



Instability and Tipover of Appliances, Furniture, and Televisions: Estimated Injuries and Reported Fatalities, 2010 Report



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Executive Summary

This report contains information on instability or tipover of appliances, furniture, and televisions. An estimate of emergency department-treated instability or tipover injuries is presented. This is followed by the counts of reported fatalities. The death incidents are from 2000 through 2008, and the injury estimates are for 2006 through 2008. Appendix A gives the methodology. The statistics presented in this report are not comparable to previously released statistics 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 38,900 emergency department-treated injuries (2006–2008) and the 242 reported fatalities occurring between 2000 and 2008, staff noted the following:

- Victims
 - Estimated emergency department-treated injuries:
 - 21,800 (56%) involved children, under age 18 years;
 - 14,500 (37%) involved adults, ages 18 through 59 years; and
 - 2,600 (7%) involved seniors, ages 60 years and older.
 - Reported fatalities:
 - 199 (82%) involved children, victim ages 1 month to 8 years;
 - 13 (5%) involved adults, victim ages 31 years to 59 years; and
 - 30 (12%) involved seniors, victim ages 61 years to 96 years.
- What fell?
 - Estimated emergency department-treated injuries:
 - 16,500 (42%) involved televisions (or TV + furniture) falling;
 - 20,700 (53%) only had furniture falling; and
 - 1,700 (4%) had appliances falling.
 - Reported fatalities:
 - 138 (57%) had televisions falling (35% only TV, 22% TV + furniture);
 - Largest category after only TV was TV + chest, bureau, or dresser.
 - 82 (34%) only had furniture falling;
 - Largest category was chest, bureau, or dresser.
 - 22 (9%) had appliances falling;
 - Largest category was stove.
- Where?
 - Estimated emergency department-treated injuries:
 - 75% in residential settings, 5% in public settings, and 20% in locations not specified.
 - Reported fatalities:
 - 71% in residential settings, 5% in public settings, and 24% in locations not specified.
 - 36% in bedrooms and 17% in living/family rooms.
- Injury Characterization (main injury type and body area affected)
 - Estimated emergency department-treated injuries:
 - 42% contusions/abrasions, 15% fractures, and 15% lacerations.
 - Head (35%); legs, feet, and toes (35%); and arms, hands, and fingers (19%).
 - Reported fatalities:
 - 52% were crushed and remained under product(s); 14% were hit/struck by product(s) but not crushed under product(s); and 21% were positional asphyxia.
 - Head (52% head only; 3% head and torso) and torso (27%).

Emergency Department-Treated Injuries

For 2006 through 2008, an estimated annual average of 38,900 people were treated in U.S. hospital emergency departments for injuries related to instability or tipover of appliances, furniture, and televisions. The furniture category had the largest number of injuries among the three product categories, with a national annual average estimate of 20,700 injuries associated with instability or tipover. This was followed by the national injury estimate of 16,500 injuries involving instability or tipover 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 1,700 injuries associated with instability or tipover. Estimates are shown in Table 1.

Table 1
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Year, 2006–2008

Year	Estimated Emergency Department-Treated Injuries ¹			
	Appliances ²	Only Furniture ³	Televisions ⁴	Appliance, Furniture, and Television Total ⁵
Annual Average	1,700	20,700	16,500	38,900
Avg 95% Confidence Interval (CI)	(1,300, 2,100)	(17,900, 23,500)	(14,400, 18,600)	(34,300, 43,600)
2008	2,300	20,400	17,500	40,300
2007	1,300	20,200	16,400	37,900
2006⁶	1,500	21,500	15,600	38,600

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, and television product codes, as described in Appendix B.

¹ The estimates are rounded to the nearest hundred. Estimates may not sum to total due to rounding.

² The appliance Coefficients of Variation (CVs) are 0.1922, 0.2125, and 0.2305 for 2008, 2007, and 2006, respectively. The CV for the appliance total estimate (5,100) for 2006 through 2008 is 0.1318.

³ The furniture CVs are 0.0772, 0.0710, and 0.0981 for 2008, 2007, and 2006, respectively. The CV for the furniture total estimate (62,200) for 2006 through 2008 is 0.0685.

⁴ The television CVs are 0.0839, 0.0790, and 0.0961 for 2008, 2007, and 2006, respectively. The CV for the television total estimate (49,500) for 2006 through 2008 is 0.0652.

⁵ The combined appliance, furniture, and TV CVs are 0.0729, 0.0647, and 0.0814 for 2008, 2007, and 2006, respectively. The CV for the total estimate (116,800) for 2006 through 2008 is 0.0607.

⁶ The 2006 estimates have been revised based on the criteria described in Appendix B. The previous estimates for 2006 were 1,600 (appliances), 25,200 (furniture), 15,900 (televisions), and 42,700 (total for appliances, furniture, and televisions).

The estimates of people treated in U.S. emergency departments for appliance, furniture, and television instability or tipover injuries is not statistically different between the yearly injury estimates within each category of product, with one exception (appliances, 2007 and 2008).⁷ There is also not a statistical difference for the appliance, furniture, and television totals among the yearly estimates.

Table 2 records the annual average estimated injuries by victim age category. Notice that the category, younger than 10 years of age, is the largest age category (49 percent) associated with instability or tipover of appliances, furniture, and televisions.

Table 2
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Victim Age Category, 2006–2008

Victim Age Category (years)	Estimated Emergency Department-Treated Injuries	
	Estimate ⁸	Percent of Total
<1 to 9	19,100	49%
10 to 19	3,500	9%
20 to 29	4,700	12%
30 to 39	3,400	9%
40 to 49	3,200	8%
50 to 59	2,300	6%
≥ 60	2,600	7%

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, or television product codes, as described in Appendix B.

⁷ The level of significance is 0.0319, and the p-value is not corrected for multiple comparisons.

⁸ The estimates are rounded to the nearest hundred. The CVs for the total estimates for 2006–2008 are 0.0762 (total est. 57,400) for 0–9, 0.0957 (total est. 10,600) for 10–19, 0.0994 (total est. 14,200) for 20–29, 0.0811 (total est. 10,100) for 30–39, 0.0912 (total est. 9,600) for 40–49, 0.1161 (total est. 7,000) for 50–59, 0.0948 (total est. 7,900) for 60-plus age categories.

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 tipovers or instability of appliances, furniture, and televisions. Children account for 56 percent of the appliance, furniture, and television emergency department-treated injury estimate (38,900). Adults and seniors account for 37 percent and 7 percent, respectively. Table 3 gives the estimated emergency department-treated injuries. A statistical difference is suggested because the confidence intervals for each victim age category do not overlap.

Table 3
Estimated Annual Average Total Number of Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Victim Age Category, 2006–2008

	Estimated Emergency Department-Treated Injuries⁹		
	Children¹⁰ (<1 to 17 years)	Adults¹¹ (18 to 59 years)	Seniors¹² (60+ years)
Appliances, Furniture, & Televisions	21,800	14,500	2,600
Avg 95% Confidence Interval (CI)	(18,700, 24,800)	(12,600, 16,400)	(2,200, 3,100)

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, or television product codes, as described in Appendix B.

⁹ The estimates are rounded to the nearest hundred.

¹⁰ For children, the CV for the total estimate (2006–2008) is 0.0718 (total est. 65,300).

¹¹ For adults, the CV for the total estimates (2006–2008) is 0.0664 (total est. 43,600).

¹² For seniors, the CV for the total estimate (2006–2008) is 0.0948 (total est. 7,900).

The 38,900 injury estimate can be refined by product categories in many cases, as well. Table 3 illustrates these estimates, where applicable. Children experience the most injuries with furniture (estimated 10,300 injuries) and televisions (estimated 11,300 injuries). Adults and seniors experience the most injuries with furniture (estimated 8,800 and 1,700 injuries, respectively). Table 4 details the estimates.

