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Product Instability or Tip-Over Injuries and Fatalities Associated with Televisions, Furniture, and Appliances: 2012 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 product instability or tip-over injuries and fatalities associated with televisions, furniture, and appliances. 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 2011, and the injury estimates are for 2009 through 2011. Appendix A gives the methodology. 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 43,200 emergency department-treated injuries (2009–2011) and the 349 reported fatalities occurring between 2000 and 2011, staff noted the following:

- Victims
  - Estimated emergency department-treated injuries:
    - 25,400 (59%) involved children, under age 18 years;
    - 14,500 (34%) involved adults, ages 18 through 59 years; and
    - 3,200 (7%) involved seniors, ages 60 years and older.
  - Reported fatalities:
    - 294 (84%) involved children, victim ages 1 month to 8 years;
    - 16 (5%) involved adults, victim ages 31 years to 59 years; and
    - 39 (11%) involved seniors, victim ages 61 years to 96 years.
- What fell?
  - Estimated emergency department-treated injuries:
    - 18,900 (44%) involved televisions (or TV + furniture) falling;
    - 22,600 (52%) involved only furniture falling; and
    - 1,600 (4%) involved appliances falling.
  - Reported fatalities:
    - 215 (62%) involved televisions falling (36% only TV, 26% TV + furniture);
      - Largest category after TV only was TV + chest, bureau, or dresser.
    - 105 (30%) involved only furniture falling;
      - Largest category was chest, bureau, or dresser.
    - 29 (8%) involved appliances falling.
- Where?
  - Estimated emergency department-treated injuries:
    - 69% in residential settings, 4% in public settings, and 27% in locations not specified.
  - Reported fatalities:
    - 77% in residential settings, 5% in public settings, and 18% in locations not specified.
    - 40% in bedrooms and 19% in living/family rooms.
- Injury Characterization (main injury type and body area affected)
  - Estimated emergency department-treated injuries:
    - 39% contusions/abrasions, 15% internal organ injuries, 14% lacerations, and 13% fractures.
    - Head (39%); legs, feet, and toes (34%); and arms, hands, and fingers (16%).
  - Reported fatalities:
    - 57% were crushed and remained under product(s); 12% were hit/struck by product(s) but not crushed under product(s); and 19% were due to positional asphyxia.
    - Head (57% head only; 4% head and torso; 1% head and limbs) and torso (25%).

Emergency Department-Treated Injuries

For 2009 through 2011, an estimated annual average of 43,200 people were treated in U.S. hospital emergency departments for product instability or tip-over injuries related to televisions, furniture, and appliances. 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 22,600 injuries (52 percent). This was followed by the national instability or tip-over injury estimate of 18,900 injuries (44 percent) associated with televisions. A television falling in combination with furniture falling is counted only in the television category. The appliance category had the lowest estimate of the three categories, with 1,600 instability or tip-over related injuries (4 percent). 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 2011, there is no statistically significant trend detected for the total television, furniture, and appliance estimates or any of the subcategory estimates (televisions, only furniture, or appliances).[1]

Table 1
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Year, 2006–2011

Year[2]	Estimated Emergency Department-Treated Injuries[3]			
	Televisions	Only Furniture	Appliances	Television, Furniture, and Appliance Total
Annual Avg (2009–2011)	18,900	22,600	1,600	43,200
Avg 95% Confidence Interval (CI)	(15,900, 21,900)	(18,800, 26,400)	(1,200, 2,100)	(36,600, 49,800)
2011	17,000	20,900	2,200	40,100
2010	20,000	23,600	1,700	45,300
2009	19,700	23,400	–	44,200
2008	17,800	20,400	2,300	40,500
2007	16,400	20,100	1,200	37,800
2006	15,900	21,800	1,400	39,100

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

[1] The threshold for determining statistical significance is a probability value (p-value) less than 0.05.
[2] The 2009, 2008, 2007, and 2006 estimates reported here differ from estimates reported previously because these revised estimates reflect the updated criteria described in Appendix B.
[3] The estimates are rounded to the nearest hundred. Estimates may not sum to total, due to rounding. The Coefficients of Variation (CVs) for the given estimates ranged from 0.0648 to 0.2406.

Table 2 records the annual average total television, furniture, and appliance estimated injuries by victim age category. Each total estimate is further refined into estimates for product categories. Notice that the category, younger than 10 years of age, is the largest age category (53 percent) associated with product instability or tip-over injuries for televisions, furniture, and appliances. This estimate can be further refined into television (29 percent) and furniture (23 percent) estimates.

Table 2
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Victim Age Category, 2009–2011[4]

Victim Age Category (years)	Estimated Emergency Department-Treated Injuries[5] (Percent of Estimate) (Television, Furniture, and Appliance Total 43,200)	
	Product Category[6]	**Estimate**
<1 through 9	TV, Furniture, & Appliance Total TV Only Furniture	22,800 (53%) 12,700 (29%) 10,100 (23%)
10 through 19	TV, Furniture, & Appliance Total TV Only Furniture	3,300 (8%) 1,300 (3%) 2,000 (5%)
20 through 29	TV, Furniture, & Appliance Total TV Only Furniture	4,500 (10%) 1,300 (3%) 2,800 (6%)
30 through 39	TV, Furniture, & Appliance Total TV Only Furniture	3,600 (8%) – 2,300 (5%)
40 through 49	TV, Furniture, & Appliance Total TV Only Furniture	3,200 (7%) – 2,000 (5%)
50 through 59	TV, Furniture, & Appliance Total TV Only Furniture	2,500 (6%) – 1,700 (4%)
60 through 69	TV, Furniture, & Appliance Total TV Only Furniture	1,400 (3%) – –
≥ 70	TV, Furniture, & Appliance Total TV Only Furniture	1,800 (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.

[4] Percentages may not sum to 100, due to rounding.
[5] The estimates are rounded to the nearest hundred, and dashes indicate that data was insufficient to support reliable statistical estimates. The CVs for the given estimates (2009–2011) ranged from 0.0897 to 0.1568.
[6] 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, the age categories of child (less 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 59 percent of the television, furniture, and appliance instability or tip-over emergency department-treated injury estimate. Adults and seniors account for 34 percent and 7 percent, respectively. A statistical difference between age categories is suggested because the confidence intervals for each victim age category do not overlap.

The 43,200 injury estimate can be further refined by product categories in many cases. Table 3 presents these estimates. Children experience the most injuries with televisions (estimated 13,800) and furniture (estimated 11,600 injuries). Adults and seniors experience the most injuries with furniture (estimated 9,100 and 1,900 injuries, respectively). Children had the highest rates annually for televisions, with 19 emergency department-treated injuries per 100,000 children, followed by furniture, with 16 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, 2009–2011

Annual Average	**Estimated Emergency Department-Treated Injuries**[7] (Emergency Department Injuries Per 100,000 U.S. Population[8])		
	Children (<1 to 17 years)	**Adults (18 to 59 years)**	**Seniors (60+ years)**
Televisions, Furniture, and Appliances Total	25,400 (34)	14,500 (7)	3,200 (10)
Avg 95% Confidence Interval (CI)	(21,000, 29,900) (28, 40)	(12,200, 16,800) (6, 8)	(2,400, 4,000) (8, 13)
Televisions	13,800 (19)	4,100 (2)	–
Only Furniture	11,600 (16)	9,100 (4)	1,900 (6)
Appliances	–	1,300 (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.

[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 (2009–2011) ranged from 0.0802 to 0.1673.

[8] The U.S. population figure for children, adults, and seniors is an average of 2008, 2009, and 2010 data for each age category for the month of July from Census data.

Children account for the largest portion of television and furniture injuries. See Table 4. These estimates 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). Roughly two-thirds of the child emergency department-treated product instability or tip-over injury estimates for televisions or furniture are accounted for by victims 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 have the most estimated injuries.

