



# **Injuries and Deaths Associated with Nursery Products Among Children Younger than Age Five**

**Risana T. Chowdhury**  
**Ted G. Yang**  
Division of Hazard Analysis  
Directorate for Epidemiology  
U.S. Consumer Product Safety Commission  
4330 East West Highway  
Bethesda, MD 20814  
**December 2021**

**This analysis was prepared by the CPSC staff. It has not been reviewed or approved by, and may not necessarily reflect the views of, the Commission.**

# Table of Contents

<b>Executive Summary</b> .....	3
<b>Introduction</b> .....	5
<b>Nursery Product-Related Emergency Department-Treated Injury Estimates</b> .....	5
Table 1: Estimated Emergency Department-Treated Injuries to Children Under Age Five: 2018–2020.....	6
Table 2: Estimated Emergency Department-Treated Injuries to Children Under Age Five by Type of Nursery Product: 2019–2020.....	7
Table 3: Distribution of Population and Estimated Emergency Department-Treated Injuries by Race Among Children Under Age Five: 2018–2020.....	8
<b>Deaths Associated with Nursery Products</b> .....	9
Table 4: Reported Deaths Among Children Under Age Five by Type of Nursery Product .....	10
<b>Appendix</b> .....	13
Methodology .....	13
Historical Data.....	15
Table 5: Nursery Product-Related ED-Treated Injury Estimates: 2016–2020.....	15
Figure 1: Nursery Product-Related ED-Treated Injury Estimates: 2016–2020 .....	15
Figure 2: Nursery Product-Related ED-Treated Estimated Injuries per 100,000 Children Under 5 Years 2016–2020.....	16

## Executive Summary

U.S. Consumer Product Safety Commission (CPSC) staff presents in this report statistics regarding injuries and deaths associated with nursery products among children younger than the age of 5 years, based on the most recently available information.<sup>1</sup>

### Emergency Department-Treated Injuries:

- In 2020, there were an estimated 44,600 emergency department-treated injuries associated with (*i.e.*, in use at the time of incident), but not necessarily caused by, nursery products among children younger than 5 years of age. This translates to an injury rate of an estimated 231 injuries per 100,000 children under the age of 5 years.<sup>2</sup> The substantial decrease from the total 2019 injury estimate is statistically significant and is presumed to be the effect of COVID-19.
- Highchairs, cribs/mattresses, infant carriers, and strollers/carriages were associated with 67 percent of the total estimated injuries. Falls were the leading cause of injury; and the head, followed by the face, was the body part injured most frequently. A diagnosis of internal organ injury, contusion/abrasion, or laceration was associated with most of the injuries.
- A trend analysis based on the 3 years from 2018 through 2020 does not show any trend in the injury estimates. Primarily driven by the decrease in 2020, a longer-term trend analysis over the period 2016 through 2020 shows a statistically significant decreasing trend.
- A review of the estimated injuries by victims' demographic characteristics shows that:
  - For 2018–2020, on average, race information is known in about 58 percent of the injuries, while the ethnicity information is mostly unknown.
  - Where information is available, the injury and population distributions by race appear to be closely aligned for each year from 2018 through 2020.
  - Ethnicity data are insufficient to allow for presentation of any estimates.

### Fatalities:

- CPSC staff has reports of 385 deaths during the 3-year period from 2016 to 2018—an annual average of 128 deaths among children younger than age 5—associated with (*i.e.*, in use at the time of incident), but not necessarily caused by, nursery products.

---

<sup>1</sup> Not all these incidents are addressable by an action the CPSC could take; however, it was not the purpose of this report to evaluate the addressability of the incidents, but rather, to update estimates of emergency department-treated injuries and to quantify the number of fatalities reported to CPSC staff.

<sup>2</sup> The population data for the denominator is available at the U.S. Census Bureau website: <https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-national-detail.html>; Annual Estimates of the Resident Population for Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2020 (NC-EST2020-AGESEX-RES); last revised July 23, 2021.

- Cribs/mattresses, playpens/play yards, bassinets/cradles, infant carriers, and inclined infant sleep products were associated with 82 percent of the fatalities reported.
- Causes of death included positional asphyxia, strangulation, and drowning, among others. In some instances, the fatalities were attributed to the product; in other cases, the fatalities resulted from a hazardous environment in or around the product.