Table 4
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Product Category, 2006–2008

Product Category	Estimated Emergency Department-Treated Injuries ¹³		
	Children ¹⁴ (<1 to 17 years)	Adults ¹⁵ (18 to 59 years)	Seniors ¹⁶ (60+ years)
Appliances	–	1,400	–
Only Furniture	10,300	8,800	1,700
Televisions	11,300	4,300	–

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, and television product codes, as described in Appendix B.

¹³ The estimates are rounded to the nearest hundred, and dashes indicate instances where estimates did not occur with high enough frequencies to support reliable statistical estimates.

¹⁴ For children, the CVs for the total estimates (2006–2008) are 0.0794 (total est. 30,800) for furniture and 0.0805 (total est. 34,000) for televisions.

¹⁵ For adults, the CVs for the total estimates (2006–2008) are 0.1428 (total est. 4,300) for appliances; 0.0754 (total est. 26,400) for furniture; and 0.0865 (total est. 12,900) for televisions.

¹⁶ For seniors, the CV for the senior furniture total estimate (5,000) for 2006 through 2008 is 0.1298.

The furniture estimates can be refined further by furniture subcategories. For the furniture instability or tipover estimate for children (10,300), tables accounted for 3,800 injuries; chests, bureaus, and dressers for 2,900 injuries; and shelves, shelving units, and bookcases for 1,900 injuries. Looking at the furniture instability or tipover estimate for adults (8,800), shelves, shelving units, and bookcases were associated with 2,700 injuries; tables with 2,500 injuries; chests, bureaus, and dressers with 1,300 injuries; and cabinets with 1,200 injuries. The remaining (1,700 for children and 1,100 for adults), estimated injuries were associated with a range of furniture subcategories, but they did not occur with high enough frequencies to support reliable statistical estimates.¹⁷ Estimates for furniture subcategories for seniors could not be generated for this reason as well. Table 5 shows the estimate details.

Table 5
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Furniture Subcategories, 2006–2008

Furniture Subtype	Estimated Emergency Department-Treated Injuries ¹⁸	
	Children ¹⁹ (<1 to 17 years)	Adults ²⁰ (18 to 59 years)
Cabinets	–	1,200
Chests, Bureaus, and Dressers (CBD)	2,900	1,300
Shelving, Shelving Units, and Bookcases (Shelf)	1,900	2,700
Tables	3,800	2,500

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, and television product codes, as described in Appendix B.

¹⁷ The criteria for estimates are discussed in Appendix A.

¹⁸ The estimates are rounded to the nearest hundred, and dashes indicate instances where estimates did not occur with high enough frequencies to support reliable statistical estimates.

¹⁹ For children, the CVs for the total estimates (2006–2008) are 0.1113 (total est. 8,800) for CBD; 0.1147 (total est. 5,600) for Shelf; and 0.1047 (total est. 11,400) for tables.

²⁰ For adults, the CVs for the total estimates (2006–2008) are 0.1295 (total est. 3,700) for cabinets; 0.1417 (total est. 4,000) for CBD; 0.1340 (total est. 8,200) for Shelf; and 0.1093 (total est. 7,600) for tables.

Table 6 gives the estimates for each victim age category by product and gender. Seniors are not included in this table because there were not high enough frequencies to support reliable statistical estimates.²¹ For children, the estimates suggest a difference by gender for televisions.²² In the furniture subcategory, the estimates for adults hint that a difference exists by gender.²³

Table 6
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Gender, 2006–2008

Product Category	Estimated Emergency Department-Treated Injuries ²⁴			
	Children (<1 to 17 years)		Adults (18 to 59 years)	
	Male ²⁵	Female ²⁶	Male ²⁷	Female ²⁸
Only Furniture	5,900	4,300	3,400	5,400
Televisions	6,900	4,500	1,700	2,600

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, and television product codes, as described in Appendix B.

For location, 75 percent of the estimated 38,900 injuries occurred in a residential location. There were 5 percent in public locations, and the remaining 20 percent did not record the location. These percentages are similar for children (76 percent residential, 6 percent public, and 18 percent unknown) and adults (74 percent residential and 23 percent unknown).

²¹ The criteria for estimates are discussed in Appendix A.

²² For children and televisions, avg 95% CI is (5,600, 8,200) for males and (3,700, 5,200) for females.

²³ For adults and furniture, avg 95% CI is (2,900, 4,000) for males and (4,400, 6,300) for females.

²⁴ The estimates are rounded to the nearest hundred.

²⁵ For male children, the CVs for the total estimates (2006–2008) are 0.0815 (total est. 17,800) for furniture and 0.0953 (total est. 20,600) for televisions.

²⁶ For female children, the CVs for the total estimates (2006–2008) are 0.1002 (total est. 13,000) for furniture and 0.0825 (total est. 13,400) for televisions.

²⁷ For male adults, the CVs for the total estimates (2006–2008) are 0.0786 (total est. 10,300) for furniture and 0.1110 (total est. 5,200) for televisions.

²⁸ For female adults, the CVs for the total estimates (2006–2008) are 0.0936 (total est. 16,100) for furniture and 0.1139 (total est. 7,700) for televisions.

The majority of victims (95 percent for children, 97 percent for adults, and 90 percent for 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, could be examined for children and adults only.²⁹ Children had their largest diagnosis with contusions/abrasions (8,900). This is followed by lacerations (3,700), internal organ injuries (3,200), and fractures (3,100). Adults had their largest injury diagnosis with contusions and abrasions (6,700), as well. This is followed by fractures (2,200), lacerations (1,700), and strains/sprains (1,400). Table 7 illustrates the estimates, where applicable.

Table 7
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Diagnosis, 2006–2008

Diagnosis	Estimated Emergency Department-Treated Injuries ³⁰	
	Children ³¹ (<1 to 17 years)	Adults ³² (18 to 59 years)
Contusions, Abrasions	8,900	6,700
Fractures	3,100	2,200
Internal Organ Injury	3,200	–
Lacerations	3,700	1,700
Strains or Sprains	–	1,400

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, and television product codes, as described in Appendix B.

²⁹ Seniors are not included in this because there were not high enough frequencies to support reliable statistical estimates. Refer to Appendix A for criteria for estimates.

³⁰ The estimates are rounded to the nearest hundred, and dashes indicate instances where estimates did not occur with high enough frequencies to support reliable statistical estimates.

³¹ For children, the CVs for the total estimates (2006–2008) are 0.0840 (total est. 26,600) for contusions/abrasions; 0.1149 (total est. 9,300) for fractures; 0.1424 (total est. 9,600) for internal organ injury; and 0.0967 (total est. 11,100) for lacerations.

³² For adults, the CVs for the total estimates (2006–2008) are 0.0789 (total est. 20,200) for contusions/abrasions; 0.1189 (total est. 6,500) for fractures; 0.1711 (total est. 5,100) for lacerations; and 0.1210 (total est. 4,200) for strains/sprains.

For the primary area of the body affected in these injuries, Table 8 shows the estimate by victim age category, where possible. Children had the most injuries affecting the head (10,800); while adults had the most injuries affecting the legs, feet, and toes (6,400). Seniors are not included in this table because there were not high enough frequencies to support reliable statistical estimates.³³

Table 8
Estimated Annual Average Emergency Department-Treated Injuries
Associated with Product Instability or Tipover by Area of Body, 2006–2008

Primary Area of Body Affected	Estimated Emergency Department-Treated Injuries ³⁴	
	Children ³⁵ (<1 to 17 years)	Adults ³⁶ (18 to 59 years)
Arms, Hands, and Fingers (Arms)	3,100	3,900
Head	10,800	2,200
Legs, Feet, and Toes (Legs)	6,200	6,400
Torso	1,600	1,900

Source: U.S. Consumer Product Safety Commission: National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U.S. hospitals that have emergency departments. The estimates include cases for appliance, furniture, and television product codes, as described in Appendix B.

³³ The criteria for estimates are discussed in Appendix A.

³⁴ The estimates are rounded to the nearest hundred.

