Product Instability or Tip-Over Injuries and Fatalities Associated with Televisions, Furniture, and Appliances: 2020 Report

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Executive Summary

This report contains information on injuries and fatalities associated with television, furniture, and appliance product instability, or tip-over incidents. Tip-over incidents include scenarios where heavy furniture falls on an individual from some type of interaction, such as climbing or exerting a force on the product while it is in one of its positions of normal use. Product instability that can lead to a tip-over incident can be caused or affected by an unstable dresser design (small foot print, top heavy), use on a sloped or unstable surface (carpet), non-use of a tip-over restraint device or use of a defective tip-over restraint device, heavy objects on top of a dresser, or multiple dresser drawers open. A television or an appliance that falls in combination with the furniture (that the television or appliance is resting in or on) is counted only in the furniture category in tabulations by product types presented in this report.

This report presents a national estimate of emergency department-treated instability or tip-over injuries, followed by the counts of reported fatalities. The death incidents are reported to have occurred from 2000 through 2019,[1] and the injury estimates are for years 2017 through 2019.[2] Appendix A presents the methodology for data extraction and selection criteria. Appendix B describes conventions applied for determining the products and scenarios that are included in the various product categories in this report. The statistics presented in this report are not comparable to statistics released previously, due to refinement of the conventions for determining in-scope National Electronic Injury Surveillance System (NEISS) injuries (see Appendix B).

Of the estimated annual average of 25,500 emergency department (ED)-treated injuries[3] (2017–2019) and the 571 reported fatalities[4] associated with tip-over incidents occurring between 2000 and 2019, staff noted the following[5]:

- Victims
  - Estimated annual average number of ED-treated injuries:
    - 11,300 (44%) involved children under age 18 years;
    - 10,000 (39%) involved adults, ages 18 to 59 years; and
    - 4,200 (17%) involved seniors, ages 60 years and older.

  - Reported fatalities:
    - 469 (82%) involved children (under age 18 years), with victims ages ranging from 1 month to 14 years;
    - 20 (4%) involved adults (age 18 to 59 years), with victims ages ranging from 28 to 59 years; and
    - 82 (14%) involved seniors, victims ages 60 years and older.

[1] Fatality counts should be considered incomplete for years 2017–2019, due to a time lag in reporting to CPSC.
[2] Injury estimates are rounded to the nearest hundred.
[3] Between 2010 and 2019, there were 12 NEISS tip-over injuries that ultimately resulted in deaths. Of these 12 deaths, two occurred between 2017 and 2019. All of these deaths are included in both the national annual estimates throughout the NEISS "injury" section and the fatality section of this report.
[4] Between 2000 and 2019, there were 21 NEISS fatalities, and all of them appear in the fatality section of this report.
[5] Percentages may not sum to 100, due to rounding.

- Tip-over product(s)
    - Estimated annual average number of ED-treated injuries:
        - 19,900 (78%) involved furniture (furniture-only, TV and furniture, or appliance and furniture);
        - 4,600 (18%) involved only televisions; and
        - 1,100 (4%) involved only appliances.

    - The estimated annual average number of ED-treated injuries involving children (under age 18 years) and furniture[6] was 8,800. Among them:
        - 3,500 (40%) involved tables;
        - 2,600 (30%) involved chests, bureaus, and dressers;
        - 1,500 (17%) involved shelving, shelving units, and bookcases; and
        - 1,100 (13%) involved all other furniture (including cabinets and stands).

    - Reported fatalities[7]:
        - 180 (32%) involved only televisions;
        - 174 (30%) involved furniture and a television both tipping over;
        - 177 (31%) involved only furniture; and
        - 40 (7%) involved only appliances[8].
            - The largest appliance category was stove/oven (27 fatalities).

- Incident location[9]
    - Estimated annual average number of ED-treated injuries:
        - 67% in residential settings, 9% in public settings, and 24% in locations not specified.

    - Reported fatalities:
        - 91% in residential settings, 4% in public settings, and 5% in locations not specified.
        - 46% in bedrooms, 19% in living/family rooms, 11% in other locations (kitchen, dining rooms, and miscellaneous other rooms), and 24% in unknown room locations.

- Injury characterization (primary injury type and body area affected)
    - Estimated annual average number of ED-treated injuries:
        - 31% contusions/abrasions, 14% fractures, 14% internal organ injuries, and 13% lacerations.
        - 37% legs, feet and toes, 30% head, 17% arms, hands, and fingers, and 13% torso.

[6] Seen in Table 1b, of the estimated 8,800 furniture-related injuries to children, about 400 of these incidents also involved a television.
[7] There were 115 fatalities involving only a chest, bureau, or dresser, and there were 103 fatalities involving a television and a chest, bureau, or dresser, so there were a total of 218 fatalities involving a chest, bureau, or dresser.
[8] There were no fatalities involving an appliance and furniture both falling.
[9] Public locations include nursing homes and assisted living facilities in both the NEISS injury estimates and in the fatality section, which generally only affects the senior age group.

- Reported fatalities:
  - 56% were crushed and remained under the product(s); 15% were hit/struck by product(s) but not crushed under the product(s); and 22% were due to positional asphyxia.
  - 65% Head (59% head only; 6% head and torso), and 24% torso only.

It should be noted that in early 2015, the CPSC launched its "Anchor It!" Campaign,[10] a national public education campaign to prevent furniture and television tip overs from killing and seriously injuring children. Tip overs are a significant hidden hazard in the home, and CPSC's safety campaign is aimed at reducing the number of deaths and injuries from tipping televisions, furniture, and appliances.

[10] http://www.cpsc.gov/en/Safety-Education/Safety-Education-Centers/Tipover-Information-Center/.

Emergency Department-Treated Injuries

Table 1a shows that from 2017 through 2019, U.S. hospital emergency departments treated an estimated average of 25,500 people annually for product instability or tip-over injuries related to televisions, furniture, and appliances.[11] The All Furniture category, which includes only furniture, furniture and a television, and furniture and an appliance falling, had the largest number of instability or tip-over-related injuries among the three product categories, with a national annual average estimate of 19,900 injuries (78 percent). This was followed by the national annual average instability or tip-over injury estimate of 4,600 injuries (18 percent) associated with only televisions. Appliance-only tip overs accounted for a national annual average of 1,100 injuries (4 percent). See Table 1a for a detailed breakdown; appliance estimates for 2013, 2016, 2017, and 2019, are not presented because there were not enough data to support reliable statistical estimates.

In this report, a television or an appliance falling in combination with furniture is counted only in the furniture category; in Table 1a through Table 1d, the furniture category is subdivided into incidents in which a television and furniture fell, and incidents in which either only furniture fell, or an appliance and furniture fell. The terse nature of NEISS narratives, and the medical records from which they are drawn, may fail to indicate a piece of furniture that may have been involved along with a fallen television. Cases that definitively indicate both a television and furniture falling were too few to produce robust estimates in the most recent years: 2017, 2018, and 2019. The previous annual report data were re-evaluated, along with the review of newer data, to ensure that the criteria for inclusion were applied consistently, and any changes to data from past reports have been listed in Appendix A.

[11] Based on the National Electronic Injury Surveillance System (NEISS), which is a probability survey of about 100 hospitals nationally.

Table 1a shows the national average annual estimates of ED-treated tip-over injuries for 2017 through 2019, as well as yearly estimates for 2010 through 2016, for comparison purposes. The estimated annual average injuries in Table 1a pertain to all ages, broken out by product categories: television-only, furniture (television and furniture; and furniture-only and appliance and furniture), appliance-only, and a total over all product categories. In Tables 1a–1d, under the column for "All Furniture" injury estimates, there are two additional, mutually exclusive estimates in parentheses that subdivide the furniture category; these estimates are for scenarios where a television and furniture both fell, and where only furniture or an appliance and furniture both fell.

Table 1a
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs for All Ages by Year 2010–2019

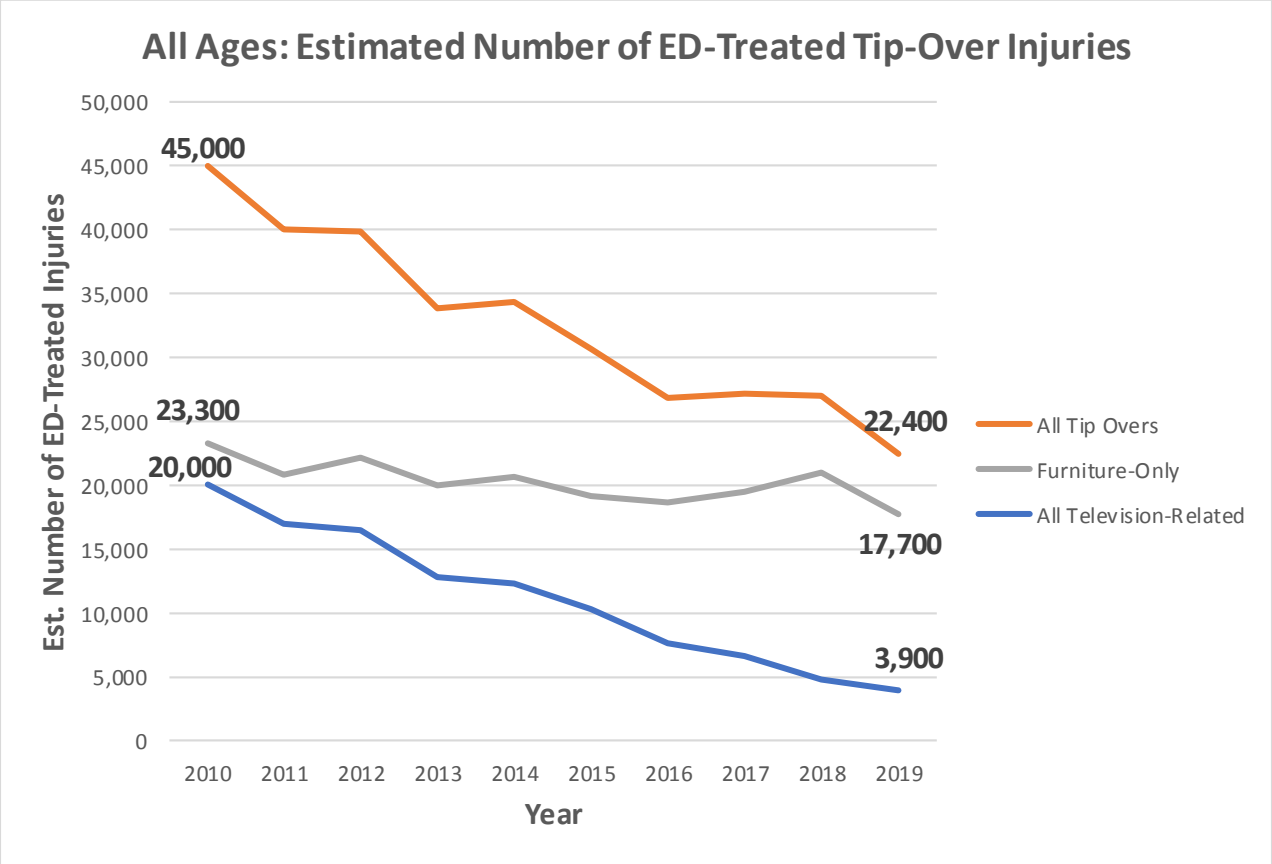
Estimated ED-Treated Injuries[12]				
Year	**Television-Only[13]**	**All Furniture ([TV + Furn]; [Furn + Appl & Furn-Only])[14]**	**Appliance-Only**	**Television, Furniture, and Appliance Total**
Annual Average (2017 – 2019)	4,600	19,900 (500; 19,400)	1,100	**25,500**
Average 95% Confidence Interval (CI)	(2,800 – 6,500)	(16,400 – 23,300) ((400 – 600); (15,900 – 22,800))	(700 – 1,400)	**(21,500 – 29,600)**
2019	3,700	17,900 (–; 17,700)	–	**22,400**
2018	4,300	21,500 (–; 20,900)	1,300	**25,500**
2017	5,900	20,100 (–; 19,400)	–	**27,100**
2016	6,300	19,900 (1,200; 18,600)	–	**26,900**
2015	9,000	20,500 (1,300; 19,200)	1,200	**30,700**
2014	10,600	22,500 (1,800; 20,700)	1,200	**34,300**
2013	10,500	22,300 (2,300; 20,000)	–	**33,800**
2012	13,700	25,000 (2,900; 22,100)	1,200	**39,900**
2011	13,900	24,100 (3,100; 20,900)	2,100	**40,100**
2010	16,900	26,500 (3,200; 23,300)	1,700	**45,000**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[12] The coefficients of variation (CVs) for the given estimates ranged from 0.0558 to 0.3199.
[13] The television counts also include flat-screen televisions and computer monitors (laptops and "computers," with no indication of a "computer monitor", were considered out of scope). For 2017 through 2019, of the annual average of 4,600 television-only tip-over injuries, just under 1 percent were computer monitors.
[14] From 2017 through 2019, there were 0 cases in which an appliance and furniture both fell, accounting for 0.00% of the 3-year annual average estimated injuries. For 2010 through 2019, scenarios in which both an appliance and furniture fell accounted for 0.06% of all furniture and appliance and furniture estimated injuries.

Figure 1 shows the yearly ED-treated tip-over injury estimates including all ages, for 2010 through 2019, for all tip overs, tip overs involving only furniture, and all tip overs involving a television.[15] For 2010 through 2019, there is a statistically significant linear decline in television-only, in television-related (television-Only; and television and furniture), and in overall tip-over ED-treated tip-over injuries including all ages. The decline in the estimated number of overall injuries in large part, is due to the decline in tip overs involving televisions during those years. No linear trend was detected for the entire period 2010 through 2019, for only-furniture[16]; and data were insufficient to test statistically for any trends in the appliance-only category. Trends over the years 2010 through 2019, are only detectable when injuries involving televisions are considered. Appliance estimates are not presented because there were not enough data to support reliable statistical estimates for some years.

Figure 1
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs for All Ages by Year 2010–2019



Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B.

[15] "Furniture-Only" estimates do not appear in Table 1a; estimates for "All Television-Related" tip overs are summed using "Television-Only" and "TV+ Furn" categories in Table 1a.
[16] A trend analysis was performed for all ages' estimated ED-treated tip-over injuries when only furniture tipped over (*e.g.*, no appliance and furniture or television and furniture scenarios included). No statistically significant trend over the years 2010 through 2019 was found.

Table 1b shows the national average annual estimates of ED-treated tip-over injuries involving children ages 0 to 17 years old. From 2010 through 2019, there is a statistically significant linear decline in television-only and in furniture-only[17] ED-treated tip-over injuries in children. There is also a statistically significant linear decline in overall tip-over injuries to children from 2010 through 2019. During the most recent years, 2017 through 2019, about 24 percent of all children's ED-treated tip-over injuries involved a television (including only a television, or a television and furniture).

