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Product Instability or Tip-Over Injuries and Fatalities Associated with Televisions, Furniture, and Appliances: 2014 Report

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

Executive Summary

This report contains information on injuries and fatalities associated with television, furniture, and appliance product instability or tip-over. An estimate of emergency department-treated instability or tip-over injuries is presented. This is followed by the counts of reported fatalities. The death incidents are from 2000 through 2013[1], and the injury estimates are for 2011 through 2013. Appendix A gives the methodology. The statistics presented in this report are not comparable to statistics released previously; this is 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 38,000 emergency department-treated injuries (2011–2013) and the 430 reported fatalities occurring between 2000 and 2013 associated with tip-overs, staff noted the following:

- Victims
  - Estimated emergency department-treated injuries:
    - 21,700 (57%) involved children, under age 18 years;
    - 13,200 (35%) involved adults, ages 18 through 59 years; and
    - 3,100 (8%) involved seniors, ages 60 years and older.
  - Reported fatalities:
    - 360 (84%) involved children, victim ages 1 month to 10 years;
    - 19 (4%) involved adults, victim ages 28 years to 59 years; and
    - 51 (12%) involved seniors, victims aged 60 years or older.
- What fell?
  - Estimated emergency department-treated injuries[2]:
    - 21,100 (56%) involved only furniture falling;
    - 15,400 (41%) involved televisions (or TV + furniture) falling; and
    - 1,500 (4%) involved appliances falling.
  - Reported fatalities:
    - 279 (65%) involved televisions falling (37% only TV, 27% TV + furniture);
      - Largest category after TV only was TV + chest, bureau, or dresser.
    - 120 (28%) involved only furniture falling;
      - Largest category was chest, bureau, or dresser.
    - 31 (7%) involved appliances falling.
      - Largest category was stove/oven.
- Where?
  - Estimated emergency department-treated injuries:
    - 66% in residential settings, 4% in public settings, and 30% in locations not specified.
  - Reported fatalities:
    - 81% in residential settings, 4% in public settings, and 14% in locations not specified.
    - 42% in bedrooms and 21% in living/family rooms.

[1] Fatality counts should be considered incomplete for years 2011-2013 due to a time lapse in reporting to CPSC.
[2] Percentages do not sum to 100, due to rounding.

- Injury Characterization (main injury type and body area affected)
    - Estimated emergency department-treated injuries:
        - 38% contusions/abrasions, 15% internal organ injuries, 14% lacerations, and 14% fractures.
        - Head (37%); legs, feet, and toes (34%); and arms, hands, and fingers (18%).
    - Reported fatalities:
        - 60% were crushed and remained under product(s); 10% were hit/struck by product(s) but not crushed under product(s); and 18% were due to positional asphyxia.
        - Head (60% head only; 4% head and torso) and torso (23%).

In FY2014, the Commission approved a Mid-Year Funding Request to establish a $400,000 public education and outreach campaign related to the prevention of death and injuries from furniture and television tip-overs. CPSC staff is planning to implement this program in FY2015.

Emergency Department-Treated Injuries

An estimated 38,000 people were treated annually in U.S. hospital emergency departments for product instability or tip-over injuries related to televisions, furniture, and appliances from 2011 through 2013. The furniture category had the largest number of instability or tip-over related injuries among the three product categories, with a national annual average estimate of 21,100 injuries (56 percent). This was followed by the national instability or tip-over injury estimate of 15,400 injuries (41 percent) associated with televisions. A television falling in combination with furniture falling is counted only in the television category. The appliance category had the smallest estimate of the three categories, with 1,500 instability or tip-over related injuries (4 percent).[3] An appliance estimate for 2009 is not given because there was not enough data to support a reliable statistical estimate. Estimates are shown in Table 1.

For the estimates in Table 1 for 2006 through 2013, there is no statistically significant trend detected for the total television, furniture, and appliance estimates. However, the overall estimates of all tip-overs for 2013 were significantly lower than for any year after 2007.[4] The television estimate for 2013 was significantly lower than for any other year (beginning in 2006, the first year included).

Table 1
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Year, 2006–2013

Year[5]	Estimated Emergency Department-Treated Injuries[6]			
	Televisions	Only Furniture	Appliances	Television, Furniture, and Appliance Total
Annual Avg (2011–2013)	15,400	21,100	1,500	38,000
Avg 95% Confidence Interval (CI)	(13,100, 17,800)	(18,200, 23,900)	(1,000, 2,000)	(33,000, 43,000)
2013	12,800	20,300	–	34,100
2012	16,500	22,000	1,200	39,800
2011	17,000	20,800	2,200	40,000
2010	20,000	23,400	1,700	45,100
2009	19,700	23,400	–	44,100
2008	17,800	20,300	2,300	40,400
2007	16,400	20,100	1,200	37,700
2006	15,900	21,600	1,400	38,900

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

[3] Percentages do not sum to 100, due to rounding.
[4] The threshold for determining statistical significance is a probability value (p-value) less than 0.05.
[5] The 2006−2011 estimates reported here differ from estimates reported previously because these revised estimates reflect the updated criteria described in Appendix B and some cases reclassified based on further review.
[6] The estimates are rounded to the nearest hundred. Estimates may not sum to total, due to rounding, and dashes indicate that data were insufficient to support reliable statistical estimates. The Coefficients of Variation (CVs) for the given estimates ranged from 0.0564 to 0.2748.

Table 2 records the estimated annual average number of emergency department-treated television, furniture, and appliance injuries by victim age category. Each estimate is further refined into estimates by product categories. Notice that children younger than 10 years of age, is the age category (50 percent) associated with the largest number of product instability or tip-over injuries for televisions, furniture, and appliances total. This estimate can be further refined into television (26 percent) and furniture (24 percent) estimates.

Table 2
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Victim Age Category, 2011–2013

Victim Age Category (years)	Estimated Emergency Department-Treated Injuries[7] (Percent of Estimate) (Television, Furniture, and Appliance Total 38,000)	
	Product Category[8]	Estimate
<1 through 9	TV, Furniture, & Appliance Total TV Only Furniture	18,900 (50%) 9,800 (26%) 9,100 (24%)
10 through 19	TV, Furniture, & Appliance Total TV Only Furniture	3,300 (9%) 1,500 (4%) 1,800 (5%)
20 through 29	TV, Furniture, & Appliance Total TV Only Furniture	4,200 (11%) 1,200 (3%) 2,600 (7%)
30 through 39	TV, Furniture, & Appliance Total TV Only Furniture	3,100 (8%) – 2,000 (5%)
40 through 49	TV, Furniture, & Appliance Total TV Only Furniture	3,000 (8%) – 2,000 (5%)
50 through 59	TV, Furniture, & Appliance Total TV Only Furniture	2,300 (6%) – 1,600 (4%)
60 through 69	TV, Furniture, & Appliance Total TV Only Furniture	1,600 (4%) – –
≥ 70	TV, Furniture, & Appliance Total TV Only Furniture	1,500 (4%) – –

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

[7] The estimates are rounded to the nearest hundred, and dashes indicate that data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0846 to 0.1915.
[8] Product estimates may not add up to total, due to rounding and the appliance category not being represented. The appliance estimates are not given because there was not enough data to support reliable statistical estimates.

For the remainder of the estimated injuries' section of this report, the age categories of child (younger than 18 years), adult (18 years to younger than 60 years), and senior (60 years or older) will be used when discussing product instability or tip-over related injuries for televisions, furniture, and appliances. Children account for 57 percent of the television, furniture, and appliance instability or tip-over emergency department-treated injury estimate. Adults and seniors account for 35 percent and 8 percent, respectively. A statistical difference between the numbers of total tip-over injuries by age category is suggested by the data because the confidence intervals for each victim age category do not overlap.

The 38,000 injury estimate can be further refined by product categories. Table 3 presents these estimates. Children experience the most injuries with televisions (estimated 11,000) and furniture (estimated 10,500 injuries). Adults and seniors experience the most injuries with furniture (estimated 8,500 and 2,100 injuries, respectively). Children had the highest rates annually for televisions, with 15 emergency department-treated injuries per 100,000 children, followed by furniture, with 14 emergency department-treated injuries per 100,000 children.

Table 3
Annual Average of Estimated Total Number of Emergency Department-Treated Product Instability or Tip-Over Injuries by Victim Age Category, 2011–2013

Annual Average 2011-2013	**Estimated Emergency Department-Treated Injuries[9]** (Emergency Department Injuries Per 100,000 U.S. Population[10])		
	Children (<1 to 17 years)	**Adults (18 to 59 years)**	**Seniors (≥60 years)**
Televisions, Furniture, and Appliances Total	21,700 (29)	13,200 (7)	3,100 (5)
Avg 95% Confidence Interval (CI)	(18,500, 24,900) (25, 34)	(11,100, 15,300) (6, 9)	(2,400, 3,700) (4, 6)
Televisions	11,000 (15)	3,500 (2)	–
Only Furniture	10,500 (14)	8,500 (5)	2,100 (3)
Appliances	–	1,200 (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.

[9] The estimates are rounded to the nearest hundred, and dashes indicate that data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0784 to 0.1871.

[10] The U.S. population figure for children, adults, and seniors is an average of 2011, 2012, and 2013 data for each age category for the month of July from Census data.

