2), and investigation components. This activity was reviewed by CDC, deemed not research, and conducted consistent with applicable federal law and CDC policy.[¶]

[†] SUIDs included deaths with any of the following causes reported on the death certificate: unknown; undetermined; SIDS; SUID; unintentional sleep-related asphyxia, suffocation, strangulation; unspecified suffocation; cardiac or respiratory arrest without other well-defined causes; or nonspecific causes (e.g., respiratory illness) with potentially contributing unsafe sleep factors. Intentional homicides are excluded.

[§] Case registry jurisdictions with cases included in the analysis are Alaska; Arizona; Sacramento County, California; San Francisco County, California; Colorado; Delaware; DeKalb and Fulton counties, Georgia; Canyon County, Idaho; Cook County, Illinois; Indiana; Kansas; Kentucky; Louisiana; Maryland; Michigan; Minnesota; Nevada; New Hampshire; New Jersey; New Mexico; Hamilton County, Ohio; select counties in Pennsylvania; Philadelphia County, Pennsylvania; Rhode Island; select counties in South Carolina; South Dakota; Tennessee; Utah; select counties in Virginia; Pierce County, Washington; and Wisconsin.

[¶] 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.

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Results

Characteristics of SUIDs

Among 4,861 case registry SUIDs that occurred during 2020–2024 and met case registry data quality criteria, most involved infants who were aged 0–3 months (66%), male (57%), Black (38%) or White (37%), born at full term (≥ 37 weeks' gestation) (74%), and insured by Medicaid (69%) (Table 1). Infants' sleep environment at death frequently involved unsafe sleep factors that were not mutually exclusive, including 46% of infants who were found in a nonsupine position, 75% on a sleep surface other than a crib, 78% with soft bedding, and 59% sharing a sleep surface. Full airway obstruction (nose and mouth, neck, or chest) was documented in 28% of SUIDs.

TABLE 1. Sudden unexpected infant deaths, by demographic characteristics of the infant and sleep environment characteristics — Sudden Unexpected Infant Death and Sudden Death in the Young Case Registry, United States, 2020–2024

Characteristic	No (%)
Demographic characteristics	4,861 (100)
Age at death, mos	
0–3	3,206 (66)
4–6	1,173 (24)
7–11	482 (10)
Sex*	
Male	2,762 (57)
Female	2,089 (43)
Missing†	10 (<1)
Race and ethnicity*,§	
American Indian or Alaska Native	86 (2)
Asian	39 (1)
Black or African American	1,828 (38)
Hispanic or Latino	650 (13)
Native Hawaiian or Pacific Islander	20 (<1)
White	1,820 (37)
Multiple races	260 (5)
Unknown/Missing†	158 (3)
Gestational age at birth, wks*	
<34	365 (8)
34–36	721 (15)
≥ 37	3,602 (74)
Unknown	124 (3)
Missing†	49 (1)
Health insurance at the time of death	
None	88 (2)
Medicaid¶	3,375 (69)
Private	703 (14)
Other/Combination**	229 (5)
Unknown	320 (7)
Missing†	146 (3)
Sleep environment characteristics	
Position in which the infant was found	
Supine	1,911 (39)
Prone	1,508 (31)
Side	715 (15)
Unknown	454 (9)
Missing†	273 (6)

Categorization of SUIDs

Using categories from the case registry classification algorithm (Box) (2), the analysis categorized SUIDs as follows: unexplained—no autopsy or death investigation (57; 1%), unexplained—incomplete case information (1,139; 23%), unexplained—no unsafe sleep factors (117; 2%), unexplained—unsafe sleep factors (no or unknown airway obstruction) (2,126; 44%), unexplained—possible suffocation with unsafe sleep factors (503; 10%), and explained—suffocation with unsafe sleep factors (919; 19%) (Table 2). Most SUIDs (3,548; 73%) were classified in a category indicating that unsafe sleep factors (1) were identified in the sleep environment; unsafe sleep factors might also have been present in the unexplained—no autopsy or death investigation and unexplained—incomplete case information categories. Among explained—suffocation,

TABLE 1. (Continued) Sudden unexpected infant deaths, by demographic characteristics of the infant and sleep environment characteristics — Sudden Unexpected Infant Death and Sudden Death in the Young Case Registry, United States, 2020–2024

Characteristic	No (%)
Sleep location*	
Crib, portable crib, or bassinet	1,011 (21)
Adult bed or futon	2,756 (57)
Chair or couch	439 (9)
Other††	424 (9)
Unknown	75 (2)
Missing†	156 (3)
Soft bedding in sleep environment	
Yes	3,814 (78)
No	365 (8)
Unknown	383 (8)
Missing†	299 (6)
Surface sharing at time of death*,§§	
Yes	2,869 (59)
No	1,691 (35)
Unknown	124 (3)
Missing†	177 (4)
Infant airway when found*	
Unobstructed	1,463 (30)
Partially obstructed	464 (10)
Fully obstructed	1,347 (28)
Unknown	1,106 (23)
Missing†	481 (10)

* Percentages might not sum to 100 because of rounding.