CPSC staff has evaluated the incidents characterized in the annual reports on nursery products for many durable infant and toddler products, along with previously and subsequently reported incidents, to assess the efficacy of voluntary standards. These evaluations have supported the staff's work with standards development organizations to refine these standards, and likewise, supported staff briefing packages for notices of proposed rulemaking (NPRs) and final rules that are required by the Danny Keysar Child Product Safety Notification Act, section 104 of the Consumer Product Safety Improvement Act of 2008 (CPSIA).<sup>3</sup> In fiscal year (FY) 2021, the Commission issued a final rule establishing a new standard for Infant Sleep Products, and similar work is ongoing for Crib Bumpers and Crib Mattresses. The rule on Gates and Enclosures also took effect in FY 2021. The Commission issued revised rules on Infant Swings, Children's Folding Chairs and Children's Folding Stools, and High Chairs.

---

<sup>3</sup> There is much overlap between the products covered by this report and the products subject to rules issued under section 104 of the CPSIA. However, this report covers some nursery products that do not fall under section 104.

## Introduction

This report presents nursery product-related injury estimates for 2020,<sup>4</sup> as well as comparisons with historic injury estimates. Detailed information on deaths associated with nursery products that reportedly occurred during the 3-year period from 2016 to 2018, is also presented. Note that reporting is ongoing, and the number of reported fatalities in this report may change.

## Nursery Product-Related Emergency Department-Treated Injury Estimates

Beginning with the 2016 report (2015 NEISS data), the injury estimates in annual reports on nursery products are based on non-incidental, emergency department-treated injuries.<sup>5</sup> The association of an incident/injury with a nursery product is incidental if the occurrence of the incident/injury is considered *not dependent* on the presence of that nursery product in the incident scenario. For example, if a child gets stung by a bee, or gets bitten by a dog while in an infant stroller, the stroller's involvement in the incident is considered incidental. The fact that the child was in a stroller had no bearing on the incident occurring. Although such incidents are retained in the NEISS database to provide analysts the flexibility and discretion to include or exclude them, the exclusion of incidental injury cases aligns more closely with the way CPSC staff has prepared the CPSIA section 104 rulemaking packages for the Commission. Now that most of the nursery products discussed in this report have a mandatory rule in place, staff believes that annual estimates based on the non-incidental data will provide a better tool for gauging the efficacy of the various standards.

An estimated 44,600 nursery product-related injuries among children younger than 5 years old were treated in U.S. hospital emergency departments (ED) in 2020. Table 1 shows the estimated injuries and the corresponding injury rates for the latest 3 years, as well as the annual averages for this 3-year period. Staff did not observe a trend in injury estimates over the 2018 through 2020 period (p-value=0.181). The attached Appendix provides annual estimates for 2016 through 2020, as well as more detail about the data-selection processes.

---

<sup>4</sup> The source of the injury estimates is the National Electronic Injury Surveillance System (NEISS), a statistically valid surveillance system for collecting injury data. NEISS injury data are gathered from the emergency departments of hospitals selected as a probability sample of all the U.S. hospitals with emergency departments. The surveillance data gathered from the sample hospitals enable CPSC staff to make timely national estimates of the number of injuries associated with specific consumer products.

<sup>5</sup> These estimates are based on data with all in-scope product codes, *except* incidental injury cases. Cases where a nursery product was present in the incident scene but played an insignificant role in the sequence of events that led to the injury were considered incidental. The methodology used was akin to historical estimates before 2015. The first report following the transition can be seen at R. Chowdhury, "Injuries and Deaths Associated with Nursery Products Among Children Younger than Age Five," CPSC, December 2016, <https://www.cpsc.gov/s3fs-public/Nursery%20Products%20Annual%20Report%202016.pdf>.

**Table 1: Estimated Emergency Department-Treated Injuries to Children Under Age Five: 2018–2020**

Calendar Year	Estimated Injuries	Estimated Injury Rates per 100,000 Children <sup>2</sup>
2018	59,000	298
2019	60,600	310 <sup>6</sup>
2020	44,600	231
2018 – 2020 Average	54,700	280

Source: NEISS, CPSC.

Note: Estimates rounded to the nearest 100. The average calculation is based on unrounded injury estimates. For all 3 years, 2018-2020, the estimates were derived based on non-incidental data only.

