Powered Scooter Special Study*
7/1/03 – 6/30/04

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

Executive Summary

Powered scooters are a relatively new product that is gaining in popularity. The U.S. Consumer Product Safety Commission (CPSC) staff noted an increase in powered scooter-related emergency room-treated injuries and conducted a study to learn more about the products involved and how people are getting injured. All National Electronic Injury Surveillance System (NEISS) emergency room-treated injuries associated with powered scooters that occurred between 7/1/03 and 6/30/04 were assigned for follow-up investigation.

The terms "motor scooter" or "powered scooter" are frequently used to refer to several different products, and we wanted to determine how many of the injuries coded as powered scooters actually involved powered scooters. As a result of this study, staff determined that 76% of the injuries coded as powered scooters during the study period actually involved powered scooters. The rest of the injuries involved other, usually similar, products.

During the study period (7/1/03 – 6/30/04), an estimated 10,015 emergency room-treated injuries were determined to be powered scooter related. Of these 10,015 injuries, two thirds of the injured persons were under 15 years of age and about 60% were male. More of the scooters associated with the injuries were reported to run on gasoline than a battery. In preliminary estimates provided by Directorate for Economic Analysis staff, the 2003 annual sales of electric and gas powered scooters were approximately the same. Less than half of the victims were wearing helmets at the time of the injury and few were wearing any other safety equipment. Slightly less than half of the scooters were owned by the injured person.

The injury narratives were reviewed and hazard patterns were coded. The two most prevalent hazard patterns were operator contributed to the accident (about 36% of the injuries) and environment contributed to the accident (about 35% of the injuries). The scooter directly contributed to the incident in about 20% of the injuries. Examples of scenarios included in this pattern are: brake failed to engage, victim was cut on a sharp edge, front wheel was wobbling prior to the accident, handle bar came loose and detached, and victim was burned from touching a hot part of the gas powered scooter.

CPSC has received reports of 49 deaths attributed to powered scooters from October 1998, when this product code was created, through November 2004. However, because most cases do not contain sufficient information for Epidemiology staff to conclusively determine the product involved, we were not able to draw any conclusions about the deaths.

During the study period, CPSC also received 133 unique incident reports involving powered scooters. The most frequent hazard patterns were "scooter directly contributed to the injury/incident" (90 reports) and "motor vehicle accident" (15 reports). For the scooter contributed pattern, the most common issues were: fire hazards, scooter unexpectedly accelerated, and handle bar broke/detached.

I. Introduction

Powered scooters are a relatively new product that is gaining in popularity. Since these are generally not registered motor vehicles, they are often not permitted to be operated on public roadways. In addition, many municipalities have taken it one step further by writing laws that prohibit the use of these products on sidewalks.

In response to the rise in popularity and a rise in injuries (Figure 7, page 9) related to powered scooters, U.S. Consumer Product Safety Commission (CPSC) staff conducted a special study of emergency room-treated injuries. All cases that were reported as powered scooter-related (product code 5042) through CPSC's National Electronic Injury Surveillance System (NEISS) over a period of one year were assigned for follow up investigation.

The two main areas of interest were to learn whether the product involved was actually a powered scooter and how people are getting injured on powered scooters. There are other products similar to powered scooters which are often described as a scooter, making it difficult to determine the product involved (see the next section, Description of Product, for descriptions of some commonly confused products). One reason for this study was to obtain a better estimate of the number of powered scooter injuries. As a result of the study, we determined that 76% of the injuries coded as powered scooter-related were actually powered scooter-related.

In July 2003, at the beginning of the study, additional guidance was sent to NEISS coders concerning these products (Appendix A) and a new product code was created for mobility scooters (1744). The guidance that was sent to the NEISS coders has photos of commonly confused products (a powered scooter, a registered motor scooter, and a mobility scooter) and the appropriate product code to use for each. Because of these two changes and the expected improvement in coding from that point forward, we did not apply the 76% adjustment to the injury estimates prior to the study period. Prior injury estimates probably have a different percentage of actual powered-scooter related injuries.

II. Description of Product

Similar wording is often used to describe a number of different products including powered scooters, registered motor scooters, motorized bicycles, and mobility scooters. For the sake of clarity in this report, we have chosen specific terms to indicate the different types of products.

There are many different types of powered scooters on the market. Powered scooters may be powered by an electric motor via a battery or by gasoline engines. The battery powered scooters tend to have smaller wheels, not go as fast, and cost less than the gasoline powered scooters. Both electric and gas powered scooters often have a braking mechanism and sometimes have a seat which may be detachable. Unpowered scooters can sometimes be converted to a powered scooter by a conversion kit, which uses a battery mounted on the handle bar column, similar to Figure 1.