† A missing response indicates the variable was left blank during data entry and no attempt was made to find the answer. An unknown response indicates the variable was considered, however the information necessary to answer the question was not available. [Guidance for Improving Child Death Review Data Quality](#)

§ Race and ethnicity were missing for <1% of infants. Persons of Hispanic or Latino (Hispanic) origin might be of any race but are categorized as Hispanic; all racial groups are non-Hispanic.

¶ Although insurance categories are mutually exclusive, infants indicated as being insured by Medicaid might have also held additional insurance.

** Health insurance indicated as other, state plan, or Indian Health Service, or more than one was selected.

†† Other includes floor, car seat, stroller, bedside sleeper, inclined sleeper, swing, or bouncy chair.

§§ Surface sharing is defined as the infant sleeping with another person (i.e., infant, child, or adult) or animal on any surface (e.g., adult bed, crib, bassinet, or couch) at the time of death.

BOX. Sudden unexpected infant death categorization criteria* — Sudden Unexplained Infant Death and Sudden Death in the Young Case Registry, United States, 2020–2024**Sudden unexplained infant death category Criteria that must be met****Unexplained**

Unexplained—no autopsy or death scene investigation Death scene investigation or autopsy not reported

Unexplained—incomplete case information • Location and position of the infant when found is unknown, or
• Toxicology, radiology, or pathology (i.e., histology, microbiology, or other pathology such as genetic testing) not performed during autopsy

Unexplained—no unsafe sleep factors • Death occurred while the infant was awake or during sleep
• If the infant was asleep, the infant was supine, in a crib or bassinet, on a nonshared, firm noninclined sleep surface, without any soft or loose bedding per American Academy of Pediatrics (AAP) Recommendations for Reducing Infant Deaths in the Sleep Environment

Unexplained—unsafe sleep factors • Death occurred in an unsafe sleep environment (per AAP recommendations); however, environmental contribution to death was uncertain because airway was unobstructed or unknown whether obstructed

Unexplained—possible suffocation with unsafe sleep factors Death with unsafe sleep factors and documentation of at least a partial airway obstruction but missing one or more of the following criteria:
1. Nonconflicting, reliable witness account
2. No potentially fatal findings or concerning conditions[†]
3. Strong evidence of a full, external airway obstruction
4. Suffocation probable given the infant's age and stage of development

Explained

Explained—suffocation with unsafe sleep factors Deaths with unsafe sleep factors and meets all of the following criteria:
1. Nonconflicting, reliable witness account
2. No potentially fatal findings or concerning conditions[†]
3. Strong evidence of a full, external airway obstruction
4. Suffocation was probable given the infant's age and stage of development

Source: Adapted from Shapiro-Mendoza CK, Camperlengo L, Ludvigsen R, et al. Classification system for the Sudden Unexpected Infant Death Case Registry and its application. *Pediatrics* 2014;134:e210–9. <https://doi.org/10.1542/peds.2014-0180>

* Categories are mutually exclusive and assigned in sequence using the Sudden Unexplained Infant Death and Sudden Death in the Young Case Registry classification algorithm; each category is applied only to cases remaining unclassified after the preceding criteria have been applied.

[†] Potentially fatal findings or concerning conditions should be severe enough to independently cause death. However, in these cases, their contribution to the death is uncertain, creating doubt that the airway obstruction alone was the cause and raising the possibility that other factors (e.g. drug toxicity or severe respiratory illness) might have contributed.

attributed (nonmutually exclusive) mechanisms included soft bedding (obstruction of the infant's airway by soft objects or loose bedding in the immediate sleep environment) (681; 74%), overlay (obstruction of the infant's airway by a person or animal) (223; 24%), wedging (obstruction of the infant's airway resulting from being trapped between two inanimate objects) (69; 8%), or other (obstruction of the infant's airway by something else in the sleep environment) (33; 4%).

SUID Death Investigation

Overall, among SUIDs in the case registry, 4,779 (98%) had an autopsy and 4,751 (98%) had a death investigation, including toxicology testing (4,613; 95%); imaging (4,311; 89%); microbiology, histology, or pathology testing (4,649; 96%); and death scene re-creation** with the person who found the infant

** Death scene re-creation, a key part of a complete investigation, is conducted with the person who found the infant unresponsive, to document the circumstances surrounding the death and assist the pathologist in determining the cause of death ([SUID Investigation, Chapter 7](#)).