Table 4
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Selected Child Victim Age Category, 2009–2011

1	1,700 (12 %)	2,000 (17%)
2	2,800 (21%)	2,300 (20%)
3	2,600 (19%)	1,600 (13%)
4	1,900 (14%)	1,300 (11%)
5 through 17	4,700 (34%)	4,000 (34%)

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 (13,800) could be refined further for one subtype. There were 1,900 estimated injuries (14 percent) where the television and a chest, bureau, or dresser both fell.

[9] For children less than 1 year of age, 1 percent was in the TV category and 4 percent was in the only furniture category.
[10] The estimates are rounded to the nearest hundred and the CVs for the given estimates (2009–2011) ranged from 0.1008 to 0.1652.

The furniture estimates can be refined further by furniture subtypes. A majority of the only furniture-related injuries for children (82 percent) were in three furniture subtype categories. For the furniture instability or tip-over estimate for children (11,600), tables accounted for 4,000 injuries (34 percent); chests, bureaus, and dressers for 3,300 injuries (28 percent); and shelves, shelving units, and bookcases for 2,200 injuries (19 percent). A similar pattern occurred with only furniture injuries for adults, for which the majority (87 percent) were in four furniture subtype categories. Looking at the total furniture instability or tip-over estimate for adults (9,100), shelves, shelving units, and bookcases were associated with 2,700 injuries (29 percent); tables with 2,500 injuries (27 percent); chests, bureaus, and dressers with 1,400 injuries (15 percent); and cabinets with 1,400 injuries (15 percent). The remaining (2,100 for children and 1,200 for adults) estimated only-furniture related injuries were associated with a range of furniture subcategories, but there was not enough data to support reliable statistical estimates.[11] 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, 2009–2011[12]

Furniture Subtype	Estimated Emergency Department-Treated Injuries[13] (Percent of Estimate)	
	Children (<1 to 17 years) (Child Furniture Estimate 11,600)	Adults (18 to 59 years) (Adult Furniture Estimate 9,100)
Tables	4,000 (34%)	2,500 (27%)
Chests, Bureaus, and Dressers (CBD)	3,300 (28%)	1,400 (15%)
Shelving, Shelving Units, and Bookcases (Shelf)	2,200 (19%)	2,700 (29%)
Cabinets	–	1,400 (15%)
Remaining Furniture Subtypes[14]	2,100 (18%)	1,200 (13%)

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

[11] The criteria for estimates are discussed in Appendix A.
[12] Percentages may not sum to 100, due to rounding.
[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 (2009–2011) ranged from 0.1070 to 0.1847.
[14] Remaining furniture subtypes for children also includes cabinets, due to the cabinets estimate being too small to report separately.

There were an estimated 20,600 males injured (48%) and an estimated 22,500 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 television[16] and furniture[17] subcategories.

Table 6
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Gender, 2009–2011

Gender	Estimated Emergency Department-Treated Injuries[18] (Percent of Estimate)			
	Product Category[19]	Children (<1 to 17 years) (Total Child Estimate 25,400)	Adults (18 to 59 years) (Total Adult Estimate 14,500)	Seniors (60+ years) (Total Senior Estimate 3,200)
Male	TV, Furniture, & Appliance Total	13,800 (54%)	5,800 (40%)	–
	TV	7,400 (29%)	1,500 (10%)	–
	Only Furniture	6,300 (25%)	3,400 (23%)	–
Female	TV, Furniture, & Appliance Total	11,700 (46%)	8,700 (60%)	2,200 (68%)
	TV	6,400 (25%)	2,700 (18%)	–
	Only Furniture	5,300 (21%)	5,700 (39%)	1,300 (42%)

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-nine percent of the estimated 43,200 injuries occurred in a residential location. There were 4 percent in public locations, and the remaining 27 percent did not record the location. These percentages are similar for children (74 percent residential and 4 percent public), adults (61 percent residential and 3 percent public) and seniors (64 percent residential and 7 percent public).

[15] The criteria for estimates are discussed in Appendix A.
[16] For adults and televisions, avg 95% CI is (1,000, 1,900) for males, and (2,100, 3,200) for females.
[17] For adults and furniture, avg 95% CI is (2,700, 4,100) for males, and (4,600, 6,900) for females.
[18] The estimates are rounded to the nearest hundred, and dashes indicate instances where data was insufficient to support reliable statistical estimates. The CVs for the given estimates (2009–2011) ranged from 0.0855 to 0.1684.
[19] 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.

The majority of victims (94 percent children, 96 percent adults, and 88 percent seniors) of these emergency department-treated injuries were treated and released, or examined and released without treatment. 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 were contusions/abrasions (16,900), internal organ injuries (6,700), lacerations (6,200), and fractures (5,700). The most frequent injury diagnosis for children was contusions/abrasions (9,600). This is followed by internal organ injuries (5,400), lacerations (3,800), and fractures (3,200). The most frequent injury diagnosis for adults was contusions and abrasions (6,100), as well. This is followed by fractures (2,000), lacerations (1,700), and strains/sprains (1,300). Table 7 illustrates the estimates, where available.

Table 7
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Diagnosis, 2009–2011[20]

Diagnosis	Estimated Emergency Department-Treated Injuries[21] (Percent of Estimate)			
	Product Category[22]	Children (<1 to 17 years) (Total Child Estimate 25,400)	Adults (18 to 59 years) (Total Adult Estimate 14,500)	Seniors (60+ years) (Total Senior Estimate 3,200)
Contusions, Abrasions	TV, Furniture, & Appliance Total	9,600 (38%)	6,100 (42%)	1,200 (36%)
	TV	5,500 (22%)	1,700 (12%)	–
	Only Furniture	4,100 (16%)	3,800 (26%)	–
Internal Organ Injury	TV, Furniture, & Appliance Total	5,400 (21%)	–	–
	TV	3,600 (14%)	–	–
	Only Furniture	1,800 (7%)	–	–
Lacerations	TV, Furniture, & Appliance Total	3,800 (15%)	1,700 (12%)	–
	TV	1,300 (5%)	–	–
	Only Furniture	2,400 (10%)	1,300 (9%)	–
Fractures	TV, Furniture, & Appliance Total	3,200 (12%)	2,000 (14%)	–
	TV	1,500 (6%)	–	–
	Only Furniture	1,700 (6%)	1,200 (8%)	–
Strains or Sprains	TV, Furniture, & Appliance Total	–	1,300 (9%)	–
	TV	–	–	–
	Only Furniture	–	–	–
All Other Diagnoses[23]	TV, Furniture, & Appliance Total	3,400 (13%)	3,400 (24%)	2,000 (64%)
	TV	1,800 (7%)	–	–
	Only Furniture	1,600 (6%)	2,800 (19%)	–

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

[20] Percentages may not sum to 100, due to rounding.
[21] 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 (2009–2011) ranged from 0.0820 to 0.2082.
[22] 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.
[23] All other diagnoses for each age category also include diagnosis with a dash, due to the estimate being too small to report separately. For example, child strains or sprains could not be reported separately but it is included in the child all other diagnoses.

Most injuries affected the head (17,000) or legs, feet, and toes (14,800). This is followed by arms, hands, and fingers (7,100). The remaining injuries affected the torso (4,100). 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 (13,000) and legs, feet, and toes (7,600). Adults had the most injuries affecting the legs, feet, and toes (6,000) and arms, hands, and fingers (3,900). Seniors are not included in this table because there were not enough data to support reliable statistical estimates.[24]

Table 8
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Area of Body, 2009–2011[25]

Primary Area of Body Affected	**Estimated Emergency Department-Treated Injuries[26] (Percent of Estimate)**		
	Product Category[27]	**Children (<1 to 17 years)** (Total Child Estimate 25,400)	**Adults (18 to 59 years)** (Total Adult Estimate 14,500)
Head	TV, Furniture, & Appliance Total	13,000 (51%)	3,000 (21%)
	TV	7,700 (30%)	–
	Only Furniture	5,300 (21%)	2,000 (14%)
Legs, Feet, and Toes (Legs)	TV, Furniture, & Appliance Total	7,600 (30%)	6,000 (42%)
	TV	3,900 (15%)	1,300 (9%)
	Only Furniture	3,700 (14%)	4,400 (30%)
Arms, Hands, and Fingers (Arms)	TV, Furniture, & Appliance Total	2,700 (11%)	3,900 (27%)
	TV	–	1,300 (9%)
	Only Furniture	1,600 (6%)	1,900 (13%)
Torso	TV, Furniture, & Appliance Total	2,000 (8%)	1,600 (11%)
	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] Percentages may not sum to 100, due to rounding.
[26] 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 (2009–2011) ranged from 0.0907 to 0.1335.
[27] 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.