Figure 1: Electric Powered Scooter

Figure 2: Electric Powered Scooter

Figure 2 shows another configuration of an electric scooter where the battery and motor are underneath the board on which the user stands. Figure 3 is an example of a gas powered scooter. Gas powered scooters usually use a 2-stroke engine. Notice the motor and gas tank are located above the rear tire and the tires are bigger than those on the electric powered scooters in Figures 1 and 2. Powered scooter-related incidents should be coded under 5042- Scooters/Skateboards, powered. Unpowered scooter-related incidents should be coded under 1329- Scooter, unpowered.

Figure 3: Gas Powered Scooter

Figure 4: Electric Powered Scooter

Figure 4 is an example of a powered scooter with a seat attached. This is where the distinction between a registered motor scooter (which falls under the National Highway Traffic Safety Administration's jurisdiction), Figure 5, and a powered scooter begins to become difficult to discern. Jurisdiction over a powered scooter may lie with the CPSC or with the National Highway Traffic Safety Administration (NHTSA) within the Department of Transportation. CPSC jurisdiction over powered scooters must be determined on a case by case basis through evaluation of the safety and on-road equipment, such as whether a full sized license plate holder is present on the scooter, the advertising and marketing literature for the scooter, and the actual usage patterns for the product in question, if known. Such a determination would be made in consultation with NHTSA. It should be noted that irrespective of whether in a particular instance CPSC has jurisdiction over the scooter, requirements on vehicle registration and use, insurance, minimum age, and operator licensing remain issues of state/local law.

Also included in the product code for powered scooters are motorized skateboards, Figure 6. During the study period, there were no injuries associated with this type of product. Motorized skateboards do not have a handlebar while a scooter does. Figure 6 is an example of a gas powered skateboard but electric powered skateboards are also available. Notice the bars that go over the user's feet and the hand held controller, which are features of this motorized skateboard but are not necessarily on all motorized skateboards. Descriptions of other products commonly confused with powered scooters, or sometimes referred to as scooters, can be found in Appendix B.

Figure 5: Registered Motor Scooter (NHTSA Jurisdiction)

Figure 6: Motorized Skateboard

III. Methodology

CPSC operates the National Electronic Injury Surveillance System (NEISS), a probability sample of about 100 U.S. hospitals with 24-hour emergency rooms (ERs) with more than six beds. These hospitals provide CPSC with data on all consumer product-related injury victims seeking treatment in the hospitals' ERs. Injury and victim characteristics, along with a short description of the incident, are coded at the hospital and sent electronically to CPSC.

Because NEISS is a probability sample, each case collected represents a number of cases (the case's *weight*) of the total estimate of injuries in the U.S. NEISS hospitals are stratified by size based on the number of annual emergency-room visits. NEISS strata comprise small, medium, large and very large hospitals, and a special stratum for children's hospitals.[1]

All emergency room-treated injuries reported through NEISS occurring between 7/1/03 and 6/30/04 and coded as powered scooter-related (product code 5042) were assigned for follow-up investigation. The victims were contacted by telephone and asked a series of questions (Appendix E). Of the total 377 cases assigned, 213 investigations were completed. Of the investigations which we were unable to complete, 46 interviews were refused by the person contacted. Most of the remaining cases could not be investigated because we were unable to contact a knowledgeable party or the participating hospitals would not provide victim identification.

The distribution of all injuries coded as power scooter-related during the study period is shown in Appendix C. The completed cases were compared with the not completed cases and found to be not significantly different on the variables of age, gender, diagnosis and disposition. The completed cases did differ on body part group from the cases not completed. Additional analysis was performed and the variation in body part was determined to have only a very small effect. These analyses and the accompanying table can be found in Appendix D.

To adjust for cases that did not have a completed interview, the NEISS weights were adjusted by the hospital strata (based on the NEISS sample design) to the total NEISS injury estimate for the cases that met the original selection criteria. Two hundred and thirteen completed interview cases with an original NEISS estimate of approximately 7,707 were adjusted by hospital strata to the total 13,184 NEISS estimate for those that met the criteria for assignment. Adjustment factors ranged from approximately 1.53 to 2.12. As determined by the hospital stratum of each completed case, these factors were multiplied by the original case weight to obtain the adjusted case weight (Table 1).

[1] Kessler, Eileen and Schroeder, Tom. The NEISS Sample (Design and Implementation). U.S. Consumer Product Safety Commission. October 1999.