Table 1b
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs Among Children Under 18 Years by Year 2010–2019

Estimated ED-Treated Injuries[18]				
Year	**Television-Only**	**All Furniture ([TV + Furn]; [Furn + Appl & Furn-Only])**	**Appliance-Only**	**Television, Furniture, and Appliance Total**
Annual Average (2017 – 2019)	2,300	8,800 (400; 8,400)	–	**11,300**
Average 95% Confidence Interval (CI)	(1,800 – 2,900)	(6,500 – 11,000) ((200 – 600); (6,200 – 10,600))	–	**(8,600 – 14,000)**
2019	1,800	8,300 (–; 8,100)	–	**10,500**
2018	2,000	9,200 (–; 8,700)	–	**11,300**
2017	3,300	8,800 (–; 8,300)	–	**12,100**
2016	3,800	10,100 (–; 9,000)	–	**13,900**
2015	5,900	9,900 (–; 8,900)	–	**16,000**
2014	6,400	11,000 (1,600; 9,300)	–	**17,400**
2013	6,200	12,200 (2,100; 10,100)	–	**18,400**
2012	9,500	13,600 (2,800; 10,800)	–	**23,200**
2011	9,600	13,600 (3,000; 10,600)	–	**23,400**
2010	11,900	16,100 (3,100; 13,000)	–	**28,000**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[17] Although "furniture-only" estimates do not appear in Table 1b, a trend analysis was performed for children's estimated ED-treated tip-over injuries when only furniture tipped over (*e.g.*, no appliance and furniture or television and furniture scenarios included). A statistically significant decreasing trend over the years 2010 through 2019 was found.

[18] The coefficients of variation (CVs) for the given estimates ranged from 0.0695 to 0.2336.

Table 1c shows the national average annual estimates of ED-treated tip-over injuries involving adults ages 18 to 59 years old. From 2010 through 2019, there is a statistically significant linear decline in television-only ED-treated tip-over injuries in adults. There is also a statistically significant linear decline in overall ED-treated tip-over injuries for adults from 2010 through 2019, which, in large part, is due to the decline in tip-over incidents involving televisions over those years. No linear trend was detected for adults for the entire 2010 through 2019 period for furniture, whether televisions were or were not involved. For the years 2017 through 2019, about 16 percent of all adult ED-treated tip-over injuries involved a television (including only a television, or a television and furniture).

Table 1c
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs Among Adults Ages 18 to 59 Years by Year 2010–2019

Estimated ED-Treated Injuries[19]				
Year	**Television-Only**	**All Furniture ([TV + Furn]; [Furn + Appl & Furn-Only])**	**Appliance-Only**	**Television, Furniture, and Appliance Total**
Annual Average (2017 – 2019)	1,500	7,900 (–; 7,800)	600	**10,000**
Average 95% Confidence Interval (CI)	(1,200 – 1,800)	(6,600 – 9,200) (–; (6,500 – 9,200))	(400 – 900)	**(8,400 – 11,600)**
2019	1,400	6,600 (–; 6,600)	–	**8,300**
2018	1,300	8,400 (–; 8,300)	–	**10,500**
2017	1,800	8,600 (–; 8,500)	–	**11,200**
2016	1,700	6,900 (–; 6,900)	–	**9,200**
2015	2,800	7,300 (–; 7,100)	–	**11,000**
2014	3,200	9,300 (–; 9,100)	–	**13,500**
2013	3,700	8,300 (–; 8,100)	–	**12,900**
2012	3,200	8,900 (–; 8,900)	–	**13,100**
2011	3,500	8,300 (–; 8,200)	1,700	**13,400**
2010	4,100	8,400 (–; 8,400)	1,400	**13,900**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[19] The coefficients of variation (CVs) for the given estimates ranged from 0.0822 to 0.2210.

Table 1d shows the national average annual estimates of ED-treated tip-over injuries involving seniors ages 60 years and older. From 2010 through 2019, no linear trend was detected for television-only, furniture (whether televisions were or were not involved), or for overall ED-treated tip-over injuries for seniors. For the years 2017 through 2019, only about one in five senior ED-treated tip-over injuries involved a television (including only a television, or a television and furniture).

Table 1d
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs Among Seniors 60 years and Older by Year 2010–2019

Estimated ED-Treated Injuries[20]				
Year	**Television-Only**	**All Furniture ([TV + Furn]; [Furn + Appl & Furn-Only])[21]**	**Appliance-Only**	**Television, Furniture, and Appliance Total**
Annual Average (2017 – 2019)	800	3,200 (–; 3,100)	–	**4,200**
Average 95% Confidence Interval (CI)	(600 – 1,000)	(2,400 – 4,000) (–; (2,400 – 3,900))	–	**(3,300 – 5,100)**
2019	–	3,000 (–; 2,900)	–	**3,700**
2018	–	3,900 (–; 3,900)	–	**5,200**
2017	–	2,700 (–; 2,600)	–	**3,800**
2016	–	2,800 (–; 2,800)	–	**3,700**
2015	–	3,300 (–; 3,300)	–	**3,800**
2014	–	2,300 (–; 2,300)	–	**3,300**
2013	–	1,800 (–; 1,800)	–	**2,400**
2012	–	2,400 (–; 2,300)	–	**3,500**
2011	–	2,200 (–; 2,100)	–	**3,300**
2010	–	1,900 (–; 1,900)	–	**3,100**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

For the remainder of the injury section, furniture category estimates also include incidents in which both a television and furniture fell. There were no injuries of a victim of any age involving both an appliance and furniture falling between 2017 and 2019.

[20] The coefficients of variation (CVs) for the given estimates ranged from 0.1093 to 0.2650.
[21] There were no senior injuries in which an appliance and furniture both fell in any year from 2010 through 2019.

Table 2 presents the estimated annual average number of ED-treated tip-over injuries for the various product categories by victim age category. As the table shows, children younger than 10 years of age account for the largest proportion of product instability or tip-over injuries, with an estimated annual average of 10,000 injuries, which is 39 percent of all tip-over injuries. Children under 10 years old also had the most furniture-related injuries (7,800 injuries; 31 percent) and the most television-only injuries (2,000 injuries; 8 percent).

Table 2
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Victim Age Category 2017–2019

Age Category (in years)	Estimated ED-Treated Injuries[22] (Percent of Total Estimate)		
	Television-Only	All Furniture (TV + Furn & Furn + Appl & Furn-Only)	Television, Furniture, and Appliance Total
<1 – 9	2,000 (8%)	7,800 (31%)	**10,000 (39%)**
10 – 19	400 (2%)	1,400 (5%)	**1,800 (7%)**
20 – 29	400 (2%)	1,600 (6%)	**2,200 (9%)**
30 – 39	–	2,100 (8%)	**2,500 (10%)**
40 – 49	–	2,100 (8%)	**2,700 (10%)**
50 – 59	400 (2%)	1,700 (7%)	**2,200 (8%)**
60 – 69	–	1,200 (5%)	**1,600 (6%)**
≥ 70	500 (2%)	2,000 (8%)	**2,600 (10%)**
Total	**4,600 (18%)**	**19,900 (78%)**	**25,500 (100%)**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Appliances, not shown as a separate column in the table, accounts for 4% of the total estimated injuries. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[22] The CVs for the given estimates (2017–2019) ranged from 0.0924 to 0.2296.

To simplify the analysis, for the remainder of this report the age groups of children (younger than 18 years), adults (18 years to younger than 60 years), and seniors (60 years and older) are used when discussing product instability or tip-over-related injuries for television-only, furniture-related, and appliance-only categories. Children account for almost half (44 percent) of all ED-treated instability or tip-over injury estimates from 2017 through 2019. Adults and seniors account for 39 percent and 17 percent of all tip-over injuries from 2017 through 2019, respectively.

Table 3 presents national average annual estimates of ED-treated tip-over injuries by age group and product category. The injury rates, per 100,000 people of each age group, are shown in parentheses next to the estimates. The furniture category, which includes scenarios when both a television and furniture fall, was associated with the majority of the estimated injuries for each age group. Of the three age groups, children sustain the highest average annual estimated number of ED-treated injuries (11,300 injuries), as well as the highest rate of tip-over injuries occurring in the population (15 injuries per 100,000 population). The injury rates are similar among the adult and senior age groups; each group incurred an estimated six injuries per 100,000 population.

Table 3
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Victim Age Category 2017–2019

Annual Average 2017 – 2019	**Estimated ED-Treated Injuries[23]** (Emergency Department Injuries Per 100,000 U.S. Population[24])		
	Children (<1 to 17 years)	**Adults (18 to 59 years)**	**Seniors (≥60 years)**
Televisions, Furniture, and Appliances	11,300 (15)	10,000 (6)	4,200 (6)
Average 95% Confidence Interval (CI)	(8,600, 14,000)	(8,400, 11,600)	(3,300, 5,100)
Television-Only	2,300 (3)	1,500 (1)	800 (1)
All Furniture (TV + Furn & Furn + Appl & Furn-Only)	8,800 (12)	7,900 (4)	3,200 (5)
Appliance-Only	–	600 (<1)	–

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[23] The CVs for the given estimates (2017–2019) ranged from 0.0822 to 0.2210.

[24] The U.S. population estimate for each age group is an average of 2017–2019 data of that age group from the "NC-EST2019-AGESEX" file in the U.S. Census data found at: https://www.census.gov/newsroom/press-kits/2020/population-estimates-detailed.html.

Children account for the largest portion of television-only and furniture-related injuries. The estimates related to children can be further subdivided into age categories for victims less than 1-year-old (less than 1 month to 11 months), 1-year-old (12 months to 23 months), to 6 years old (72 months to 83 months), and children 7 years and older. Table 4 presents national average annual estimates of ED-treated tip-over injuries by age group and product category. The injury rates, per 100,000 people of each age group, are shown in parentheses next to the estimates.

As seen in Table 4, victims age 1 to 4 years account for a majority of the estimated child ED-treated tip-over injuries involving tip overs of television-only, as well as for tip overs involving furniture. For the television-only category, 1-year-olds and 2-year-olds account for the highest number of estimated annual injuries (400 and 400 injuries, respectively). For the furniture-related category, 1-year-olds and 2-year-olds account for the highest number of estimated injuries (1,700 and 1,500 injuries, respectively).

Table 4
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Selected Child Victim Age Category 2017–2019

Child Age Category[25] (in years)	Estimated ED-Treated Injuries for Children[26] (Injury Rate Per 100,000 Persons)		
	Television-Only	All Furniture (TV + Furn & Furn + Appl & Furn-Only)	Television, Furniture, and Appliance Total
<1	–	500 (14)	**600 (16)**
1	400 (11)	1,700 (43)	**2,100 (54)**
2	400 (11)	1,500 (38)	**2,000 (51)**
3	–	1,000 (26)	**1,400 (36)**
4	–	1,000 (26)	**1,300 (33)**
5	–	700 (17)	**800 (20)**
6	–	400 (10)	**500 (13)**
7 – 17	500 (1)	1,900 (4)	**2,500 (5)**
Total	**2,300 (3)**	**8,800 (12)**	**11,300 (15)**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Appliances, not shown as a separate column in the table, accounts for 1% of the total estimated injuries. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[25] Of all television-only injuries to children, about 1 percent were children younger than 1 year of age.
[26] The CVs for the given estimates (2017–2019) ranged from 0.1324 to 0.2259.

In Table 5, the furniture-related estimates are classified further by furniture subtypes. Tables were involved in over one in three (38 percent) ED-treated tip-over injuries involving furniture over all ages, and tables were also the largest furniture-related category for each age group: children, adults, and seniors.

Children were the age group with the most furniture-related ED-treated injuries (44 percent), followed by adults (40 percent), and the senior age group (16 percent). There were an estimated annual average of 2,600 ED-treated injuries to children involving chests, bureaus, and dressers; of these, 9 percent are known to have involved a fallen television as well. Between 2017 and 2019, of the estimated annual average of 19,900 furniture-related injuries over all ages, an annual average of 500 injuries indicated a television also fell.

Table 5
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Furniture Subcategories 2017–2019

Furniture Subtype	Estimated ED-Treated Injuries[27] (Percent of Total Estimate)			
	Children (<1 to 17 years)	Adults (18 to 59 years)	Seniors (60 years and older)	All Ages Total
Tables	3,500 (18%)	2,700 (14%)	1,200 (6%)	**7,500 (38%)**
Chests, Bureaus, and Dressers (CBD)	2,600 (13%)	1,100 (5%)	–	**4,000 (20%)**
Shelving, Shelving Units, and Bookcases (Shelf)	1,500 (7%)	2,300 (12%)	800 (4%)	**4,600 (23%)**
Cabinets	–	1,000 (5%)	–	**1,600 (8%)**
Remaining Furniture Subtypes	900 (5%)	800 (4%)	400 (2%)	**2,200 (11%)**
Total	**8,700 (44%)**	**7,900 (40%)**	**3,200 (16%)**	**19,900 (100%)**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for furniture product codes, as described in Appendix B. It includes cases where a television or appliance also fell. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[27] The CVs for the given estimates (2017–2019) ranged from 0.1001 to 0.2052.

There were an estimated 12,900 females injured (50 percent) and an estimated 12,700 males injured (50 percent) annually in all product instability or tip-over incidents for all ages. Table 6 presents the estimates for each victim age category by product category and gender. There was no statistical difference by gender in children, adults, seniors, or all ages combined for television-only, furniture, or the combined category estimate of all tip-over incidents.

Table 6
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Gender 2017–2019

Age Group	Gender	Estimated ED-Treated Injuries[28] (Percent of Total Estimate)			
		Television-Only	All Furniture (TV + Furn & Furn + Appl & Furn-Only)	Appliance-Only	Television, Furniture, and Appliance Total
Children	Female	1,000 (4%)	3,600 (14%)	–	4,700 (18%)
	Male	1,300 (5%)	5,100 (20%)	–	6,600 (26%)
Adults	Female	900 (4%)	4,600 (18%)	–	5,700 (22%)
	Male	600 (2%)	3,300 (13%)	500 (2%)	4,300 (17%)
Seniors	Female	500 (2%)	2,000 (8%)	–	2,500 (10%)
	Male	–	1,200 (5%)	–	1,700 (7%)
All Ages	Female	2,400 (9%)	10,200 (40%)	–	12,900 (50%)
	Male	2,300 (9%)	9,600 (38%)	800 (3%)	12,700 (50%)
Total		4,600 (18%)	19,900 (78%)	1,100 (4%)	25,500 (100%)

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

Considering the location of injury, 67 percent of the estimated 25,500 injuries of all ages occurred in a residential location. Nine percent occurred in a public location, such as schools, churches, daycare centers, offices, restaurants, stores, or parks, and 24 percent happened in an unknown location. These percentages are somewhat similar for children (73 percent residential and 8 percent public), adults (61 percent residential and 6 percent public) and seniors (66 percent residential, and 14 percent public, which includes nursing homes).