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 (5,400), followed by contusions/abrasions (3,400), and lacerations (2,800). Many of the leg injuries were diagnosed as contusions/abrasions (3,900) and fractures (1,700). For many of the adult leg injuries, the diagnosis was contusions/abrasions (3,100). Some of the adult arm injuries were also constusions/abrasions (1,700). Many of the child injuries affecting the torso were also contusions/abrasions (1,300). Table 9 gives the estimates.

Table 9
Annual Average of Estimated Emergency Department-Treated
Product Instability or Tip-Over Injuries by Selected Area of Body/Diagnosis, 2009–2011

Primary Area of Body Affected/ Diagnosis	Estimated Emergency Department-Treated Injuries[28]		
	Product Category[29]	Children (<1 to 17 years) (Total Child Estimate 25,400)	Adults (18 to 59 years) (Total Adult Estimate 14,500)
Head/ Internal Organ Injury	TV, Furniture, & Appliance Total	5,400 (21%)	–
	TV	3,600 (14%)	–
	Only Furniture	1,800 (7%)	–
Head/ Contusions, Abrasions	TV, Furniture, & Appliance Total	3,400 (13%)	–
	TV	2,000 (8%)	–
	Only Furniture	1,400 (5%)	–
Head/ Lacerations	TV, Furniture, & Appliance Total	2,800 (11%)	–
	TV	–	–
	Only Furniture	1,700 (7%)	–
Legs/ Contusions, Abrasions	TV, Furniture, & Appliance Total	3,900 (15%)	3,100 (21%)
	TV	2,300 (9%)	–
	Only Furniture	1,600 (6%)	2,200 (15%)
Legs/ Fractures	TV, Furniture, & Appliance Total	1,700 (7%)	–
	TV	–	–
	Only Furniture	–	–
Arms/ Contusions, Abrasions	TV, Furniture, & Appliance Total	–	1,700 (12%)
	TV	–	–
	Only Furniture	–	–
Torso/ Contusions, Abrasions	TV, Furniture, & Appliance Total	1,300 (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.

[28] 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 (2009–2011) ranged from 0.0977 to 0.2130.
[29] 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.

Reported Fatalities

CPSC staff has received 349 reports of product instability or tip-over fatalities that occurred between 2000 and 2011, and that are related to televisions, furniture, and appliances. Of these 349 reported fatalities, 62 percent (215 deaths) involved televisions falling, with 89 of the 215 fatalities associated with televisions along with the furniture in/on which the television was resting falling as well. Thirty percent (105 deaths) of the 349 reported fatalities were associated with only furniture falling. The remaining 8 percent (29 deaths) involved appliances falling. Table 10 presents the instability or tip-over data for televisions, furniture, and appliances by year of incident.

Table 10
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Year, 2000–2011

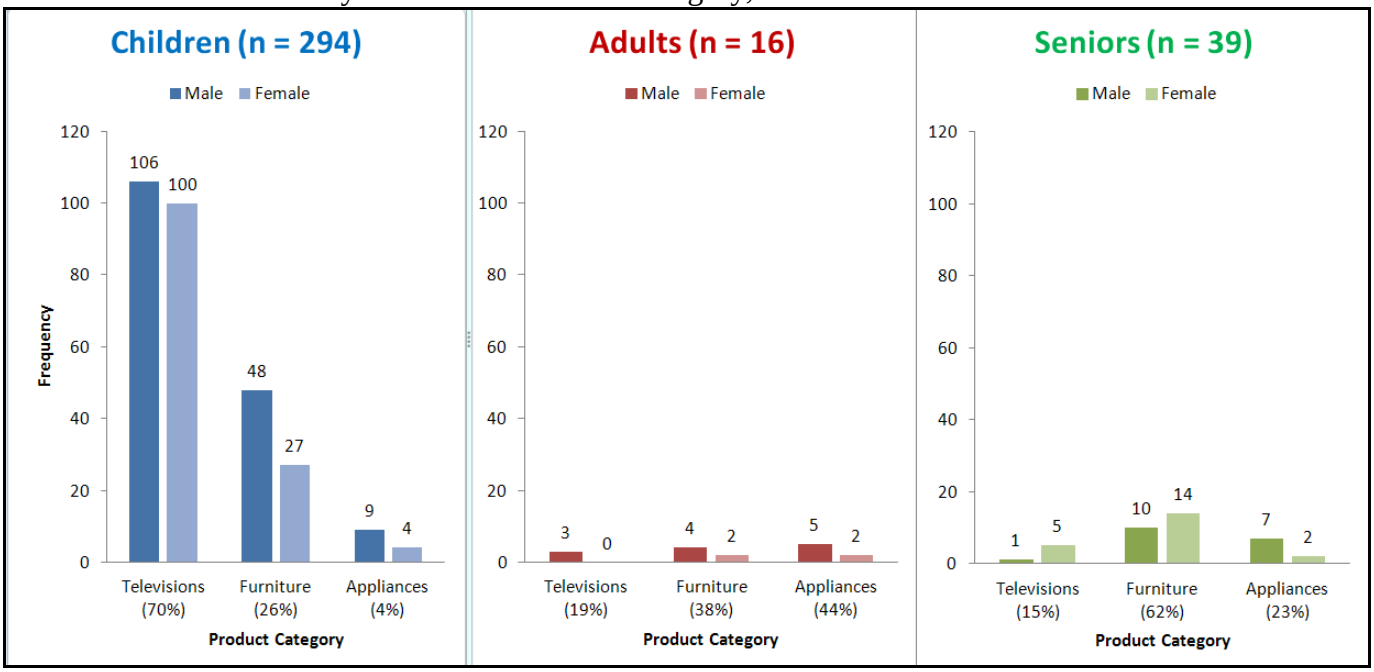
Year	Televisions (TV + Furniture)[30]	Only Furniture	Appliances	Television, Furniture, and Appliance Total	Percent of Total (n = 349)[31]
2011*	29 (14)	10	2	41	12%
2010*	22 (5)	5	4	31	9%
2009*	20 (12)	6	1	27	8%
2008	29 (11)	10	0	39	11%
2007	25 (14)	7	0	32	9%
2006	23 (7)	5	3	31	9%
2005	18 (10)	10	2	30	9%
2004	11 (2)	13	1	25	7%
2003	9 (1)	6	4	19	5%
2002	10 (4)	10	3	23	7%
2001	12 (5)	19	6	37	11%
2000	7 (4)	4	3	14	4%
Product Category Total	215 (89)	105	29	**349**	
Percent of Total (n = 349)	62% (26%)	30%	8%		

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.