TABLE 2. Sudden unexpected infant deaths, by mechanism of suffocation and characteristics of death investigation — Sudden Unexpected Infant Death and Sudden Death in the Young Case Registry, United States, 2020–2024

SUID and SDY Case Registry classification category and mechanism of suffocation	No. (%) [*]
Total [†]	4,861 (100)
Explained, suffocation with unsafe sleep factors	919 (19)
Soft bedding [§]	681 (74)
Overlay [¶]	223 (24)
Wedging ^{**}	69 (8)
Other ^{††}	33 (4)
Unexplained	3,942 (80)
No autopsy or death investigation	57 (1)
Incomplete case information	1,139 (23)
No unsafe sleep factors	117 (2)
Unsafe sleep factors	2,126 (44)
Possible suffocation with unsafe sleep factors	503 (10)
Death investigation characteristics [†]	
Autopsy performed	
Yes	4,779 (98)
No	53 (1)
Unknown	22 (<1)
Missing ^{§§}	7 (<1)
Death investigation performed [†]	
Yes	4,751 (98)
No	52 (1)
Unknown	51 (1)
Missing ^{§§}	7 (<1)
Death scene re-creation performed	
Yes, with doll	2,182 (45)
Yes, without doll	236 (5)
No	1,668 (34)
Unknown	452 (9)
Missing ^{§§}	323 (7)
Toxicology testing performed	
Yes	4,613 (95)
No	112 (2)
Unknown	89 (2)
Missing ^{§§}	47 (1)

unresponsive (2,418; 50% [90% of re-creations made use of a doll]) (Table 2). Genetic testing was not documented for 86% of infants. Information was missing or unknown regarding the position in which the infant was found for 15% of SUIDs and regarding airway obstruction status for 33% (Table 1).

Discussion

Findings from this analysis of the most recent SUID case registry data are consistent with previously reported findings of sociodemographic and sleep environment characteristics, classification categories, and completed investigation components (2–6). Case registry data can offer insight into the drivers of persistent SUID rates that vital statistics data alone cannot. Continued use of recent case registry data is critical to improving death investigations, increasing understanding of SUID etiologies and risk factors, and providing contextual information for SUID prevention efforts.

TABLE 2. (Continued) Sudden unexpected infant deaths, by mechanism of suffocation and characteristics of death investigation — Sudden Unexpected Infant Death and Sudden Death in the Young Case Registry, United States, 2020–2024

SUID and SDY Case Registry classification category and mechanism of suffocation	No. (%) [*]
Imaging performed [†]	
Yes	4,311 (89)
No	292 (6)
Unknown	134 (3)
Missing ^{§§}	124 (3)
Microbiology, histology, or pathology testing performed	
Yes	4,649 (96)
No	45 (1)
Unknown	114 (2)
Missing ^{§§}	53 (1)
Genetic testing performed	
Yes	681 (14)
No	3,215 (66)
Unknown	433 (9)
Missing ^{§§}	532 (11)

Abbreviations: SDY = Sudden Death in the Young; SUID = sudden unexpected infant death.

^{*} Percentages are calculated using the total SUIDs as the denominator, except for the mechanisms of suffocation (i.e., soft bedding, overlay, wedging, or other), which are calculated from among the 919 SUIDs categorized as suffocation with unsafe sleep factors.

[†] Percentages might not sum to 100 because of rounding.

[§] Obstruction of an infant’s airway by blanket, sheet, pillow, couch or recliner cushions, or other soft objects or loose bedding that are part of the immediate sleep environment.

[¶] Obstruction of an infant’s airway by a person or animal.

^{**} Obstruction of an infant’s airway as a result of being stuck or trapped between two inanimate objects.

^{††} Obstruction of an infant’s airway by something in the sleep environment other than soft bedding, overlay, or wedging such as a plastic bag.

^{§§} A missing response indicates the variable was left blank during data entry and no attempt was made to find the answer. An unknown response indicates the variable was considered; however, the information necessary to answer the question was not available. [Guidance for Improving Child Death Review Data Quality](#)

Case registry data on the thoroughness of autopsies and death scene investigations, reflected in the unexplained–incomplete case information category (23%), can identify areas for improvement and support engagement with medicolegal communities. Consistent with previous case registry analyses (3), this analysis found that nearly all case registry SUIDs during 2020–2024 had an autopsy (98%) and scene investigation (98%), and critical autopsy components (e.g., toxicology, imaging, or pathology) were typically completed. However, completeness of critical contextual information varied, including information regarding the position in which the infant was found and presence or absence of airway obstruction. Approximately one half of investigations had a documented death scene re-creation, conducted by investigators, with the witness present, to capture circumstances at death. Use of a doll during re-creation to assist witnesses in demonstrating the exact position in which the infant was found increased from 37% during 2010–2012 to 45% in this analysis (3). Although

room for improvement remains, this increase might reflect case registry efforts to improve death investigations.