As noted above, children account for the largest portion of television and furniture injuries. The estimates related to children can be subdivided further into victim age categories for victims' ages 1-year-old (12 months through 23 months) to 4 years old (48 months through 59 months). See Table 4. Roughly two-thirds of the child emergency department-treated product instability or tip-over injury estimates for televisions and furniture are accounted for by victim's ages 1 to 4 years.

For the television category, 2-year-olds and 3-year-olds account for the most estimated injuries. For the furniture category, 1-year-olds and 2-year-olds account for the most estimated injuries. An estimate for children under 1-year-old (1 month through 11 months) is not given because there was not enough data to support a reliable statistical estimate.

Table 4
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Selected Child Victim Age Category, 2011–2013

Child Victim Age Category[11] (years)	**Estimated Emergency Department-Treated Injuries for Children[12] (Percent of Total Estimate)**	
	Television Estimate (Total Child TV Estimate 11,000)	**Only Furniture Estimate (Total Child Furniture Estimate 10,500)**
<1	–	–
1	1,500 (14 %)	1,900 (18%)
2	2,100 (19%)	1,900 (18%)
3	1,800 (16%)	1,500 (15%)
4	1,300 (12%)	–
5 through 17	4,100 (37%)	3,800 (36%)

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

The child television instability or tip-over related injury estimate (11,000) could be refined further for one subtype. There were 1,700 estimated injuries to children (15 percent) where the television and a chest, bureau, or dresser both fell.

[11] For children younger than 1 year of age, 2 percent were in the "TV" category, and 4 percent were in the "only-furniture" category of injuries to children.
[12] The estimates are rounded to the nearest hundred, and the CVs for the given estimates (2011–2013) ranged from 0.0809 to 0.1537.

The furniture estimates can be refined further by furniture subtypes. A majority of the only-furniture-related injuries for children (83 percent) were in three furniture subtype categories. For the furniture instability or tip-over estimate for children (10,500), tables accounted for 3,600 injuries (34 percent); chests, bureaus, and dressers for 3,200 injuries (31 percent); and shelves, shelving units, and bookcases for 2,000 injuries (19 percent). The remaining only-furniture-related injuries accounted for 1,800 injuries (6 percent). A similar pattern occurred with only-furniture injuries for adults, for which the majority (77 percent) were in three furniture subtype categories. Looking at the total furniture instability or tip-over estimate for adults (8,500), shelves, shelving units, and bookcases were associated with 2,700 injuries (31 percent); tables with 2,300 injuries (27 percent); and chests, bureaus, and dressers with 1,500 injuries (18 percent). The remaining only-furniture-related injuries accounted for 2,000 injuries (8 percent). Estimates for furniture subcategories for seniors could not be generated for this reason as well. Table 5 shows the estimate details.

Table 5
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Only Furniture Subcategories, 2011–2013

Only Furniture Subtype	**Estimated Emergency Department-Treated Injuries[13] (Percent of Estimate)**	
	Children (<1 to 17 years) (Child Furniture Estimate 10,500)	**Adults (18 to 59 years) (Adult Furniture Estimate 8,500)**
Tables	3,600 (34%)	2,300 (27%)
Chests, Bureaus, and Dressers (CBD)	3,200 (31%)	1,500 (18%)
Shelving, Shelving Units, and Bookcases (Shelf)	2,000 (19%)	2,700 (31%)
Remaining Furniture Subtypes[14]	1,800 (6%)	2,000 (8%)

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

[13] The estimates are rounded to the nearest hundred, and dashes indicate instances where data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0943 to 0.1308.
[14] Remaining furniture subtypes for children also include cabinets, due to the estimate for cabinets being too small to report separately.

There were an estimated 18,400 males injured (48%) and an estimated 19,600 females injured (52%) in all product instability or tip-over incidents. Table 6 gives the estimates for each victim age category by product and gender. Seniors have only two estimates in this table because there were not enough data to support reliable statistical estimates for many of the subcategories.[15] For adults, the estimates suggest a statistical difference by gender for the only-furniture[16] subcategory.

Table 6
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Gender, 2011–2013

Gender	Estimated Emergency Department-Treated Injuries[17] (Percent of Estimate)			
	Product Category[18]	Children (<1 to 17 years) (Total Child Estimate 21,700)	Adults (18 to 59 years) (Total Adult Estimate 13,200)	Seniors (≥60 years) (Total Senior Estimate 3,100)
Male	TV, Furniture, & Appliance Total	11,700 (54%)	5,600 (42%)	–
	TV	5,800 (27%)	1,300 (10%)	–
	Only Furniture	5,900 (27%)	3,400 (26%)	–
Female	TV, Furniture, & Appliance Total	9,900 (46%)	7,600 (58%)	2,000 (66%)
	TV	5,300 (24%)	2,300 (17%)	–
	Only Furniture	4,600 (21%)	5,000 (38%)	1,400 (47%)

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

Sixty-six percent of the estimated 38,000 injuries occurred in a residential location. There were 4 percent in public locations, and 30 percent were in an unknown location. These percentages are somewhat similar for children (72 percent residential and 5 percent public), adults (57 percent residential and 2 percent public) and seniors (58 percent residential and 10 percent public).

[15] The criteria for estimates are discussed in Appendix A.
[16] For adults and furniture, avg. 95% CI is (2,600, 4,200) for males, and (4,300, 5,800) for females.
[17] The estimates are rounded to the nearest hundred, and dashes indicate instances where data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0743 to 0.1742.
[18] Product estimates may not add up to total, due to rounding and the appliance category not being represented. The appliance estimates are not given because there were not enough data to support reliable statistical estimates.

The majority of victims (94 percent of children, 95 percent of adults, and 82 percent of seniors) of these emergency department-treated injuries were treated and released. The diagnoses, which are independent of the disposition, such as treated and released, were examined for children, adults, and seniors. The majority of the diagnoses for all age groups combined, including the senior age group, were contusions/abrasions (14,200), internal organ injuries (5,800), lacerations (5,300), and fractures (5,300). The most frequent injury diagnosis for children was contusions/abrasions (8,100). This is followed by internal organ injuries (4,400), lacerations (3,200), and fractures (3,000). The most frequent injury diagnosis for adults was contusions and abrasions (5,200), as well. This is followed by fractures (1,800), lacerations (1,600), and strains/sprains (1,200). Estimates for injury subcategories for seniors could not be generated because there was not enough data to support reliable statistical estimates. Table 7 illustrates the estimates, where available.

Table 7
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Diagnosis, 2011–2013

Diagnosis	Estimated Emergency Department-Treated Injuries[19] (Percent of Estimate)		
	Product Category[20]	Children (<1 to 17 years) (Total Child Estimate 21,700)	Adults (18 to 59 years) (Total Adult Estimate 13,200)
Contusions, Abrasions	TV, Furniture, & Appliance Total	8,100 (37%)	5,200 (39%)
	TV	4,200 (19%)	1,300 (10%)
	Only Furniture	3,800 (18%)	3,400 (25%)
Internal Organ Injury	TV, Furniture, & Appliance Total	4,400 (20%)	–
	TV	2,600 (12%)	–
	Only Furniture	1,700 (8%)	–
Lacerations	TV, Furniture, & Appliance Total	3,200 (15%)	1,600 (12%)
	TV	–	–
	Only Furniture	2,100 (10%)	1,300 (10%)
Fractures	TV, Furniture, & Appliance Total	3,000 (14%)	1,800 (14%)
	TV	1,400 (7%)	–
	Only Furniture	1,600 (7%)	–
Strains or Sprains	TV, Furniture, & Appliance Total	–	1,200 (9%)
	TV	–	–
	Only Furniture	–	–
All Other Diagnoses	TV, Furniture, & Appliance Total	2,400 (11%)	2,500 (19%)
	TV	1,300 (6%)	–
	Only Furniture	–	1,400 (11%)

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

[19] The estimates are rounded to the nearest hundred, and dashes indicate instances where data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0853 to 0.2050.
[20] Product estimates may not add up to total, due to rounding and the appliance category not being represented. The appliance estimates are not given because there were not enough data to support reliable statistical estimates.

Most injuries for all age groups combined, including the senior age group, affected the head (14,000). This is followed by legs, feet, and toes (12,800), arms, hands, and fingers (6,700), and the torso (4,300). Table 8 shows the estimates for the primary area of the body affected in these injuries by victim age category. Most injuries to children affected the head (10,500) and legs, feet, and toes (6,800). Most injuries to adults affected the legs, feet, and toes (4,900) and arms, hands, and fingers (3,700). Seniors are not included in this table because there were not enough data to support reliable statistical estimates.[21]

Table 8
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Area of Body, 2011–2013

Primary Area of Body Affected	**Estimated Emergency Department-Treated Injuries[22] (Percent of Estimate)**		
	Product Category[23]	**Children (<1 to 17 years)** (Total Child Estimate 21,700)	**Adults (18 to 59 years)** (Total Adult Estimate 13,200)
Head	TV, Furniture, & Appliance Total	10,500 (48%)	2,700 (21%)
	TV	5,700 (26%)	–
	Only Furniture	4,800 (22%)	1,900 (15%)
Legs, Feet, and Toes (Legs)	TV, Furniture, & Appliance Total	6,800 (31%)	4,900 (37%)
	TV	3,400 (16%)	1,200 (9%)
	Only Furniture	3,300 (15%)	3,300 (25%)
Arms, Hands, and Fingers (Arms)	TV, Furniture, & Appliance Total	2,500 (12%)	3,700 (28%)
	TV	–	–
	Only Furniture	1,500 (7%)	2,000 (16%)
Torso	TV, Furniture, & Appliance Total	1,800 (8%)	1,800 (13%)
	TV	–	–
	Only Furniture	–	1,200 (9%)
All Other Body Parts	TV, Furniture, & Appliance Total	–	–
	TV	–	–
	Only Furniture	–	–

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

[21] The criteria for estimates are discussed in Appendix A.
[22] The estimates are rounded to the nearest hundred, and dashes indicate instances where data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0665 to 0.1454.
[23] Estimates in the table may not add up to the total for each overall age group due to rounding and the appliance category not being represented. The appliance estimates are not given because there was not enough data to support reliable statistical estimates.