Falls were the leading cause of all nursery product-related injuries reported through NEISS for 2020, like previous years. About 70 percent of the total injuries involved the head and the face, which were the body parts injured most frequently. Internal organ injuries, contusions/abrasions, or lacerations were the diagnoses in about 71 percent of the NEISS-reported injuries.<sup>7</sup> More than 93 percent of the injuries were treated and released; about 3 percent of the injuries required hospitalization; and 2 percent of the injuries were treated and transferred to a different hospital. These proportions have remained steady over the years; for example, both in 2019, as well as in 2018, 94 percent of the estimated injuries were treated and released, about 3 percent were hospitalized, and about 2 percent were treated and transferred to another hospital. Any deaths reported through NEISS are included in the fatality discussion that follows.

Table 2 shows the breakdown of injury estimates by different product categories for 2020, along with the injury estimates for 2019, for comparison purposes. As in 2019, there were more than 30 product codes associated with the injury estimates in 2020. The associated products have been aggregated into 13 product categories that align with standards development activities as in 2019. The top four categories: highchairs, cribs/mattresses, infant carriers, and strollers/carriages were associated with 67 percent of the total estimated injuries.

There was a statistically significant decrease from an estimated total of 60,600 ED-treated injuries in 2019, to 44,600 injuries in 2020. Due to the drastic lifestyle changes brought on by the onset of COVID-19 pandemic, visits to hospital EDs were likely kept at a minimum by parents/caregivers of young children. Given that most of the nursery product related injuries are typically not very severe (*i.e.*, the “treated and released”-type), it is likely that these injuries may have been treated in other non-hospital settings, such as urgent care facilities or physicians’ offices. Between 2019 and 2020, decreases were observed in every product group except one. Six of the decreases, annotated with a “\*\*\*” in Table 2, were statistically significant (p-value < 0.05). The only product group showing a small increase was the “other” category.

<sup>6</sup> The estimate has been revised since the publication of the previous report.

<sup>7</sup> Beginning in 2018, two diagnoses codes and two injured-body-parts codes are available in NEISS. To date, these newly introduced codes remain uncoded for more 80 percent of the injury reports. They were not used in this analysis.

**Table 2: Estimated Emergency Department-Treated Injuries to Children Under Age Five  
By Type of Nursery Product: 2019–2020**

PRODUCT CATEGORY	ESTIMATED EMERGENCY DEPARTMENT-TREATED INJURIES	
	2019	2020
TOTAL	60,600	44,600
Highchairs	12,000	10,200
Cribs/Mattresses**	11,800	8,700
Infant Carriers (Excludes Motor Vehicle Incidents)**	7,700	5,900
Strollers/Carriages**	7,200	5,100
Changing Tables	3,400	2,600
Baby Gates/Barriers	3,000	2,500
Baby Walkers/Jumpers/Exercisers	3,000	2,200
Playpens/Play Yards**	2,400	1,500
Baby Bouncer Seats**	2,800	1,300
Portable Baby Swings**	2,000	1,200
Baby Bottles/Warmers/Sterilizers	1,300	--- <sup>8</sup>
Bassinets/Cradles	--- <sup>8</sup>	--- <sup>8</sup>
Baby Baths/Bath Seats/Bathinettes	--- <sup>8</sup>	--- <sup>8</sup>
Other <sup>9</sup>	1,300	1,400

Source: NEISS, CPSC. Estimates are rounded to the nearest 100. The injury estimates may not add up to the total due to rounding. Note: \*\*\* indicates statistical significance (p-value<0.05).

Table 3 shows the breakout of injury estimates by race for each year from 2018 through 2020. Over the 3-year time frame, on average, the victim’s race was unspecified for 42 percent of the estimated nursery product injuries. White children made up 43 percent of victims under the age of 5; Black/African American children made up 10 percent of victims, and children of other races made up less than 5 percent of victims. When considering only the injuries where race was known, on average, 74 percent were White (compared to 70 percent of the population for that age), 18 percent were Black (compared to 16 percent of the population for that age), and 4 percent were Asian (compared to 6 percent of the population for that age). As Table 3 shows, the distribution of estimated injuries by race has not changed much year-over-year during the period 2018 through 2020. However, due to the high proportion of the data with race information unspecified, this finding should be interpreted with caution.