Approximately one half of SUIDs were categorized as unexplained–unsafe sleep factors or unexplained–possible suffocation with unsafe sleep factors. More complete information on airway obstruction status would improve differentiation between explained sleep-related suffocation, with clear prevention implications, and unexplained death for which further investigation of etiologies and risk factors are needed.

The small but heterogeneous unexplained–no unsafe sleep factors category might reflect physiologic or genetic etiologies or those unrelated to the sleep environment (4). In addition, approximately one third of SUIDs had documentation of an unobstructed airway, again suggesting an etiology unrelated to suffocation. These findings underscore the ongoing need to investigate contributing factors that are unrelated to the sleep environment and expand diagnostic evaluation of SUIDs, including relevant genetic testing during autopsy.

Case registry data have previously indicated that unsafe sleep factors increase the risk for explained sleep-related suffocation and unexplained death (5). Most SUIDs in this analysis, regardless of whether they were explained or unexplained, had unsafe sleep factors present, and approximately one fifth were categorized as explained–suffocation. The $\geq 73\%$ prevalence of unsafe sleep factors identified among SUIDs in this analysis was similar to that reported for 2011–2020 ($\geq 76\%$) (6). Compared with live infants in the 2016 Pregnancy Risk Assessment Monitoring System (7), SUID cases less frequently met AAP's safe sleep recommendations, reinforcing the importance of safe sleep practices to reduce SUID risk.

Although safe sleep recommendations^{††} are widely promoted, supporting caregivers in implementing recommended practices can be complex. SUIDs differ by race and ethnicity, and [Medicaid coverage](#) was overrepresented among SUIDs in the analysis compared with 2020–2024 births among case registry jurisdictions (69% versus 39%).^{§§} State or local case registry data analyses can identify prevalent risk factors, populations at high risk for SUID, and contextual contributors (e.g., parental unemployment or housing instability) to guide development and implementation of focused prevention efforts (8). CDC supports the development of such community-based, data-guided SUID prevention efforts in 10 case registry jurisdictions. These jurisdictions use local data, engage with families and providers in their communities, identify locally

relevant barriers to and facilitators for practicing safe infant sleep, and develop tailored strategies to increase adoption of safe sleep practices (9).

Limitations

The findings in this report are subject to at least four limitations. First, case registry data are subject to availability, accuracy, and biases in primary data sources, including caregiver and investigator accounts of often unwitnessed events and chaotic death scenes. This might result in higher percentages of missing and unknown responses to some critical variables. Second, social desirability bias might result in underreporting of unsafe sleep practices (10), which could lead to underrepresentation of unsafe sleep factors among SUIDs. Third, although reporting of most variables was $>95\%$ complete; variables with $>5\%$ missing or unknown responses warrant cautious interpretation, because incomplete information might affect validity and generalizability of reported data. Finally, the study population comprised SUIDs in 31 participating case registry jurisdictions which accounted for approximately 40% of U.S. SUIDs. Thus, study results are not fully generalizable limits generalizability to other jurisdictions and nationally; however, sociodemographic characteristics of the case registry population were similar to characteristics of all U.S. SUIDs.

Implications for Public Health Practice

Public health professionals and clinicians can use newly reported case registry data to improve death investigations, increase understanding of etiology and risk factors, and enhance prevention efforts. Improving the completeness of death investigations, including performing genetic testing and documenting airway obstruction status, can better distinguish deaths with clear prevention implications. SUIDs with no unsafe sleep factors present at the time of death highlight the need to explore additional risk factors and underlying etiologies. Continued analysis and dissemination of up-to-date case registry data offer a more relevant reflection of current practice, which might more effectively guide SUID understanding and prevention.

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^{††} [The Safe to Sleep campaign](#), led by the National Institutes of Health National Institute of Child Health and Human Development, is an evidence-based national effort to reduce the risk for SUID.

^{§§} Births were restricted for each jurisdiction to the years in which that jurisdiction contributed case registry data. Counties were included when available in [CDC WONDER nativity data](#). Data are current as of September 1, 2026.

Summary

What is already known about this topic?

Circumstances-at-death data from the Sudden Unexpected Infant Death (SUID) and Sudden Death in the Young Case Registry (case registry) complement vital statistics and are critical to prevention of SUIDs.

What is added by this report?

Analysis of 2020–2024 case registry data found that SUID sociodemographic characteristics and risk factors were similar to those identified in previous reports: most deaths occurred in infants who were aged 0–3 months (66%), male (57%), Black or African American (38%) or White (37%), born at ≥ 37 weeks' gestation (74%), and insured by Medicaid (69%). Unsafe sleep factors were identified in $\geq 73\%$ of cases. Almost all SUIDs had an autopsy and death investigation; completeness varied.