Looking closer at the primary body part affected, as well as the diagnosis, estimates can be given for some of the injuries by selected area of body and diagnosis. Of the head injuries that occurred to children, the most frequent diagnosis was internal organ injury (4,300), followed by contusions/abrasions (2,600), and lacerations (2,500). Many of the leg injuries were diagnosed as contusions/abrasions (3,400) and fractures (1,700). For many of the adult leg injuries, the diagnosis was contusions/abrasions (2,600). Some of the adult arm injuries were also contusions/abrasions (1,400). Many of the child injuries affecting the torso were also contusions/abrasions (1,200). Table 9 gives the estimates. Seniors are not included in this table because there were not enough data to support reliable statistical estimates.[24]

Table 9
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Selected Area of Body/Diagnosis, 2011–2013

Primary Area of Body Affected/ Diagnosis	**Estimated Emergency Department-Treated Injuries**[25]		
	Product Category[26]	**Children (<1 to 17 years)** (Total Child Estimate 21,700)	**Adults (18 to 59 years)** (Total Adult Estimate 13,200)
Head/ Internal Organ Injury	TV, Furniture, & Appliance Total	4,300 (20%)	–
	TV	2,600 (12%)	–
	Only Furniture	1,700 (8%)	–
Head/ Contusions, Abrasions	TV, Furniture, & Appliance Total	2,600 (12%)	–
	TV	1,500 (7%)	–
	Only Furniture	–	–
Head/ Lacerations	TV, Furniture, & Appliance Total	2,500 (11%)	–
	TV	–	–
	Only Furniture	1,500 (7%)	–
Legs/ Contusions, Abrasions	TV, Furniture, & Appliance Total	3,400 (16%)	2,600 (19%)
	TV	1,700 (8%)	–
	Only Furniture	1,700 (8%)	1,700 (13%)
Legs/ Fractures	TV, Furniture, & Appliance Total	1,700 (8%)	–
	TV	–	–
	Only Furniture	–	–
Arms/ Contusions, Abrasions	TV, Furniture, & Appliance Total	–	1,400 (11%)
	TV	–	–
	Only Furniture	–	–
Torso/ Contusions, Abrasions	TV, Furniture, & Appliance Total	1,200 (5%)	–
	TV	–	–
	Only Furniture	–	–

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

[24] The criteria for estimates are discussed in Appendix A.
[25] The estimates are rounded to the nearest hundred, and dashes indicate instances where data were insufficient to support reliable statistical estimates. The CVs for the given estimates (2011–2013) ranged from 0.0831 to 0.1626.
[26] Product estimates may not add up to total, due to rounding and the appliance category not being represented. The appliance estimates are not given because there were not enough data to support reliable statistical estimates.

Reported Fatalities[27]

CPSC staff has received 430 reports of product instability or tip-over fatalities that occurred between 2000 and 2013, and that were related to televisions, furniture, and appliances. Of these 430 reported fatalities, 65 percent (279 deaths) involved televisions falling, with 118 of the 279 fatalities associated with televisions along with the furniture in/on which the television was resting falling as well. Twenty-eight percent (120 deaths) of the 430 reported fatalities were associated with only furniture falling. The remaining 7 percent (31 deaths) involved appliances falling. Table 10 presents the instability or tip-over data for televisions, furniture, and appliances by year of incident[28].

Table 10
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Year, 2000–2013

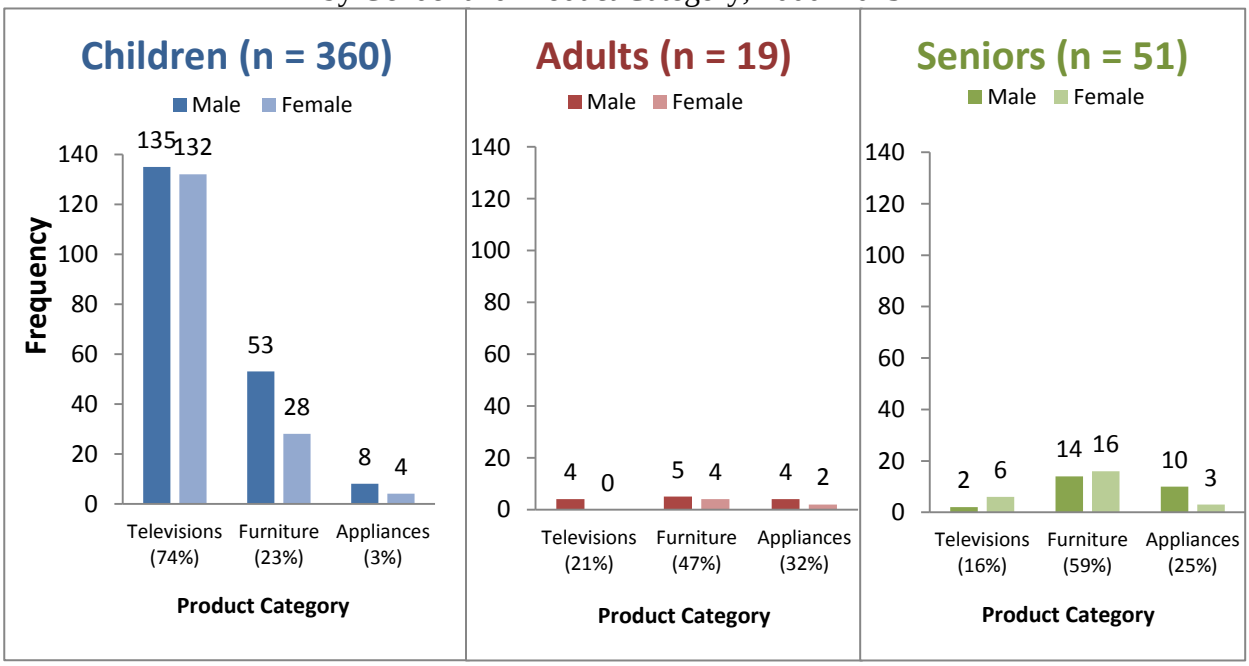
Year	Televisions (TV + Furniture)[29]	Only Furniture	Appliances	Television, Furniture, and Appliance Total	Percent of Total (n = 349)[30]
2013*	17 (8)	5	1	23	5%
2012*	36 (18)	6	2	44	10%
2011*	40 (17)	12	2	54	13%
2010	23 (5)	7	4	34	8%
2009	20 (12)	6	1	27	6%
2008	29 (11)	10	0	39	9%
2007	25 (14)	8	0	33	8%
2006	21 (7)	5	3	29	7%
2005	18 (10)	10	1	29	7%
2004	11 (2)	13	1	25	6%
2003	10 (1)	6	5	21	5%
2002	10 (4)	10	3	23	5%
2001	12 (5)	18	5	35	8%
2000	7 (4)	4	3	14	3%
Product Category Total	279 (118)	120	31	**430**	
Percent of Total (n = 430)	65% (27%)	28%	7%		

Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations). Asterisks (*) indicate ongoing reporting.

[27] Fatality counts should be considered incomplete for years 2011-2013 due to a time lapse in reporting to CPSC.
[28] Some of the coding and duplicate record determinations were revised from prior reports and resulted in changes to the 2001, 2005 and 2006 fatality counts.
[29] Numbers within parentheses represent the subset of televisions falling, where both the television and furniture on which the television was resting fell.
[30] Percentages may not sum to 100, due to rounding.

The fatalities were separated into three distinct age categories: (1) children (younger than 18 years of age); (2) adults (18 years of age or older, but less than 60 years); and (3) seniors (60 years of age or older). Eighty-four percent (360 deaths) of these fatalities were children. This is followed by seniors with 12 percent (51 deaths); and the remaining victims were adults (4 percent; 19 deaths). Of the 360 child fatalities, 74 percent (267 deaths) involved falling televisions, and 23 percent (81 deaths) involved only furniture falling. Examining the 51 senior fatalities, 59 percent (30 deaths) involved only furniture falling, and 25 percent (13 deaths) involved appliances falling. Child fatalities involving televisions do not appear to differ according to gender (51 percent male versus 49 percent female). The fatalities involving children and furniture suggest differences based on gender (65 percent male, versus 35 percent female). For other fatalities, it is harder to examine differences, due to small counts. Graph 1 illustrates these frequencies by gender, product, and victim age category.