Staff explored the injury data for information on ethnicity of victims. Although NEISS is equipped to capture such information, for the period 2018 through 2020, for nursery product injuries among children under 5 years of age, the ethnicity is unspecified for most of the data.

<sup>8</sup> ‘---’ represent estimates that do not meet the NEISS reporting criteria, which require estimates to be 1,200 or greater, sample sizes to be 20 or larger, and the coefficients of variation to be 33 percent or lower.

<sup>9</sup> In both 2019 and 2020, the “Other” category included: pacifiers/teething rings, diapers (excluding diaper rash cases), potty chairs/training seats, harnesses, and safety pins. In 2019, the “Other” category also included baby rattles, night lights, and crib mobiles/gyms while in 2020, it included diaper pails.

**Table 3: Distribution of Population<sup>2</sup> and Estimated Emergency Department-Treated Injuries by Race<sup>10</sup> Among Children Under Age Five Where Race Information Available: 2018–2020**

	2018		2019		2020	
Race	Percent of		Percent of		Percent of	
	Estimated Injuries	Population	Estimated Injuries	Population	Estimated Injuries	Population
White	74%	70%	75%	70%	74%	70%
Black/African American	16%	15%	19%	16%	18%	16%
Other <sup>11</sup>	8%	6%	4%	6%	3%	6%
Asian	2%	6%	1%	6%	4%	6%
American Indian/Alaska Native	<0.5%	2%	1%	2%	1%	2%
Native Hawaiian/Pacific Islander	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%
<b>Total</b>	100% <sup>†</sup>	100%	100% <sup>‡</sup>	100%	100% <sup>§</sup>	100%

Source: NEISS, CPSC. Percentages may not add up to 100, due to rounding.

Note: <sup>†</sup>This accounts for 56 percent of total estimated ED-treated nursery product-related injuries in 2018 for children under 5.

<sup>‡</sup>This accounts for 58 percent of total estimated ED-treated nursery product-related injuries in 2019 for children under 5.

<sup>§</sup>This accounts for 60 percent of total estimated ED-treated nursery product-related injuries in 2020 for children under 5.

<sup>10</sup> Where information is available in NEISS. See notes below Table 3 for information on the percentage of unknown in each year.

<sup>11</sup> Other: By NEISS definition, this category includes any race not explicitly listed in Table 3, or when more than one race (e.g., multiracial, biracial) is indicated.



## Deaths Associated with Nursery Products

Although all the Commission's databases are used to identify nursery product-related deaths, death certificates are a major source of information for this analysis. At the time of the data extraction for this analysis, the Commission's death certificates database was at least 98 percent complete through 2018. The deaths reported here are from 2016 through 2018, the latest 3-year time frame with sufficiently available information, like previous annual reports.<sup>12</sup>

Table 4 provides a summary of nursery product-related reported deaths (total and average annual) for 2016 through 2018, along with data previously reported for 2015 through 2017, for comparison purposes. Reporting is ongoing, and the number of reported fatalities may change. Moreover, these reports are anecdotal and do not constitute a statistical sample or a complete count of nursery product-related deaths. As such, CPSC staff strongly discourages drawing any inferences based on the year-to-year increase or decrease shown in the reported data.

CPSC staff has received reports of a total of 385 deaths associated with nursery products—an annual average of 128 deaths—during this period. About 33 percent (126 total, or an annual average of 42) were associated with cribs/mattresses. Playpens/play yards accounted for 19 percent (73 total, or an annual average of 24) of the reported deaths. Bassinets/cradles were associated with 16 percent (a total of 62 or an annual average of 21) of the reported deaths, while infant carriers were associated with 8 percent (a total of 31 or an annual average of 10) of the reported deaths. Infant inclined sleep products accounted for 6 percent (a total of 25 or an annual average of eight) of the reported deaths. The remaining 68 reported fatalities were associated with a range of products, including baby bouncers, baby bath/bathinettes, infant portable swings, baby gates/barriers, changing tables/pads, infant strollers/carriages, highchairs, baby walkers/jumpers/exercisers, and a variety of other sleep-products (*e.g.*, in-bed sleepers and toddler beds), seating products (*e.g.*, floor seats), and miscellaneous products.

For certain incident scenarios in which direct product involvement or failure was not evident, consultation with staff from the CPSC's Directorate for Engineering Sciences was necessary to determine the most appropriate product category in which to place the fatalities. Details of the methodology are provided in the attached Appendix.