Table 1: Adjusting for those Cases Not Completing the Interview

Stratum	Sample Size		NEISS Weight		Adjustment Factor
	Completed Interview	Met Criteria for Assigning	Completed Interview	Met Criteria for Assigning	
Children's Hospital	51	80	315.419	500.096	1.5855
Large Hospital	45	72	2,315.614	3,635.665	1.5701
Medium Hospital	23	46	1,738.598	3,378.152	1.9430
Small Hospital	34	52	2,371.172	3,620.609	1.5269
Very Large Hospital	60	127	966.590	2,049.156	2.1200
Total	213	377	7,707.393	13,183.678	

The cases were reviewed and the product involved in the injury was determined (Table 2). Powered scooters were involved in 76.0% of the injuries. Since July 2003, mobility scooters should be coded under 1744: motorized vehicles, not elsewhere classified (three or more wheels). The "other products" category (in the table below) includes pull toys, wheelchairs, mopeds or power assisted cycles, powered minibikes, and two-wheeled, powered, off-road vehicles.

Table 2: Completed Investigations, by product involved

Product Code	Product	Estimated Injuries	Percent	Count
5042	Scooters/skateboards, powered	10,015	76.0%	174
1744	Motorized vehicles, not elsewhere classified (3 or more wheels)	1,154*	8.8%	15
1329	Scooters, unpowered	705*	5.4%	9
5040	Bicycles and accessories (excl. mountain bikes)	517*	3.9%	4
1910	2-wheel motor vehicles (licensed, excl mopeds and trail bikes)	379*	2.9%	5
	Other products	415*	3.1%	6
	Total	13,185ψ		213

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

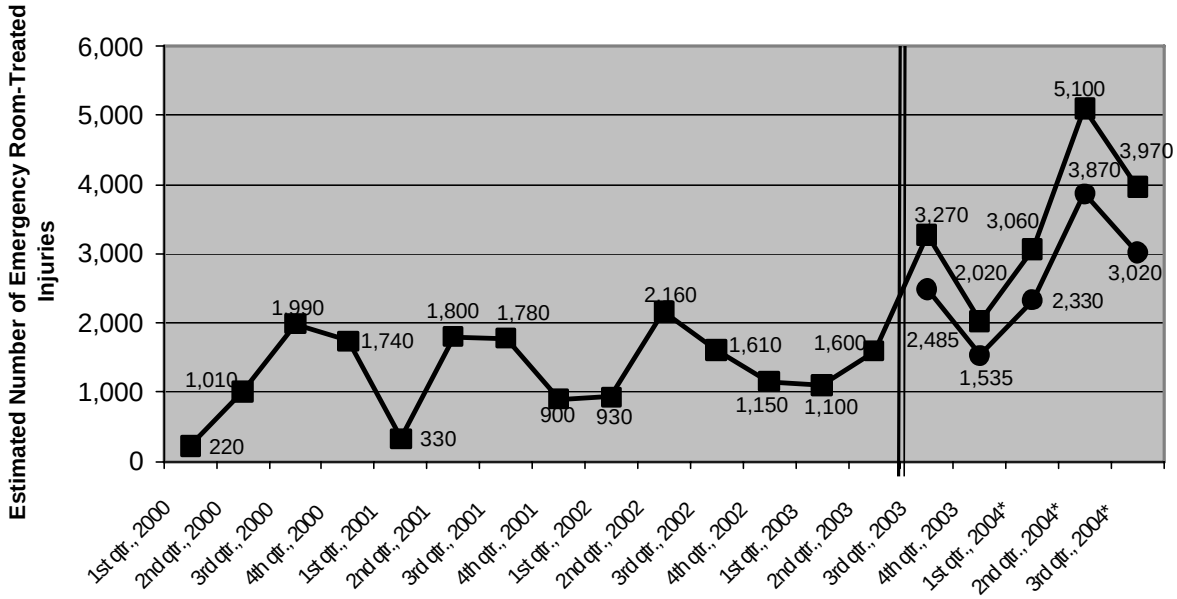
ψ This total differs slightly from the total in Table 1 (Met Criteria for Assigning) due to rounding.

The Injury or Potential Injury Incident database (IPII) is a CPSC database containing reports of injuries or potential injuries made to the Commission. These reports come from news clips, consumer complaints received by mail or through CPSC's telephone hotline or web site, Medical Examiners and Coroners Alert Program (MECAP) reports, letters from lawyers, and similar sources. While the IPII database does not constitute a statistical sample, it can provide CPSC staff with guidance or direction in investigating potential hazards. Since cases in this database may come from a variety of sources, some cases may be listed multiple times. To obtain a more accurate count of the number of reported incidents associated with powered scooters, they were reviewed to eliminate duplicates.