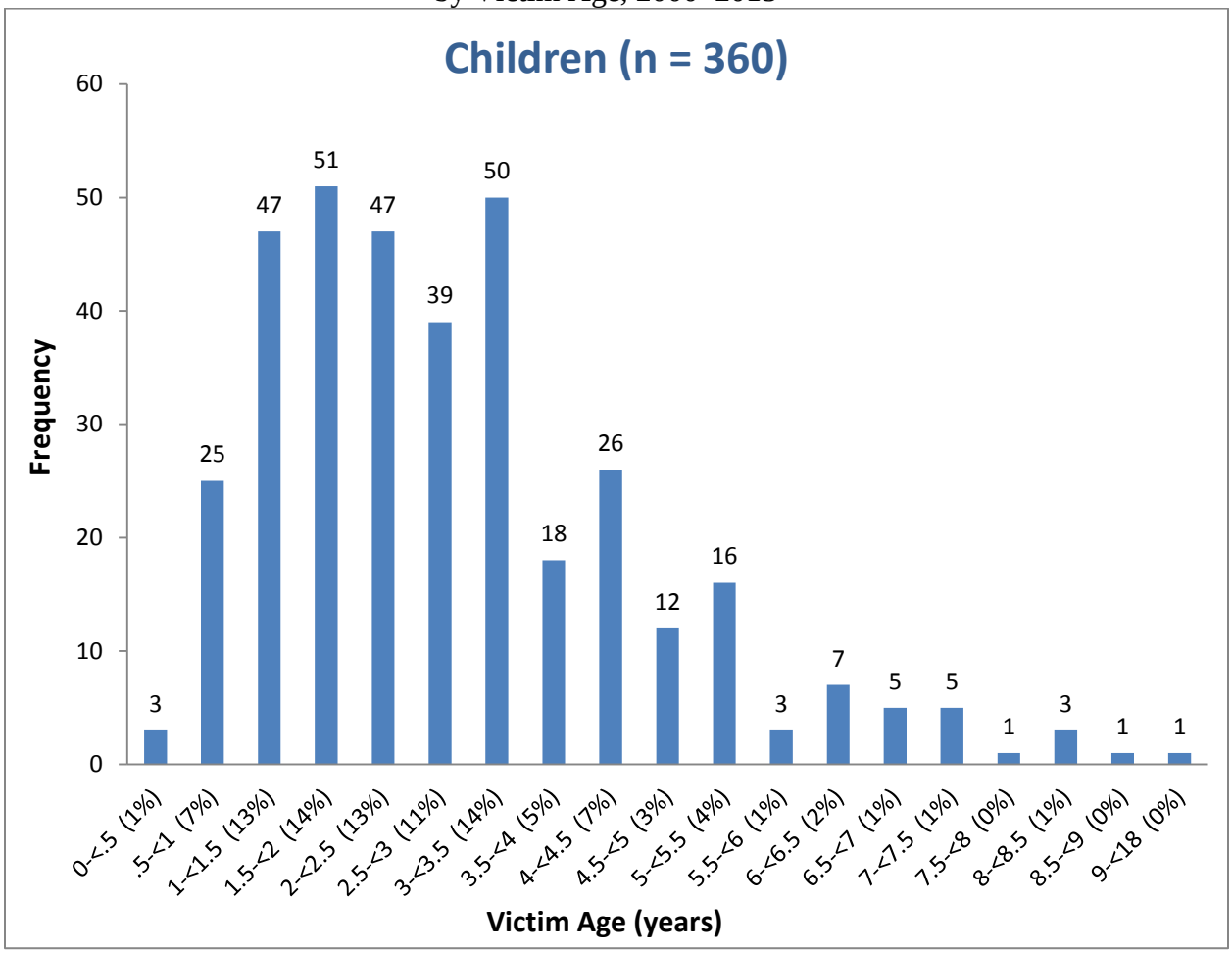
Graph 1
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Gender and Product Category, 2000–2013



Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

Counts by victim age category for the 360 fatalities involving children are presented in Graph 2. Children ranged in age from 1 month to 10 years. Sixty-five percent (234 deaths) of the children were at least 1 year of age and less than 3½ years of age.

Graph 2
Child Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Victim Age, 2000–2013[31]

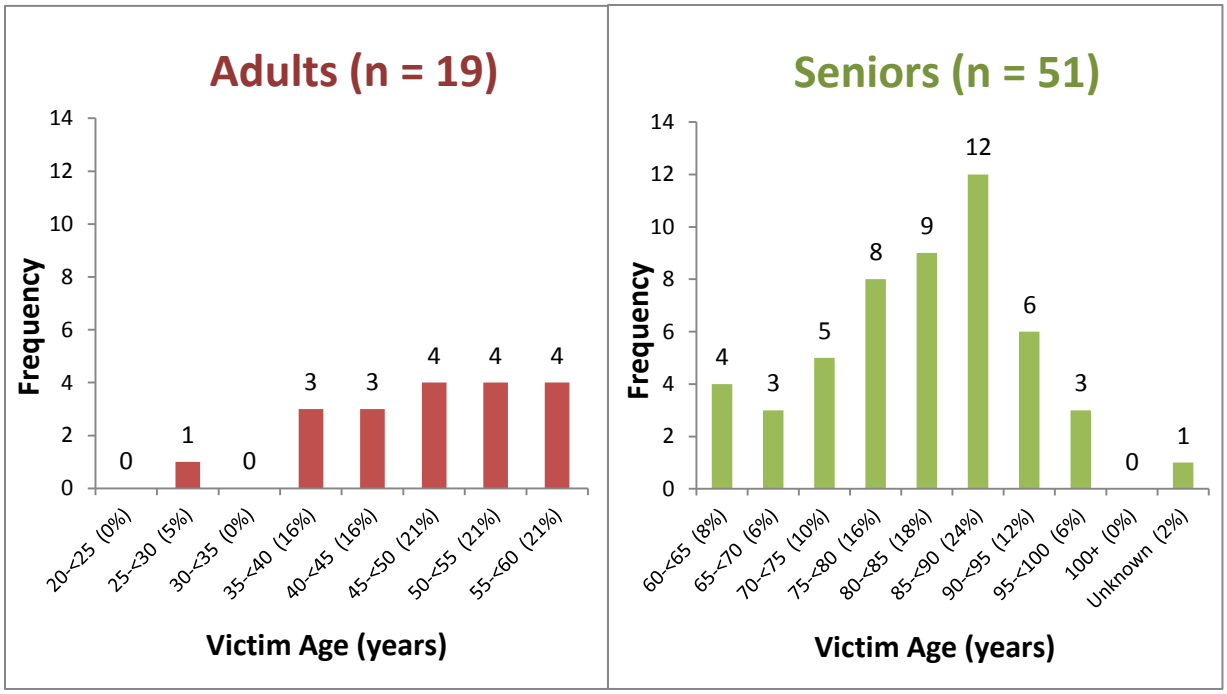


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[31] Percentages may not sum to 100, due to rounding.

Adults and seniors account for 70 fatalities. The adults ranged in age from 28 years to 59 years, and the seniors were 60 years of age or older. Seventy-five percent (38 deaths) of the fatalities happened to seniors who were 75 years of age or older. Graph 3 illustrates the ages of the fatality victims for these two groups.

Graph 3
Adult & Senior Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Victim Age, 2000–2013[32]