---

<sup>12</sup> These deaths do not constitute a statistical sample of known probability and do not necessarily include all nursery product-related deaths that occurred during the 2016–2018 period. However, they do provide at least a minimum number for deaths associated with nursery products during that time. Furthermore, the number of reported incidents may change should staff receive additional reports. In addition, the number of fatalities for each product/group of products presented in this and previous annual nursery product reports are not expected to match the number of fatalities presented in any rulemaking packages on the same product/group of products because of the difference in the data-inclusion criteria applied. See Methodology section of the Appendix for the process used in this report.

**Table 4: Reported Deaths Among Children Under Age Five  
By Type of Nursery Product**

PRODUCT CATEGORY	TOTAL DEATHS		AVERAGE ANNUAL DEATHS	
	2015-2017	2016-2018	2015-2017	2016-2018
TOTAL	<i>361</i>	385	<i>120</i>	128
Cribs/Mattresses <sup>13</sup>	<i>114</i>	126	38	42
Playpens/Play Yards	69	73	23	24
Bassinets/Cradles	<i>68</i>	62	23	21
Infant Carriers (Excludes Motor Vehicle Incidents)	32	31	11	10
Infant Inclined Sleep Products <sup>14</sup>	<i>18</i>	25	6	8
Baby Bouncer Seats	8	11	3	4
Baby Baths/Bath Seats/Bathinettes	8	10	3	3
Portable Baby Swings	10	9	3	3
Baby Gates/Barriers	7	9	2	3
Changing Tables	4	5	1	2
Strollers/Carriages	5	3	2	1
Highchairs	1	1	<1	<1
Baby Walkers/Jumpers/Exercisers	1	1	<1	<1
Other <sup>15</sup>	16	19	5	6

Source: CPSC epidemiological databases: Consumer Product Safety Risk Management System (CPSRMS) and NEISS from 2016 to 2018, for reported deaths.

Deaths for 2015-2017, which are shown in italics, represent changes since publication of the previous annual report, due to availability of additional information.

Note: The average annual deaths do not add up to the total due to rounding.

A closer look at the top five product categories with the largest numbers of reported deaths provides some insight into the hazard patterns. Between 2016 and 2018, these product categories were associated with 82 percent of the reported fatalities; for the earlier period (2015 through 2017), they accounted for 83 percent of the total reported fatalities.

<sup>13</sup> Certain items, such as nursing pillows and lounger pillows, are usually placed within other products, such as cribs, bassinets, and play yards. Any report involving these items was categorized with the product in which they were located, to avoid double counting.

<sup>14</sup> Beginning with the annual report published in 2018, the Infant Inclined Sleep Products group is presented in a row of its own in Table 4. These products come with one or more inclined sleep surface adjustment positions for the seat back that are greater than 10 degrees, but do not exceed 30 degrees. Some specific examples are infant hammocks, recliner seats, and nappers. These products will be subject to the safety standard for infant sleep products that the Commission published on June 23, 2021, with an effective date of June 23, 2022 (86 FR 33022).

<sup>15</sup> Of the 19 deaths in this category from 2016 through 2018, 11 deaths were associated with products used in the sleep environment that are not among the product categories listed in Table 4. Among the 11, an unspecified “travel bassinet” and a toddler bed (product code 4082) were involved in 1 death each; portable youth bedrails (product code 4075) were involved in 2 deaths; and in-bed sleepers were involved in the remaining 7 deaths. In addition to the 11 deaths, there were 3 asphyxiation deaths—1 on a teether, 1 on a baby bottle nipple, and 1 on a pacifier; 2 drowning deaths, where an infant was left unattended on a non-bathing infant floor seat (product code 4074) in a water-filled tub; 2 deaths in a rocker, where one unrestrained infant was found rolled over in a prone position and the other infant was found “slumped” in a supine position; and 1 additional death, where the decedent was described found as follows: “crib was situated on a changing table.” Upon careful review of the last case, staff concluded that the product was some undetermined nursery product, small enough to be positioned on top of a changing table.

See <https://www.cpsc.gov/s3fs-public/Nursery-Products-Annual-Report-2020.pdf> p.8, for a list of products associated with deaths in the “Other” category in 2015–2017.