CPSC purchases death certificates from all 50 states, the District of Columbia and some territories. Only those certificates in certain E-codes (based on the World Health Organization's International Classification of Diseases ICD-10 system) are purchased. These are then examined for product involvement before being entered into CPSC's death certificate database. This is not a statistical sample and therefore cannot be used to estimate the number of deaths in the U.S. associated with each product. The number of deaths for each product is at least a minimum count. To obtain a count of fatalities associated with powered scooters, the death certificate data was combined with the deaths found in the IPII database, and with the deaths in the NEISS database (case counts, not weights are used in the death figures in section VI). The cases were then reviewed to eliminate duplicates and determine hazard patterns.

IV. NEISS Data

Figure 7: Injury Estimate Associated with the Powered Scooter Code, by Calendar Year Quarter, January 2000 - June 2004



Source: National Electronic Injury Surveillance System (NEISS) 2000-2004
Numbers rounded to the nearest ten.
The second line, points denoted by circles, is the adjusted injury estimate.
* Data was not complete for 2004 at the time this report was prepared. These are preliminary estimates.

In Figure 7, the line between the 2nd quarter and 3rd quarter in 2003 delineates when the additional guidance was sent to the NEISS coders and when the new product code for mobility scooters was created. The injury estimates should be more accurate after this guidance was sent. In 2002, there were an estimated 5,860 emergency room-treated injuries associated with the powered scooter code. In 2003, there were an estimated 7,990 emergency room-treated injuries associated with the powered scooter code. The increase of 2,130 emergency room-treated injuries from 2002 to 2003 was a statistically significant increase (p=.0253). However, since we do not know what proportion of the injuries coded as powered scooter-related was actually powered scooter-related prior to the study period, this increase should be interpreted with caution.

As of 4/4/2005, there were an estimated 13,780 emergency room-treated injuries associated with powered scooters in calendar year 2004. These injury estimates include all injuries coded as powered scooter-related and are shown by calendar year quarter on the graph by the line with the points denoted by squares. As a result of the special study, it was determined that 76% of the injuries coded with the powered scooter code were actually powered scooter-related. Therefore, the adjusted emergency room-treated injury estimate for calendar year 2004 is 10,470. The line on the graph with the points denoted by circles shows the adjusted injury estimates. At the time this report was prepared data collection was not complete for calendar year 2004 and this estimate will change.

V. Study Results: Powered Scooter-Related Injuries

Note: For completeness, estimates are reported for each level of a variable. However, estimates based on small sample sizes, noted below, have a high degree of variability and should be interpreted with caution.

Injury Estimate

During the year-long study period, there were an estimated 10,015 (CV=.173, n=174) powered scooter-related emergency room-treated injuries. There were an estimated 23,472 medically-treated injuries[2] (includes injuries treated in other settings, such as a doctor's office or clinic). The estimated societal cost for these injuries was $500 million[2].

Demographics, Diagnosis, Body Part, Disposition

The majority of the powered scooter injury victims were under 15 years of age (66.2%). The mean age was 18 years and the median age was 12 years. The mean age was higher than the median age because a few victims were 65 years or older. There were more males (59.3%) injured than females (40.7%). In the under 15 age group, the injuries were fairly evenly split between males and females. However, in the 15 and older age group, more of the injuries were sustained by males than females (Table 3). Most of the injuries were contusions, abrasions, lacerations, or hematomas (49.7%) and fractures (25.5%). Concussions and internal organ injuries to the head accounted for 8.4% of the injuries. Included in "other" are: thermal burns, foreign body, dental injury, internal injury, strain and sprain, and other. The hospitalization rate was 5.1% which is less than NEISS as a whole for this time period, 6.2%. (Table 4)

Table 3: Estimated Number of Injuries Associated with Powered Scooters by Gender and Age Group

	Age group- estimate and percent[3]		**n=174**
Gender	**under 15**	**15 and over**	**Total**
Male	3,512 53.0%	2,424 71.5%	5,936 59.3%
Female	3,115 47.0%	964* 28.5%	4,079 40.7%
Total	6,627 66.2%	3,388 33.8%	10,015

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

[2] These estimates were obtained using CPSC's Injury Cost Model, see Appendix F for a description.
[3] The percentages for gender are percent of the total injuries for that age group column.