The disposition of the ED-treated tip-over injuries show that the majority of victims (95 percent of children, 94 percent of adults, and 78 percent of seniors) were treated and released; however, 16 percent of the seniors were hospitalized.

[28] The CVs for the given estimates (2017–2019) ranged from 0.0758 to 0.2185.

The primary diagnoses,[29] which are independent of the disposition, were examined for children, adults, and seniors. Table 7 presents the breakdown of the diagnoses (where available) for the different product categories and age groups. The majority of the diagnoses for all age groups combined, and also for each age group alone, was contusions/abrasions (8,000; 31 percent). Contusions and abrasions was also the most frequent diagnosis for both the television-only category and the furniture-related category. The next most prevalent diagnoses of all age groups combined were fractures (3,700; 14 percent), internal organ injuries (3,500; 14 percent), and lacerations (3,400; 13 percent). Children were diagnosed with internal organ injuries at a higher rate than any other diagnosis, compared to adults and seniors, primarily because of the many head injuries to children in tip-over incidents.

Table 7
Annual Average of Estimated ED-Treated Injuries Due to Product Instability or Tip Overs by Diagnosis 2017–2019

Primary Diagnosis	Age Group	Estimated ED-Treated Injuries[30] (Percent of Total Estimate)		
		Television-Only	All Furniture (TV + Furn & Furn + Appl & Furn-Only)	Television, Furniture, and Appliance Total
Contusions, Abrasions	Children	800 (3%)	2,800 (11%)	**3,700 (14%)**
	Adults	–	2,600 (10%)	**3,100 (12%)**
	Seniors	–	900 (3%)	**1,200 (5%)**
Fractures	Children	–	1,300 (5%)	**1,600 (6%)**
	Adults	–	1,000 (4%)	**1,500 (6%)**
	Seniors	–	400 (2%)	**600 (2%)**
Internal Organ Injury	Children	500 (2%)	1,500 (6%)	**2,000 (8%)**
	Adults	–	700 (3%)	**900 (4%)**
	Seniors	–	400 (2%)	**500 (2%)**
Lacerations	Children	–	1,400 (6%)	**1,700 (7%)**
	Adults	–	900 (4%)	**1,200 (5%)**
	Seniors	–	500 (2%)	**500 (2%)**
Strains or Sprains	Children	–	–	–
	Adults	–	800 (3%)	**1,000 (4%)**
	Seniors	–	–	–
All Other Diagnoses	Children	500 (2%)	1,600 (6%)	**2,200 (8%)**
	Adults	–	1,900 (7%)	**2,400 (9%)**
	Seniors	–	800 (3%)	**1,100 (4%)**
Total		**4,600 (18%)**	**19,900 (78%)**	**25,500 (100%)**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Appliances, not shown as a separate column in the table, accounts for 4% of the total estimated injuries. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[29] Beginning in 2018 NEISS incidents, there are up to 2 diagnoses coded for each patient visit. For this report, only the first diagnosis coded is used for estimates in Tables 7 and 9, because the first diagnosis listed refers to the most severe diagnosis resulting from the tip-over incident.

[30] The CVs for the given estimates (2017–2019) ranged from 0.1191 to 0.2701.

Table 8 presents the primary body parts injured in the ED-treated tip-over injuries.[31] Nearly 1 in 5 (19 percent) of all estimated ED-treated tip-over injuries of all ages were head injuries to children. Most injuries for all age groups combined were to the legs, feet and toes (9,400 injuries; 37 percent). This is followed by the head (7,800; 30 percent), arms, hands, and fingers (4,400 injuries; 17 percent), and torso (3,400 injuries; 13 percent). Most injuries to children were to the head (4,900 injuries), and legs, feet, and toes (3,600 injuries). Most injuries to adults were to the legs, feet, and toes (4,300 injuries), and arms, hands, and fingers (2,200 injuries). Most injuries to seniors were to the legs, feet, and toes (1,500 injuries), and the head (1,100 injuries).

Table 8
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Area of Body 2017–2019

Primary Area of Body Affected	Age Group	Estimated ED-Treated Injuries[32] (Percent of Total Estimate)		
		Television-Only	All Furniture (TV + Furn & Furn + Appl & Furn-Only)	Television, Furniture, and Appliance Total
Head	Children	1,100 (4%)	3,800 (15%)	**4,900 (19%)**
	Adults	400 (1%)	1,400 (5%)	**1,800 (7%)**
	Seniors	–	800 (3%)	**1,100 (4%)**
Legs, Feet, and Toes (Legs)	Children	900 (3%)	2,700 (11%)	**3,600 (14%)**
	Adults	500 (2%)	3,600 (14%)	**4,300 (17%)**
	Seniors	–	1,200 (5%)	**1,500 (6%)**
Arms, Hands, and Fingers (Arms)	Children	–	1,500 (6%)	**1,700 (7%)**
	Adults	–	1,700 (7%)	**2,200 (8%)**
	Seniors	–	400 (2%)	**600 (2%)**
Torso	Children	–	600 (2%)	**900 (3%)**
	Adults	–	1,200 (5%)	**1,600 (6%)**
	Seniors	–	700 (3%)	**900 (4%)**
All Other Body Parts	Children	–	–	–
	Adults	–	–	–
	Seniors	–	–	–
Total		**4,600 (18%)**	**19,900 (78%)**	**25,500 (100%)**

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Appliances, not shown as a separate column in the table, accounts for 4% of the total estimated injuries. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[31] Beginning in 2018 NEISS incidents, there are up to two body parts coded for each patient visit. For this report, only the first body part coded is used for estimates in Tables 8 and 9, because the first body part coded corresponds to the more severe and first coded diagnosis resulting from the tip-over incident.
[32] The CVs for the given estimates (2017–2019) ranged from 0.1042 to 0.2438.

By evaluating the primary body part affected, as well as the diagnosis, it is possible to estimate the injuries by selected area of body and diagnosis, as seen in Table 9. Of the head injuries that occurred to children, the most frequent diagnosis was an internal organ injury (2,000 injuries), followed by lacerations (1,000 injuries). Many of the leg injuries to children were diagnosed as contusions/abrasions (1,600 injuries), and fractures (900 injuries). For many of the adult and senior head injuries, the diagnosis was an internal organ injury (900 and 500 injuries, respectively). For many of the adult and senior leg injuries, the diagnosis was contusions/abrasions (1,700 and 500 injuries, respectively).

Table 9
Annual Average of Estimated ED-Treated Injuries Due to
Product Instability or Tip Overs by Area of Body and Diagnosis 2017–2019

Primary Area of Body Affected/ Diagnosis	Age Group	Estimated ED-Treated Injuries[33] (Percent of Total Estimate)		
		Television-Only	All Furniture (TV + Furn & Furn + Appl & Furn-Only)	Television, Furniture, and Appliance Total
Head/ Internal Organ Injury	Children	500 (2%)	1,500 (6%)	**2,000 (8%)**
	Adults	–	700 (3%)	**900 (4%)**
	Seniors	–	400 (2%)	**500 (2%)**
Head/ Lacerations	Children	–	900 (3%)	**1,000 (4%)**
	Adults	–	–	–
	Seniors	–	–	–
Legs/ Contusions, Abrasions	Children	400 (2%)	1,200 (5%)	**1,600 (6%)**
	Adults	–	1,500 (6%)	**1,700 (6%)**
	Seniors	–	400 (2%)	**500 (2%)**
Legs/ Fractures	Children	–	600 (3%)	**900 (3%)**
	Adults	–	500 (2%)	**800 (3%)**
	Seniors	–	–	–
Torso/ Contusions, Abrasions	Children	–	400 (2%)	**500 (2%)**
	Adults	–	500 (2%)	**600 (2%)**
	Seniors	–	–	–
Arms/ Contusions, Abrasions	Children	–	500 (2%)	**500 (2%)**
	Adults	–	500 (2%)	**600 (3%)**
	Seniors	–	–	–
Arms/ Fractures	Children	–	400 (2%)	**500 (2%)**
	Adults	–	400 (2%)	**500 (2%)**
	Seniors	–	–	–

Source: U.S. Consumer Product Safety Commission: NEISS. The estimates include cases for television, furniture, and appliance product codes, as described in Appendix B. Appliances, not shown as a separate column in the table, accounts for 4 percent of the total estimated injuries. Estimates that are not statistically reliable are presented as "–" (see Appendix A). Estimates are rounded to the nearest hundred and may not add up to total.

[33] The CVs for the given estimates (2017–2019) ranged from 0.1469 to 0.2445.

Reported Fatalities[34]

Between 2000 and 2019, CPSC staff has received 571 reports of product instability or tip-over-related fatalities that were related to televisions, furniture, or appliances. The criteria for determining the in-scope cases are presented in Appendix B. Of these 571 reported fatalities, 180 deaths (32 percent) involved only a television falling, 174 deaths (30 percent) involved both a television falling and the furniture in/on which the television was resting also falling, 177 deaths (31 percent) involved only furniture falling, and 40 deaths (7 percent) involved only an appliance falling. If considering televisions falling (television-only + television and furniture), there were 354 deaths (62 percent). If considering furniture falling (furniture-only + television and furniture), there were 351 deaths (61 percent). There were no deaths in which both furniture and an appliance fell.

Some differences are apparent between the numbers and classifications of fatalities in this report when compared with fatalities reported in past annual reports. The reason is two-fold; since the earlier publications, CPSC has received new reports of tip-over fatalities that occurred between 2000 and 2018, and CPSC has received additional information on some of the tip-over fatalities that appeared in past reports. This has necessitated re-evaluation of previous fatality categorizations for better consistency of the data. The details of these changes are provided in Appendix A.

[34] Fatality counts should be considered incomplete for years 2017–2019, due to a time lag in reporting to CPSC.

Table 10 presents the instability or tip-over-related fatality data for televisions, furniture, and appliances by year of death. While data reporting is ongoing, especially for 2017 through 2019, it appears that the number of fatalities reported involving the furniture-only and appliance-only categories have not decreased in the most recent years, when compared to years dating back to 2000; meanwhile it appears that the television-related categories are showing lower numbers in the more recent years 2015 and 2016, when compared to the previous decade of reporting.

Table 10
Product Instability or Tip-Over-Related Fatalities Reported to CPSC by Year 2000–2019[35]

Year	Television-Only[36]	TV + Furniture	Furniture-Only	Appliance-Only	Television, Furniture, and Appliance Total	Percent of Total (n = 571)
2019*	2	0	5	1	**8**	**1%**
2018*	4	2	4	3	**13**	**2%**
2017*	3	8	8	2	**21**	**4%**
2016	4	9	15	1	**29**	**5%**
2015	7	7	10	2	**26**	**5%**
2014	13	12	17	1	**43**	**8%**
2013	11	12	10	2	**35**	**6%**
2012	17	20	7	2	**46**	**8%**
2011	20	19	12	1	**52**	**9%**
2010	16	6	7	4	**33**	**6%**
2009	8	13	7	1	**29**	**5%**
2008	17	12	8	0	**37**	**6%**
2007	9	16	10	0	**35**	**6%**
2006	12	8	5	3	**28**	**5%**
2005	7	11	9	1	**28**	**5%**
2004	9	2	12	1	**24**	**4%**
2003	8	2	5	5	**20**	**4%**
2002	4	6	8	3	**21**	**4%**
2001	6	5	16	5	**32**	**6%**
2000	3	4	2	2	**11**	**2%**
Product Category Total	**180**	**174**	**177**	**40**	**571**	**100%**
Percent of Total (n = 571)	**32%**	**30%**	**31%**	**7%**	**100%**	

Source: CPSC databases, including NEISS and CPSRMS. Asterisks (*) indicate ongoing reporting.

Similar to the NEISS injuries, the fatalities were separated into three distinct age categories: children (younger than 18 years of age); adults (ages 18 to 59 years); and seniors (60 years of age and older).

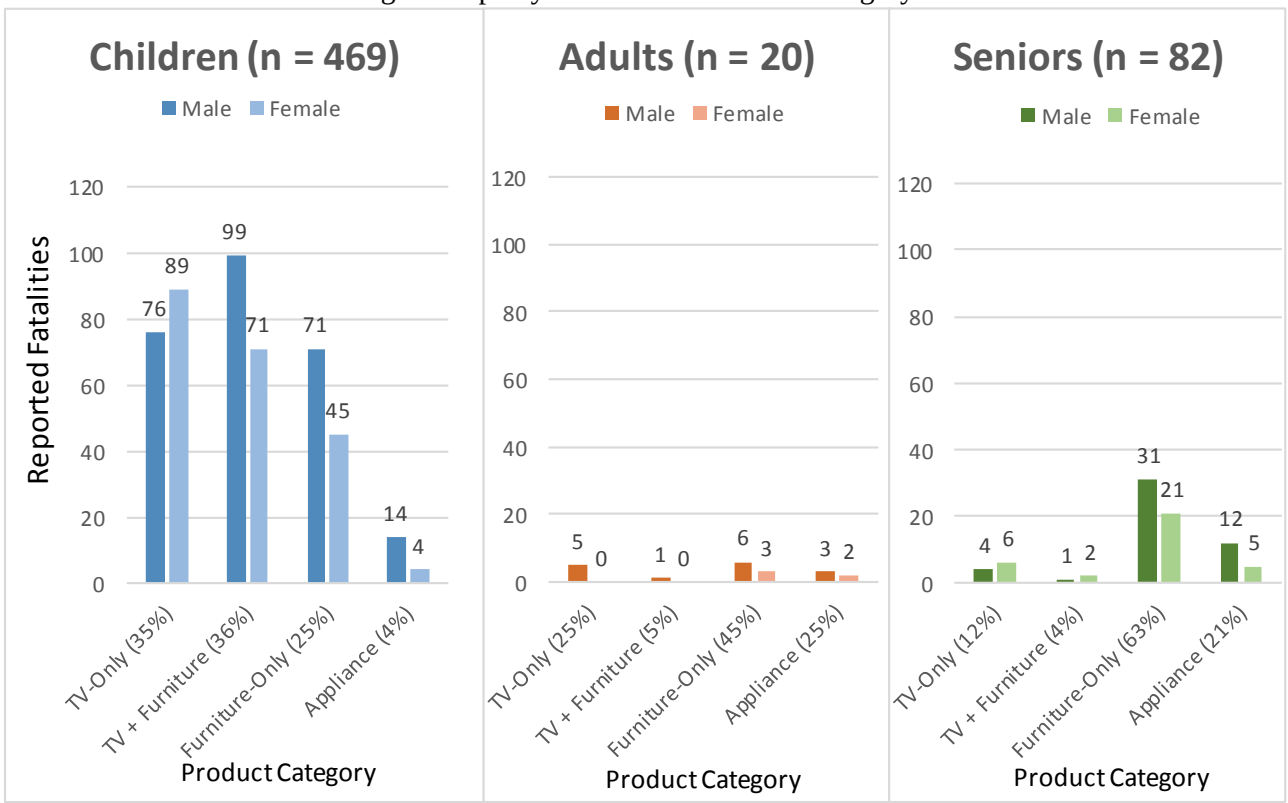
[35] There are 0 deaths involving both furniture and an appliance tipping over.
[36] There are no computer monitor-related fatalities among the television fatality counts.