Between 2016 and 2018, 126 deaths were associated with cribs/mattresses. This total includes one additional fatality in 2016, for which additional information became available since publication of the previous annual report. Most of these deaths were associated with a cluttered sleep environment (the presence of extra bedding in the crib, such as pillows, blankets, and/or comforters, among others) that led to asphyxiation of the infant. Approximately 8 percent of the 126 deaths resulted from a range of hazards associated with the crib, including incomplete assembly; missing, broken, or nonfunctioning components; ill-fitting mattress; or ineffective crib repairs. Some of these incidents occurred in, or on, older, reassembled, recalled, or secondhand cribs. The remaining crib fatalities involved the presence of hazardous crib surroundings. Examples include strangulations from nearby cords or strings; suffocations from plastic bags located in/near the crib; asphyxiations due to co-sleeping with other children in the crib; entrapments between crib rail and a tied-down cover (e.g., a twin mattress); hyperthermia, resulting from a broken thermostat in the sleep area; and in one case, an electrocution when the infant touched a power outlet from inside his crib.

Playpens/play yards were associated with 73 deaths between 2016 and 2018. Most of the deaths were due to asphyxiation, where the infant suffocated on a blanket/pillow/other soft bedding placed inside the play yard. The presence of a hazardous environment in or around the product, such as makeshift covers (e.g., cardboards) used on top of play yards to contain the infant, use of ill-fitting, non-original mattresses and sofa cushions in the play yards, or co-sleeping arrangements with other infants in the play yard, were associated with some of the deaths. A few of the fatalities involved faulty products.

Between 2016 and 2018, staff identified 62 deaths associated with bassinets/cribblers. This total includes one new fatality in 2017, for which additional information became available since publication of the previous annual report. Most of these deaths were associated with extra bedding, with pillows involved in many of the suffocation deaths. A few of the bassinet-related deaths involved product failure and/or the presence of hazardous surroundings around the bassinet.

Thirty-one deaths associated with infant carriers were identified during the period 2016 through 2018. Placing the infant in the carrier in a hazardous manner was the most common scenario. Examples include an infant partially restrained in the seat with shoulder straps only, who slid forward in the seat and strangled at the chest clip; a fatality resulting from an unattended and unrestrained infant, sometimes sleeping on top of a soft blanket in the seat, who managed to get into a compromised position; a fatality resulting from a carrier tipping over when placed on a nonrigid surface, trapping the infant inside; an infant positioned improperly in a carrier on the caregiver's body, which led to suffocation; and an infant left unsupervised for an extended period in a vehicle with the windows rolled up, resulting in death due to hyperthermia.

Finally, between 2016 and 2018, infant inclined sleep products were associated with 25 deaths. This total includes 1 additional fatality in 2017, for which additional information became available since publication of the previous annual report. These products come with one or more inclined sleep surface adjustment positions for the seat back that are greater than 10 degrees, but do not exceed 30 degrees. All but one of these 25 fatalities happened in deep-seated recliner seats with rocking features; 1 fatality occurred in a foam recliner seat that was placed on a couch. Some of the decedents were placed prone in the product, on soft bedding; some of the decedents were found to have rolled over, either completely or partially, ending up in a compromised position that resulted

in asphyxiation deaths; a couple of the fatalities described the decedent as being found in a chin-to-chest position; and in one case, an older sibling climbed into the product, creating an unsupervised hazardous situation that ultimately led to the suffocation death of the infant. These products will be subject to the safety standard for infant sleep products that the Commission published on June 23, 2021, with an effective date of June 23, 2022 (86 FR 33022).

In conclusion, the hazard patterns described indicate that although a nursery product was involved, many of the fatalities were associated with how the product was used, including putting the product in a hazardous situation, and/or using it in a hazardous manner.

# Appendix

## Methodology

### ED-Treated Injuries (In-Scope Data):

- Database: NEISS from 01/01/2020 through 12/31/2020 (2016 through 2019 NEISS analytical datasets from previous years were used for comparison purposes).
- Product codes: 1500–1599, excluding 1550.<sup>16</sup> When multiple nursery products were coded as involved in an injury report, staff identified a “primary” product code based on the narrative description and used that for classification in this analysis.
- Age of victim: 0 through 4 years.
- Screened to ensure that no motor vehicle incidents were included.
- All cases of diaper rash (identified as side-effects of antibiotics use or exposure to prolonged moisture) were excluded.