³⁵ For children, the CVs for the total estimates (2006–2008) are 0.1206 (total est. 9,200) for arms; 0.0751 (total est. 32,300) for head; 0.0766 (total est. 18,700) for legs; and 0.1297 (total est. 4,700) for torso.

³⁶ For adults, the CVs for the total estimates (2006–2008) are 0.0879 (total est. 11,800) for arms; 0.1093 (total est. 6,700) for head; 0.0838 (total est. 19,100) for legs; and 0.1145 (total est. 5,700) for torso.

Reported Fatalities

CPSC staff has received 242 reports of fatalities that occurred between 2000 and 2008, and are related to appliance, furniture, or television instability or tipover. Of these 242 reported fatalities, 57 percent (138 incidents) involved televisions falling, with 54 of the 138 fatalities associated with televisions and the furniture in/on which the television was resting falling as well. Thirty-four percent (82 incidents) of the 242 reported fatalities were associated with only furniture falling. The remaining nine percent (22 incidents) involved appliances falling. Table 9 presents the instability or tipover data for appliances, furniture, and televisions by year of incident. The last four years appear to have similar reported frequencies.

Table 9
Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
Related to Instability or Tipover by Year, 2000–2008

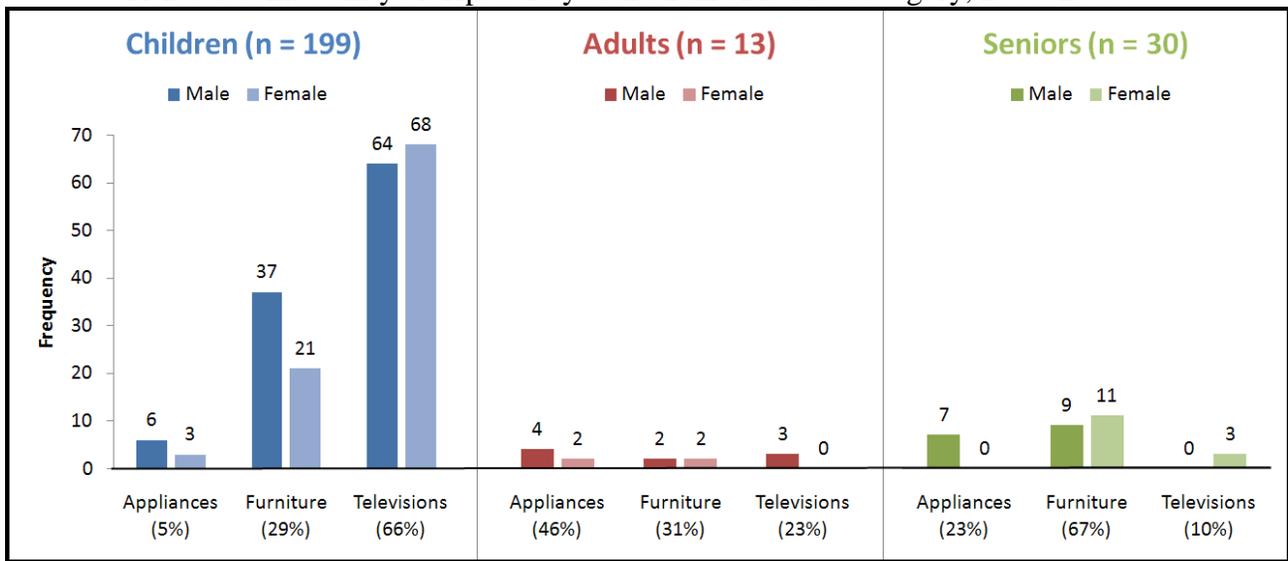
Year	Appliances	Only Furniture	Televisions (TV + Furniture) ³⁷	Appliance, Furniture, and Television Total	Percent of Total (n = 242)
2008*	0	9	24 (8)	33	14%
2007*	0	6	24 (13)	30	12%
2006	3	5	23 (7)	31	13%
2005	2	10	18 (10)	30	12%
2004	1	13	11 (2)	25	10%
2003	4	6	9 (1)	19	8%
2002	3	10	10 (4)	23	10%
2001	6	19	12 (5)	37	15%
2000	3	4	7 (4)	14	6%
Product Category Total	22	82	138 (54)	242	
Percent of Total (n = 242)	9%	34%	57% (22%)		

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.

³⁷ Numbers in parenthesis are the subset of televisions falling, where both the television and furniture fell.

The fatalities were separated into three distinct age categories: children (younger than 18 years of age); adults (18 years of age or older, but less than 60 years); and seniors (60 years of age or older). Eighty-two percent (199 incidents) of these fatalities were children. This is followed by seniors with 12 percent (30 incidents), and the remaining victims were adults (5 percent; 13 incidents). Of the 199 child fatalities, 66 percent (132 incidents) involved falling televisions, and 29 percent (58 incidents) involved only furniture falling. Examining the 30 senior fatalities, 67 percent (20 incidents) involved only furniture falling, and 23 percent (7 incidents) involved appliances falling. Child fatalities involving televisions do not appear to have a difference based on gender (48 percent male versus 52 percent female). The fatalities involving children and furniture do 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.

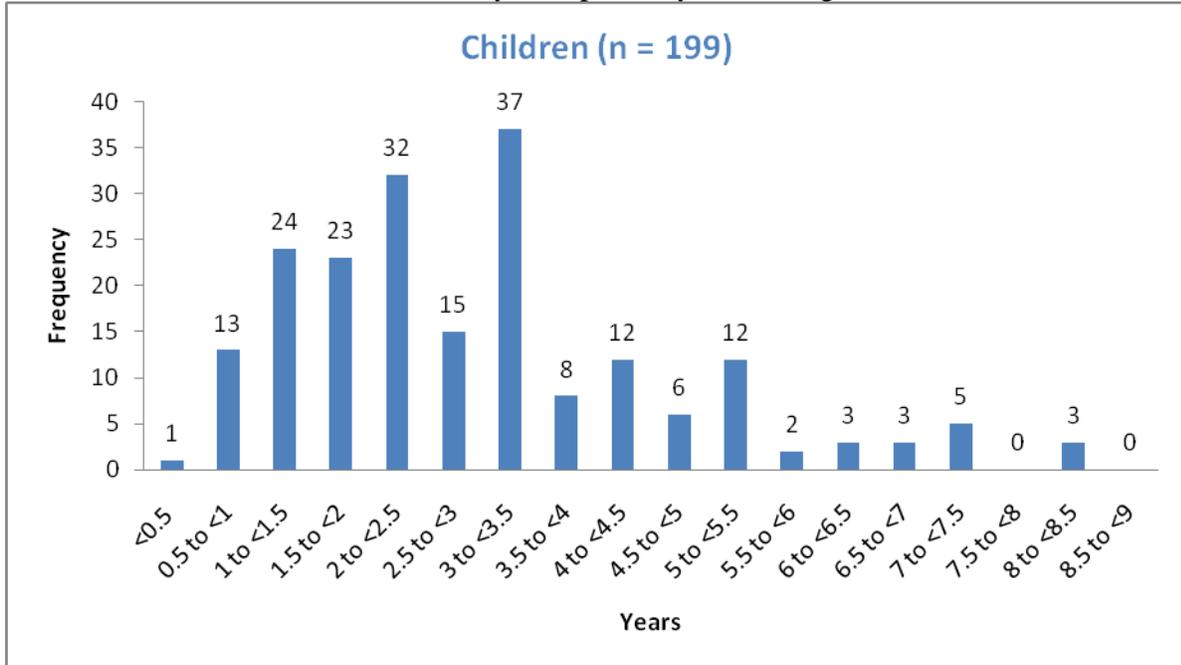
Graph 1
 Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
 Related to Instability or Tipover by Gender and Product Category, 2000–2008



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 categories for the 199 fatalities involving children are presented in Graph 2. Children ranged in age from one month to eight years. Sixty-six percent (131 incidents) of the children were at least one year of age and less than three and a half years of age.