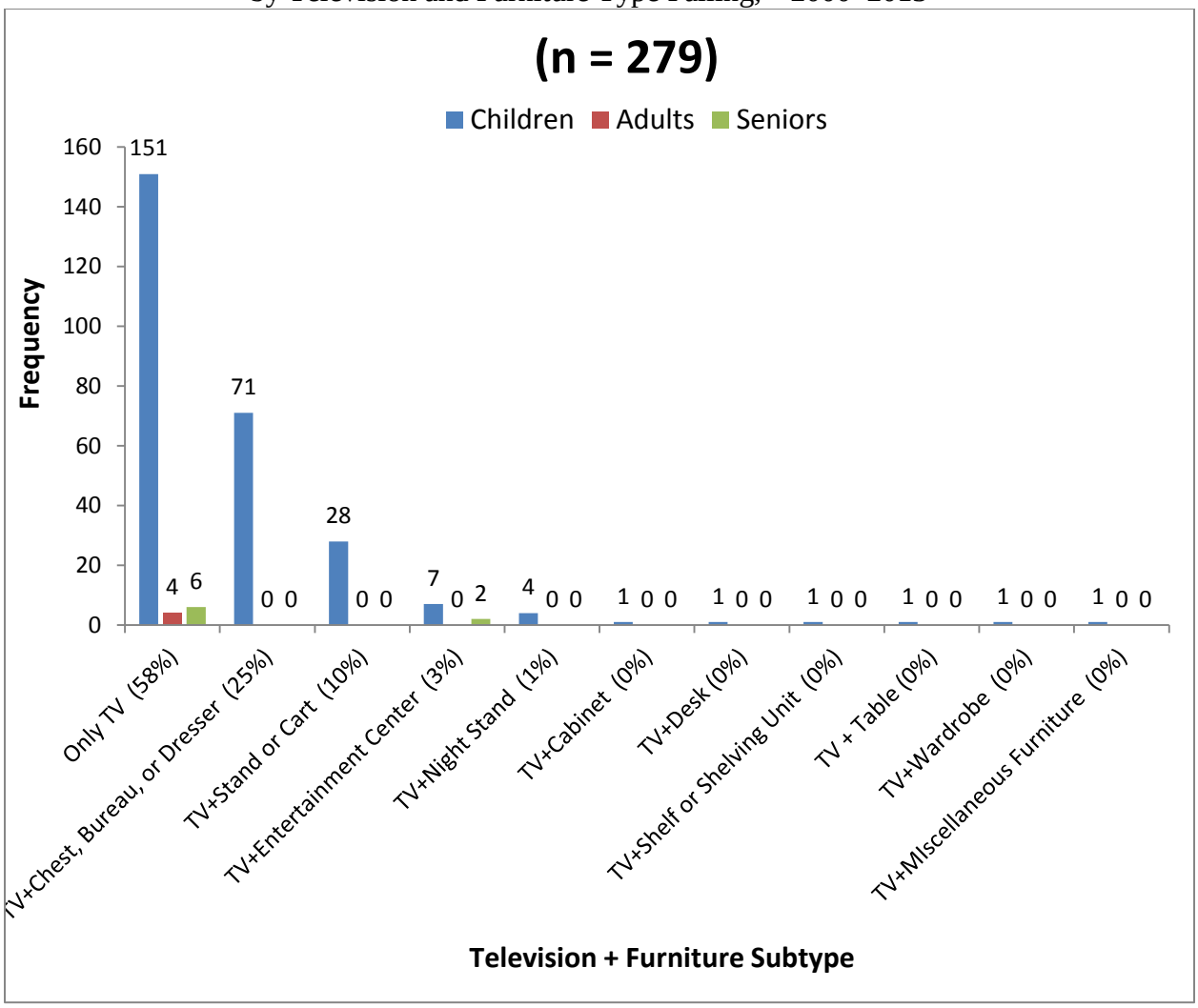


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[32] Percentages may not sum to 100, due to rounding.

Sixty-five percent (279 deaths) of the 430 fatalities involved televisions. Of these 279 deaths, 96 percent (267 fatalities) were children; 1 percent (4 fatalities) were adults; and 3 percent (8 fatalities) were seniors. In 58 percent (161 deaths) of the 279 television-related fatalities, only the television fell without furniture also falling. This is followed by a television plus a chest, bureau, or dresser falling (25 percent; 71 deaths), and a television plus a cart/stand falling (10 percent; 28 deaths). Graph 4 shows the frequencies.

Graph 4
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Television and Furniture Type Falling,[33] 2000–2013[34]

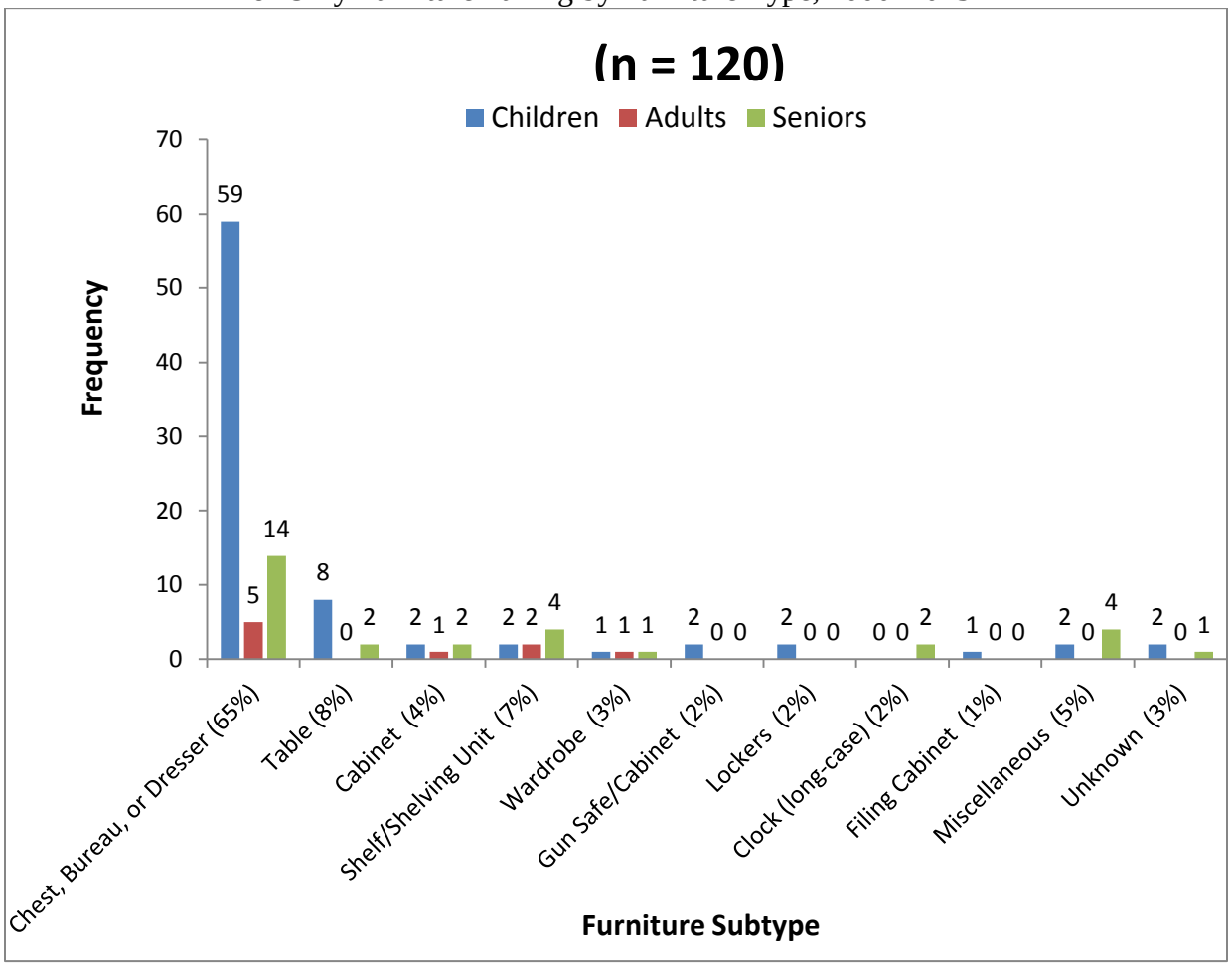


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[33] Fatalities where it could not be determined if the furniture fell are counted as only the TV falling.
[34] Percentages may not sum to 100, due to rounding.

Of the 430 fatalities, 28 percent (120 deaths) involved only furniture falling. For these 120 deaths, 68 percent (81 fatalities) were children; 25 percent (30 fatalities) were seniors; and 8 percent (9 fatalities) were adults. Graph 5 gives the frequencies for instability or tip-over deaths by furniture type and victim age involving only furniture falling. Notice that the chest, bureau, or dresser category has the largest count (65 percent; 78 deaths).

Graph 5
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
for Only Furniture Falling by Furniture Type, 2000–2013[35]

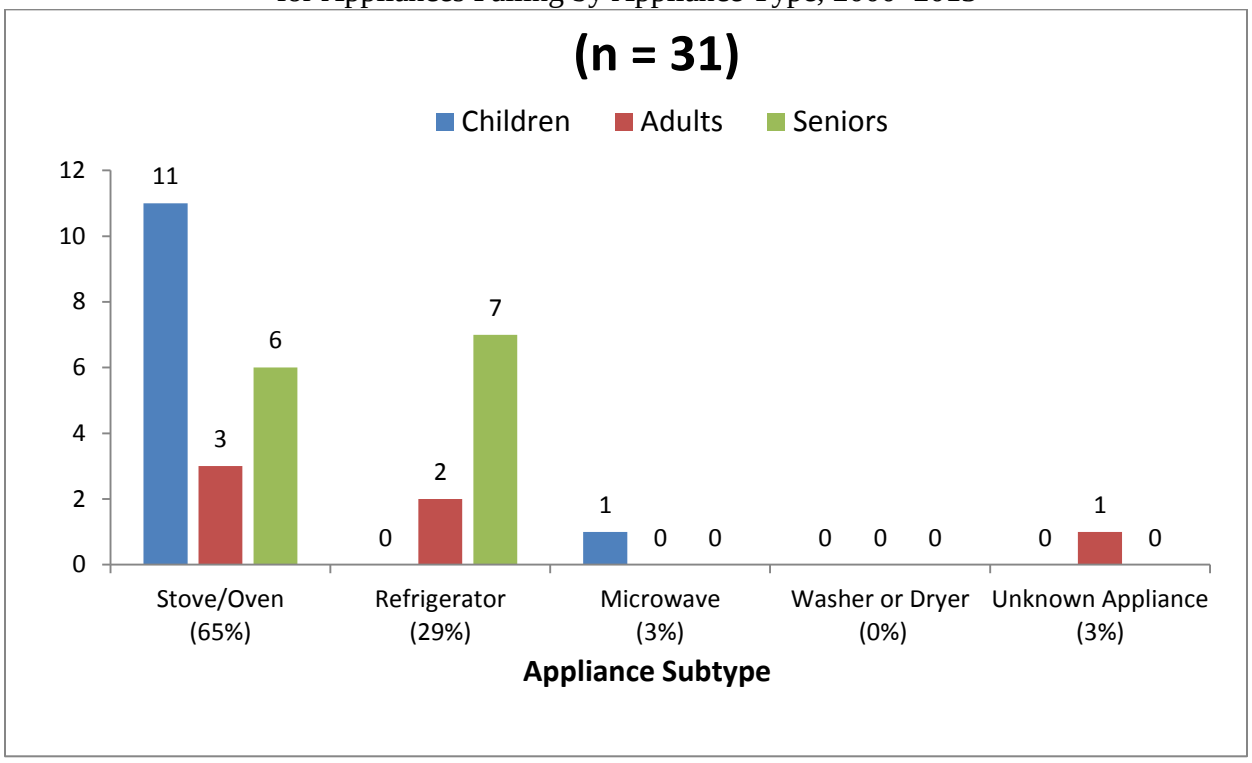


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[35] Percentages may not sum to 100, due to rounding.