[30] Numbers within parentheses represent the subset of televisions falling, where both the television and furniture on which the television was resting fell.
[31] Percentages may not sum to 100 percent, 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 (294 deaths) of these fatalities were children. This is followed by seniors with 11 percent (39 deaths); and the remaining victims were adults (5 percent; 16 deaths). Of the 294 child fatalities, 70 percent (206 deaths) involved falling televisions, and 26 percent (75 deaths) involved only furniture falling. Examining the 39 senior fatalities, 62 percent (24 deaths) involved only furniture falling, and 23 percent (9 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 (64 percent male, versus 36 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, 2000–2011[32]

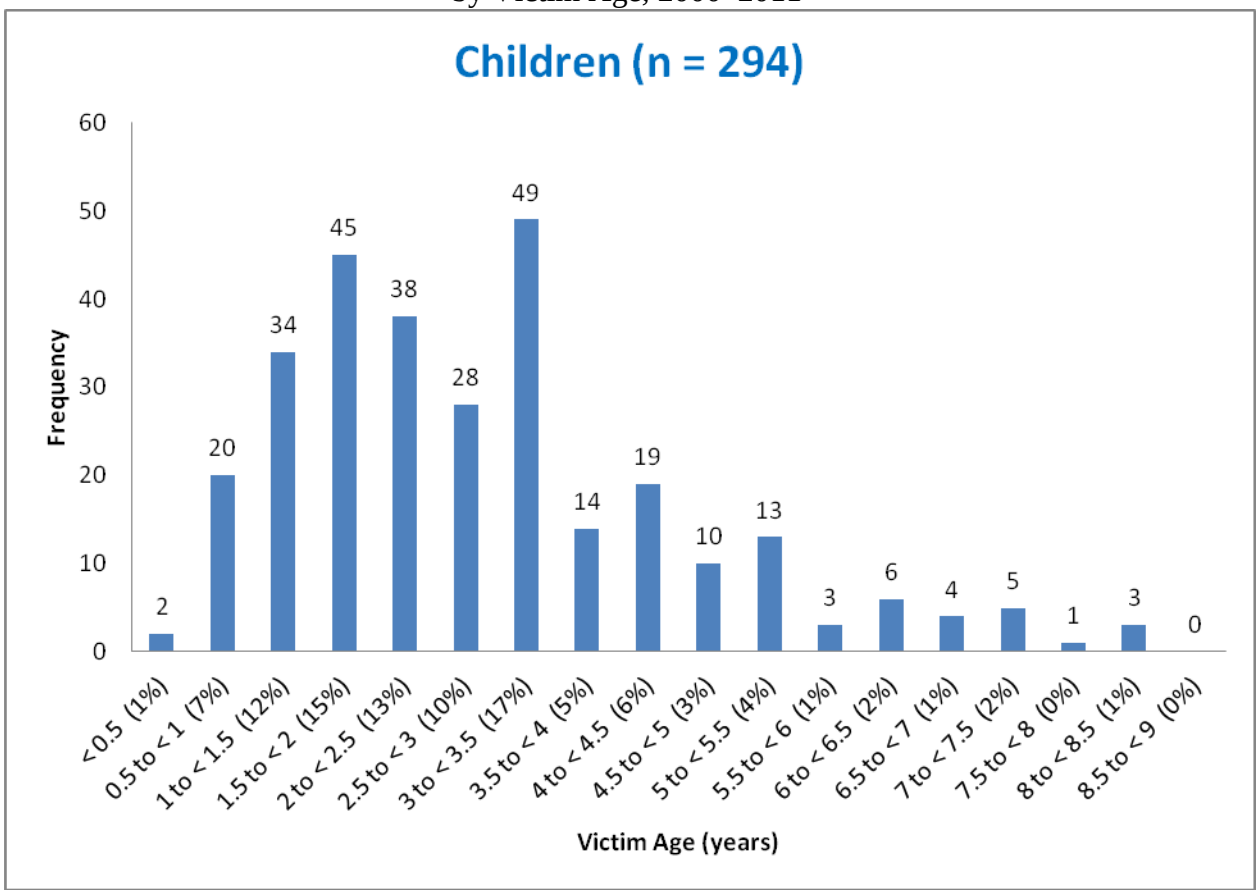


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

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

Counts by victim age category for the 294 fatalities involving children are presented in Graph 2. Children ranged in age from 1 month to 8 years. Sixty-six percent (194 deaths) of the children were at least 1 year of age and less than 3½ years of age.

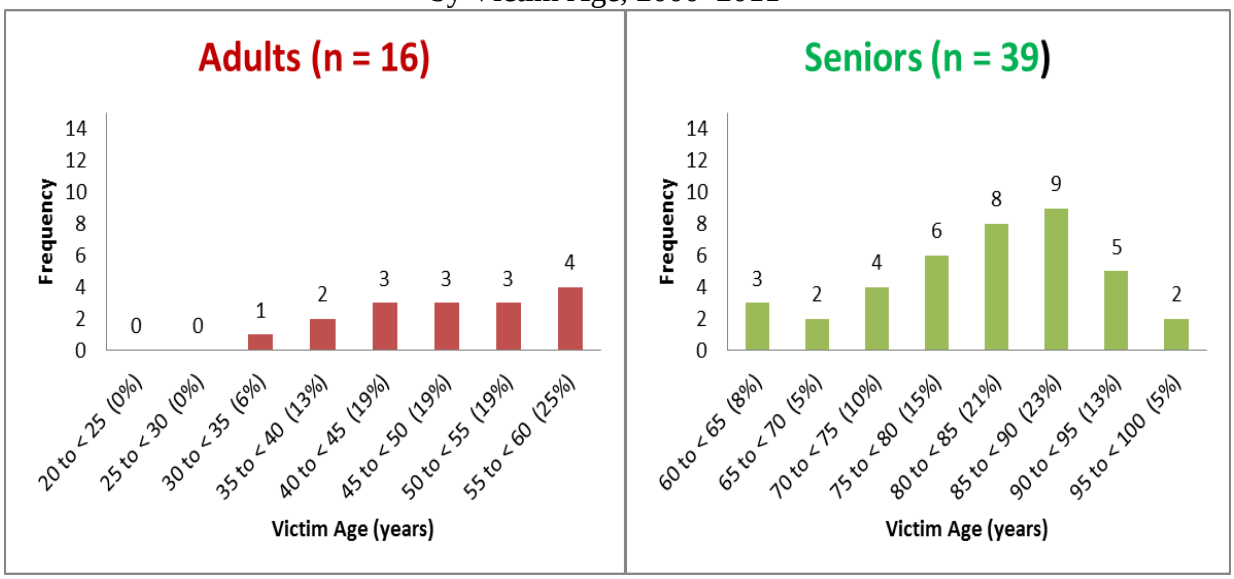
Graph 2
Child Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Victim Age, 2000–2011



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

Adults and seniors account for 55 fatalities. The adults ranged in age from 31 years to 59 years, and the seniors ranged in age from 60 years to 96 years. Fifty-five percent (30 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, 2000–2011[33]