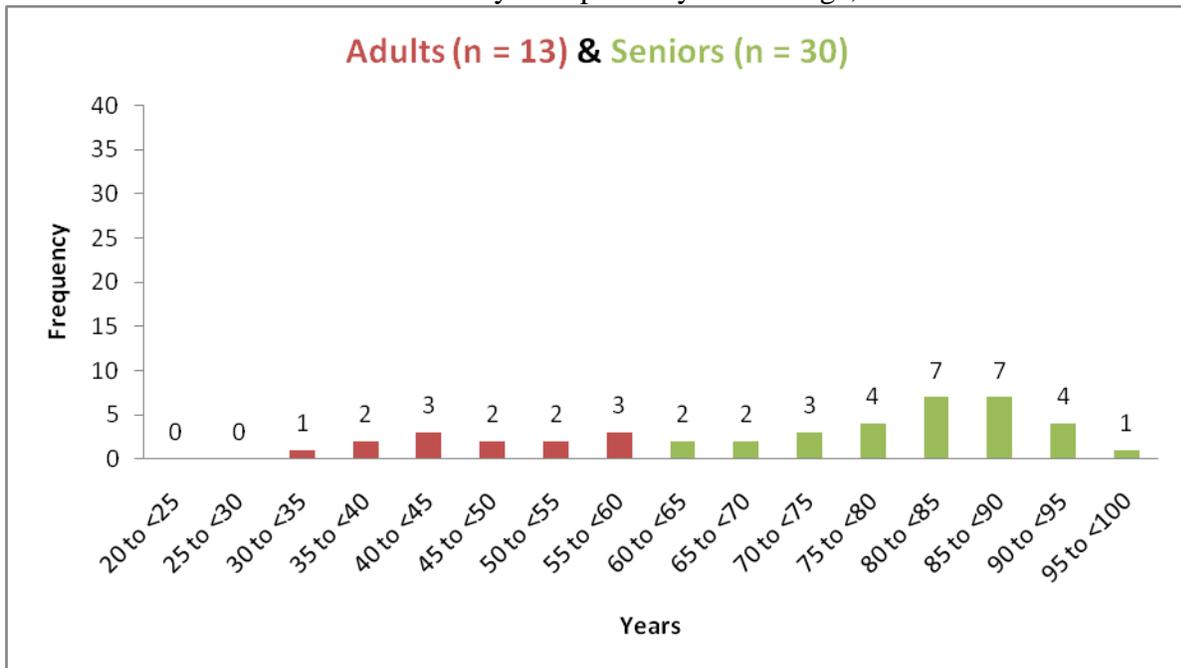
Graph 2
 Child Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
 Related to Instability or Tipover by Victim Age, 2000–2008



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 43 fatalities. The adults ranged in age from 31 years to 59 years, and the seniors ranged in age from 61 years to 96 years. Forty-four percent (19 incidents) of the fatalities occurred in seniors who were 80 years of age or older. Graph 3 illustrates the ages for these two groups.

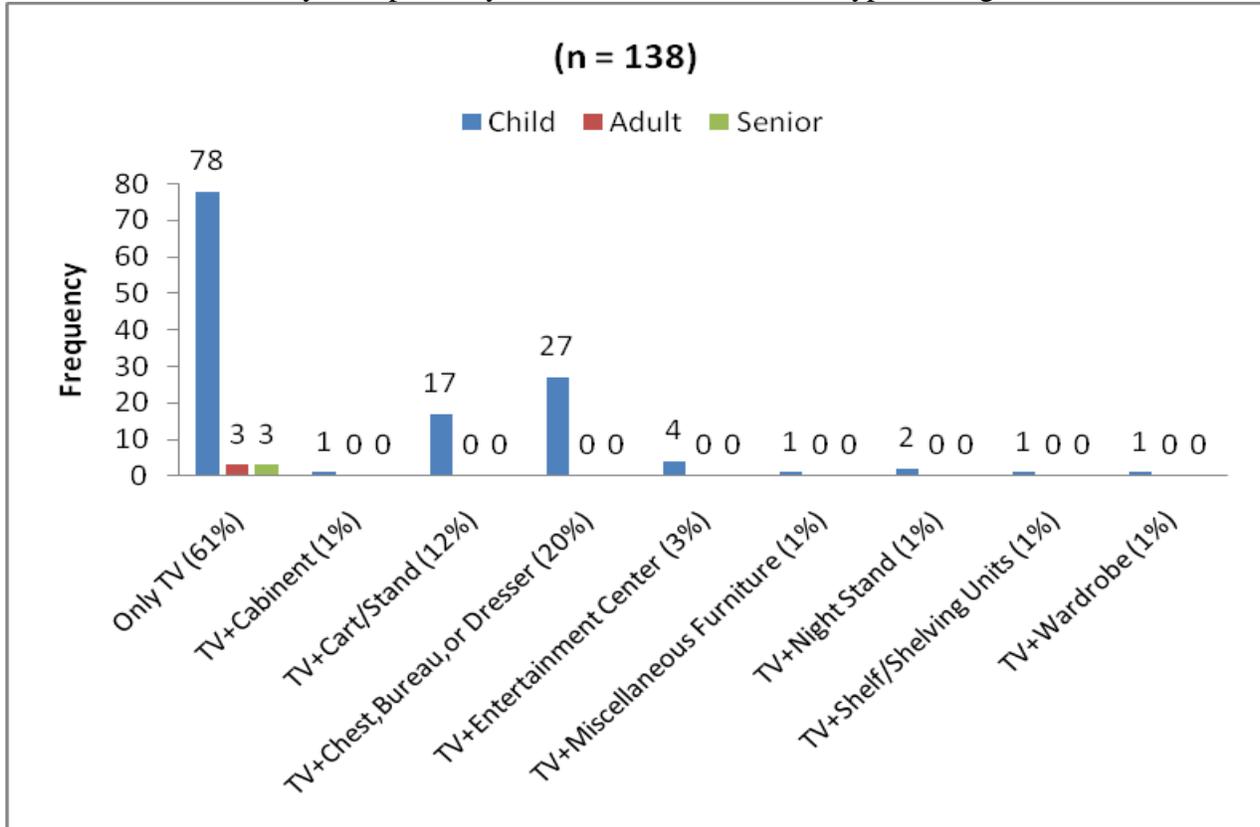
Graph 3
 Adult & Senior Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions Related to Instability or Tipover by Victim Age, 2000–2008



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

Fifty-seven percent (138 incidents) of the 242 fatalities involved televisions. Of these 138 incidents, 96 percent (132 fatalities) were children; 2 percent (3 fatalities) were adults; and 2 percent (3 fatalities) were seniors. In 61 percent (84 incidents) of the 138 television-related fatalities, only the television fell without furniture also falling. This is followed by a television and a chest, bureau, or dresser falling (20 percent; 27 incidents), and a television and a cart/stand (12 percent; 17 incidents). Graph 4 shows the frequencies.