### (Additional Screenings Applied to Arrive at Non-Incidental Data):

- If the official diagnosis indicated that no injury had been sustained, the case was excluded.
- If the product’s involvement was incidental, such as a child being stung by a bee, or getting bitten by a dog while in an infant stroller, the case was excluded.
- If a child suffered a medical crisis while seated in a highchair (e.g., choking on food), or gained access to adult medication by climbing on a crib, the case was excluded.
- If a child was injured by other young children (e.g., pulled out of an infant swing by a young sibling), the case was excluded.

### Deaths:

- Databases: CPSRMS and NEISS from 01/01/2016 through 12/31/2018; date of extraction was 06/15/2021.

Information available from CPSRMS and NEISS on incidents that have not been investigated is often incomplete or provides insufficient information on the hazard scenario. If these incident reports are investigated later, or as other associated reports come in, the initial information is corroborated or contradicted, and the fatality numbers reported may change.

- Product codes: 1500–1599, excluding 1550<sup>16</sup>; 4074 for *children’s chairs*, 4075 for *portable youth bed rails*, and 4082 for *toddler beds*.
- Age of victim: 0 through 4 years.
- Screened to ensure no duplicates were included; all records of the same incident that were reported through different data sources were associated and included as a single report.
- Miscoded products were recoded correctly. A common example was a play yard miscoded as a crib.
- As with the emergency department-treated injuries, deaths involving certain products were grouped together. For instance, baby baths and bathinettes were counted together with bath

---

<sup>16</sup> Product code 1550 (*Infant and Toddler Play Centers excluding Jumpers, Bouncers, and Exercisers*) represents a toy, not a nursery product.

seats; exercisers were counted with baby walkers and jumpers; and as noted earlier, any extra-bedding-in-crib incidents were counted with cribs, while incidents with extra bedding in a play yard were counted with play yards.

- Staff carefully screened to determine whether cases were in scope or out of scope. An example of an out-of-scope case would be an incident where no direct or circumstantial information was available to determine *how* the death occurred, or if Sudden Infant Death Syndrome was the only information available from the official report(s). These criteria differ from the inclusion criteria used in various rulemaking packages prepared by CPSC staff. In the latter, *all* data are included, but such incidents may be classified differently; for example, the incidents could be classified into “non-product-related” or “no information” categories, as appropriate (and are excluded from the data-based evidence used for rulemaking purposes). As such, the number of fatalities for each product/group of products presented in this and previous annual nursery product reports are not expected to match the number of fatalities presented in any rulemaking packages on the same product/group of products.

In some cases that were considered in scope, the death was not associated directly with the nursery product. However, hazards in the vicinity of the product, often created inadvertently by caregivers, led to the deaths. For instance, extra bedding inside the crib, or plastic bags that were within easy reach of the crib, have led to some deaths. These deaths have been included with crib deaths. Similarly, clutter and extra bedding inside the play yard, or placement of the play yard within easy reach of a window blind cord, have led to some fatalities. These have been counted with play yard deaths. While these deaths may not be due to product failure only, they highlight some common misconceptions and oversights, poorly drafted instructions, or warnings, and/or foreseeable use patterns for these products. Therefore, these deaths were included.

Staff excluded any report to the CPSC of a nursery product-related incident that occurred outside of the United States.

## Historical Data

Based on the non-incident data only, trend analysis for 2018–2020 shows no statistically significant trend (p-value=0.181). However, when historical data from 2016 and 2017 are included, the 2016–2020 data show a statistically significant decreasing trend (p-value=0.038). Staff believes this is primarily driven by the substantial decrease in the overall ED-treated injury estimate in 2020.