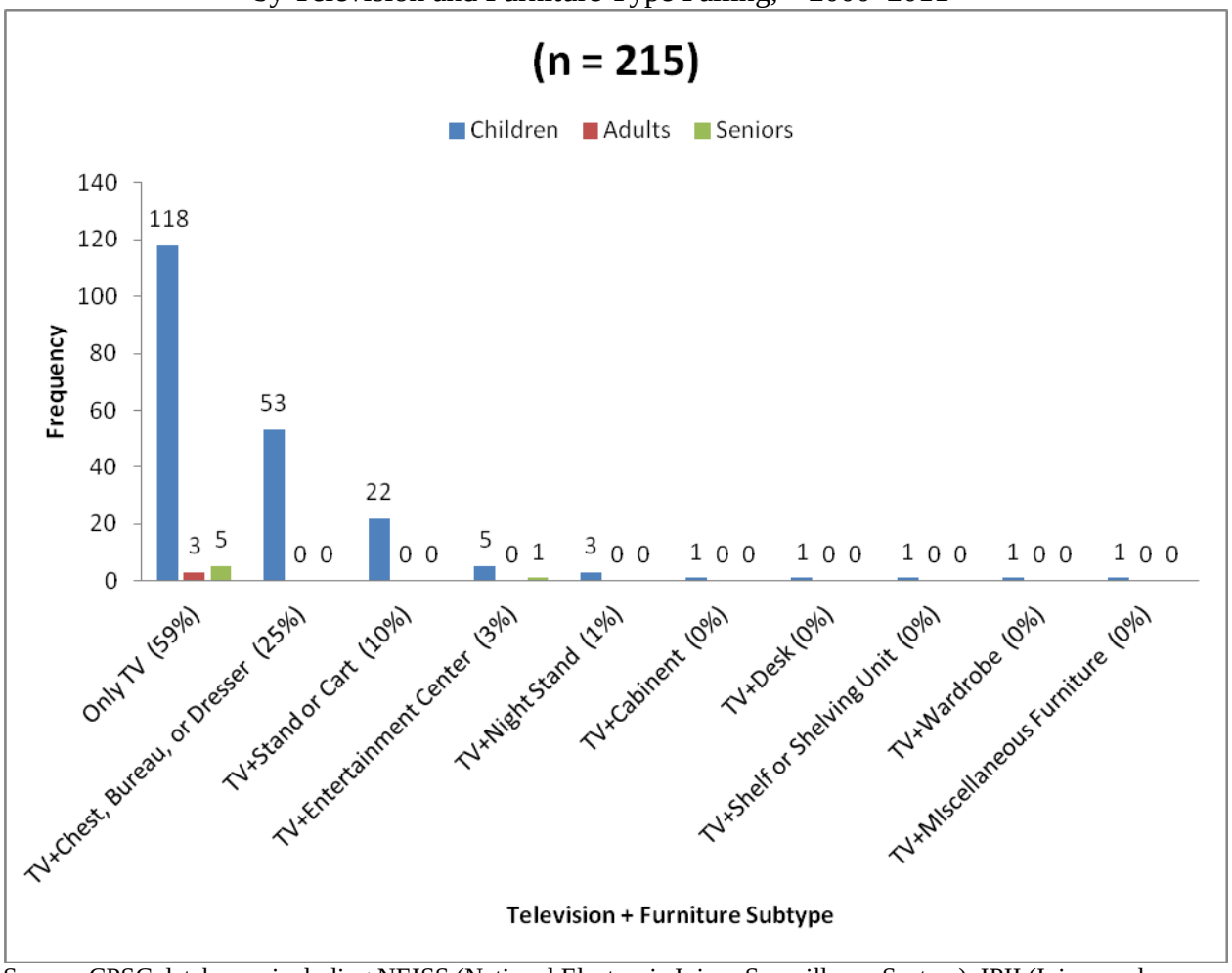


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

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

Sixty-two percent (215 deaths) of the 349 fatalities involved televisions. Of these 215 deaths, 96 percent (206 fatalities) were children; 1 percent (3 fatalities) were adults; and 3 percent (6 fatalities) were seniors. In 59 percent (126 deaths) of the 215 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; 53 deaths), and a television plus a cart/stand falling (10 percent; 22 deaths). Graph 4 shows the frequencies.

Graph 4
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Television and Furniture Type Falling,[34] 2000–2011[35]

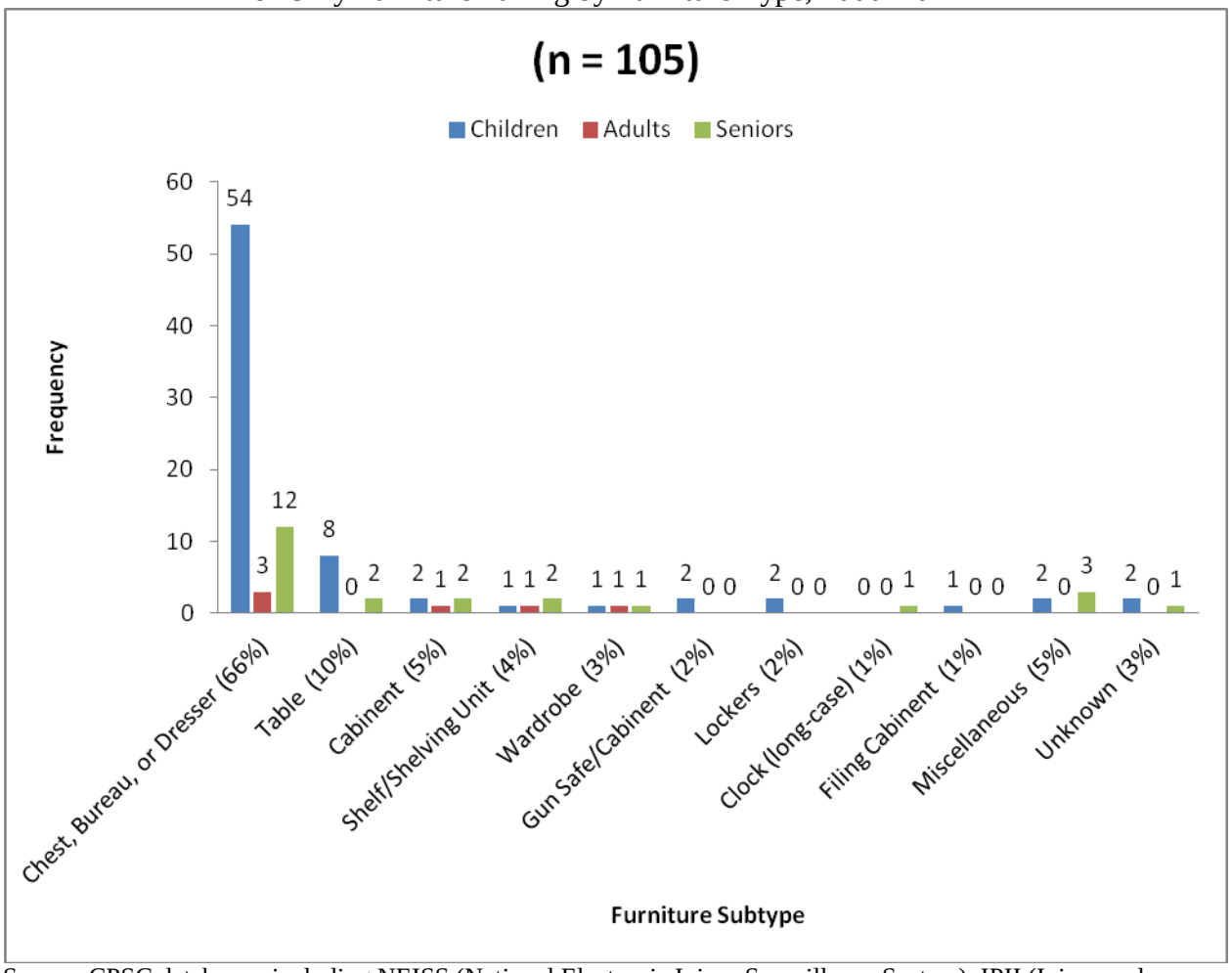


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

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

Of the 349 fatalities, 30 percent (105 deaths) involved only furniture falling. For these 105 deaths, 71 percent (75 fatalities) were children; 23 percent (24 fatalities) were seniors; and 6 percent (6 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 (66 percent; 69 deaths).