Graph 4
 Fatalities Reported to CPSC Staff for Televisions Falling
 Related to Instability or Tipover by Television and Furniture Type Falling,³⁸ 2000–2008³⁹



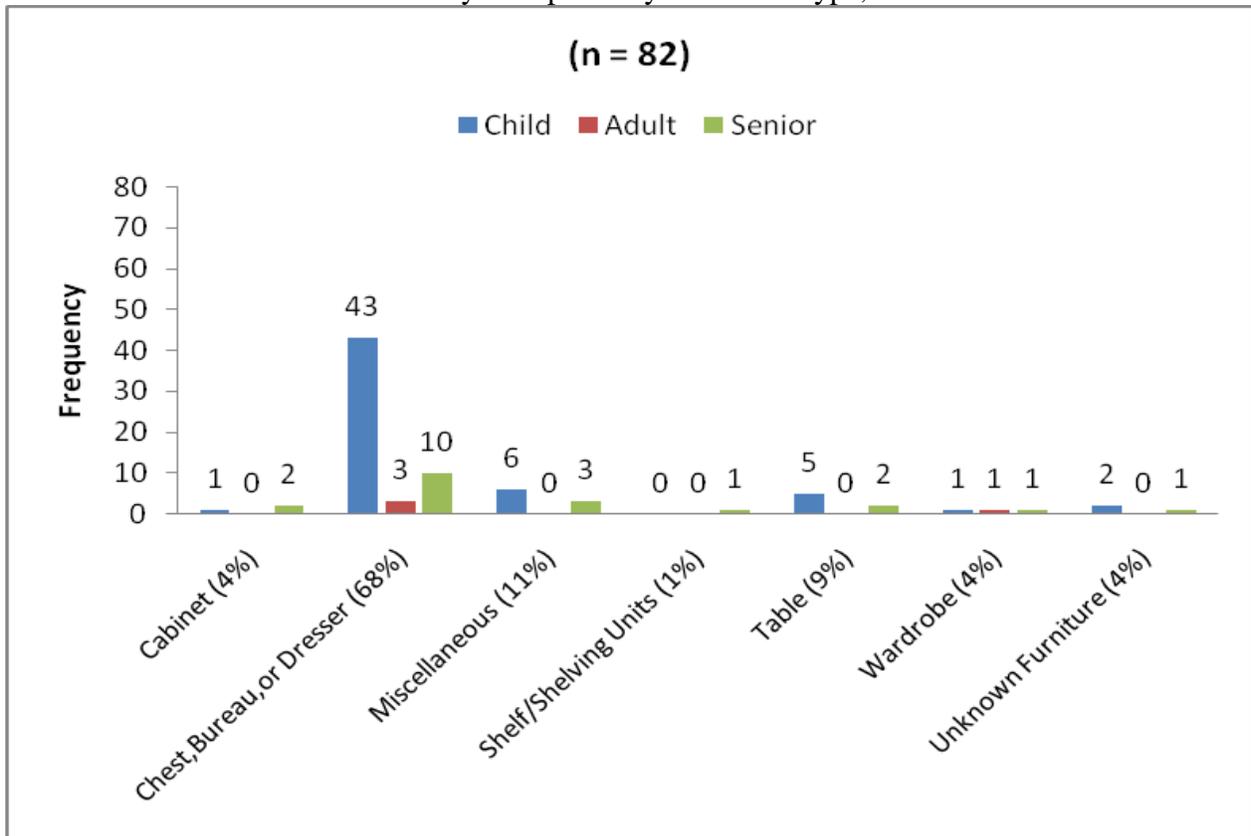
Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-depth Investigations).

³⁸ Fatalities where it could not be determined if the furniture fell are counted as only the TV falling.

³⁹ Percentages do not sum to 100 due to rounding.

Of the 242 fatalities, 34 percent (82 incidents) involved only furniture falling. For these 82 incidents, 71 percent (58 fatalities) were children; 24 percent (20 fatalities) were seniors; and 5 percent (4 fatalities) were adults. Graph 5 gives the frequencies for incidents involving only furniture falling as a result of instability or tipover by furniture type and victim age. Notice that the chest, bureau, or dresser category has the largest count (56 total incidents).

Graph 5
Fatalities Reported to CPSC Staff for Only Furniture Falling
Related to Instability or Tipover by Furniture Type, 2000–2008⁴⁰

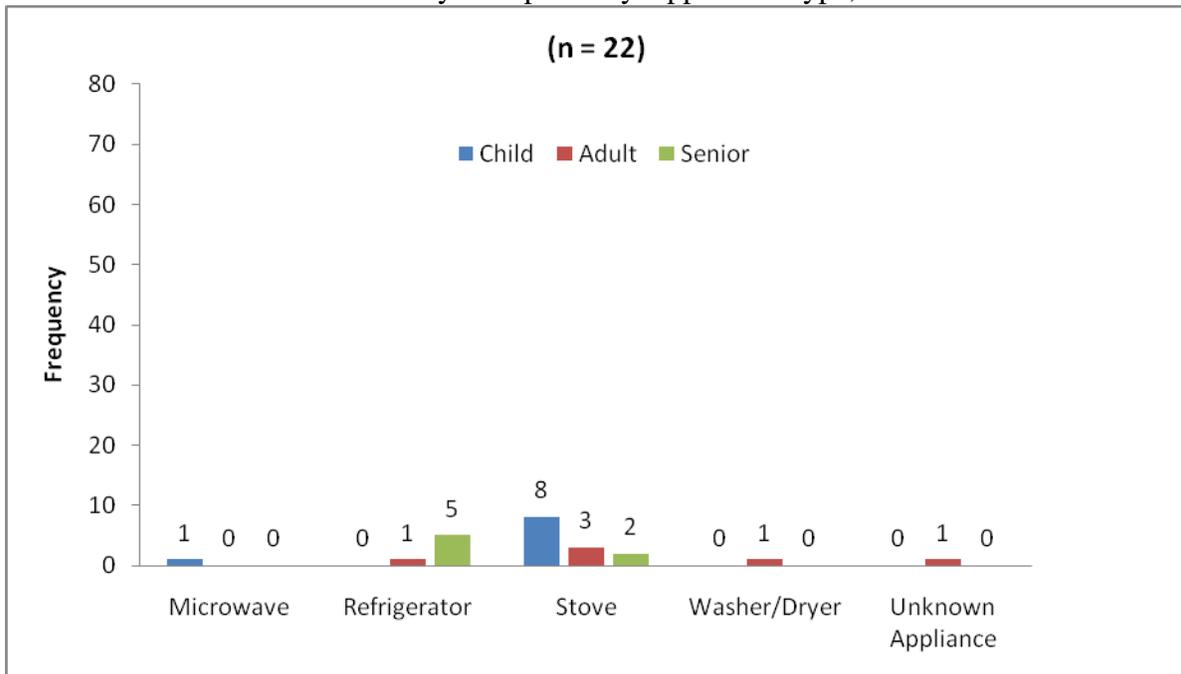


Source: CPSC databases including, NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-depth Investigations).

⁴⁰ Percentages do not sum to 100 due to rounding.

The remaining 9 percent (22 incidents) of the 242 fatalities involved appliances falling. For these 22 incidents, 9 fatalities were children; 7 were seniors; and 6 were adults. Due to the small number of incidents, percentages are not given for appliances. The stove category had the largest number of fatalities (13 incidents) for appliances. Graph 6 presents these frequencies.