The remaining 7 percent (31 deaths) of the 430 fatalities involved appliances falling. For these 31 deaths, 12 fatalities were children; 13 were seniors; and 6 were adults. For appliances, the stove category included the largest number of fatalities (20 deaths). Graph 6 presents these frequencies.

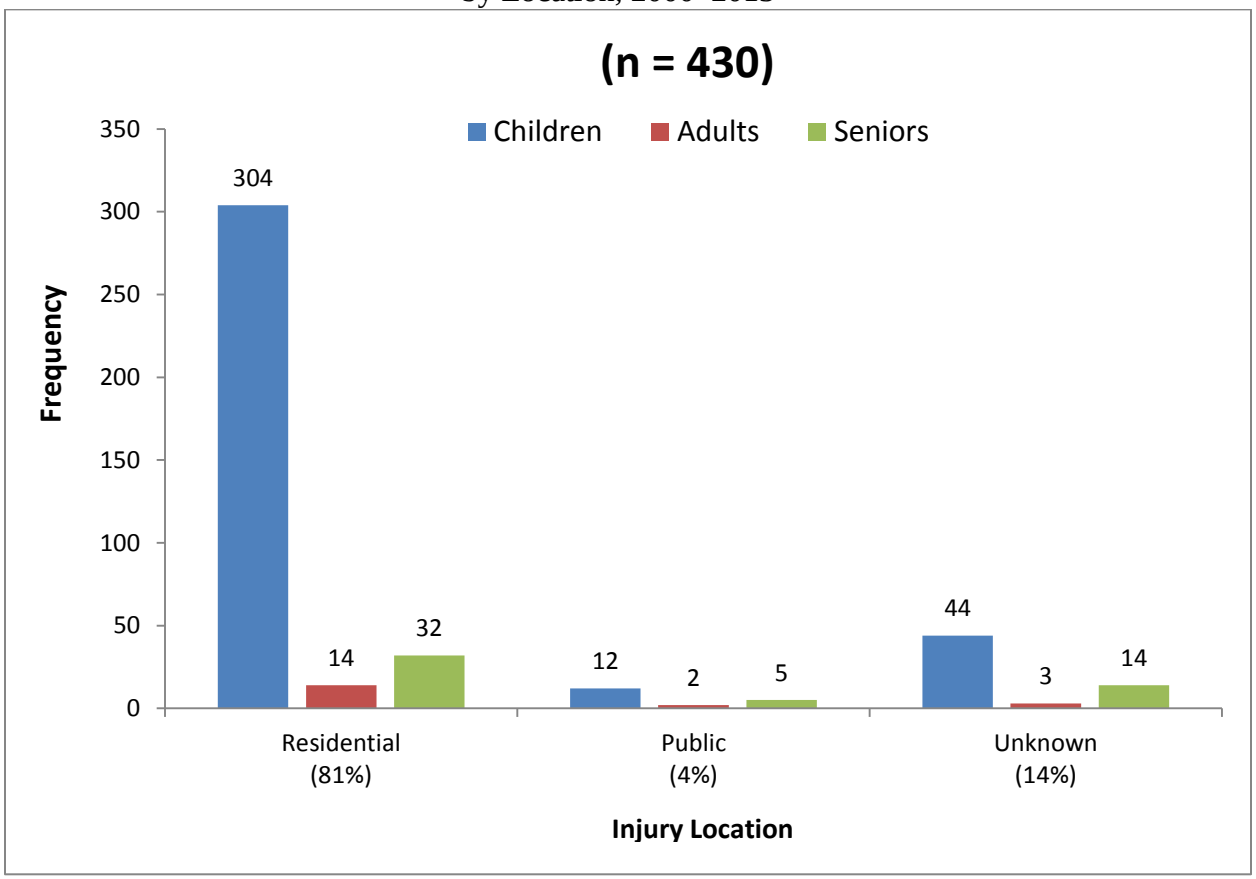
Graph 6
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
for Appliances Falling by Appliance Type, 2000–2013



Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

Residential locations account for 81 percent (350 deaths) of the fatalities. Four percent occurred in public locations (19 deaths); and 14 percent (61 deaths) did not provide enough information to determine the location. Fatalities of children had a similar distribution by location (84 percent residential, 3 percent public, and 12 percent unknown). Graph 7 shows these details.

Graph 7
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Location, 2000–2013[36]

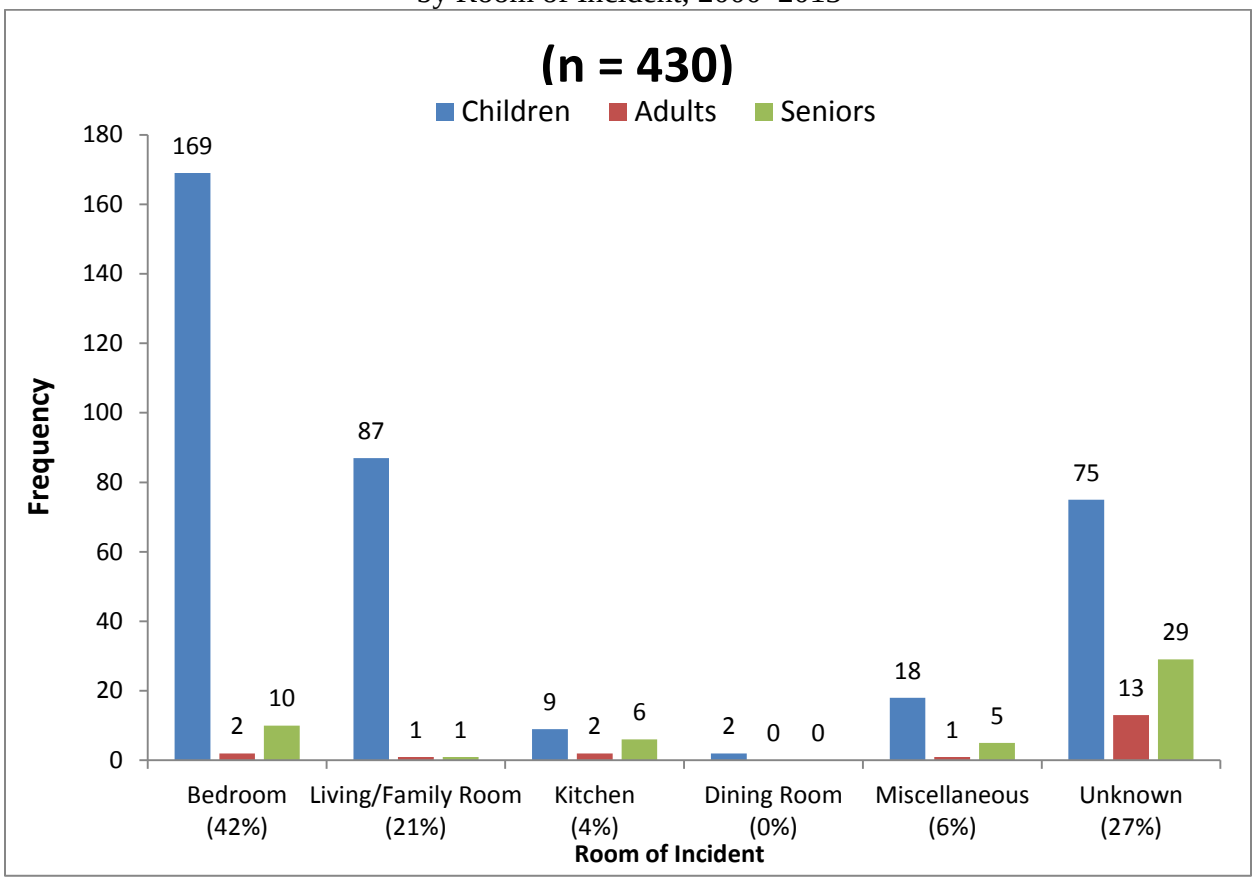


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[36] Percentages may not sum to 100, due to rounding.

For the room where the incident occurred, the bedroom had the largest number of fatalities, with 42 percent (181 deaths). This is followed by the living/family room, with 21 percent (89 deaths). There is also a large portion of unknown locations (27 percent; 117 deaths) for this room-of-incident variable. Of the fatalities involving children (360 deaths), 47 percent occurred in bedrooms, and 24 percent happened in living/family rooms. For adults and seniors (19 adult deaths; 51 senior deaths), there were many unknown locations (68 percent for adults, and 57 percent for seniors). Graph 8 details this characteristic.