What are the implications for public health practice?

Case registry data are critical to improving death investigations, etiologic and risk factor understanding, and evidence-based SUID prevention.

Maryland; Michigan; Minnesota; Nevada; New Hampshire; New Jersey; New Mexico; Hamilton County, Ohio; select counties in Pennsylvania; Philadelphia County, Pennsylvania; Rhode Island; select counties in South Carolina; South Dakota; Tennessee; Harris County, Texas; Utah; Vermont; select counties in Virginia; Pierce County, Washington; and Wisconsin.

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Notes from the Field

Clinical Characteristics of Patients with Ebola Disease Caused by Bundibugyo Virus — Uganda, 2026

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Ebola disease is a viral hemorrhagic fever caused by viruses of the genus *Orthoebolavirus*. Bundibugyo virus (*Orthoebolavirus bundibugyoense*), first identified in 2007 in Bundibugyo District, Uganda, is one of four orthoebolaviruses known to cause Ebola disease in humans (1,2); only two previous Bundibugyo virus disease (BVD) outbreaks have been documented (2). Transmission occurs through direct contact with infectious blood or other body fluids (3). Common signs and symptoms include fever, abdominal pain, diarrhea, vomiting, weakness, and bleeding from orifices and injection sites (1). Case-fatality rates (CFRs) among confirmed cases in the two previous outbreaks ranged from 32% to 55% (1,4). No licensed vaccine or specific treatment is available for BVD; clinical management is primarily supportive (2). On May 15, 2026, the Uganda Ministry of Health confirmed an outbreak of BVD imported from the neighboring Democratic Republic of the Congo (DRC).

On August 26, 2026, the outbreak was declared over in Uganda with 20 confirmed BVD cases and one probable case reported, although the outbreak in DRC is ongoing. This report describes the clinical and epidemiologic characteristics of all 21 cases. This activity was reviewed by CDC, deemed not research, and conducted consistent with applicable federal law and CDC policy.*

Investigation and Outcomes

Index Case and Identification of BVD Outbreak in Uganda

The index patient in Uganda was a man aged 59 years from Democratic Republic of the Congo (DRC) who traveled to Uganda seeking medical care. He was admitted to a private hospital in Kampala on May 11 with fever, respiratory distress, epigastric pain, and nausea. Despite receiving supportive care, he died in the intensive care unit on May 14.

At the time of his death, the BVD outbreak had not yet been identified in DRC. After the index patient's death, a Congolese resident in Kampala contacted Uganda Ministry of Health officials to alert them about unexplained deaths occurring in DRC, prompting testing of a stored blood sample from the index patient for viral hemorrhagic fever. On May 15, the Central Emergency Response and Surveillance Laboratory in Kampala confirmed the presence of Bundibugyo virus by reverse transcription–polymerase chain reaction. The same day, DRC confirmed the BVD outbreak (5).

Characteristics of Patients with BVD

Among the 20 patients with confirmed BVD, the median age was 34 years (range = 1–59 years), and 12 (60%) patients were male. Fifteen (75%) confirmed cases occurred among Congolese nationals who entered Uganda while symptomatic and seeking health care, including 12 persons who were seeking care for suspected BVD. An additional probable case also occurred in a Congolese national. Four (20%) confirmed cases occurred among Ugandan health care workers exposed during the attempted resuscitation of a patient with probable BVD who died and was embalmed before diagnostic testing could be completed. One additional Ugandan case occurred in a driver exposed to the body of one of the Congolese nationals.

The most common signs and symptoms among 18 (90%) patients admitted to the Mulago Hospital Ebola treatment unit (ETU) were fever (100%), headache (83%), and myalgia (78%) (Table). During their initial evaluation, all 18 ETU patients had serum transaminitis with hypoalbuminemia and hyponatremia (Supplementary Table). Among all 21 cases, three patients died (including two with confirmed BVD [CFR = 10%] and one with probable BVD). Among all three patients who died, BVD was only suspected near or after the time of death. All patients who died were bleeding from multiple sites at the time of death; no other patients developed bleeding. Only one of the patients who died (a woman aged 33 years) reached ETU, by which time she was critically ill, and she died 2 days later. She was the only patient with a known comorbidity (decompensated hypertensive heart disease).