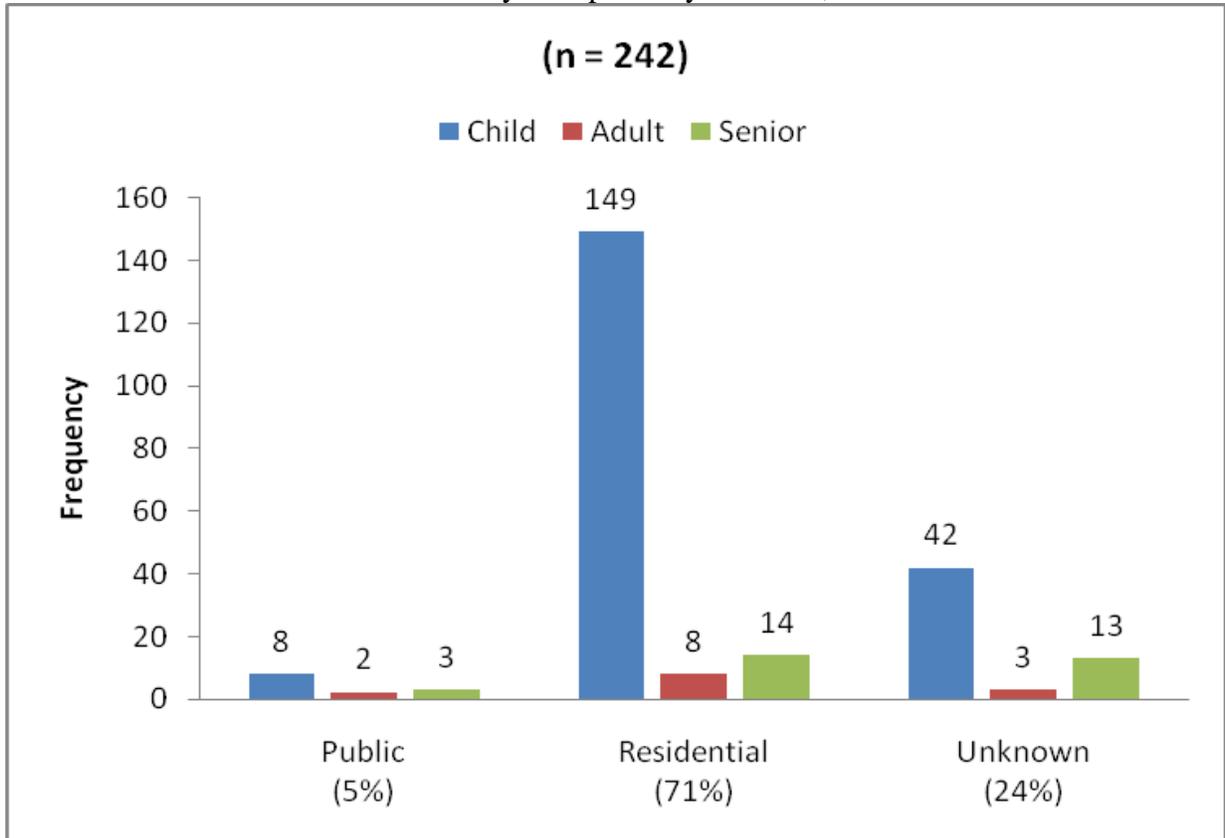
Graph 6
 Fatalities Reported to CPSC Staff for Appliances Falling
 Related to Instability or Tipover by Appliance Type, 2000–2008



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 71 percent (171 incidents) of the fatalities. Five percent occurred in public locations (13 incidents); and 24 percent (58 incidents) did not provide enough information to determine the location. Fatalities of children had a similar distribution by location (75 percent residential, 4 percent public, and 21 percent unknown). Graph 7 enumerates these details.

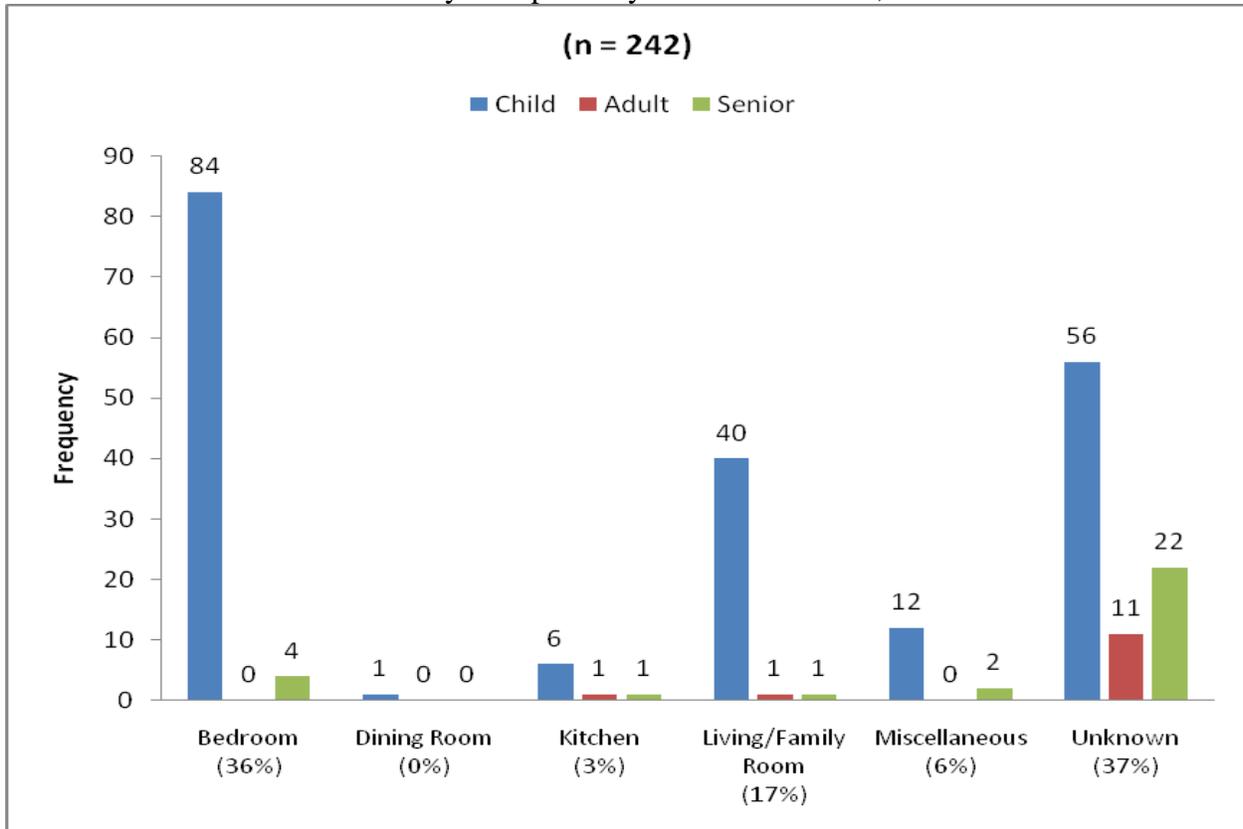
Graph 7
 Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
 Related to Instability or Tipover by Location, 2000–2008



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 of incident, the bedroom had the largest number of fatalities with 36 percent (88 incidents). This is followed by the living/family room with 17 percent (42 incidents). There is also a large portion of unknowns (37 percent; 89 incidents) for this room-of-incident variable. Of the fatalities in children, 42 percent occurred in bedrooms and 20 percent in living/family rooms. For adults and seniors, there were many unknowns for the location of the fatality (85 percent for adults and 73 percent for seniors). Graph 8 details this characteristic.

Graph 8
Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
Related to Instability or Tipover by Room of Incident, 2000–2008⁴¹