Graph 5
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
for Only Furniture Falling by Furniture Type, 2000–2011[36]

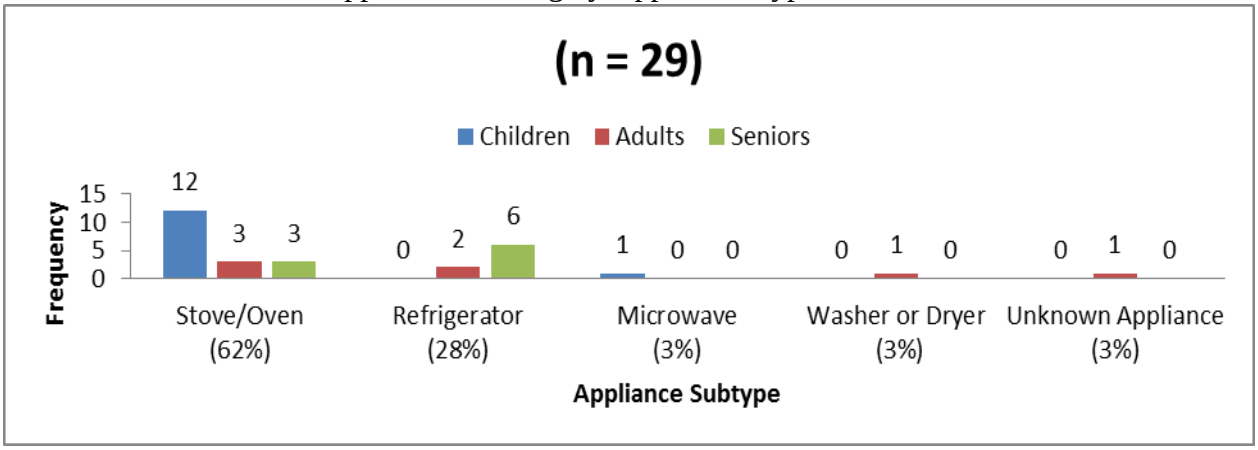


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

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

The remaining 8 percent (29 deaths) of the 349 fatalities involved appliances falling. For these 29 deaths, 13 fatalities were children; 9 were seniors; and 7 were adults. For appliances, the stove category included the largest number of fatalities (18 deaths). Graph 6 presents these frequencies.

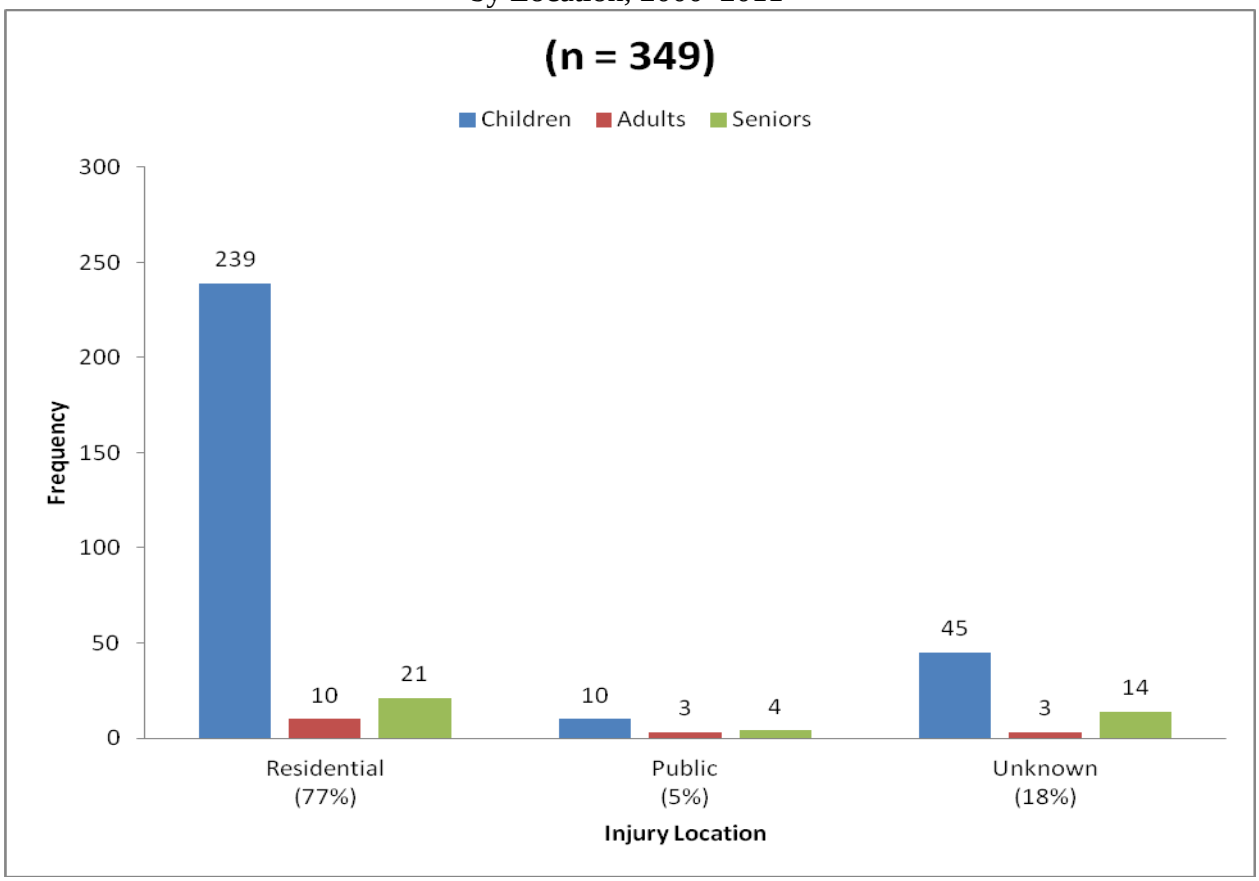
Graph 6
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
for Appliances Falling by Appliance Type, 2000–2011



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 77 percent (270 deaths) of the fatalities. Five percent occurred in public locations (17 deaths); and 18 percent (62 deaths) did not provide enough information to determine the location. Fatalities of children had a similar distribution by location (81 percent residential, 3 percent public, and 15 percent unknown). Graph 7 shows these details.

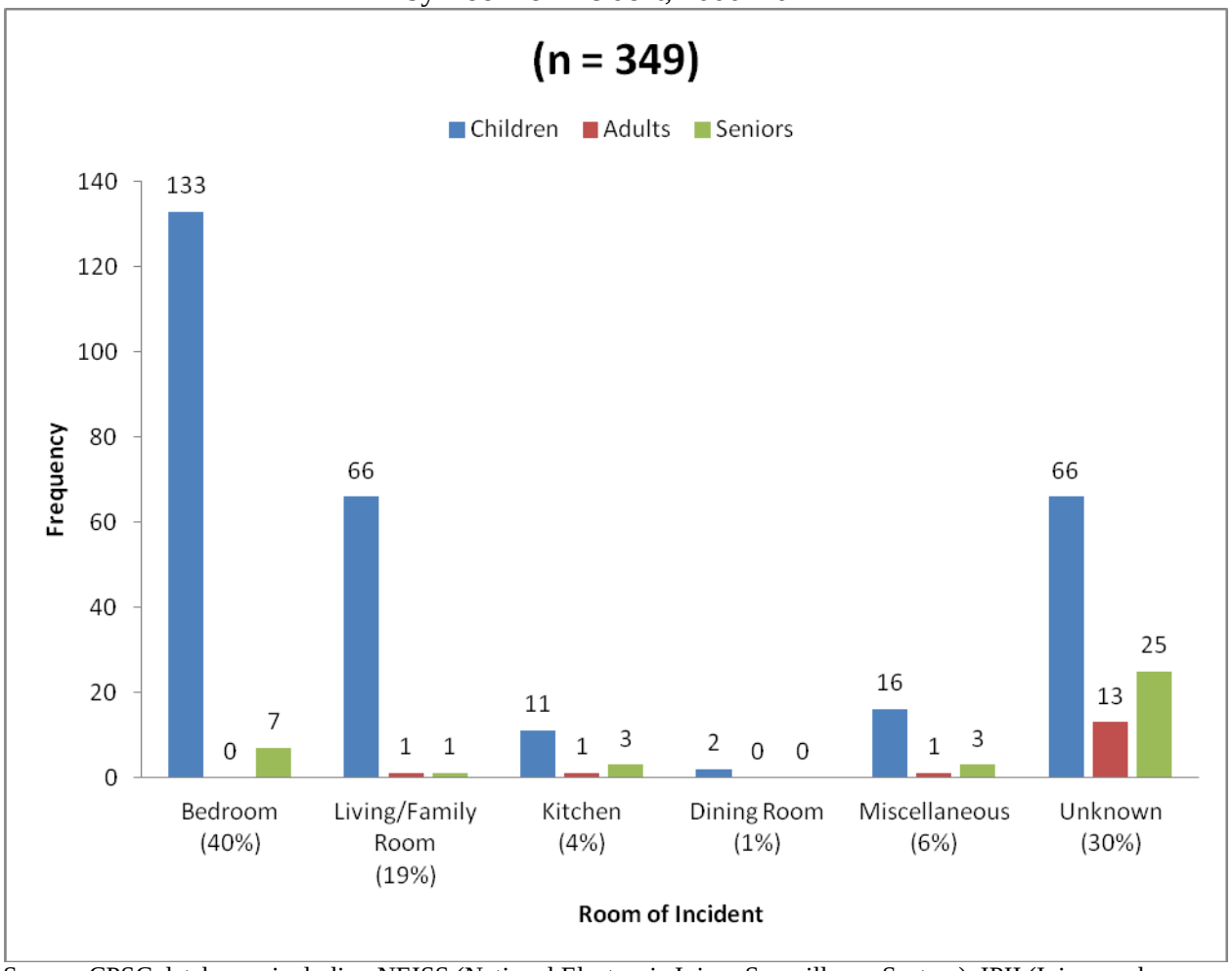
Graph 7
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Location, 2000–2011