Table 4: Special Study Data – Demographics, Diagnosis, Body Part, Disposition of Injuries Associated with Powered Scooters

	Adjusted Estimate	Percent	Count
Sample Size n=174			
Age			
median: 12 years			
mean: 18 years			
minimum: 15 months			
maximum: 79 years			
Age Distribution			
9 years and younger	2,118	21.2%	41
10 to 14 years	4,509	45.0%	91
15 to 19 years	1,254*	12.5%	17
20 to 44 years	1,502*	15.0%	17
45 years and older	632*	6.3%	8
Gender			
male	5,936	59.3%	100
female	4,079	40.7%	74
Body Parts			
head, neck	3,235	32.3%	61
trunk	999*	10.0%	15
arm, hand	2,613	26.1%	46
leg, foot	3,168	31.6%	52
Diagnosis			
contusions, abrasion, laceration, hematoma	4,974	49.7%	90
fracture	2,554	25.5%	48
concussion and internal organ injury to the head	842*	8.4%	16
other	1,645	16.4%	20
Disposition			
treated and released	9,494	94.8%	161
hospitalized, transferred	511*	5.1%	12
unknown	10*	0.1%	1

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

Study Questions

More of the scooters were reported to be powered by gasoline (55.3%) than by a battery (37.3%). Victims 15 years of age and older were on gas powered scooters (64.5% of the injuries associated with this age group) more than on battery powered scooters (27.8%). In preliminary estimates provided by Directorate for Economic Analysis staff, the 2003 annual sales of electric and gas powered scooters were approximately the same. Victims under 15 years of age were more evenly divided between gas powered scooters (50.5% of the injuries associated with this age group) and battery powered scooters (42%). (Table 5)

Table 5: Estimated Number of Injuries Associated with Powered Scooters by Age and Source of Power

	Age- estimate and percent[4]		
Source of power	**under 15**	**15 and over**	**Total**
Gasoline	3,349 50.5%	2,185 64.5%	5,534 55.3%
Electric/battery	2,792 42.1%	943* 27.8%	3,735 37.3%
Do not know	486* 7.3%	260* 7.7%	746* 7.4%
Total	6,627 66.2%	3,388 33.8%	10,015

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

Most of the scooters were used mainly for fun or play (86.1%). Only a small proportion of the scooters were primarily used for transportation (8.9%) and this type of riding was more common with the older age group. There was no relationship found between the age of the user and the type of riding for which the scooter was used (χ^2 test was performed, p-value > .05)[5]. (Table 6)

Table 6: Estimated Number of Injuries Associated with Powered Scooters by Age and Type of Riding

	Age- estimate and percent[4]		n=172
Type of riding	**under 15**	**15 and over**	**Total**
Transportation	346* 5.2%	533* 16.4%	879* 8.9%
Fun or play	6,135 92.6%	2,359 72.7%	8,494 86.1%
Other/unknown	146* 2.2%	352* 10.8%	498* 5.0%
Total	6,627 67.1%	3,244 32.9%	9,871

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

[4] The percentages for source of power and type of riding are percent of the total injuries for that age group column.

[5] Test performed using SUDAAN which takes into account the survey design.

Since most of the victims were under 15 years old, the parent of the victim often responded to the questionnaire and many of the respondents did not witness the accident. In most of the accidents, the victim was riding the scooter (93.3%) and the scooter had some type of brake (88.9%). (Table 7)

Among the cases for which the product age was reported (n=128), the median product age was two months and the average product age was 3.6 months. This is not unexpected because this product became popular relatively recently. (Table 7)

Fewer than half of the victims were wearing helmets at the time of the accident (42.2%) and few were wearing any additional safety equipment (Table 7). Victims under 15 years of age were slightly more likely to wear a helmet (46.5% of this age group was wearing a helmet) than victims 15 years of age or older (33.3%). Of the 16 cases of concussion and internal organ injury to the head (national estimate – 842*), only four of the injured were wearing helmets. The events surrounding these four cases were: the victim braked too hard and fell, striking her chin; the victim was stuck by a motor vehicle; the victim was distracted, lost control, and fell, receiving a basilar skull fracture; and in the remaining case, the exact details of the accident were not reported but the child struck her face. In 10 of the 11 cases where the victim was not wearing a helmet, helmet use may have reduced or prevented the injury. This was determined by reviewing the description of the accident scenario provided by the respondent and the description of the injury provided by the respondent or reported by the NEISS coder. If the injury was to an area of the head which would be covered by a helmet, it was determined that helmet use may have reduced or prevented the injury. In the remaining concussion injury, we do not know if the victim was wearing a helmet.