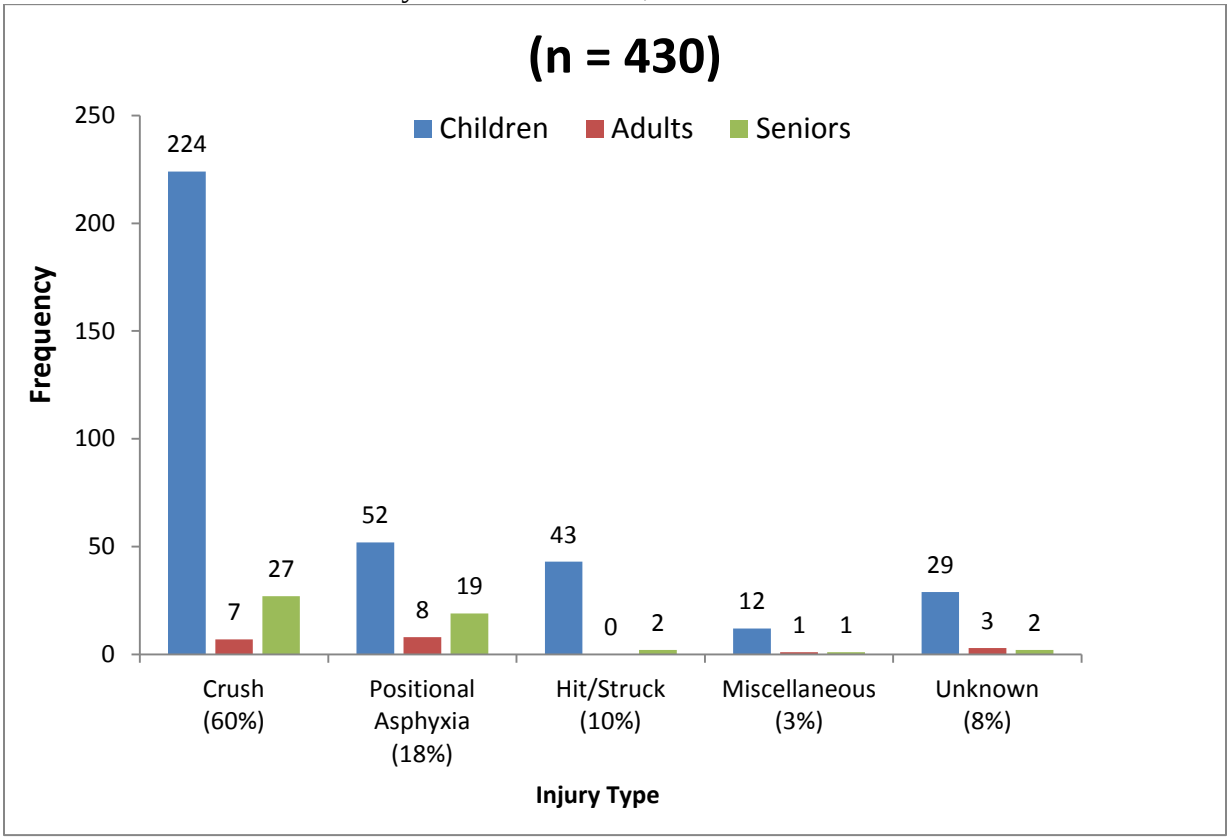
Graph 8
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Room of Incident, 2000–2013



Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

The majority of the fatalities were due to the victim being crushed[37] by the product (60 percent). This is followed by fatalities that were the result of positional asphyxia[38] (18 percent) and fatalities due to being hit/struck[39] (10 percent) by product(s). Crushing incidents accounted for the largest number of fatalities in children and seniors. Graph 9 details these frequencies by victim age and manner of death.

Graph 9
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Manner of Death,[40] 2000–2013[41]

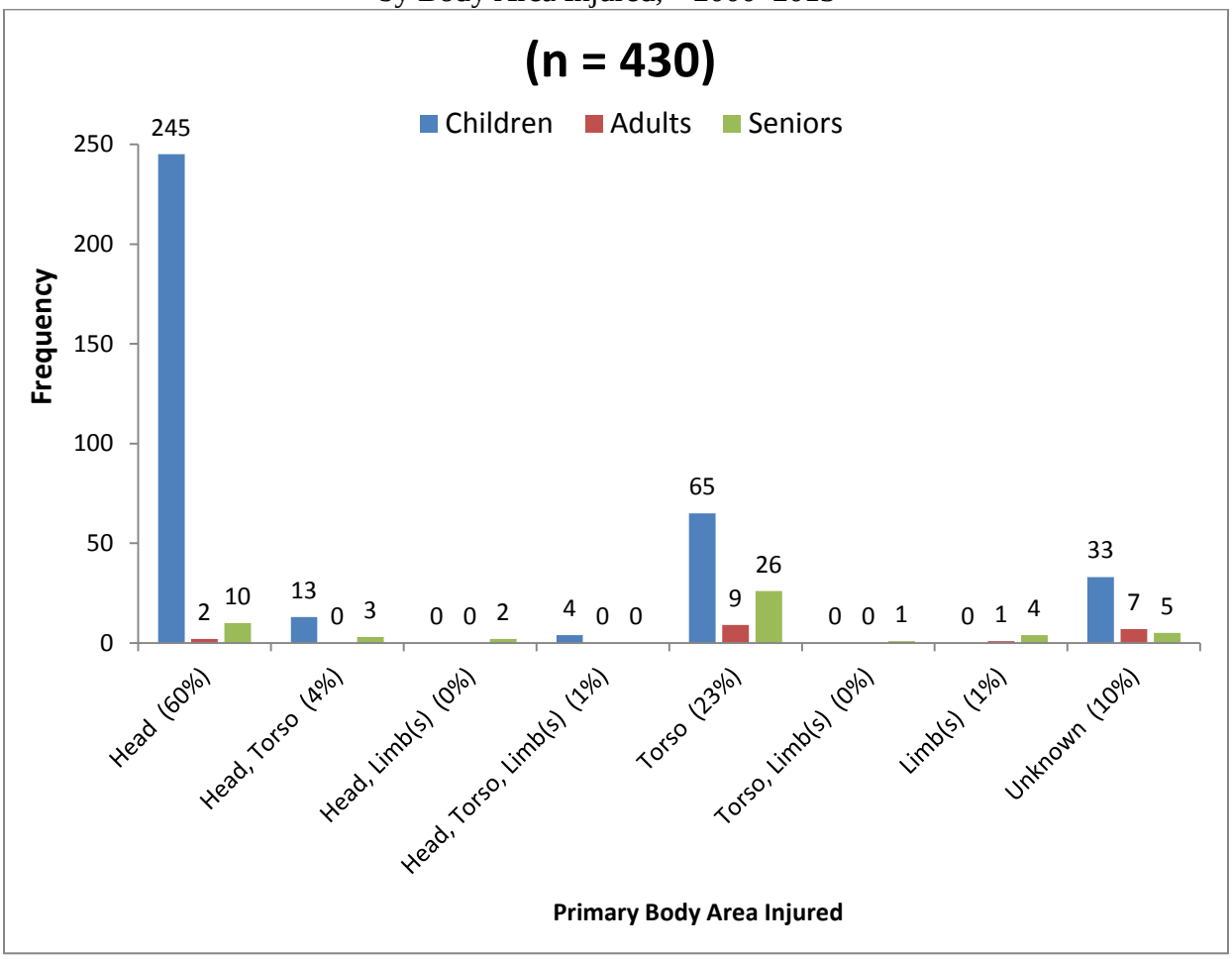


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[37] 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).
[38] 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.
[39] Hit/struck by injuries are events in which it was clear the product(s) fell on the victim but did not land or remain on the victim.
[40] The CPSC Directorate for Health Sciences staff coded each fatality by injury type.
[41] Percentages may not sum to 100, due to rounding.

The head was the area of the body injured most frequently (60 percent head only; 4 percent head and torso in these reported fatalities; this is followed by the torso (23 percent) only. Head injuries were the predominant injury to children, compared to adults and seniors, who had more torso injuries. Graph 10 illustrates these frequencies by victim age and body area injured.