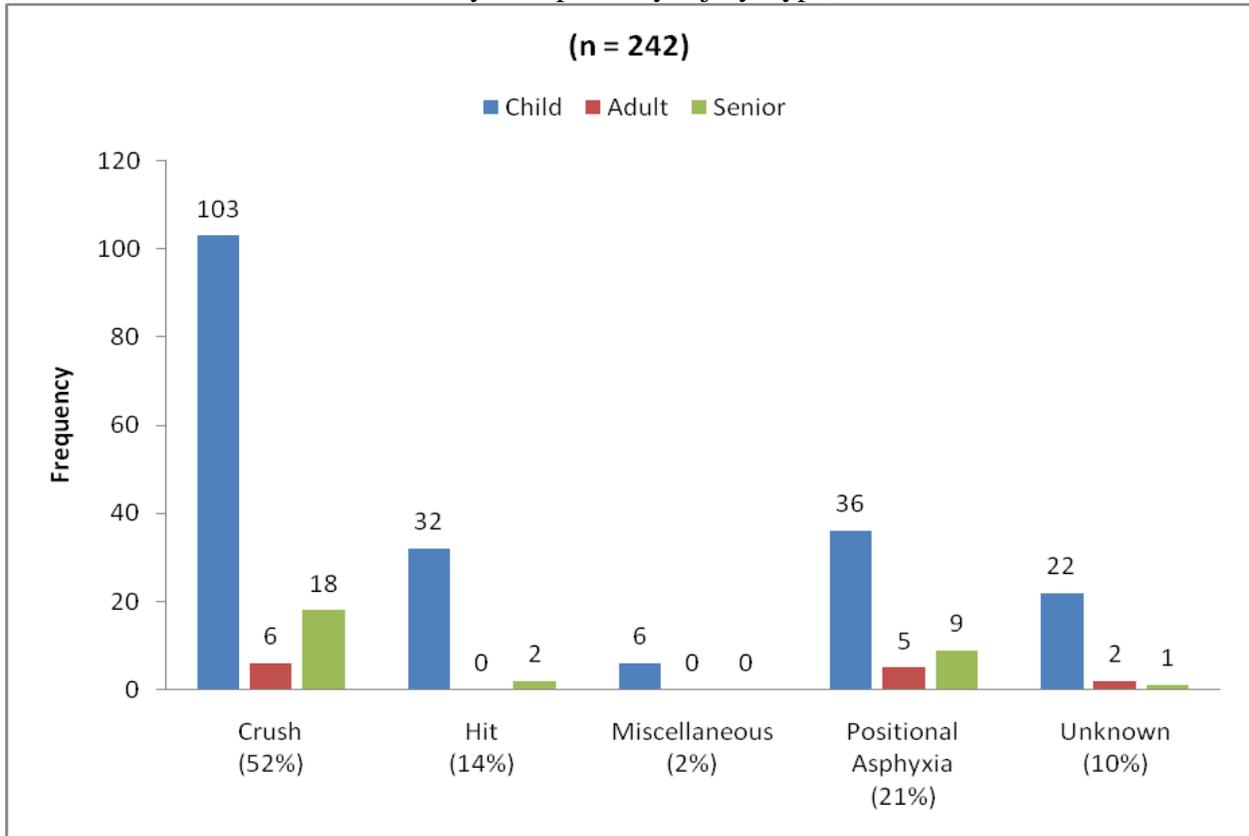


Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-depth Investigations).

⁴¹ Percentages do not sum to 100 due to rounding.

The types of injuries seen in these reported fatalities were mostly crushing injuries⁴² (52 percent). This is followed by positional asphyxia (21 percent) and being hit/struck⁴³ (14 percent) by product(s). Crushing injuries accounted for the largest number of fatalities in each victim age category. Graph 9 details these frequencies by victim age and injury type.

Graph 9
 Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
 Related to Instability or Tipover by Injury Type,⁴⁴ 2000–2008⁴⁵



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

⁴² Crushing injuries are events in which it was clear that the product(s) fell on the victim and the victim remained under the product(s).

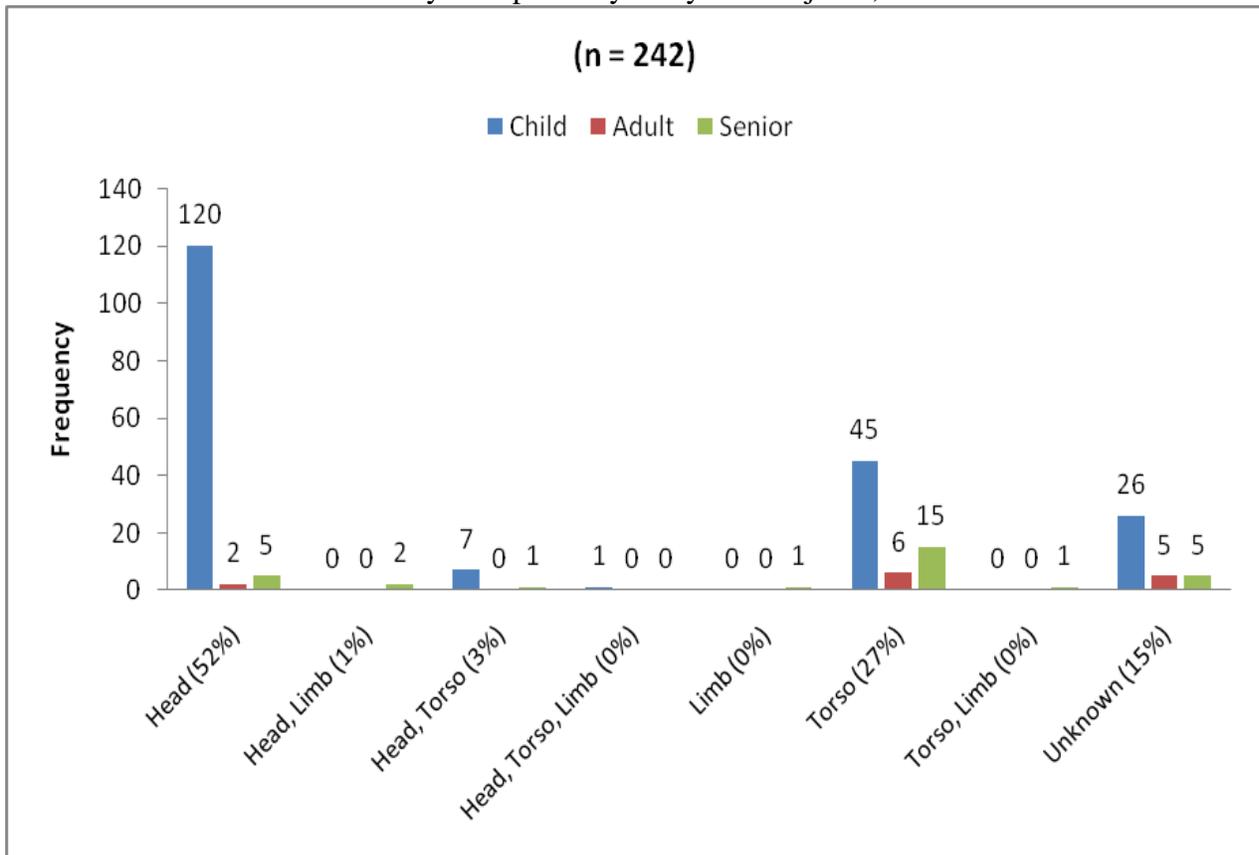
⁴³ Hit/struck by injuries are events in which it was clear the product(s) fell on the victim, but did not land or remain on the victim.

⁴⁴ Injury type was coded for each fatality by CPSC Directorate for Health Sciences staff.

⁴⁵ Percentages do not sum to 100 due to rounding.

The head was the area of the body injured most frequently (52 percent head only and 3 percent head and torso) in these reported fatalities, and this is followed by only the torso (27 percent). Children had the most head injuries compared to adults and seniors, who had more torso injuries. Graph 10 illustrates these frequencies by victim age and body area injured.

Graph 10
 Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
 Related to Instability or Tipover by Body Area Injured,⁴⁶ 2000–2008⁴⁷