Figure 2 presents the reported fatalities by gender and product categories among the different age groups. Of the 571 fatalities, 469 (82 percent) were among children, 82 (14 percent) among seniors, and the remaining 20 (4 percent) among adults.

Of the 469 child fatalities, 165 (35 percent) involved only a television falling, 170 (36 percent) involved both a television falling and the furniture in/on which the television was resting also falling, 116 (25 percent) involved only furniture falling, and 18 (4 percent) involved only an appliance falling.

Of the 165 child fatalities involving only a television falling, there does not appear to be a stark difference when comparing genders, with 89 female fatalities (54 percent) versus 76 male fatalities (46 percent). The 286 fatalities involving children and furniture (with or without a television also falling) suggest differences based on gender. Of the 116 children fatalities involving only furniture, 71 were male (61 percent) and 45 were female (39 percent), and of the 170 children fatalities involving both a television and furniture falling, 99 were male (58 percent) and 71 were female (42 percent). It is harder to examine differences based on gender for the adult and senior groups, due to small counts.

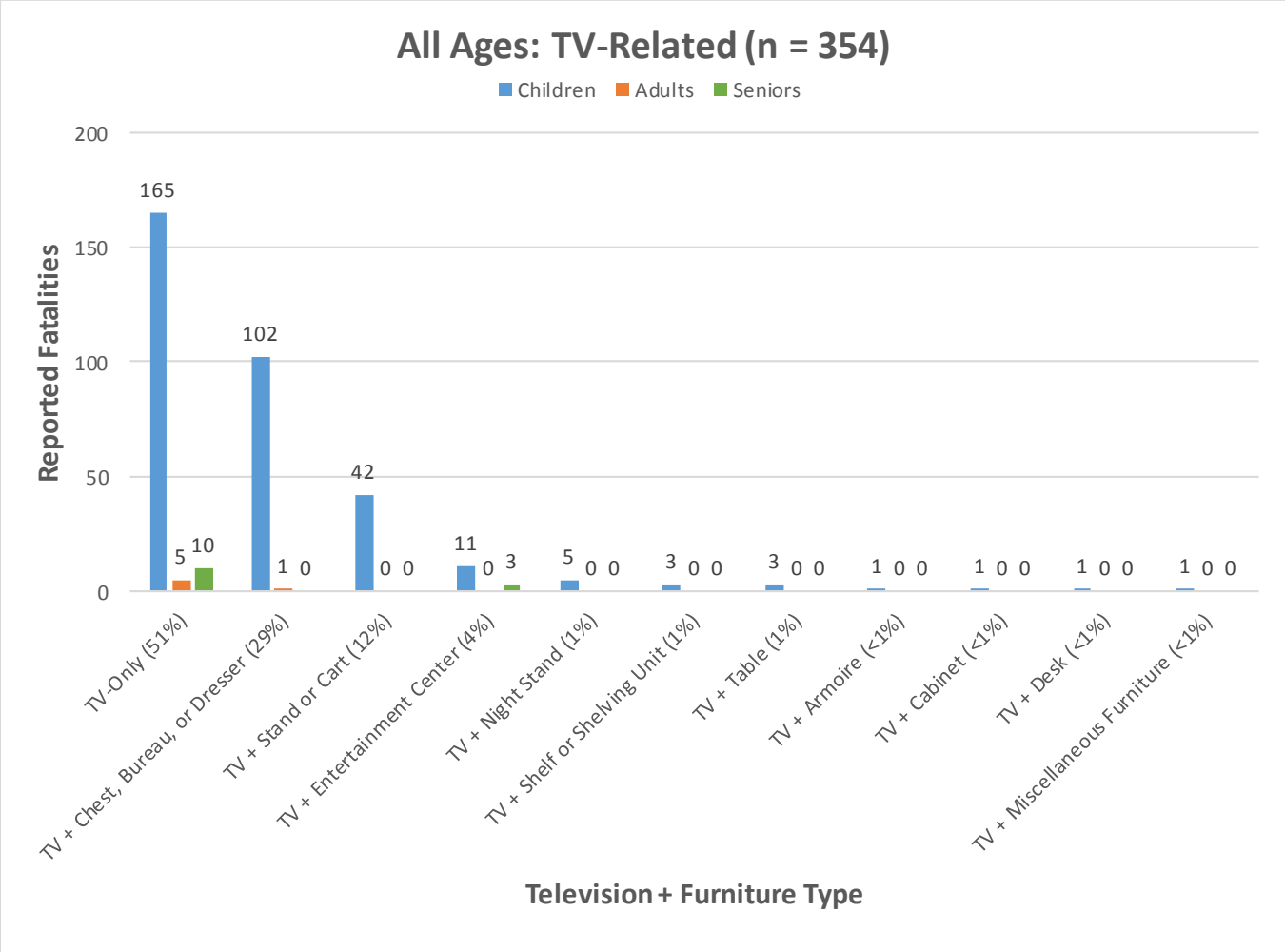
Figure 2
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
for Different Age Groups by Gender and Product Category 2000–2019



Source: CPSC databases, including NEISS and CPSRMS.

Of the 571 fatalities, 354 deaths (62 percent) involved televisions. Of the 354 television-related tip-over deaths of all ages, 335 fatalities (95 percent) were children; 13 fatalities (4 percent) were seniors; and 6 fatalities (2 percent) were adults. Figure 3 presents the frequencies of fatalities by television and furniture type.

Figure 3
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
by Television and Furniture Type[37] 2000–2019[38]

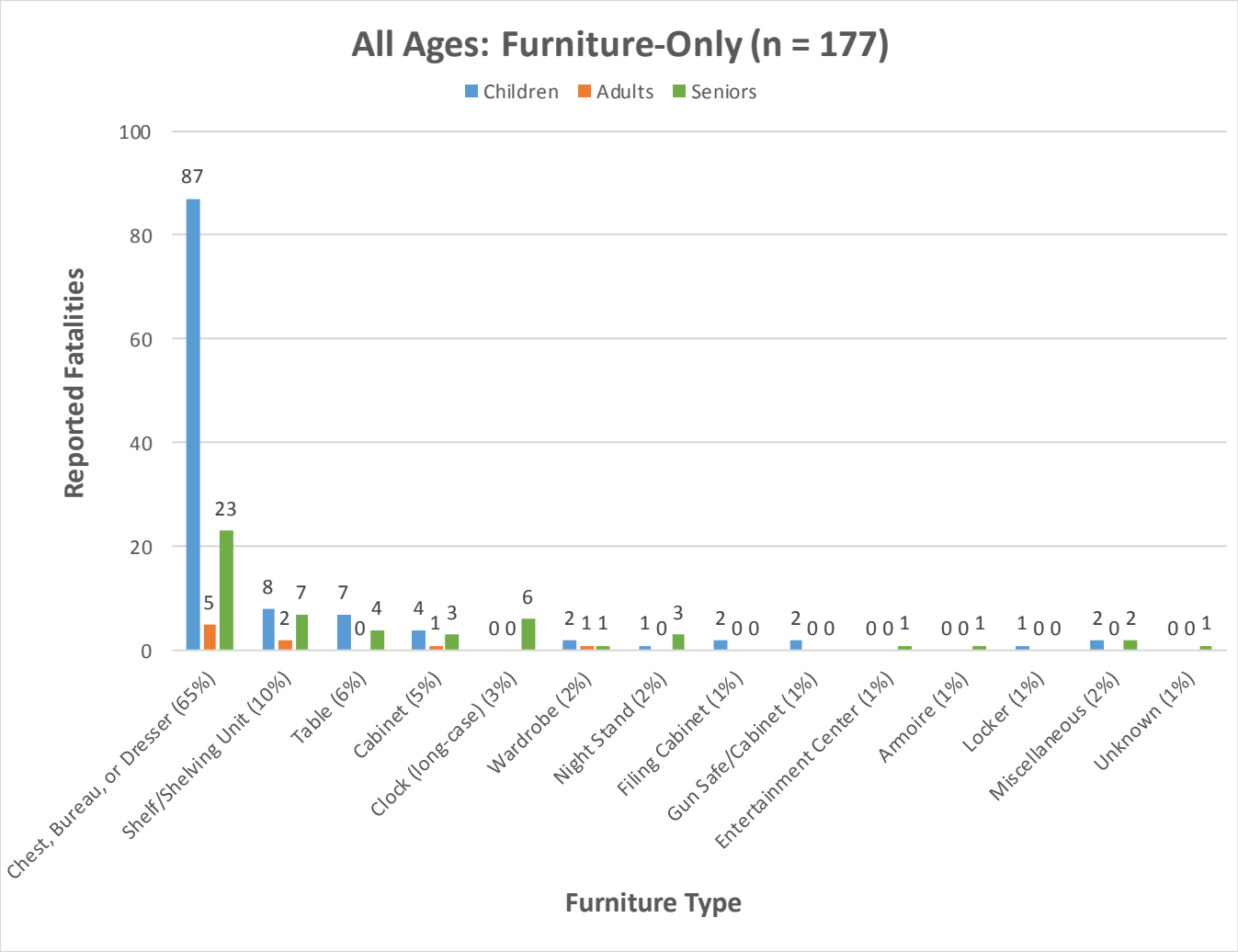


Source: CPSC databases, including NEISS and CPSRMS.

[37] Fatalities where it could not be determined if the furniture also tipped or fell are counted as only the television falling.
[38] The miscellaneous furniture is an antique phonograph cabinet.

Of the 571 fatalities, 177 deaths (31 percent) involved only furniture falling. Of these 177 deaths, 116 fatalities (66 percent) were children; 52 fatalities (29 percent) were seniors; and 9 fatalities (5 percent) were adults. Figure 4 presents the frequencies for instability or tip-over deaths by furniture type and victim age group involving only furniture falling.[39]

Figure 4
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
for Furniture-Only by Furniture Type 2000–2019[40]



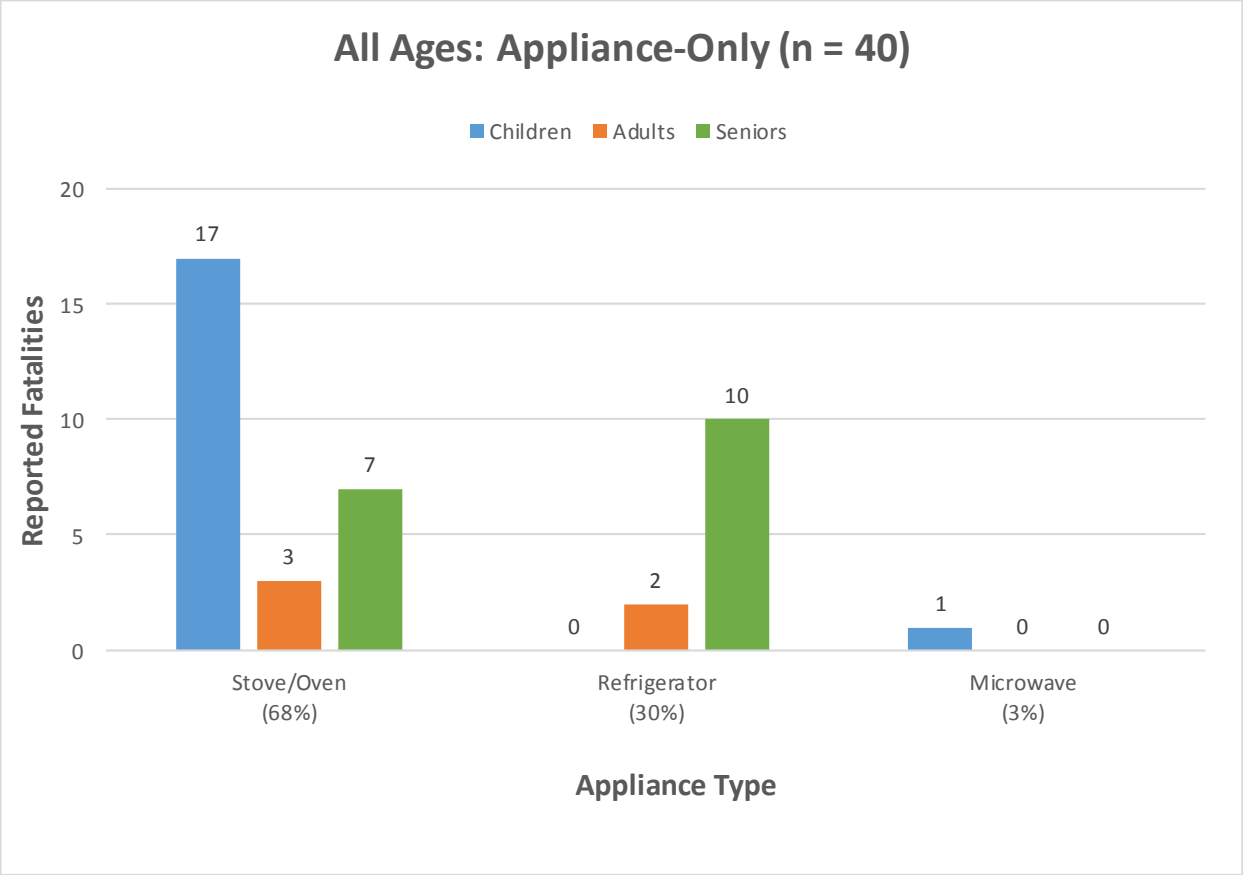
Source: CPSC databases, including NEISS and CPSRMS.

If we combine all chest, bureau, and dresser-related tip-over fatalities of all ages, with and without a television also falling, there are 218 fatalities, which make up 38 percent of all tip-over fatalities. Of the 218 chest, bureau, and dresser-related tip-over fatalities, 189 (87%) involved children.

[39] The fatality where the furniture is unknown was described as either an armoire or a bookcase.
[40] Miscellaneous furniture include: two coat racks, a portable storage closet, and a room divider.

The remaining 40 deaths (7 percent) of the 571 fatalities involved only an appliance falling. Of these 40 deaths, 18 fatalities were children; 17 were seniors; and 5 were adults. Figure 5 presents the frequencies of fatalities by appliance type.