Compassionate Use of Remdesivir

Due to the lack of effective antivirals and remdesivir's role as an inhibitor of viral RdRp in COVID-19, remdesivir is now used off-label for the treatment of BDBV in the ongoing outbreaks in DRC and Uganda. Uganda implemented

* 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. Characteristics of patients with confirmed Ebola disease caused by Bundibugyo virus — Uganda, 2026

Characteristic	No. (%)
Demographic characteristics	20 (100)
Age, yrs, median (range)	34 (1–59)
Sex	
Female	8 (40)
Male	12 (60)
Nationality	
Congolese	15 (75)
Ugandan	5 (25)
Occupation	
Health care worker	4 (20)
Other	16 (80)
Exposure and travel	20 (100)
Traveled from DRC into Uganda (exposure in DRC)	14 (70)
Exposed in Uganda	6 (30)
Laboratory abnormalities on admission to ETU	18 (100)
Leukopenia	13 (72)
Monocytosis	11 (61)
Thrombocytopenia	5 (28)
Anemia	0 (—)
Hypoalbuminemia	18 (100)
Elevated alanine aminotransferase	14 (78)
Elevated aspartate aminotransferase	18 (100)
Elevated C-reactive protein	11 (61)
Hyponatremia	18 (100)
Hyperkalemia	1 (6)
Elevated urea level	3 (17)
Elevated creatinine level	5 (29)
Elevated creatinine kinase level	3 (17)
Hypoglycemia	3 (16)
Signs and symptoms on admission to ETU	18 (100)
Fever	18 (100)
Headache	15 (83)
Myalgia	14 (78)
Arthralgia	13 (72)
Fatigue and asthenia	12 (67)
Epigastric pain	12 (67)
Vomiting	8 (44)
Diarrhea	7 (39)
Bleeding	3 (17)
Reduced level of consciousness	1 (6)
Clinical care and outcome	20 (100)
Treated in ETU	18 (90)
Managed in non-ETU areas before definitive diagnosis	2 (10)
Received remdesivir	18 (100)
Died	2 (10)
Recovered	18 (90)

Abbreviations: DRC = Democratic Republic of the Congo; ETU = Ebola treatment unit.

compassionate use[†] of remdesivir (an antiviral medication approved for treatment of COVID-19 and used off-label for

[†]Remdesivir is an investigational nucleotide analog antiviral medication with activity against RNA viruses that is approved for treatment of COVID-19 and used off-label for BVD. The medication was made available through Uganda's compassionate use (expanded access) framework. Before medication administration, patients underwent an eligibility assessment in accordance with the Uganda Ministry of Health treatment protocol in the viral hemorrhagic fever handbook. Remdesivir was administered only after obtaining informed consent from patients or their legally authorized representatives. This intervention was implemented as an emergency public health measure in the absence of licensed treatment options. Remdesivir was administered on the day of admission to ETU (median = 5 days and mean = 5.6 days from symptom onset).

BVD) as part of the clinical management of all 18 patients with Ebola virus disease admitted to ETU. One patient experienced severe skin rash and hepatorenal toxicity, resulting in discontinuation of remdesivir after 3 days, followed by resolution of signs and symptoms. The patient later recovered.

Preliminary Conclusions and Actions

The observed 10% CFR among confirmed patients with BVD in Uganda is lower than CFRs in previous BVD outbreaks (1,4), which might be a result of the patients who sought health care promptly. Communicating with the public about the benefits of seeking care promptly when BVD is suspected might improve patient outcomes. The universal findings of elevated liver enzymes, hypoalbuminemia, and hyponatremia at ETU admission suggest that these abnormalities might be characteristic features of early BVD; a routine laboratory assessment might help guide clinical management. In addition, the low CFR in Uganda (10%) during this outbreak compared with that in DRC's 2026 outbreak (48% as of September 2, 2026) suggests that clinical trials of remdesivir for BVD patients might be warranted in addition to optimized supportive care. Enhancing Ebola disease surveillance in Uganda in border areas and in health care facilities frequented by persons from outbreak-affected communities could also help identify cases and provide early health care. Uganda's response to the BVD outbreak underscores the importance of coordinated multi-sectoral activities to prioritize early diagnosis, rapid isolation, and infection prevention and control, as well as the potential benefit of remdesivir in treating BVD.

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Case management and case investigation teams; Uganda Ministry of Health Incident Management Team; CDC 2026 Ebola Response.

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Summary

What is already known about this topic?

Clinical and epidemiologic descriptions of Bundibugyo virus disease (BVD) are rare; case-fatality rates in previous outbreaks have ranged from 32% to 55%. Effective treatments have not been described.

What is added by this report?

Among the first 21 cases (20 confirmed; one probable) in the 2026 Uganda BVD outbreak, 18 were admitted to the Mulago National Referral Hospital Ebola Treatment Unit (ETU). Among these 18, all had elevated liver enzymes, hypoalbuminemia, and hyponatremia on ETU admission. All 18 received treatment with remdesivir through an off-label, compassionate-use protocol. Among 20 confirmed cases, 18 (90%) patients survived; two deaths occurred among patients with confirmed cases whose infections were recognized late. Seeking care promptly might have reduced the number of deaths.