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

For the room where the incident occurred, the bedroom had the largest number of fatalities, with 40 percent (140 deaths). This is followed by the living/family room, with 19 percent (68 deaths). There is also a large portion of unknown locations (30 percent; 104 deaths) for this room-of-incident variable. Of the fatalities involving children (294 deaths), 45 percent occurred in bedrooms, and 22 percent happened in living/family rooms. For adults and seniors (16 adult deaths; 39 senior deaths), there were many unknown locations (81 percent for adults, and 64 percent for seniors). Graph 8 details this characteristic.

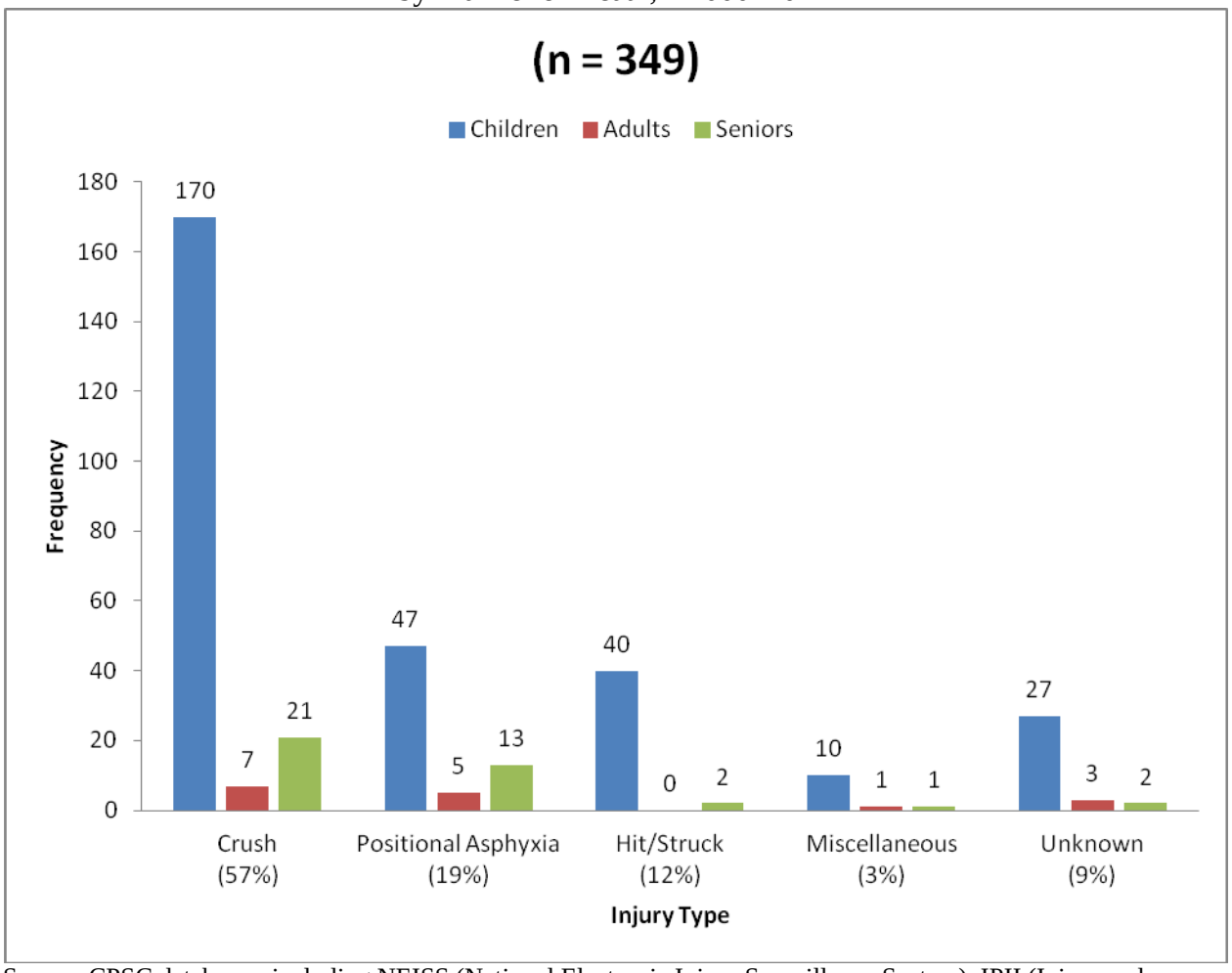
Graph 8
Product Instability or Tip-Over Fatalities Reported to CPSC Staff
by Room of Incident, 2000–2011



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 (57 percent). This is followed by fatalities that were the result of positional asphyxia[38] (19 percent) and fatalities due to being hit/struck[39] (12 percent) by product(s). Crushing incidents accounted for the largest number of fatalities in each victim age category. 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] 2000–2011