Graph 10
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Body Area Injured,[42] 2000–2013[43]

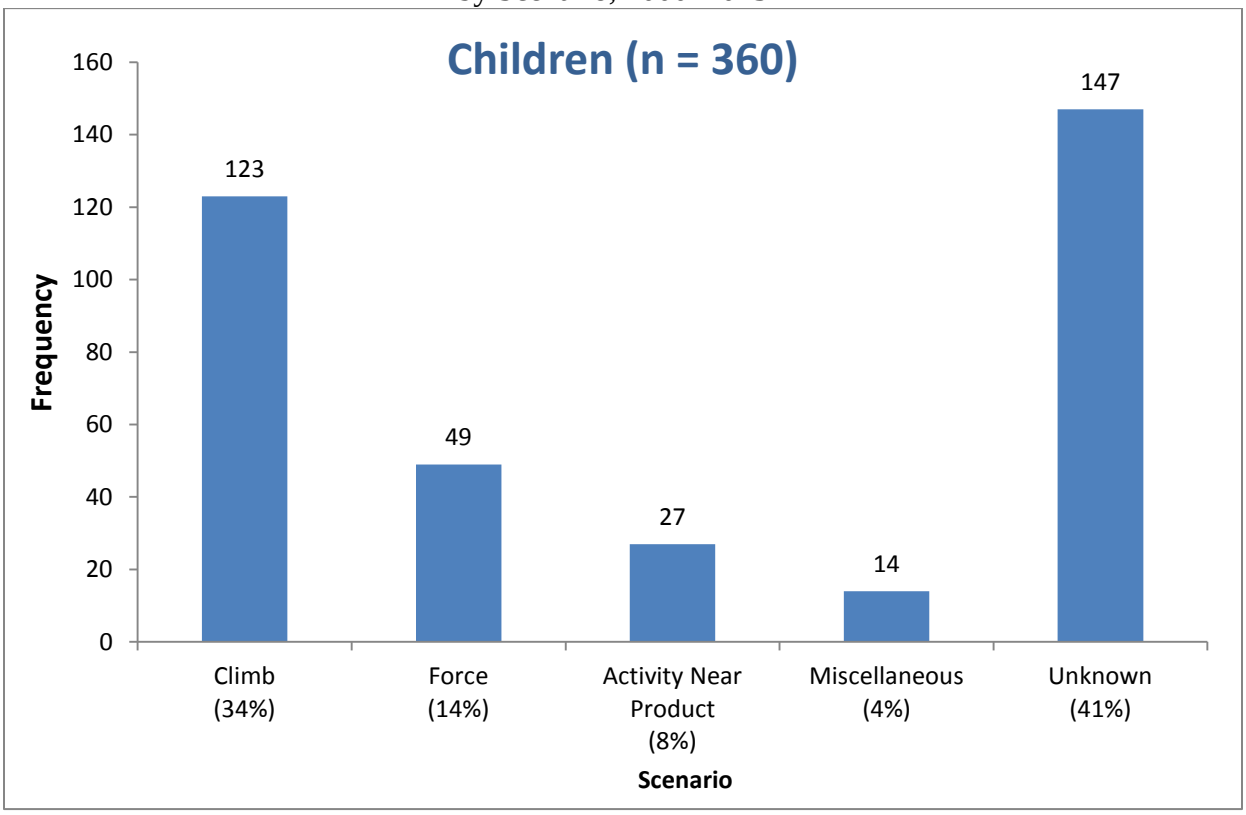


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[42] The CPSC Directorate for Health Sciences staff coded the body area injured for each fatality.
[43] Percentages may not sum to 100, due to rounding.

The hazard scenarios were classified, where possible. The scenarios for the 70 deaths involving adults and seniors did not have enough details in most cases to be classified. Accordingly, Graph 11 gives frequencies for children only. Of the 360 deaths involving children, there is also a large set of unknown scenarios (41 percent; 147 deaths). In 34 percent (123 deaths) of the child fatalities, the victim or someone else was climbing on the furniture and/or television. This is followed by scenarios in which force was being applied to the furniture and/or television, such as hitting, pulling, or kicking (14 percent; 49 deaths). In 8 percent (27 deaths), the victim was involved in some activity near the product, such as playing nearby or adjusting the controls on a TV or electronic device connected to the TV. The remaining 4 percent (14 deaths) have known scenarios that do not fit into the other categories. Graph 11 gives the counts.

Graph 11
Child Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Scenario, 2000–2013[44]



Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[44] Percentages may not sum to 100, due to rounding.

Appendix A

Methodology for Estimating 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 what types of product-associated instability or tip-over incidents should be counted. For the purpose of this report, tip-over incidents concern heavy objects that fall on an individual as a result of 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 as a result of some issue with the product's center of gravity changing. This is a less stringent definition compared to the tip-over definition because it does not require the additional criterion of interaction. The instability and tip-over definitions helped to set the criteria for the types of scenarios and products that have been included in the data.

In examining the types of products involved in the incidents, staff considered whether the product was heavy and whether it potentially could inflict crushing or compressing injuries. The additional criterion of the potential interaction of the individual with the product was also important. The categories of televisions, furniture, and appliances fit these criteria. The individual product codes were chosen based on the product's potential to fall, the product's size, and its weight. Other products, such as chairs, couches, and beds, were also excluded, due to the emphasis on products that are more upright and those that were not meant to sit, stand, or lie upon.

The potential product codes were determined from categories associated with televisions, furniture, and appliances. Table 11 identifies the potential 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 [45]

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	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

[45] The source for product codes and descriptions is the NEISS Coding Manual (updated January 2013).

After the set of potential product codes was established, the next step was to determine what types of scenarios to look for in the narratives. Narrative key word searches were used with caution when extracting a potential set of data because the narrative field descriptions have so many possible word choices, misspellings and sentence structures. Additionally, National Electronic Injury Surveillance System (NEISS) and Death Certificate (DTHS) narratives are often very terse and provide only basic information. For these reasons, the product codes and the time period were the criteria used to extract the data sets; and then the narratives were examined to determine if the incident met the instability or tip-over definition(s). The incident was not included if only a part of the product fell, such as a door on an entertainment center. Cases involving adults moving products or people dropping products were removed because the product was not in its normal state of use. Products that were hanging on the wall and fell were also excluded. Appendix B gives more details about the conventions that were applied to the reported incidents to determine in-scope cases.

The most recent injury estimates came from 2012 and 2013 NEISS data extracted on April 04, 2013, and merged with data from last year's report for the years 2006 through 2011, to cover the 2006 through 2013 reporting period. The 2011 data was reviewed along with the newer data to ensure the criteria for inclusion was applied consistently. This introduced minor differences to past reports. The NEISS product codes used for the data were the television, furniture, and appliance codes mentioned above. Very detailed heuristics were used when examining the NEISS narratives due to the terse nature of the narratives. Appendix B gives the details for what was considered in scope. Because reports in NEISS are unique, there were no duplicates. NEISS data are a weighted sample from which national estimates can be produced, provided the sample count is greater than 20, the estimate is greater than 1,200, and the coefficient of variation (CV) is less than 33.

Data were extracted on June 12, 2014, from NEISS, Injury and Potential Injury Incidents (IPII), DTHS, and In-Depth Investigations (INDP) for fatalities involving the television, furniture, and appliance codes mentioned above, covering the years 2000 through 2013. Data collected between 2012 and 2013 were merged with the data used in the last report (extracted July 17, 2012). It should be noted that, for a given year, incidents are included on an ongoing basis for IPII and DTHS. In particular, additional reports generally are received for the most recent years. Information from these cases was extracted into an Excel spreadsheet and sorted by incident state and date. Source documents were checked to eliminate duplicate incident reports. As fatal incidents are notable events in the community where they occur, often there were multiple news reports (IPII), a medical examiner's report (IPII), a death certificate (DTHS), an In-Depth Investigation (INDP), and less frequently, a hospital emergency department report (NEISS) for a single incident. IPII is a mixture of various types of information, including newspaper clippings, consumer complaints, and reports from other government agencies, such as medical examiners/coroners. Information is submitted voluntarily to IPII, so that staff cannot be sure that information on all of the deaths has been received. Once the incident set was established, the incidents were examined to code additional scenario characteristics.

All numbers in this report are rounded to the nearest integer, except for injury estimates, which are rounded to the nearest hundred. Because NEISS is a weighted sample, injury estimate category percentages were based on the category-weighted estimate, divided by the total weighted estimate. Fatality category percentages were based on the category count observed, divided by the total count.

Appendix B

Conventions for Determining In-Scope NEISS Incidents

NEISS incidents often have a terse narrative; accordingly, a more stringent set of rules was used when examining this NEISS set of potential instability or tip-over incidents compared to fatalities extracted from the other CPSC epidemiological databases (IPII, DTHS, and INDP). This appendix lists the types of products included in the NEISS instability or tip-over incidents associated with televisions, furniture, and appliances. Some of the coding determinations were revised from the last data extraction and resulted in changes to the 2006, 2007, 2008, 2009, 2010 and 2011 NEISS estimates.

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

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. Locker (Include only: in-home locations)
    m. Pedestal
    n. Plant stand
    o. Rack (Include only: coat rack)
    p. Room divider
    q. Safe (Exclude: falling off shelf)
    r. Safety strap (Include: tethering in-scope items to a wall) (Exclude: mounting items on a wall)
    s. Shelf (Exclude: in closets and in stores)
    t. Stand (Include only: microwave, night, and TV)
    u. Table
    v. Vanity
    w. Wall unit

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. Situation examples which caused an injury:
   a. "tried to catch"
      Ex: The patient tried to catch a falling TV and injured foot.
      Ex: While at school the patient tried to stop a room divider from falling over and injured 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 stop from falling.

   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 count:

1. Anything falling from/off of/out of a wall, or attached/connected to a wall.

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 to what 'it' is referenced. Does 'it' refer 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: If a child 9 years old or younger "dropped" or "moved" an unstable item, or tipped over an item, causing the child to go to the hospital to seek treatment, then the incident is counted.

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, dish washer, 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, podium, pot, pan, railing, skillet, slot machine, statue, toolbox, vase, and yard compactor.