What are the implications for public health practice?

Communicating with the public about the benefits of seeking health care promptly when BVD is suspected might improve patient outcomes. Clinical trials of remdesivir for patients with BVD might be warranted.

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Notes from the Field

Characteristics and Monitoring of the 2026 Ebola Outbreak of Ebola Disease Caused by Bundibugyo Virus — Democratic Republic of the Congo, August 2026

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On September 1, 2026, this report was posted as an MMWR Early Release on the MMWR website (<https://www.cdc.gov/mmwr>).

The Democratic Republic of the Congo (DRC) Ministry of Public Health declared an Ebola outbreak on May 15, 2026 (1). Two days later, CDC activated its Emergency Operations Center as part of the U.S. government response to this rapidly growing outbreak (2). This report describes the epidemiologic characteristics and monitoring of the ongoing outbreak in DRC.

Investigation and Outcomes

Background

The 2026 Ebola DRC outbreak caused by Bundibugyo virus is now the [second largest Ebola outbreak](#) ever recorded. As of August 21, 2026, DRC reported 5,458 confirmed cases and 2,606 (48%) confirmed deaths. Compared with previous Ebola outbreaks, the increase in cases in DRC is unprecedented, with approximately 5,000 cases in 100 days ([Ebola Outbreak: Current Situation | CDC](#)). Cases have been reported from six of the 26 DRC provinces (Bas-Uélé, Haut-Uélé, Ituri, North Kivu, South Kivu, and Tshopo), affecting 57 of 151 health zones in the affected provinces. Ituri province remains the outbreak epicenter, accounting for 84% of reported cases. Strategies known to control Ebola outbreaks include community-based surveillance, case detection alert notifications,* rapid and in-depth case investigations, identification and monitoring of contacts, infection control measures (e.g., prompt isolation of persons with suspected or confirmed Bundibugyo virus disease [BVD]), rapid diagnostic testing, mortality surveillance, and safe and dignified burials (SDBs).†

* A [case detection alert notification](#) is generated for any of the following: 1) any person with onset of fever and no response to treatment for usual causes of fever in the area; 2) any person with at least one of the following signs: bleeding, bloody diarrhea, or blood in urine; or 3) any sudden death.

† An SDB is the safe management, preparation, transport, and burial of the body of a person who has died from suspected or confirmed Ebola disease. Trained personnel conduct the burial using appropriate infection prevention and control measures to prevent exposure and transmission while also respecting the dignity of the decedent and accommodating the cultural, religious, and personal wishes of the family and community to the extent that they can be carried out safely.

Data Source

Operational indicators for five domains have been generated based on experience with previous Ebola outbreaks, including DRC's 2018 outbreak (3) (Table). Targets reflect the levels necessary to end the outbreak. The DRC Ministry of Public Health prepares [publicly available daily situation reports](#), and CDC abstracts data from these reports to evaluate the established indicators each day. Indicator data are monitored over time to assess the outbreak trajectory. This activity was reviewed by CDC, deemed not research, and conducted consistent with applicable federal law and CDC policy.§

Operational Indicator Analysis

Nearly all operational indicators remain below identified targets (Table). Operational indicator values were calculated for the 21-day period of July 31–August 21. The average percentage of alerts investigated within 24 hours (last reported August 5, 2026) was 83% (target = >90%). An average of 10.6 contacts were identified per confirmed case (target = ≥20), suggesting underreporting and underascertainment of case contacts. The percentage of confirmed new cases previously identified as known contacts (last reported July 12, 2026) was 15%–20% (target = >90%); this suggests that most cases are occurring outside known transmission chains. In addition, more than one half (59%) of confirmed Ebola deaths are occurring outside an Ebola treatment unit (ETU) (target = 0%), suggesting insufficient ETU capacity, fear of ETUs, and ongoing spread through unidentified transmission chains. Laboratory testing was performed for 72% of validated alerts (target = >90%), indicating that a substantial number of suspected cases remain untested. Test positivity was 24%, with a target of 0%. Although the national ETU bed occupancy was 64%, meeting the target of <80%, occupancy varied substantially by health zone, with some facilities unable to isolate all infected persons and reporting occupancies as high as 140%. Fewer than one half (49%) of affected health zones had at least one SDB team (target = 100%). Current data were not available for several response indicators, such as percentage of persons with confirmed BVD receiving prompt isolation (target = >90%) and percentage of deaths with SDBs (target = 100%), underscoring ongoing data gaps in this complex public health response.