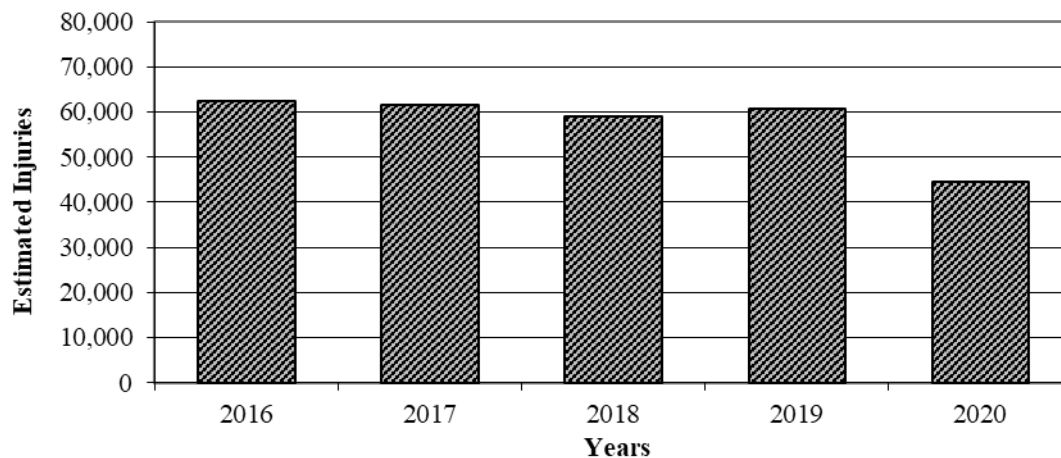
Table 5 and Figure 1 present the 5-year injury estimates covering 2016 through 2020, based on ED-treated, **non-incident** data on nursery products. Figure 2 presents the corresponding 5-year estimated injury rates per 100,000 children under age 5.

**Table 5: Nursery Product-Related ED-Treated Injury Estimates: 2016 – 2020**

Calendar Year	Estimated Injuries	95% Confidence Interval
2016	62,300	41,700 – 82,800
2017	61,400	42,700 – 80,100
2018	59,000	38,400 – 79,600
2019	60,600	38,000 – 83,200
2020	44,600	26,800 – 62,300

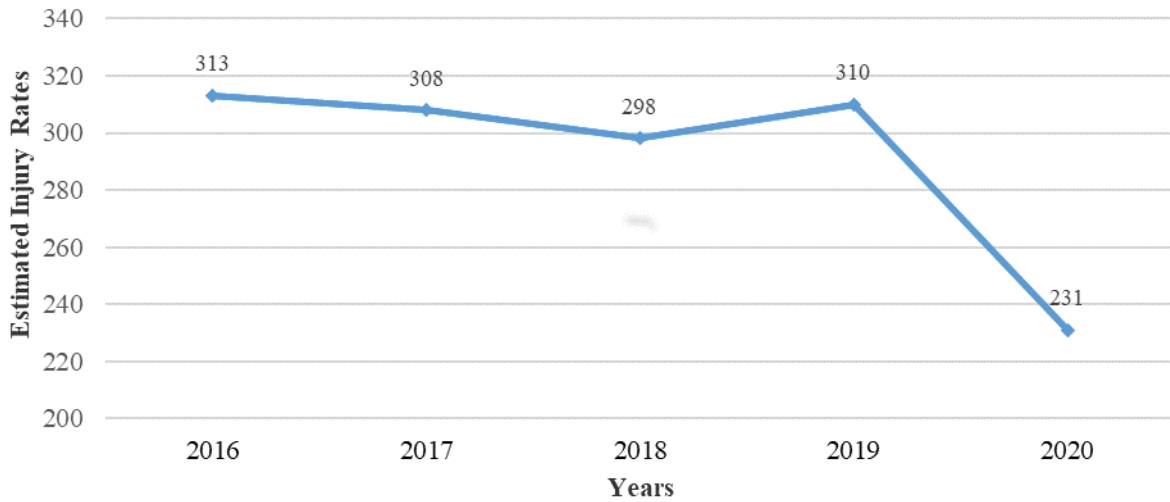
Source: NEISS, CPSC. Estimates rounded to nearest 100.

**Figure 1: Nursery Product-Related ED-Treated Injury Estimates: 2016 – 2020**



Source: NEISS, CPSC. Estimates are rounded to nearest 100.

**Figure 2: Nursery Product-Related ED-Treated Estimated Injuries per 100,000 Children Under 5 Years: 2016 – 2020**



Source: NEISS, CPSC. Estimates are rounded to nearest 100.

The population data for the denominator is from U.S. Census Bureau website (same as footnote 2):

<https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-national-detail.html>; Annual Estimates of the Resident Population for Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2020 (NC-EST 2020-AGESEX-RES); last revised July 23, 2021.

With the completion of this report, analyses of non-incident hospital ED-treated injury data are now available for the six years, 2015 through 2020. As analyses are completed for additional years, staff anticipates presenting 10- and 15-year trends in the future.