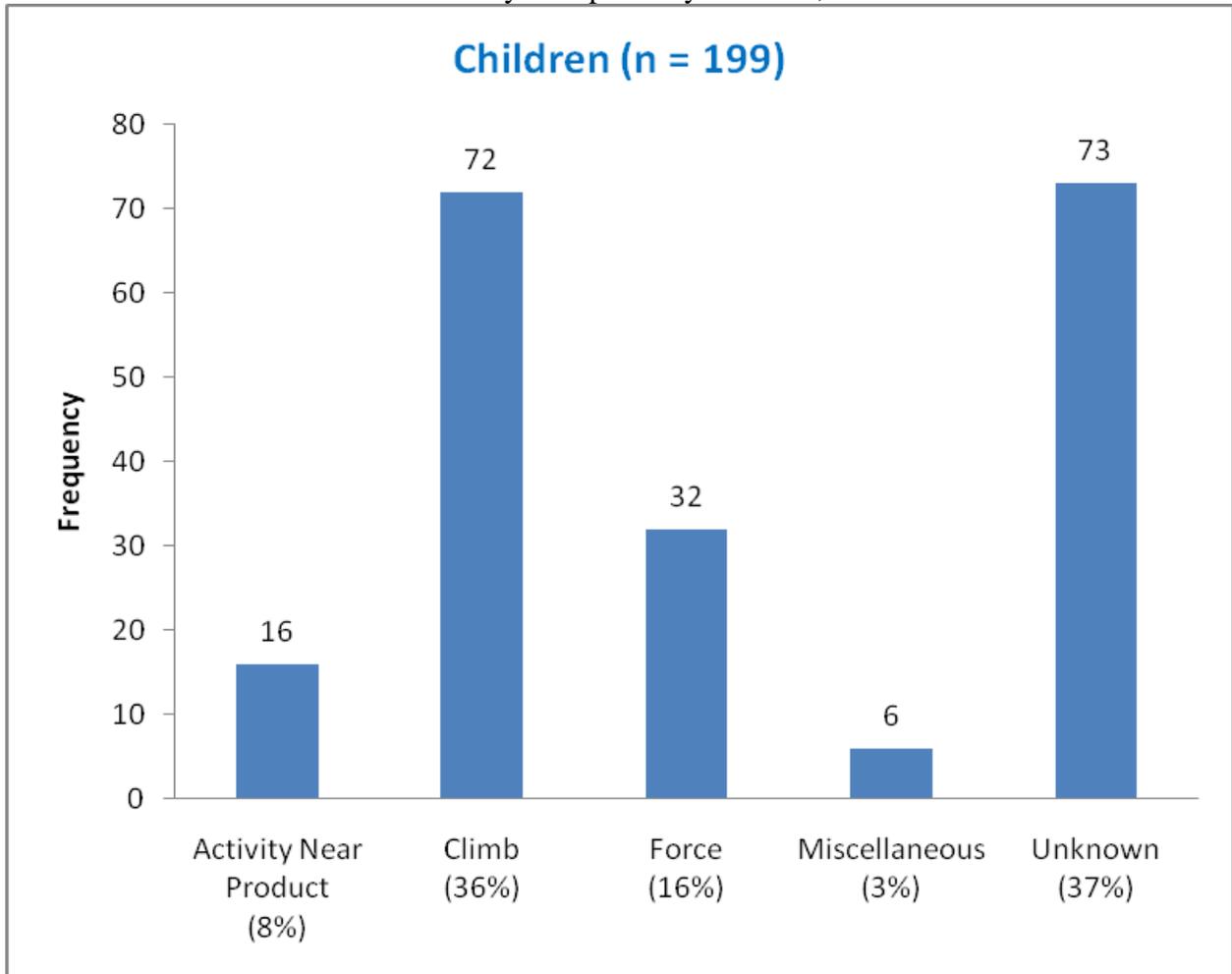
Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-depth Investigations).

⁴⁶ Body area injured was coded for each fatality by CPSC Directorate for Health Sciences staff.

⁴⁷ Percentages do not sum to 100 due to rounding.

The hazard scenarios were classified, where possible. The scenarios for the 43 incidents involving adults and seniors did not have enough details (37 incidents) in most cases to be classified. Accordingly, Graph 11 gives frequencies only for children. Of the 199 incidents involving children, there is also a large set of unknown scenarios (37 percent; 73 incidents). In 36 percent (72 incidents) 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 (16 percent; 32 incidents). In 8 percent (16 incidents), 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 3 percent (6 incidents) have known scenarios that do not fit into the other categories. Graph 11 gives the counts.

Graph 11
 Child Fatalities Reported to CPSC Staff for Appliances, Furniture, and Televisions
 Related to Instability or Tipover by Scenario, 2000–2008



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

Appendix A

Methodology for Instability or Tipover of Appliances, Furniture, and Televisions Estimated Injuries and Reported Fatalities

A multidisciplinary team of CPSC staff met to discuss terminology, the types of products of interest, and what types of incidents should be counted for product-associated instability or tipover. For the purpose of this report, tipover concerns 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 tipover for this report. For instability, the product falls as a result of some issue with the center of gravity. This is a less stringent definition compared to tipover because it does not require the additional criterion of interaction. The instability and tipover 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 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 appliances, furniture, and televisions fit these criteria. The individual product codes were chosen based on the product's ability to potentially fall, product size, and product weight. Children's furniture was excluded due to its size. Other products, such as chairs, couches, and beds were also excluded due to the emphasis on products that are more upright and products that were not meant to sit, stand, or lie upon.

The potential product codes were determined for these categories (appliances, furniture, and televisions). Televisions have only one product code (572), which makes this category the easiest for finding potential incidents. The appliance category was more complicated. Table 10 enumerates this category's potential product codes.

Table 10
Potential Appliance Product Codes Associated with Instability or Tipover

NEISS Product Code	Description
101	Washing machines without wringers or other dryers
102	Wringer washing machines
106	Electric clothes dryers without washers
107	Gas clothes dryers without washers
126	Washing machines, not specified
127	Clothes dryers, not specified
135	Washer-Dryer combinations (within one frame)
140	Washing machines, other or not specified
214	Dishwashers
252	Trash compactors
259	Electric ranges (with ovens)
260	Gas ranges (with ovens)
263	Freezers (separate from refrigerators)
264	Microwave ovens
266	Ovens, not specified
267	Other ranges (with ovens)
273	Ranges, not specified
276	Refrigerators
278	Electric ranges or ovens (excl. counter-top ovens)
279	Gas ranges or ovens
281	Ranges or ovens, not specified
482	Appliances, other and not specified

The furniture category is also more complex, and the included product codes are shown in Table 11.

Table 11
Potential Furniture Product Codes Associated with Instability or Tipover

NEISS Product Code	Description
519	Television tables or stands
604	Desks, chests, bureaus, or buffets
693	Footlockers
1107	Other containers
1112	Metal containers
1123	Plastic containers (rigid or semirigid)
1125	Wooden containers
1684	Carts, other, or not specified
1726	Lockers
4013	Other furniture
4014	Furniture, not specified
4056	Cabinets, racks, room dividers, and shelves
4057	Tables (excl. baby changing tables, billiard tables, or pool tables)
4065	Clocks, electric or battery operated
4067	Clocks, not electric or battery operated or not specified

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 and sentence structures. Also, NEISS and 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 definition(s) for instability or tipover. 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.

Injury estimates came from NEISS data extracted on December 3, 2009, for the years 2006 through 2008. The NEISS product codes used for the data were the appliance, furniture, or television 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 was extracted on December 3, 2009, from NEISS, IPII, DTHS, and INDP for fatalities involving appliance, furniture, and television codes mentioned above, covering the years 2000 through 2008. 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, there were often 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. Since 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 tipover incidents compared to fatalities extracted from the other CPSC epidemiological databases (IPII, DTHS, and INDP). This appendix gives the types of products included in the NEISS instability or tipover incidents associated with appliances, furniture, and televisions. Some of the rules were revised from the last NEISS data extraction and resulted in changes to the 2006 NEISS estimates.

Unstable or tipover items included 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. Desk (Exclude: at schools)
 - h. Display case (Include only: in home locations)
 - i. Dresser
 - j. Floor lamp (Exclude: all other lamps)
 - k. Grandfather clock (Exclude: all other clocks)
 - l. Locker (Include only: in home locations)
 - m. Pedestal
 - n. Rack (Include only: coat rack)
 - o. Room divider
 - p. Safe (Exclude: falling off shelf)
 - q. Safety strap (Include: tethering in-scope items to a wall)
(Exclude: mounting items on a wall)
 - r. Shelf (Exclude: in closets and in stores)
 - s. Stand (Include only: microwave, night, and TV)
 - t. Table
 - u. Vanity
 - v. Wall unit
2. Appliances:
 - a. Dishwasher
 - b. Dryer
 - c. Freezer
 - d. Microwave
 - e. Refrigerator (Include: mini fridge)
 - f. Stove/Oven
 - g. Trash compactor
 - h. 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 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 instability or a tipover of an item occurred and is the reason for the hospital visit.

Unstable or tipover 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 that do not describe an unstable or tipover, such as assemble, brake, collapse, drop, fix, 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.