In roughly half the injuries, the scooter was owned by someone other than the victim (53.5%) and of those, the scooter was most often owned by a friend/relative (59.9%). (Table 7)

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

Table 7: Distribution of Responses of Selected Survey Questions

Question Number	Question Wording and Answers Sample Size and Percent Distribution	**Adjusted Estimate**	**Percent**	**Count**
10	Who is the respondent?			**n=174**
	Injured person	2,672	26.7%	36
	Parent of victim	6,593	65.8%	121
	Someone else	750*	7.5%	17
12	Did you witness the accident? (respondents are those who are not the victim, Q10)			**n=138**
	Yes	1,132	15.4%	20
	No	6,211	84.6%	118
17	Which one of these categories best describes the involvement of your/(victim's name) in the accident?			**n=174**
	Riding the scooter	9,345	93.3%	160
	Pedestrian struck by scooter	41*	0.4%	2
	Other	629*	6.3%	12
19	What type of power did the motor of the scooter run off of?			**n=174**
	Gasoline	5,534	55.3%	92
	Electric or battery	3,735	37.3%	71
	Don't know	746*	7.4%	11
27	Does the scooter have brakes of any kind?			**n=172**
	Yes	8,775	88.9%	157
	No	189*	1.9%	2
	Don't know	906*	9.2%	13
28	What type of riding is the scooter typically used for?			**n=172**
	Transportation	879*	8.9%	13
	Fun or play	8,495	86.1%	152
	Other	201*	2.0%	2
	Don't know	297*	3.0%	5
30	When was the scooter purchased or if it was a gift, when was it received?			**n=128**
	median product age: 2 months			
	average product age: 3.6 months			
	maximum product age: 2 years			

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

	Was the rider wearing any of the following safety equipment at the time of the incident?			**n=172**
33	Helmet- Yes	4,162	42.2%	71
	Helmet- No	5,125	51.9%	93
	Helmet- Don't know	584*	5.9%	8
34	Knee pads- Yes	488*	5.0%	11
	Knee pads- No	8,756	88.7%	153
	Knee pads- Don't know	626*	6.3%	8
35	Wrist pads- Yes	45*	0.5%	2
	Wrist pads- No	9,199	93.2%	162
	Wrist pads- Don't know	626*	6.3%	8
36	Elbow pads- Yes	539*	5.5%	11
	Elbow pads- No	8,706	88.2%	153
	Elbow pads- Don't know	626*	6.3%	8
38	Are/Is you/(child's name) the owner of the scooter?			**n=173**
	Yes	4,638	46.5%	88
	No	5,341	53.5%	85
39	Who is the owner? (specify relationship to victim) (respondents are those who answered "no" to Q38)			**n=84**
	someone from the neighborhood	562*	10.7%	9
	brother/sister	448*	8.6%	8
	parent/primary caregiver	491*	9.4%	7
	victim's child	151*	2.9%	2
	friend/relative	3,134	59.9%	53
	other	446*	8.5%	5

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

Hazard Pattern

The investigation narratives were read and hazard patterns were determined. The two most prevalent hazard patterns were "operator contributed to the accident" (35.9% of powered scooter injuries) and "environment contributed to the accident" (35.1% of powered scooter injuries) (Table 8). Some examples of scenarios included in "operator contributed to the accident" are:

- Operator fell off scooter
- Two people were riding the scooter at the same time
- Operator lost control of the scooter
- Operator accidentally accelerated the scooter
- Operator braked too quickly.

Some examples of scenarios included in "environment contributed to the accident" are:

- Hit a curb
- Hit a bump
- Hit a pot hole
- Accident occurred because of riding over gravel.

The hazard pattern "operator contributed to the accident" was more frequent in the under 15 age group than the 15 and older age group (χ^2 p-value=.0160)[6]. The hazard pattern "environment contributed to the accident" was marginally more frequent in the older age group than the younger age group (χ^2 p-value=.0601)[6]. No relationship was found between source of power of the scooter and hazard pattern (χ^2 p-value=.6408)[6]. (Table 8)

The hazard pattern "scooter directly contributed to the accident/injury" accounted for 19.6% (1,964 injuries, n=26, CV=.205, cases listed in Appendix G) of the injuries associated with powered scooters. The proportion of injuries associated with this hazard pattern in each age group is roughly the same. Examples of scenarios included in this pattern are (from most prevalent to least prevalent):

- Brake failed to engage
- Victim was cut on a sharp edge
- Front wheel was wobbling prior to the accident
- Handlebar came loose and detached
- Victim was burned from touching a hot part of a gas powered scooter
- Other: accelerator stuck, kill switch failed, engine seized, a bolt came loose, tire blew.

[6] Test performed using SUDAAN which takes into account the survey design.