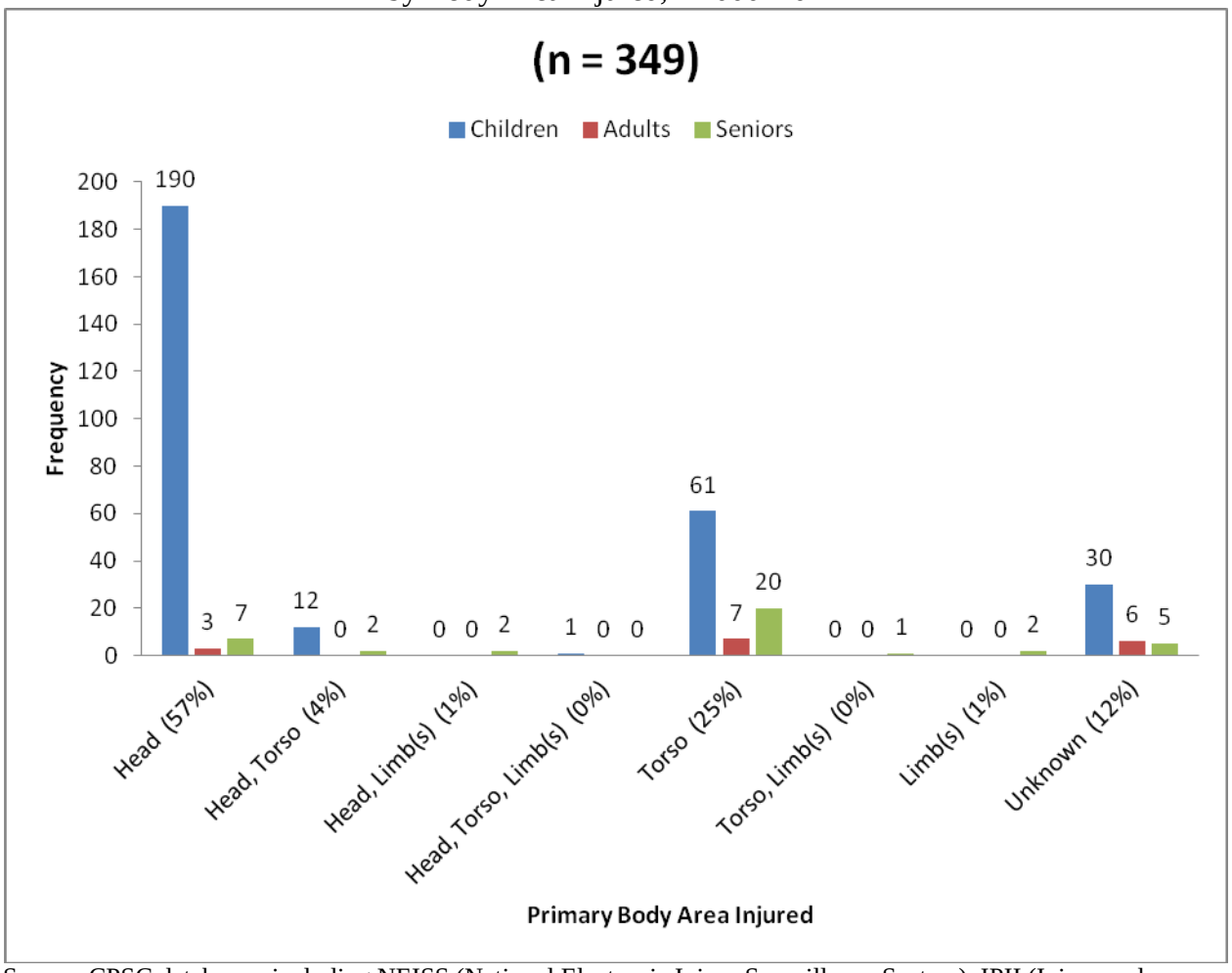


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[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] CPSC Directorate for Health Sciences staff coded each fatality by injury type.

The head was the area of the body injured most frequently (57 percent head only; 4 percent head and torso; 1 percent head and limb(s)) in these reported fatalities); this is followed by the torso (25 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,[41] 2000–2011

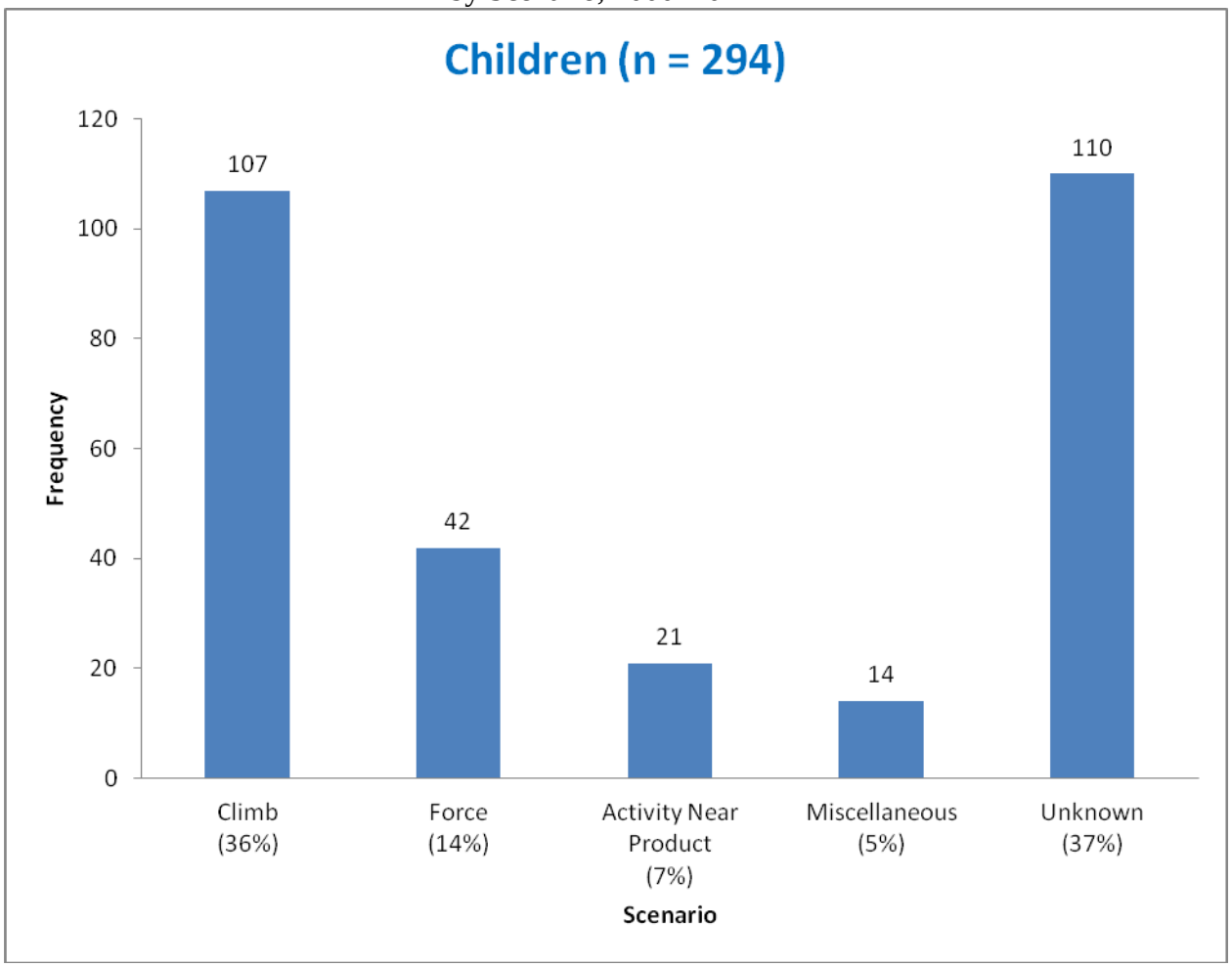


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations).

[41] CPSC Directorate for Health Sciences staff coded the body area injured for each fatality.

The hazard scenarios were classified, where possible. The scenarios for the 55 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 294 deaths involving children, there is also a large set of unknown scenarios (37 percent; 110 deaths). In 36 percent (107 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; 42 deaths). In 7 percent (21 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 5 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, 2000–2011[42]



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

[42] 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, 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. These product codes were updated from previous years, and two appliance codes, dishwashers (214) and trash compactors (252), used in previous years were removed from the potential product codes to examine due to them often not being free-standing and being under countertops. 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 [43]

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	Billards 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	Clothelines or clothes drying racks (excluding poles)
Appliance	3233	Other grills or stoves

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

[43] The source for product codes and descriptions is the NEISS Coding Manual (updated January 2011).

caution when extracting a potential set of data because the narrative field descriptions have so many possible word choices and sentence structures. Also, 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.

Injury estimates came from 2011 NEISS data extracted on July 15, 2012, and merged with data from last year's report for the years 2006 through 2010, to cover the 2006 through 2011 reporting period. 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. Since reports in NEISS are unique, there were no duplicates. NEISS data is 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 July 17, 2012, 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 2011. The data were merged with the data used in the last report (September 2011). 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. Injury count category percentages were based on the category sample size observed, divided by the total sample size. Death 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 rules were revised from the last NEISS data extraction and resulted in changes to the 2006, 2007, and 2008 NEISS estimates. The furniture category was adjusted to include only lockers known to be used in a residential setting and the appliance category was adjusted to remove dishwashers and trash compactors.

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, fan, food processor, fryer, heater (electric or gas), rice cooker, stove hood/fan, toaster, toaster oven, 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.