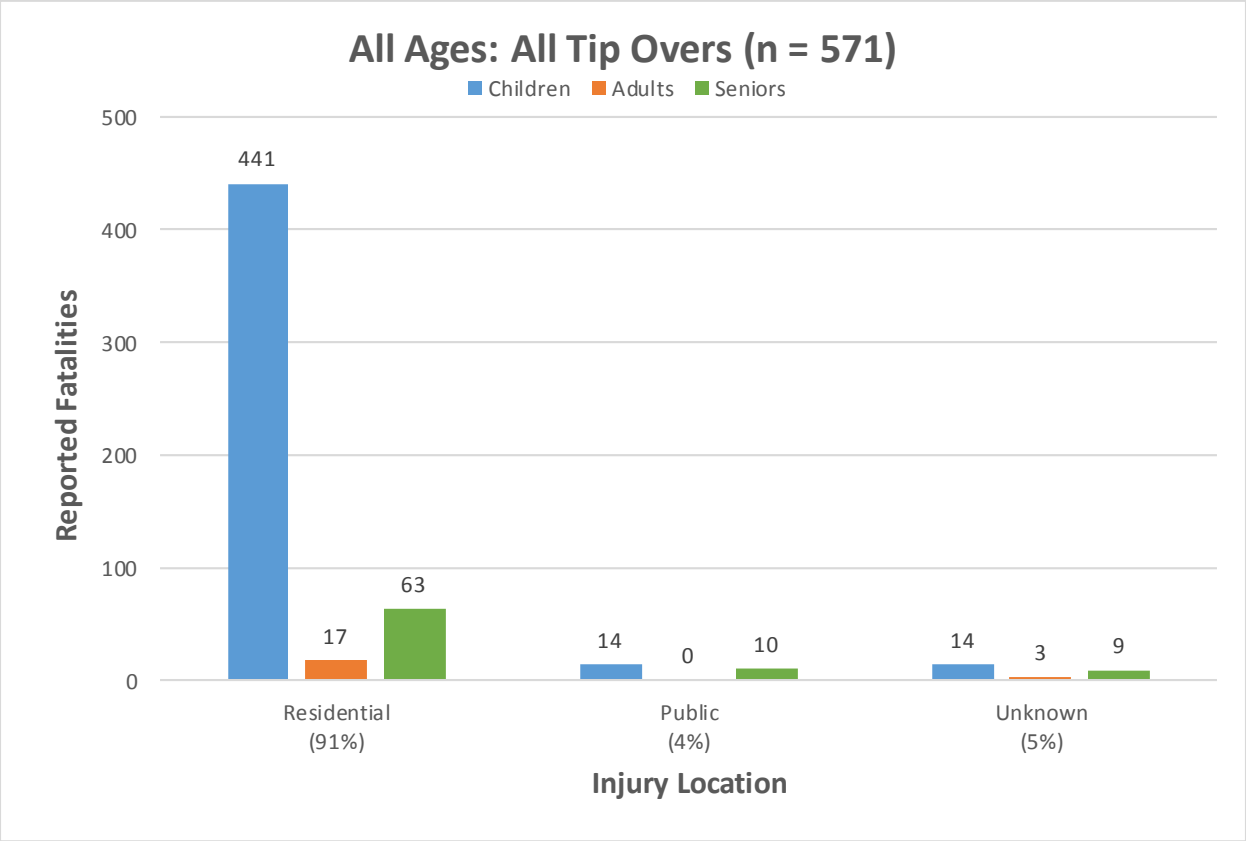
Figure 5
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
for Appliances by Appliance Type 2000–2019



Source: CPSC databases, including NEISS and CPSRMS.

Residential locations account for 521 (91 percent) of the fatalities. Twenty-four deaths (4 percent) occurred in public locations; and 26 deaths (5 percent) did not provide enough information to determine the location. Fatalities to children had a similar distribution by location (94 percent residential, 3 percent public, and 3 percent unknown). Figure 6 presents the tip-over fatalities by location.

Figure 6
Product Instability or Tip-Over-Related Fatalities Reported to CPSC by Location 2000–2019[41]

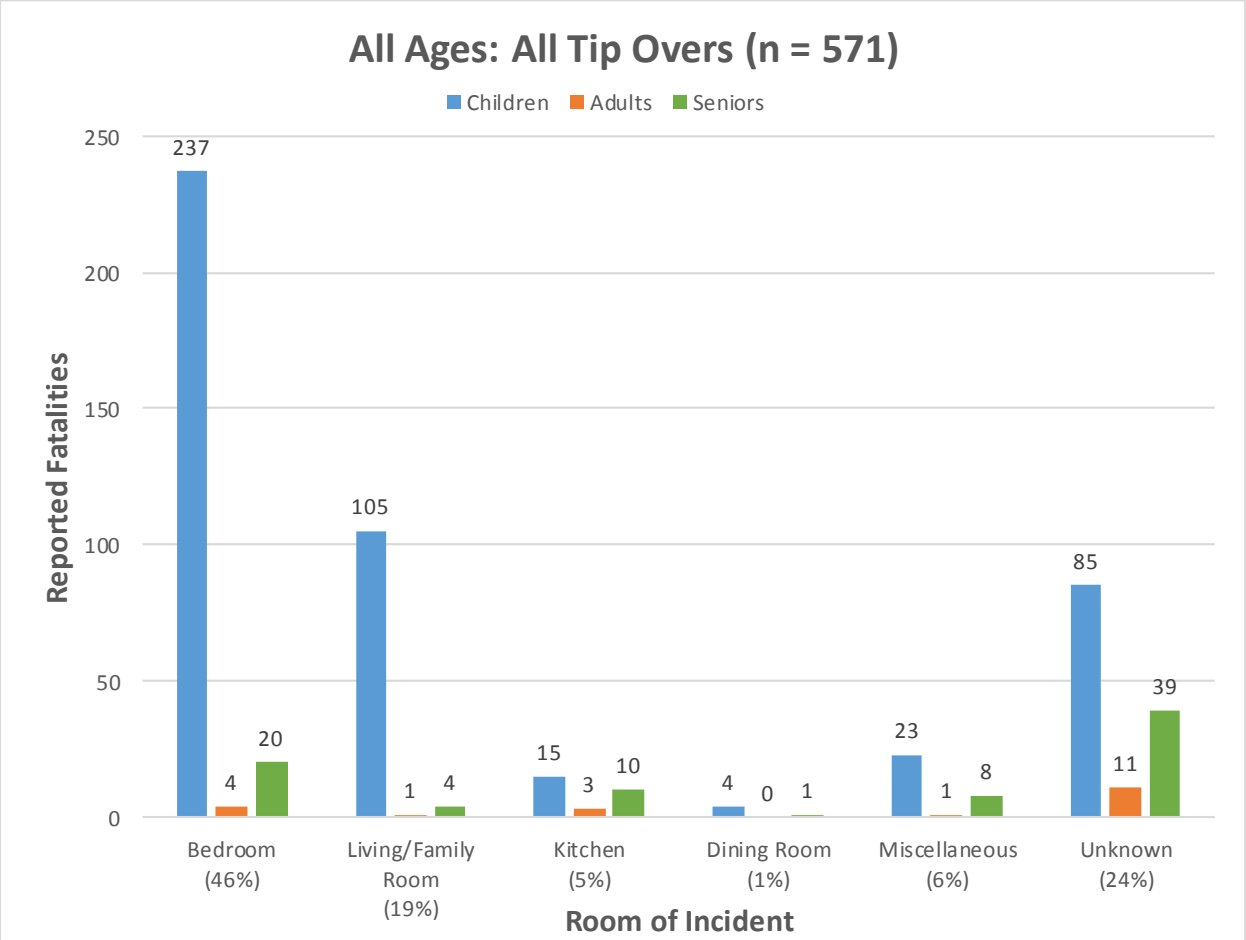


Source: CPSC databases, including NEISS and CPSRMS.

[41] Public locations include nursing homes and assisted living facilities in both the NEISS injury estimates and in the fatality section, which generally only affects the senior age group. Other public locations besides nursing homes include: churches, daycare centers, hotels, schools, and stores.

For the room where the incident occurred, the bedroom had the largest number of fatalities, with 260 deaths (46 percent). This is followed by the living/family room, with 110 deaths (19 percent). There is also a large portion of unknown locations (136 deaths; 24 percent) for the room-of-incident. Of the 469 fatalities involving children, 237 deaths (50 percent) occurred in bedrooms, and 105 deaths (22 percent) happened in living/family rooms. For adults and seniors, there were many unknown room locations (11 fatalities, or 55 percent of adults, and 39 fatalities, or 48 percent of seniors). Figure 7 presents the tip-over fatalities by room of incident.

Figure 7
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
by Room of Incident 2000–2019[42]

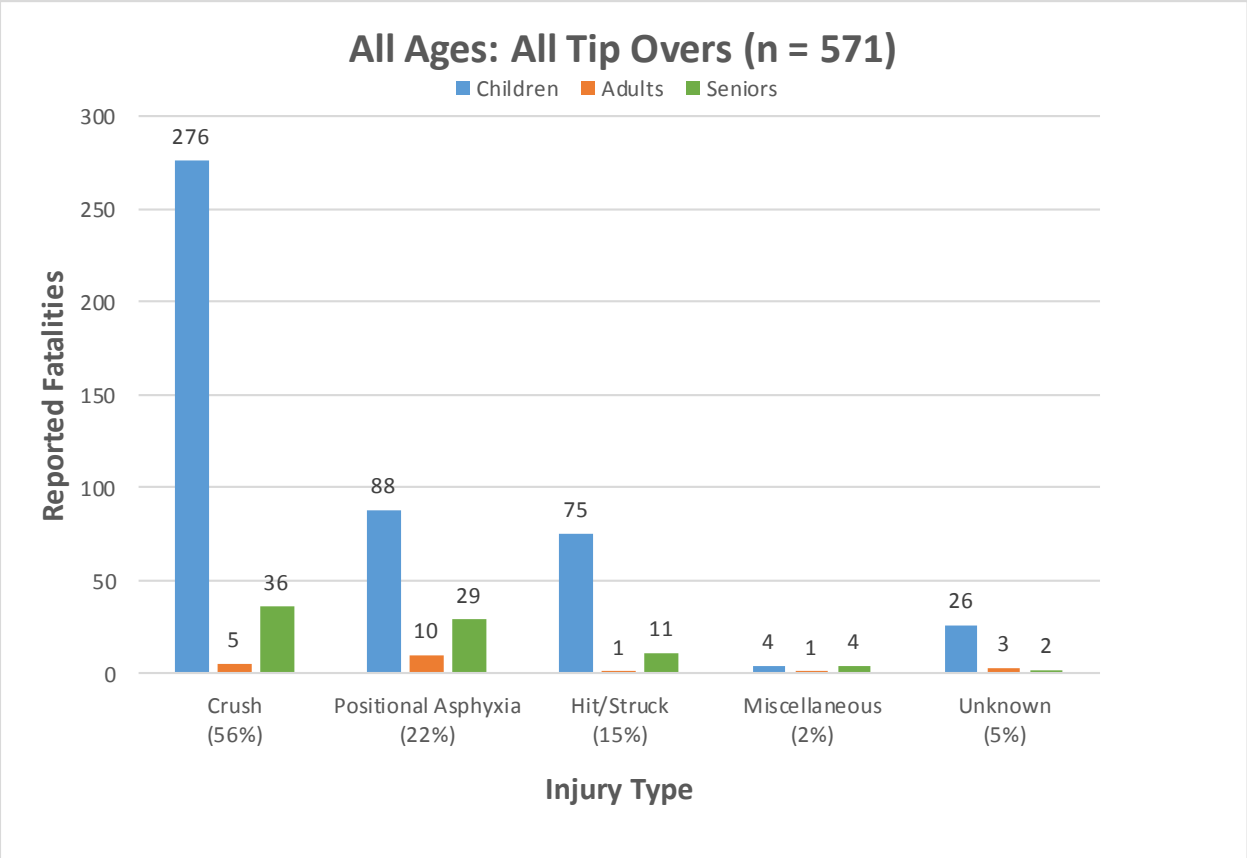


Source: CPSC databases, including NEISS and CPSRMS.

[42] Some of the miscellaneous rooms include: hallways, playrooms, garages, home offices, spare/storage rooms, daycare centers, and most public locations. Nursing home bedrooms, living/family rooms, kitchens, and dining rooms are not in the miscellaneous category.

Figure 8 presents the frequencies of fatalities by manner of death. The majority of the fatalities were due to the victim being crushed[43] by the television, furniture, or appliance (317 deaths; 56 percent). This is followed by fatalities that were the result of positional asphyxia[44] (117 deaths; 20 percent), and fatalities due to being hit/struck[45] (87 deaths; 15 percent) by product(s). Crushing incidents accounted for the largest number of fatalities in children (276 fatalities, or 59 percent of children), and seniors (36 fatalities, or 44 percent of seniors). Positional asphyxia incidents accounted for the most adult deaths (9 fatalities, or 45 percent of adults).

Figure 8
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
by Manner of Death 2000–2019[46]



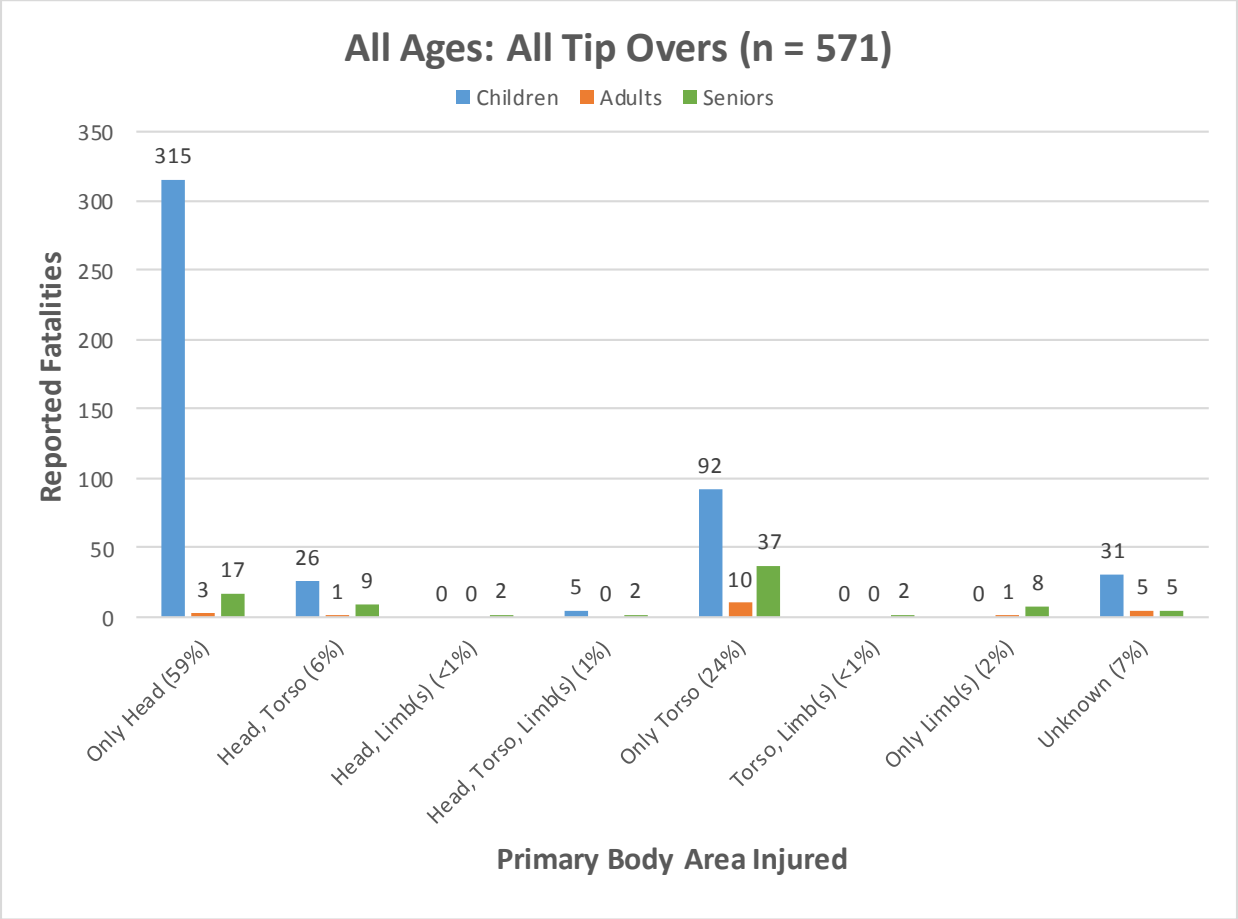
Source: CPSC databases, including NEISS and CPSRMS.