Table 8: Estimated Number of Injuries Associated with Powered Scooters by Hazard Pattern by Age and Source of Power

Hazard Pattern	Age- estimate and percent[7]		Source of power- estimate and percent[7]			n=174
	under 15	15 and over	Gasoline	Battery	Do not know	Total
Motor vehicle accident	382* 5.8%	153* 4.5%	384* 6.9%	151* 4.0%	0	535* 5.4%
Operator contributed to the accident	2,820 42.6%	772* 22.8%	1,766 31.9%	1,621 43.4%	206* 27.6%	3,592 35.9%
Environment contributed to the accident	1,964 29.6%	1,549* 45.7%	1,814 32.8%	1,313 35.1%	386* 51.8%	3,513 35.1%
Scooter directly contributed to the accident/injury	1,283 19.4%	681* 20.1%	1,391* 25.1%	538* 14.4%	35* 4.7%	1,964 19.6%
Other or unknown	178* 2.7%	232* 6.9%	179* 3.2%	113* 3.0%	118* 15.9%	410* 4.1%
Total	6,627 66.2%	3,338 33.8%	5,534 55.3%	3,735 37.3%	746 7.5%	10,015

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

[7] The percentages are percent of the total injuries for that column.

VI. Deaths Reported

From October of 1998, when the powered scooter code was created, through November 2004, CPSC has received reports of 49 deaths involving powered scooters (includes two cases reported through NEISS). In all of these cases, the person involved was the operator of the scooter. The ages of the deceased ranged from six to 86, and the mean and median age was 39. One quarter of the deceased were under the age of 15. Forty-three were male and six female.

Some of these cases may have involved a registered motor scooter or a mobility scooter instead of a powered scooter, but there was not enough product detail to make that determination. If the victim was 65 years of age or older, we suspect the product involved may have been mobility scooter. The twenty-nine deaths that were the result of an accident involving a motor vehicle probably included some registered motor scooters. Twelve of the deaths were the result of a fall from the scooter. In three of those falls, alcohol and/or drugs were involved. In another death, the exact details of the accident aren't known but alcohol was believed to be a contributing factor. In four of the deaths, the victim lost control of the scooter. The remaining three deaths involved other hazard patterns.

VII. Incident Data

During the study period (7/1/03 – 6/30/04), CPSC received 133 unique incident reports involving powered scooters. There were 14 reported deaths (also discussed in section VI Deaths Reported), 51 injuries, 67 cases with no injury, and 1 case with only incidental product involvement. In 46 of the injuries and in all of the deaths, the person involved was the operator of the scooter.

The most frequent hazard patterns were as follows:

- Scooter contributed to the injury/incident (90 reports with 28 injuries)
- Motor vehicle accident (15 reports with 8 deaths, 7 injuries)
- Operator fell off scooter (9 reports with 3 deaths, 6 injuries)
- Accident occurred as a result of something the operator did (7 reports with 1 death, 6 injuries)

In the category of scooter contributed to the injury/incident, the most common problems were (spreadsheet in Appendix H):

- Fire hazards (includes: electric fire, gas fire/spark, gas leak, melted, smoking) (19 reports)
- Unexpectedly accelerated (in six of these incidents, there was no one operating the scooter at the time of the accident.) (14 reports)
- Handle bar broke/detached (13 reports)
- Multiple problems (10 reports)
- Unable to turn off (5 reports)

VIII. Summary

Powered scooters started rising in popularity as the popularity of non-powered scooters declined, beginning in 2002. To learn more about the injuries associated with powered scooters, we assigned, for telephone investigation, all NEISS emergency room-treated powered scooter injuries (product code 5042) that occurred between 7/1/03 and 6/30/04.

During the study period (July 1, 2003 – June 30, 2004), there were an estimated 13,185 emergency room-treated injuries reported for the powered scooter code. After reviewing the completed investigations, 10,015 of these injuries were determined to actually have involved powered scooters. Two thirds of the injured persons were under 15 years of age and 59.3% were male. More of the scooters were reported to run on gasoline (55.3%) than off of a battery (37.3%). In preliminary estimates provided by Directorate for Economic Analysis staff, the 2003 annual sales of electric and gas powered scooters were approximately the same. Less than half of the victims were wearing helmets at the time of the accident (42.2%) and few were wearing additional safety equipment. Slightly less than half of the scooters were owned by the injured person (46.5%).

The injury narratives were reviewed and hazard patterns were coded. The scooter directly contributed to the accident/injury in 19.6% of the injuries. Examples of scenarios included in this pattern are: brake failed to engage, victim was cut on a sharp edge, front wheel wobbling prior to the accident, handlebar came loose and detached, burned from touching a hot part of the gas powered scooter, etc. This is a high proportion of injuries in which something about the product contributed to the injury.