Preliminary Conclusions and Actions

As of August 21, 2026, most operational indicator measures remained below established response targets, and data for others were unavailable, indicating gaps in surveillance, contact

§ 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. Public health objectives, operational indicators, and status of reaching targets to end the Ebola outbreak caused by Bundibugyo virus — Democratic Republic of the Congo, August 2026

Domain	Public health objective	Indicator*	Target	Status as of August 21, 2026
Case detection alerts [†]	Detect cases rapidly	Percentage of alerts investigated within 24 hours (3-wk average)	>90% of alerts investigated	Not available [§]
Contact tracing	Interrupt disease transmission	Average no. of contacts identified per case (3-wk average)	≥20 contacts identified per case	10.6 contacts identified per case [¶]
		Daily percentage of contact tracing completeness (3-wk average)	>95% complete	82% complete [¶]
		Percentage of new cases that are known contacts (3-wk average)	>90% of new cases	No data
Laboratory testing	Identify persons with laboratory-confirmed Ebola disease	Percentage of validated alerts with laboratory testing for Ebola (3-wk average)	>90% tested	72% tested [¶]
		Percentage of laboratory tests for Ebola that are positive (3-wk average)	0% positive	24% positive [¶]
Isolation	Prevent spread of infection	Percentage of ETU beds occupied (3-wk average)	<80% occupied both for isolation beds and for treatment beds	64% occupied [¶]
		Percentage of persons with confirmed BVD isolated within 24 hours (3-wk average)	>90% isolated	Not available ^{¶,***}
SDB	Prevent funeral-associated transmission	Percentage of confirmed BVD deaths that occur outside an ETU (3-wk average)	0% of deaths	59% of deaths [¶]
		Percentage of affected health zones with an SDB team (cumulative estimate) ^{††}	100% of health zones	49% of health zones
		Percentage of deaths that receive SDBs	100% of deaths	No data

Abbreviations: BVD = Bundibugyo virus disease; ETU = Ebola treatment unit; SDB = safe and dignified burial.

* Data reported or derived from publicly available situation reports from the Democratic Republic of the Congo.

[†] A case detection alert notification is generated for any of the following: 1) any person with onset of fever and no response to treatment for usual causes of fever in the area; 2) any person with at least one of the following signs: bleeding, bloody diarrhea, or blood in urine; or 3) any sudden death ([Ebola Virus Outbreak Toolbox | World Health Organization](#)).

[§] Last reported on August 5, 2026, as 83% (3-week average); indicated as not available because a more recent estimate is not available.

[¶] The 3-week period for calculating these indicator values was July 31–August 21, 2026.

^{**} Last reported on July 12, 2026, as 15%–20% overall; indicated as not available because a more recent estimate is not available.

^{††} Reported from implementing partners [FHI 360](#) on August 19, 2026, and the [International Federation of Red Cross and Red Crescent Societies](#) on August 20, 2026.

Summary

What is already known about this topic?

In May 2026, an outbreak of Ebola disease caused by Bundibugyo virus was identified in the Democratic Republic of the Congo.

What is added by this report?

This ongoing outbreak is now the second largest Ebola outbreak in history. The targets for five critical public health response indicators (case detection alerts, contact tracing, laboratory testing, isolation of infected persons, and safe and dignified burials) have not yet been met, and the outbreak continues to expand rapidly.

What are the implications for public health practice?

Substantial improvements in established outbreak control measures are crucial to rapidly detect and diagnose cases and isolate and provide treatment for infected persons, prevent funeral-associated transmission to prevent additional spread, and control this rapidly expanding outbreak.

tracing, laboratory testing, health care-seeking, isolation, and SDB capacity that limit control of the ongoing outbreak. These missing data and operational gaps, together with continued

geographic expansion of the outbreak, a high percentage of deaths occurring outside ETUs, and a low percentage of cases among persons previously identified as contacts, indicate uncontrolled expansion of the outbreak. Public health response activities are complicated by a protracted complex [humanitarian emergency](#) in the eastern part of DRC, including armed conflict, limited health infrastructure, population displacement and mobility, and constraints on access to affected communities.

Containment and control of the 2026 Ebola disease outbreak requires integration and coordination of at least five response areas: 1) expansion of community-based surveillance systems ensuring rapid investigation of alerts; 2) improvements in contact tracing completeness and timeliness; 3) expansion of treatment and isolation capacity in affected health zones; 4) increased laboratory testing capacity, enabling prompt case identification; and 5) ensuring SDBs in affected health zones.

In addition, collecting robust, high-quality data regarding these operational actions is essential at the health zone level; CDC's continued support to the DRC Ministry of Public Health and partners with improving data collection is critical. Collecting data at the level of the health zone facilitates

timely local outbreak response decisions. Rapidly enhancing international humanitarian coordination and mobilizing global technical, operational, and other needed support are critical for accelerating the response and controlling the outbreak.

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