[43] "Crushing" incidents are events in which it was clear that the product(s) fell on the victim and the victim remained under the product(s).
[44] "Positional Asphyxia" is a form of asphyxia that occurs when the body position prevents adequate oxygen supply to the lungs, such as an upper airway obstruction or a limitation in chest wall expansion.
[45] "Hit/Struck" injuries are events in which it was clear the product(s) fell on the victim but did not land or remain on the victim.
[46] Some of the miscellaneous injuries include: lacerations from broken glass tables, health complications resulting from a tip over (heart attack or stroke, or broken bones from falls), burn injuries from tipped ovens, deaths caused by items that were in/on the tipped over furniture, and competing risks of more than one of the other categories equally contributing to the death.

The head was the area of the body impacted most frequently in fatality incidents with 335 deaths caused by injuries to the head-only (59 percent), and 35 fatalities to the head and torso (6 percent). This is followed by the torso-only, with 139 deaths (24 percent). Damage to the head was the predominant injury leading to death for children, compared to adults and seniors, who had more torso injuries leading to death.

Of the 354 television-related tip-over deaths of all ages, including with and without furniture also falling, 298 (84 percent) were due to only head injuries. Figure 9 presents frequencies of fatalities by victim age and body area injured.

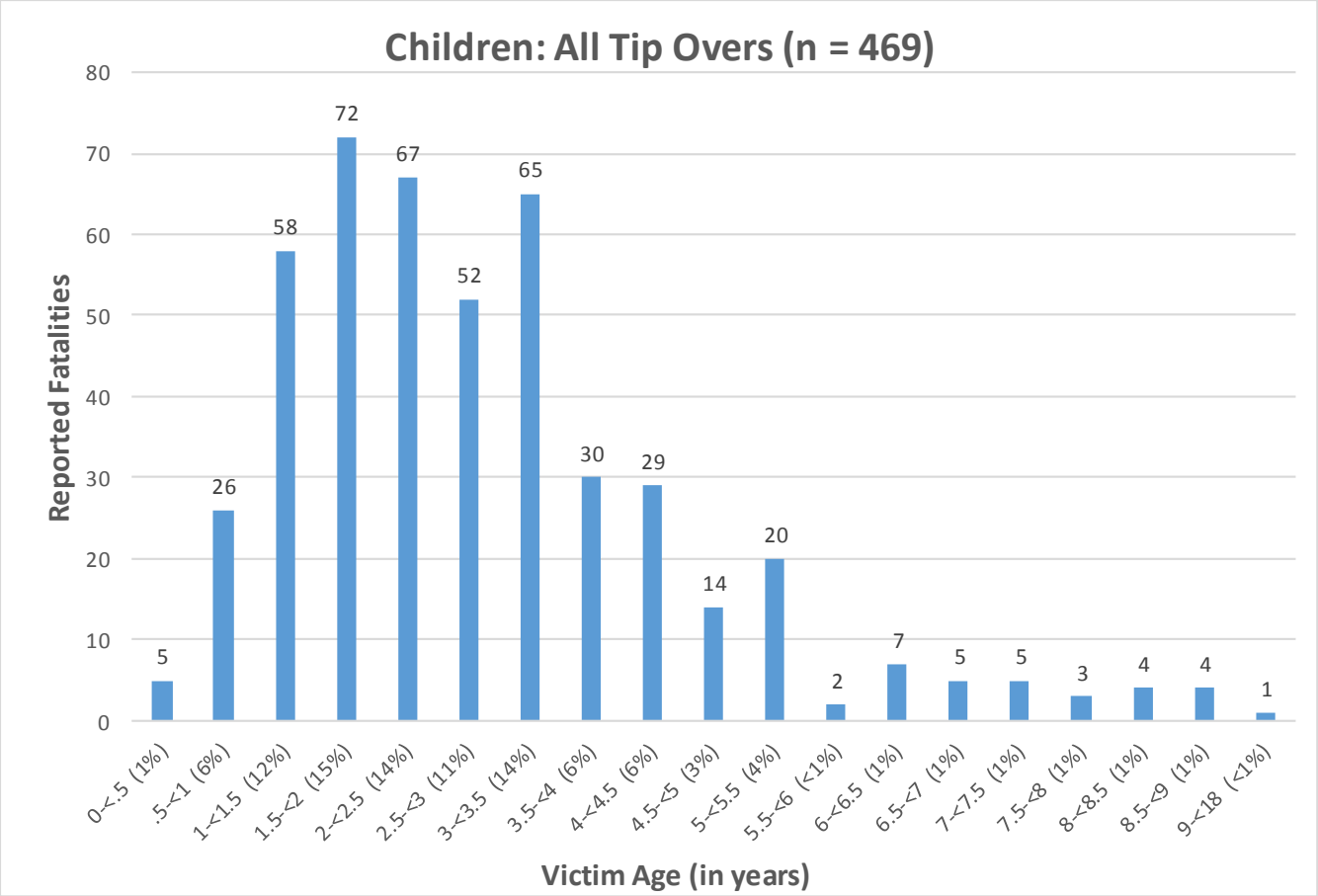
Figure 9
Product Instability or Tip-Over-Related Fatalities Reported to CPSC
by Body Area Injured 2000–2019



Source: CPSC databases, including NEISS and CPSRMS.

Frequencies and percentages by victim age category for the 469 fatalities involving children are presented in Figure 10. While most decedents were between 1 month and 8 years of age, there was one 14-year old decedent who died of complications arising from a tip-over incident that happened when he was 2 years old. Of the 469 fatalities involving children, a majority (314 deaths; 67 percent) were at least 1 year of age and less than 3½ years of age. The age used is the age at the time of death,[47] which may differ somewhat from the age at the time of the incident.

Figure 10
Product Instability or Tip-Over-Related Child Fatalities Reported to CPSC
by Victim Age at Time of Death 2000–2019

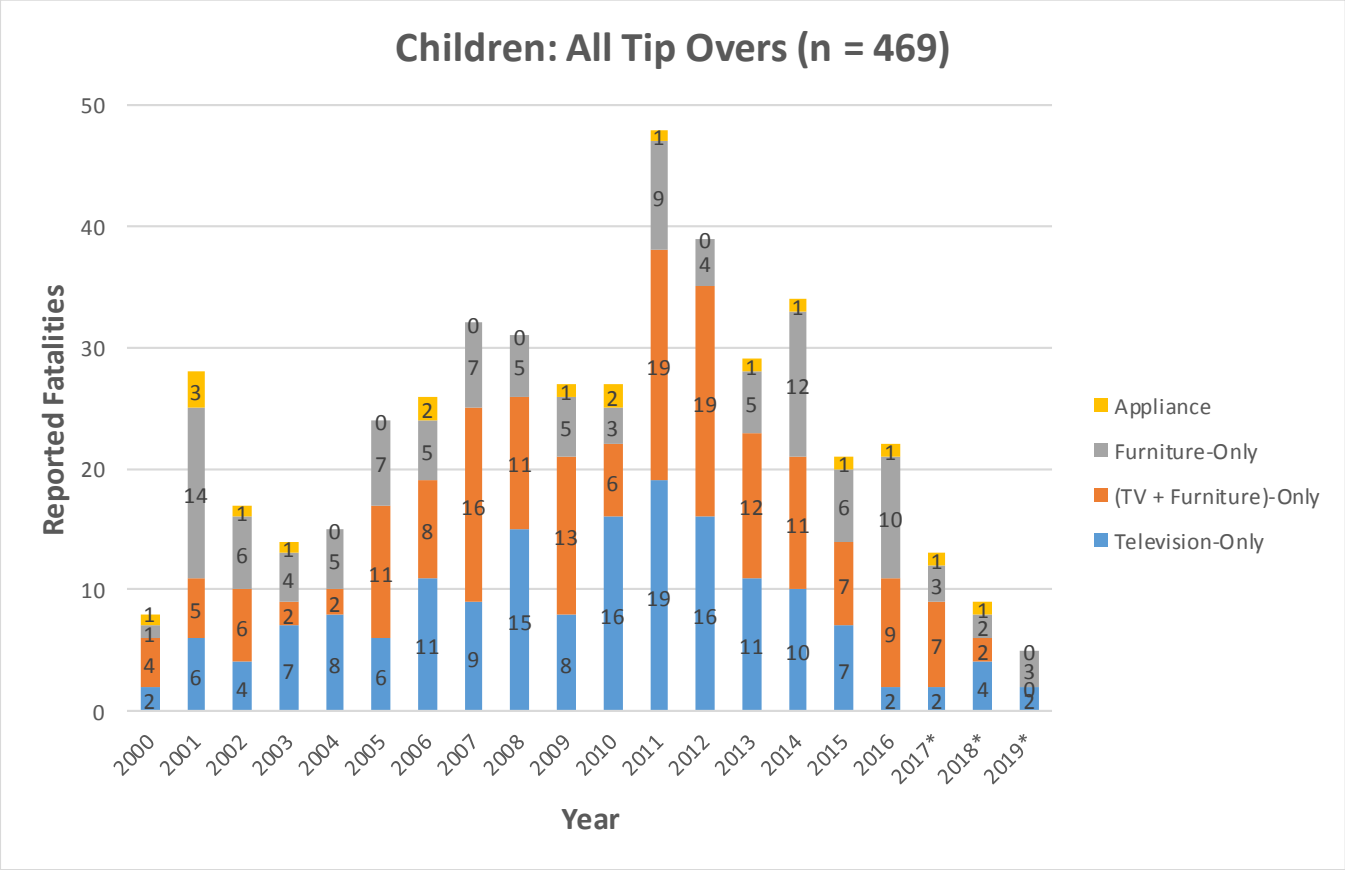


Source: CPSC databases, including NEISS and CPSRMS.

[47] In most cases, the age at the time of death is the same as the age at the time of incident. In a few cases, the ages differed. In some cases, the age at the time of incident was not reported.

Shown in Figure 11 are the 469 tip-over fatalities involving children divided into furniture categories for years 2000 through 2019. It does not appear that the number of reported children tip-over deaths involving furniture has declined in recent years. In the most recent 5 years of complete reporting, from 2012 through 2016, there have been between 13 and 23 furniture-related tip-over fatalities to children each year, of which there have been between 4 and 12 furniture-only tip-over deaths to children in each of those years. Notice that there has been at least 1 child tip-over death involving an appliance reported to CPSC in each year from 2009 through 2018, except the year 2012.

Figure 11
Product Instability or Tip-Over-Related Child Fatalities Reported to CPSC
by Product Category 2000–2019

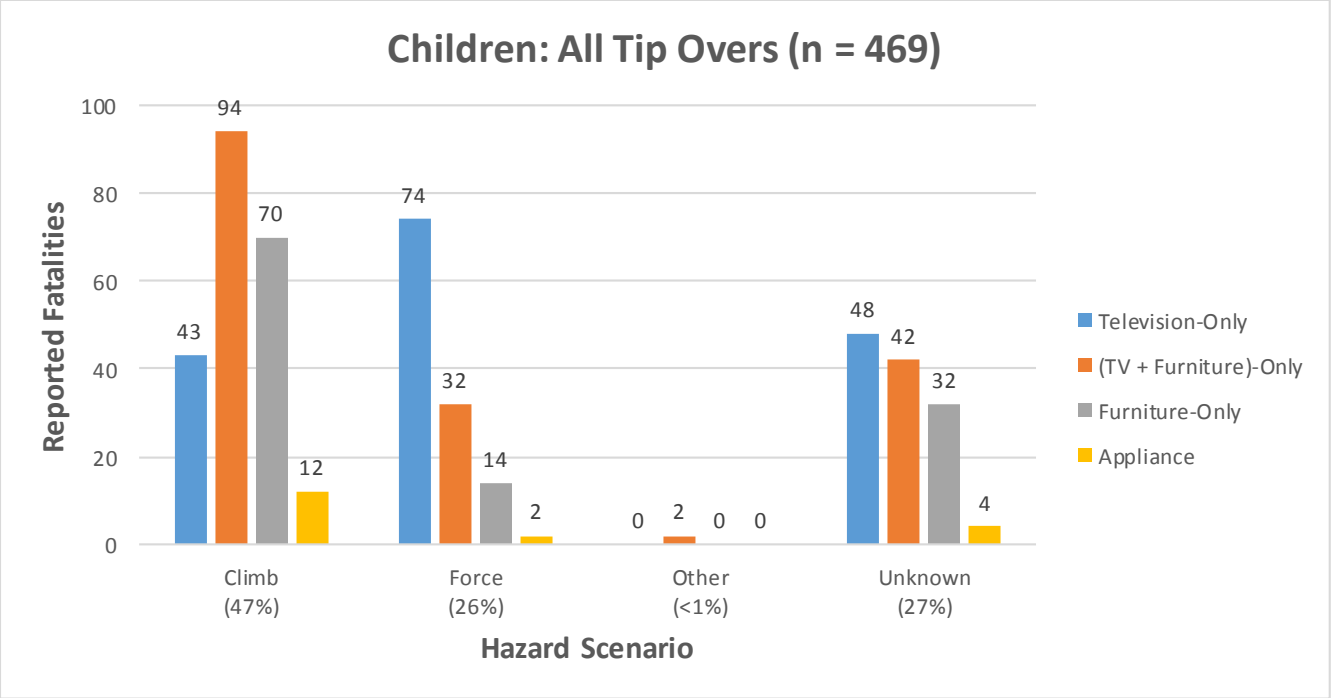


Source: CPSC databases, including NEISS and CPSRMS. Asterisks (*) indicate ongoing reporting.

For children, the hazard scenario of how the child or other children were interacting with the tip-over product immediately before the tip-over incident were classified, where possible.[48] The scenarios for the 102 deaths involving adults and seniors did not have enough details, in most cases, to be classified. Accordingly, Figure 12 presents frequencies of deaths for children.

Of the 469 deaths involving children, 126 (27 percent) had unknown scenarios, which commonly happened when the child was alone in a room at the moment the incident took place, leaving no eyewitness to observe the tip-over incident. In many of the unknown incident scenarios, the victim could have been climbing on or applying force to the television, furniture, or appliance that tipped over. Among the 117 known scenarios involving children and only televisions, in 37 percent (43 out of 117 fatalities) of deaths the victim or another child was climbing on the television, furniture, or appliance, and in 63 percent (74 out of 117 fatalities) of deaths the victim or another child was applying force in some manner other than climbing, such as hitting, pulling, or kicking the tipped over product, or adjusting controls on a television or electronic device connected to the television. Among the 212 known child furniture-related scenarios, in 77 percent (164 out of 212 fatalities) of deaths the victim or another child was climbing on the television or furniture, and in 22 percent (46 out of 212 fatalities) of deaths the victim or another child was applying force in some manner other than climbing. The 2 *other* known scenarios involved furniture with a television resting on top, and the furniture spontaneously fell with no force exerted on the furniture or television prior to the tip-over occurrence. Figure 12 presents the frequencies of children fatalities by hazard scenario.

Figure 12
Product Instability or Tip-Over-Related Child Fatalities Reported to CPSC by Scenario 2000–2019



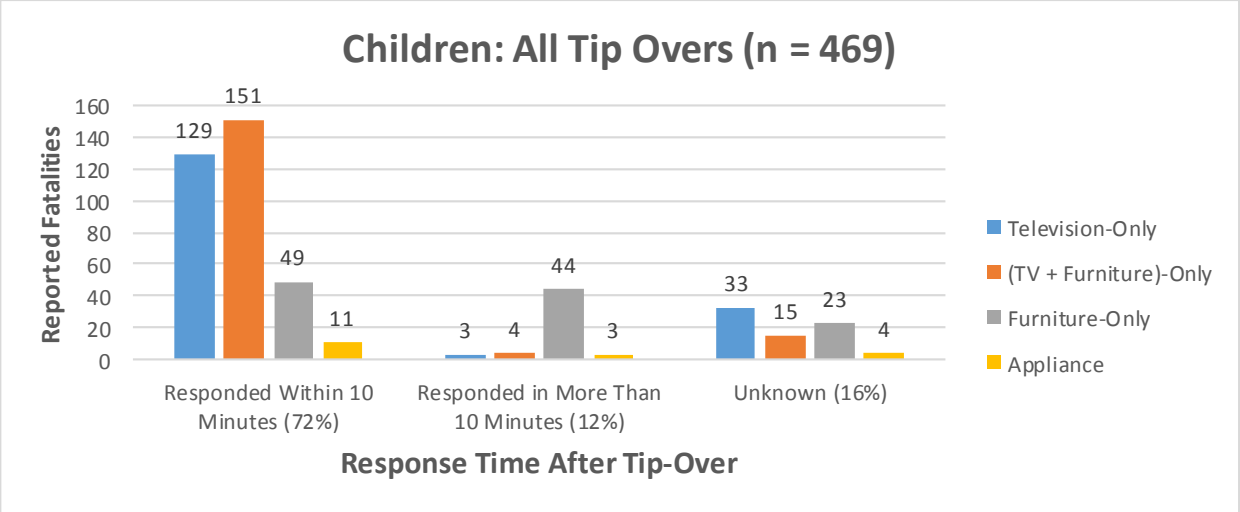
Source: CPSC databases, including NEISS and CPSRMS.

[48] Incident scenarios were re-evaluated for the 2020 report. Updated scenario categories reflect the tip-over scenarios as precisely as possible with the available information.

The response time for a child's death is defined as: from when a tip-over incident occurred to the time that a caregiver found the child, began administering aid, and alerted emergency personnel were classified, where possible. In the incidents where a caregiver *responded within 10 minutes*, a caregiver found the victim and the tipped over television, furniture, or appliance within 10 minutes of the tip over occurring. Some examples include: a caregiver witnessed or was in the room when the incident happened, a sibling or other child witnessed the tip over and immediately alerted a caregiver, a caregiver heard the tip-over incident and immediately investigated where the loud 'bang' was coming from and found the victim, or a caregiver left the child alone for 10 minutes or less before finding the tip-over incident. For incidents with a *delayed response of more than 10 minutes*, the child was left unsupervised for at least 10 minutes before being found along with the tipped over television, furniture, or appliance. Among these incidents, there was no indication that the tip-over incident was heard, or a crash may have been heard but the loud 'bang' was not investigated immediately. In some cases, the victim was left unsupervised for many hours, such as overnight, before being found. For incidents with an *unknown* response time, incident scenarios were described by mostly vague details. It is possible that incidents in the unknown category could have been responded to immediately or any other lapse of time after a tip over occurred.

Accordingly, Figure 13 presents the frequencies of child fatalities by response time after a tip over occurred. Among the known response times involving television-related child fatalities (including only a television, or a television and furniture), a caregiver responded within 10 minutes in 98 percent (280 out of 287 fatalities) of the fatalities, as compared to 53 percent (49 out of 93 fatalities) involving furniture-only tip-overs. There was an unknown response time after a tip over in 14 percent (48 out of 335 fatalities) of television-related fatalities and 20 percent (23 out of 116 fatalities) of furniture-only deaths.

Figure 13
Product Instability or Tip-Over-Related Child Fatalities Reported to CPSC
by Response Time After Tip-Over 2000–2019[49]

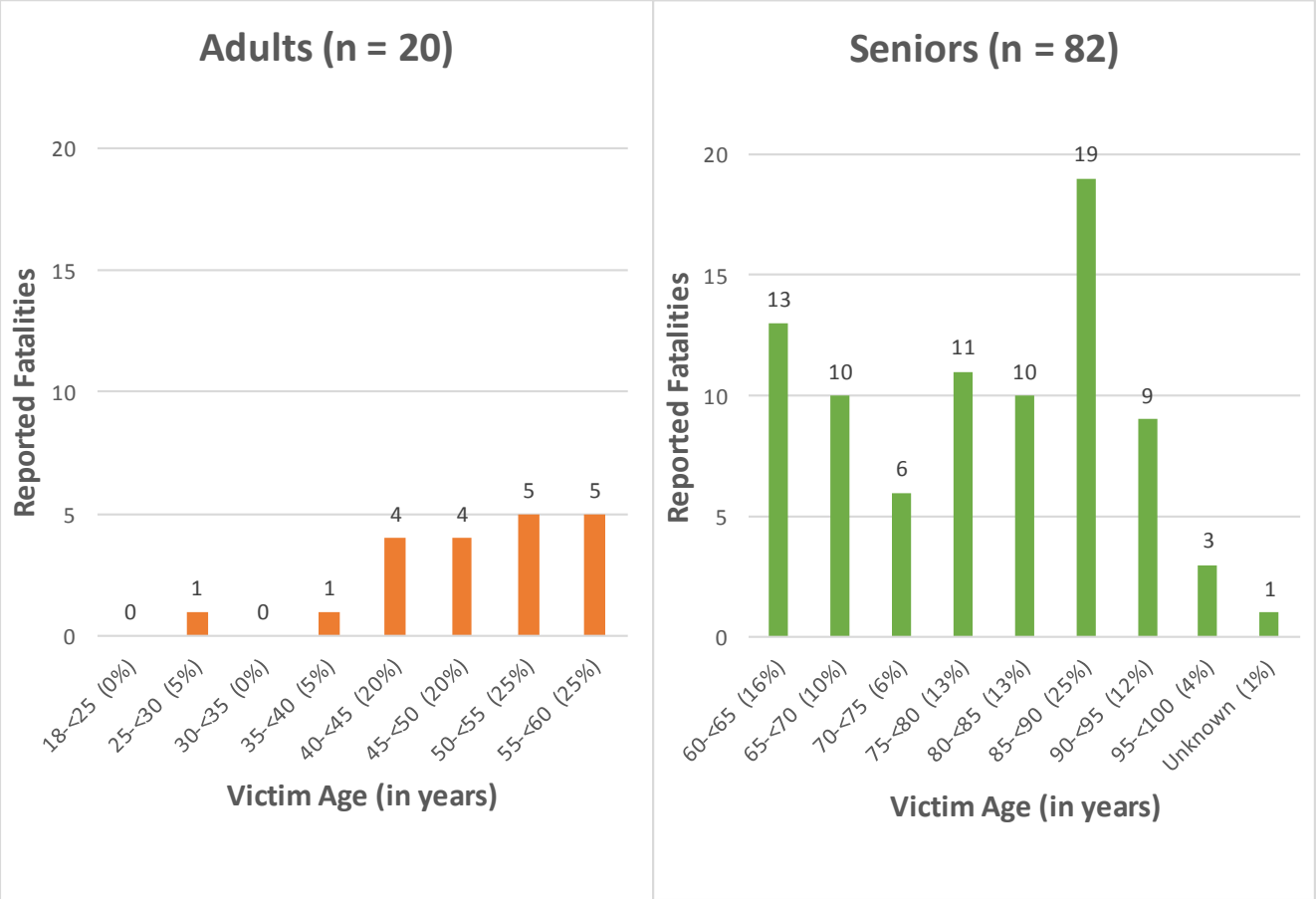


Source: CPSC databases, including NEISS and CPSRMS.

[49] Precise time measurements are typically unavailable within the incident description (*i.e.*, "I left for a few minutes", or "He was gone for five to ten minutes"); data are categorized based on narrative response time estimates.

Figure 14 presents the distribution of the tip-over fatalities for adults (18 to 59 years of age) and seniors (60 years and older) by age ranges. Of the senior deaths, 52 fatalities (63 percent) happened to seniors who were 75 years of age or older, and 31 senior fatalities (38 percent) happened to seniors who were 85 years old or older. Of the adults, 18 out of the 20 tip-over fatalities occurred to adults ages 42 to 59 years old. Not shown in Figure 14, there were either 1 or 2 adult fatalities in each year between 2010 and 2018, except for 2013 and 2015 where there were 0 adult deaths.

Figure 14
Product Instability or Tip-Over-Related Adult and Senior Fatalities Reported to CPSC by Victim Age at Time of Death 2000–2019[50]

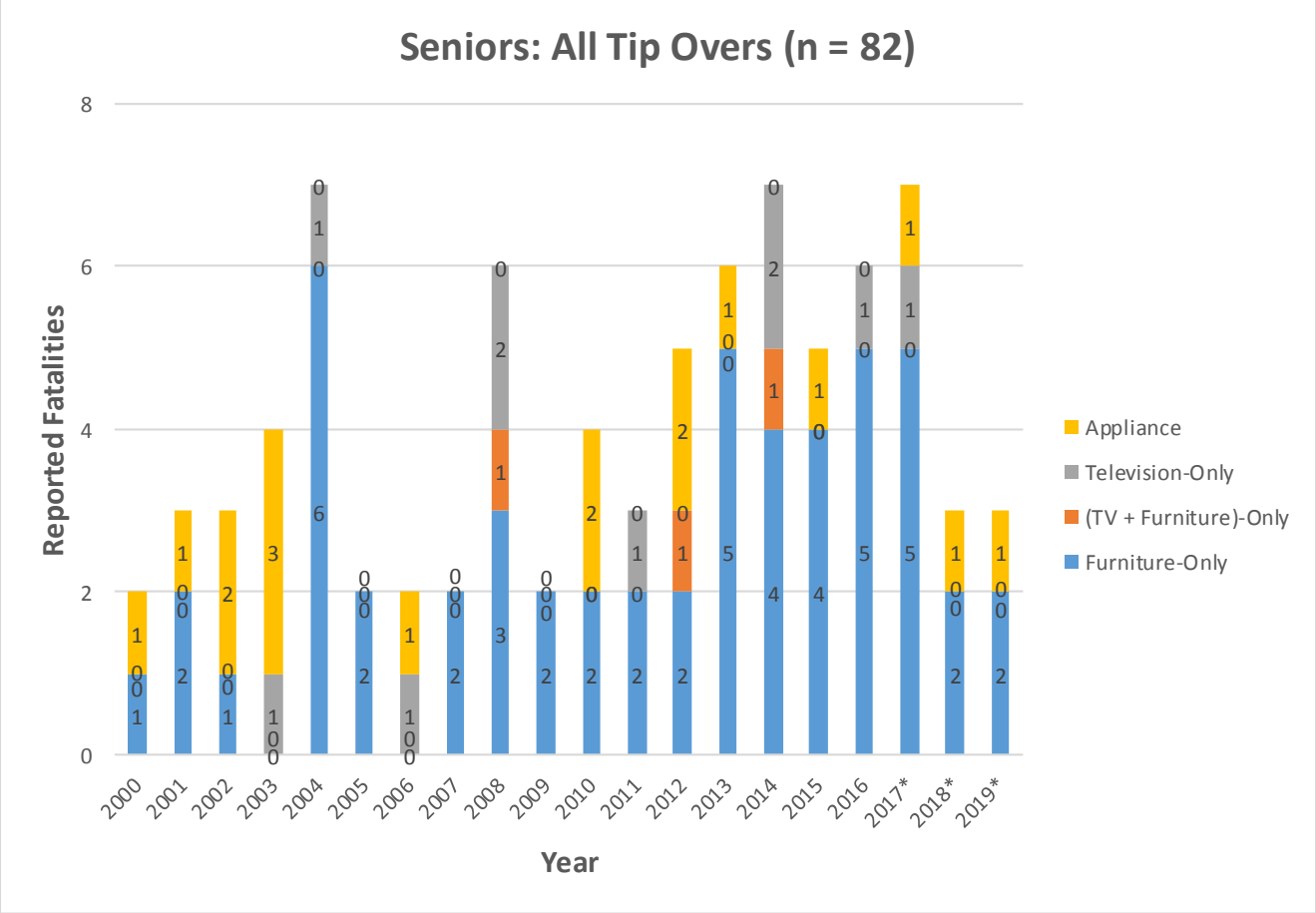


Source: CPSC databases, including NEISS and CPSRMS.

[50] One decedent, described as an "elderly" woman, has been classified as a senior with an unknown age.

Figure 15 presents the 82 senior tip-over fatalities by furniture categories for years 2000 through 2019. There were between 2 and 7 senior fatalities in each of these 20 years. In each year from 2012 to 2017, there were between 5 and 7 senior deaths reported, mostly due to furniture-only fatalities.

Figure 15
Product Instability or Tip-Over-Related Senior Fatalities Reported to CPSC
by Product Category 2000–2019



Source: CPSC databases, including NEISS and CPSRMS. Asterisks (*) indicate ongoing reporting.

Appendix A

Methodology for Selecting Product Instability or Tip-Over Injuries and Fatalities Associated with Televisions, Furniture, and Appliances

A multidisciplinary team of CPSC staff met to discuss terminology, the types of products of interest, and types of product-associated instability or tip-over incidents that are to be considered in-scope. For this report, the focus is on heavy objects that tip over and fall on an individual usually due to some type of interaction, such as climbing or exerting a force, on the object while it is in one of its positions of normal use. This interaction with the product results in the center of gravity of the product changing. When the product falls on an individual, the injuries are typically crushing or compressing in nature. Instability is defined differently from tip-over incidents for this report. For instability, the product falls due to some issue with the product's center of gravity changing (*i.e.*, with or without the interaction associated with tip-overs). Product instability can be triggered by other causes, including simply having multiple drawers open in a dresser or cabinet. The instability and tip-over definitions helped to set the criteria for the types of scenarios and products that have been included in the analysis.

Staff determined that televisions, furniture, and appliances listed in Appendix B have the greatest risk of tipping over and potentially causing serious or fatal injuries. In examining the types of products to include, staff considered the product's potential to fall, and the product's purpose, size, location, and weight. The additional criterion of the potential interaction of the individual with the product was also important. Generally, the focus is on furniture that: is larger or heavier and has the potential to cause great injury or death; stands more upright in nature; has a normal resting location; is rarely moved from that normal resting location during day to day activity and; is not usually meant to be interacted with too much excessive force. Products intended to be sat on or laid upon, such as chairs, couches, and beds, were excluded, due to the emphasis on products that are not intended to be frequently moved or interacted with excessive force.

A television or an appliance falling in combination with the furniture (that it is resting in or on) falling is counted only in the furniture category, when incidents are divided into television, furniture, or appliance categories in this annual report. Generally, if furniture falls while either a television or an appliance is resting in or on top of the furniture, then the television or appliance is also going to fall. Using this logic, it makes sense to categorize these incidents by putting them all into the furniture category, even though many times the injury or death scenario is caused by a person, usually a child, being drawn to interact with or actually interacting with a television or appliance that is sitting atop free-standing furniture. In many instances, the television or appliance that falls along with furniture is likely the primary cause of more severe injuries or fatalities, rather than the furniture that fell as well.

The potential product codes were determined from furniture products associated with televisions, furniture, and appliances that meet the criteria described above and in Appendix B. Table 11 identifies the product codes used to extract the instability or tip-over data for televisions, furniture, and appliances.

Table 11
Potential Instability or Tip-Over Television, Furniture, and Appliance Product Codes[51]

Product Category	NEISS Product Code	Description
Television	557	Computers (equipment and electronic games)
Television	572	Televisions
Furniture	519	Television tables or stands
Furniture	604	Desks, chests, bureaus, or buffets
Furniture	693	Footlockers
Furniture	709	Safes
Furniture	1260	Billiards or pool (activity, apparel or equipment)
Furniture	1269	Table Tennis (activity, apparel or equipment)
Furniture	1684	Carts, other, or not specified
Furniture	1726	Lockers
Furniture	4013	Other furniture
Furniture	4014	Furniture, not specified
Furniture	4056	Cabinets, racks, room dividers, and shelves
Furniture	4057	Tables (excl. baby changing tables, billiard tables, or pool tables)
Furniture	4065	Clocks, electric or battery operated
Furniture	4067	Clocks, not electric or battery operated or not specified
Appliance	101	Washing machines without wringers or other dryers
Appliance	102	Wringer washing machines
Appliance	106	Electric clothes dryers without washers
Appliance	107	Gas clothes dryers without washers
Appliance	126	Washing machines, not specified
Appliance	127	Clothes dryers, not specified
Appliance	135	Washer-Dryer combinations (within one frame)
Appliance	140	Washing machines, other or not specified
Appliance	259	Electric ranges (with ovens)
Appliance	260	Gas ranges (with ovens)
Appliance	263	Freezers (separate from refrigerators)
Appliance	264	Microwave ovens
Appliance	266	Ovens, not specified
Appliance	267	Other ranges (with ovens)
Appliance	273	Ranges, not specified
Appliance	276	Refrigerators
Appliance	278	Electric ranges or ovens (excl. counter-top ovens)
Appliance	279	Gas ranges or ovens
Appliance	280	Other ranges or ovens
Appliance	281	Ranges or ovens, not specified
Appliance	482	Appliances, other and not specified
Appliance	1821	Clotheslines or clothes drying racks (excluding poles)
Appliance	3233	Other grills or stoves

[51] The source for product codes and descriptions is the NEISS Coding Manual (updated January 2020).

After staff established the set of product codes, the next step was to determine the types of scenarios to look for in the incident narratives. Narrative key word searches were not used when extracting a potential set of data, because the narrative field descriptions have many possible word choices, misspellings, and sentence structures. Additionally, narratives from NEISS, medical examiner reports, and death certificates are often very terse and provide only basic information. Consequently, the NEISS product codes listed in Table 11 and the incident date range were the criteria used to extract the data sets; then, the narratives were examined, using very detailed heuristics, to determine if an incident met the instability or tip-over definition(s). In Appendix B, additional details describe the products and conventions that are used to determine in-scope cases, and some examples are also given to explain what products and which instability or tip-over scenarios are considered in-scope.

NEISS data are based on a nationally representative probability sample consisting of patient visits to about 100 hospitals in the United States and its territories.[52] The total number of hospital emergency department visits nationwide in the United States are estimated from the probability sample, as well as derivation of estimates for age groups, products, injury types, disposition, and body parts for particular years, or combinations of these criteria, among others. CPSC reports publish NEISS estimates provided the sample count is greater than 20, the national estimate is greater than 1,200, and the coefficient of variation (CV) is less than 0.33. However, as long as a 3-year total estimate meets the above criteria, even if the annual average estimate fails, then those estimates are presented in the NEISS section of this report. This means an estimated annual average of less than 400 injuries is not presented in this report. Because the hospital reports in NEISS are unique, there are no duplicates.

The most recent injury estimates were based on 2019 NEISS data extracted on May 6, 2020; this was merged with data from last year's report for the years 2010 through 2018, to cover the 2010 through 2019 reporting period. After careful consideration of scope criteria (described in Appendix B), some incidents in the previous annual report were re-evaluated to ensure that the criteria for inclusion were applied consistently. The changes that followed are listed below:

- Fourteen incidents from the years 2010 through 2018 were omitted and one incident was added.
- Eighteen incidents were moved from the "television-only" category to the "television and furniture" category.
- Five incidents were moved from the "furniture-only" category to the "television and furniture" category.
- Two incidents were moved from the "television and furniture" category to the "television-only" category.
- One incident was moved from the "television and chest, bureau, and dresser" category to the "television and table" category.

Some product instability or tip-over-related injury victims survive the initial impact, but succumb to their injuries while being treated in an emergency room. In the NEISS data from

[52] NEISS data can be accessed from the CPSC webpage under the "Access NEISS" link at: https://www.cpsc.gov/Research--Statistics/NEISS-Injury-Data.

2010 through 2019, there are 12 such injuries which resulted in death after the victim was sent to and treated in the emergency room. These 12 deaths have been included in the calculation of the national injury estimates for 2010 through 2019, and also in the fatality analysis presented in this report. There are another 9 NEISS deaths that occurred between 2000 and 2009, which appear in the fatality section.

Fatality data were extracted on July 1, 2020, from NEISS and CPSRMS (Consumer Product Safety Risk Management System) for instability or tip-over fatalities involving the television, furniture, and appliance codes mentioned above in Table 11, covering deaths occurring in the years 2000 through 2019. Data collected in 2020 were merged with the data used in the last annual report (extracted June 1, 2019). It should be noted that, for a given year, incidents are received on an ongoing basis, and there is commonly a lag of about 2 years between when many fatalities occur and when they are first reported to CPSC. Additionally, it is not uncommon that multiple reports about a single fatality are received, therefore source documents are carefully checked to eliminate duplicate incident reports. As fatal incidents are notable events in the community where they occur, often there are multiple news reports, a medical examiner's report, a death certificate, an in-depth investigation initiated by CPSC staff, and less frequently, a NEISS report. Reports come from various types of sources, including newspaper clippings, consumer complaints, and reports from other government agencies, such as medical examiners/coroners. Accordingly, CPSRMS data is anecdotal and represents at least a minimum for all fatalities that have occurred nationwide. Once the fatality set is established, the incidents are examined to code additional scenario characteristics, such as victim age, furniture type, incident location, injury type, and response time. Public locations include nursing homes and assisted living facilities in both the NEISS injury estimates and in the fatality section, which generally only affects the senior age group.

CPSC has received new reports of tip-over fatalities that occurred between 2000 and 2018, and has received additional information on some of the tip-over fatalities that appeared in past reports. This has necessitated re-evaluation of previous fatality categorizations for better consistency of the data. Following the re-evaluation, some changes were made to the fatality statistics presented in the 2019 report. These changes are listed below:

- One death was omitted and one death was added.
- Eleven children deaths were moved from the "television-only" category to the "television and furniture" category.
- Ten deaths were moved from the "miscellaneous" injury type category to the "positional asphyxia" category.
- Two children deaths had the age at the time of death changed by 6 months and 1 year, respectively.
- One death changed which primary body part was injured, and one report changed the room location of the incident.

Fatalities in this report are reported as counts from CPSC data, and injury estimates are rounded to the nearest hundred. Injury estimate category percentages were based on the category-weighted estimates before rounding; fatality category percentages were based on the category counts observed.

Appendix B

Conventions for Determining In-Scope Incidents

NEISS incidents often have a terse narrative; accordingly, staff used a more stringent set of rules when examining this NEISS set of potential instability or tip-over incidents compared to fatalities extracted from the other CPSC epidemiological database (CPSRMS). This appendix lists the types of products and incident scenarios included in the NEISS and fatality instability or tip-over incidents associated with televisions, furniture, and appliances. In an effort to improve the identification of in-scope incidents, some of the coding determinations were revised from the last data extraction, and a handful of incidents from past annual tip-over reports were omitted. During the preparation of the briefing package for the proposed rulemaking on chests, bureaus, and dressers (CBDs) in FY2020, a comprehensive review of NEISS and fatality incidents from past reports involving only televisions and incidents involving CBDs was done. It necessitated the reclassifications of some incidents from the 2019 annual report. This report is using the same reclassifications to continue to maintain the consistency of data, however some reclassifications of injuries may not be apparent due to rounding.

Unstable items <u>included</u> in the counts:

1. Furniture:
    a. Armoire
    b. Bookcase
    c. Bureau
    d. Cabinet (Exclude: kitchen and medicine)
    e. Cart (Include only: microwave and TV)
    f. Chest (Exclude: jewelry and falling off shelf)
    g. Cupboard
    h. Desk (Exclude: at schools)
    i. Display case (Include only: in-home locations)
    j. Dresser
    k. Clocks, long case (Exclude: all other clocks)
    l. Game Tables (Include only: "game table", ping pong, and pool)
    m. Locker (Include only: in-home locations)
    n. Pedestal
    o. Plant stand
    p. Rack (Include only: coat rack)
    q. Room divider
    r. Safe (Exclude: falling off shelf)
    s. Safety strap (Include: tethering in-scope items to a wall) (Exclude: mounting items on a wall)
    t. Shelf (Exclude: in closets and in stores)
    u. Stand (Include only: microwave, night, and TV)
    v. Table (Include: picnic and folding tables) (Exclude: TV tray tables)
    w. Vanity
    x. Wall unit
    y. Wardrobe

2. Appliances:
    a. Dryer
    b. Freezer
    c. Microwave
    d. Refrigerator (Include: mini fridge)
    e. Stove/Oven
    f. Washing machine

Note: If the type of furniture or appliance is not specified in the narrative, then the incident is not included. Examples include the item that caused the injury being described by only the terms "furniture" or "appliance" in the narrative.

3. Electronics:
    a. Computer screen/monitor (Exclude: "computer" and laptop)
    b. Television

Note: All other electronics are not included in the count.

4. Locations:
    a. Store (Exclude: cart, display case, rack, and shelf)
    b. School (Exclude: desk and locker)
    c. Other public locations (Exclude: locker)

5. Sample scenarios that involved an injury:
    a. "tried to catch"
        Ex: The patient tried to catch a falling TV and injured his/her foot.
        Ex: While at school, the patient tried to stop a room divider from falling over and injured his/her head.
    b. "found under" (Exclude: desk and table)
        Ex: Mom heard a loud crash, and she found her son lying under a dresser.
    c. "pulled on self"
        Ex: The infant pulled a TV down onto herself.
        Ex: Grandma started to fall when she pulled a dresser onto herself in order to try to keep her balance.

Note: These incident types are counted when a narrative implies an instability or tip-over incident occurred and is the reason for the hospital visit.

Unstable items not included in the counts:

1. Falls of wall-mounted televisions/appliances are excluded. Furniture that is tethered or secured to the wall for the purpose of preventing a tip-over incident is included.

2. Ambiguity in the narrative:
   a. What is the item that fell?
      Ex: The patient was sitting next to an unstable table while leaning back in her chair when it fell over and landed on her.
      (It is unclear if 'it' refers to the table or the chair.)
   b. Which event caused the patient to seek treatment at the hospital?
      Ex: The patient has a skull fracture. Either the patient bumped his head on a cabinet today, or yesterday a TV fell off a dresser onto his head.
      (It is unclear for which incident the patient is being treated at the hospital.)

3. Action verbs alone that do not describe instability, such as assemble, brake, collapse, drop, fix, hit, struck, and move.

Note: The incident is included if a child 9 years old or younger "dropped" or attempted to "move" an in-scope television, furniture, or appliance item and it tipped over, causing the child to seek hospital treatment.

4. Components of furniture such as a door, drawer, handle, knob, panel, table leaf, and table top.

5. Furniture intended to be sat upon or laid on, such as a bed, bench, bleacher, chair, couch, futon, glider, love seat, recliner, and seat.

6. Appliance (examples): air conditioner, blender, boiler, broiler, crock pot, fan, food processor, fryer, heater (electric or gas), rice cooker, stove hood/fan, toaster, toaster oven, trash compactor, and vacuum.

7. Electronics (examples): cable box, DVD/VCR player, video game system, radio, and speaker.

8. Storage furniture (examples): barrel, box, cage, cans, case, container, crate, hutch, tank, and trunk.

9. Other furniture (examples): all baby furniture, all power tools, aquarium, book, candle, candleholder, figurine, fireplace, mantel, mirror, newspaper box, pan, podium, pot, railing, skillet, slot machine, statue, toolbox, TV tray table, vase, and yard compactor.