Appendix A:
Scooter Coding Guidance

Sent to the NEISS coders 7/1/03

5042 – Scooters/skateboards, powered

1910 – Licensed two-wheeled motor vehicles
(excl. mopeds and trail bikes)

1744 – Motorized vehicles, not elsewhere
classified (three or more wheels)

Appendix B:
Other Products that are Sometimes Referred to as Scooters

The distinction between a registered motor scooter, Figure B1, and a powered scooter is not always easily made. Whether CPSC or NHTSA has jurisdiction over a powered scooter must be determined on a case by case basis through evaluation of the safety and on-road equipment, such as the presence of a full sized license plate holder, the advertising and marketing literature for the scooter, and the actual usage patterns for the products in question, if known. It should be noted that irrespective of whether CPSC has jurisdiction over the scooter, requirements on vehicle registration and use, insurance, minimum age, and operator licensing remain issues of state/local law. Registered motor scooters do not fall under CPSC's jurisdiction and incidents involving these products should not be included in our databases, unless a consumer product is also involved.

Figure B1: Registered motor scooter

Figure B2: Mobility Scooter

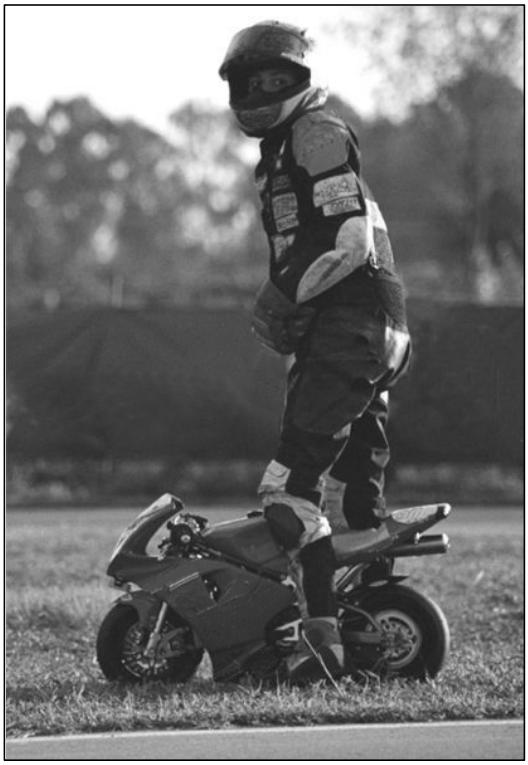
Another product commonly called a powered scooter is a mobility scooter, Figure B2. This product differs from a powered scooter in that the seat is more chair like, it has three or four wheels, and is used to aid in mobility of an elderly and/or handicapped person. Mobility scooter-related incidents should be coded under 1744 – Motorized Vehicles, not elsewhere classified (three or more wheels). This code was created at the beginning of the study period, July 2003. Mobility scooters that are "medical devices" are not within the CPSC's jurisdiction unless they are intended for use by children. This determination can be difficult to make. For example, if the scooter is promoted for use by people on crutches, or is advertised as reimbursable by Medicare or medical insurance, it would be a "medical device". Mobility scooters with arms for riders with physical limitations are often considered by the Food and Drug Administration (FDA) to be medical devices.

Two additional products worth mentioning, which do not appear as often in the powered scooter data, are mopeds and pocket bikes, because they are sometimes referred to as scooters. While the term "moped" is commonly used to refer to a registered motor scooter, in reality it is a motorized bicycle, Figure B3. By Act of Congress, CPSC has jurisdiction over electric bicycles with fully operable pedals and an electric motor of less than 750 watts (1 h.p.) whose maximum speed on a paved level surface is less than 20 miles per hour when powered solely by such motor and ridden by a 170-pound operator. Mopeds are less common than they used to be in the US and this term is also being used to refer to registered motor scooters. Note that the moped has pedals, like a bicycle. Moped-related incidents should be coded under 3215 – Mopeds or Power-Assisted Cycles.

Figure B3: Moped

Figure B4: Pocket Bike

A pocket bike, Figure B4, looks very much like a motorcycle, only much smaller (usually only as tall as an average adult's knees). These products are frequently made in Italy and were originally developed for racing. They're now being produced in gas and electric models. Many have much lower maximum speeds than the racing pocket bikes, and are being sold alongside powered scooters. Pocket bike-related incidents should be coded under 5035 – Minibikes, powered.



Appendix C:
Distribution of All Injuries Coded as Powered Scooter-Related During the Study Period

	Estimate	Percent	Count
Sample Size n=377			
Age			
median: 12 years			
mean: 23 years			
minimum: 15 months			
maximum: 91 years			
Age Distribution			
9 years and younger	2,335	17.7%	81
10 to 14 years	4,783	36.3%	148
15 to 19 years	1,704	12.9%	39
20 to 44 years	2,556	19.4%	65
45 years and older	1,805	13.7%	44
Gender			
male	7,969	60.5%	223
female	5,214	39.6%	154
Body Parts			
head, neck	3,681	27.9%	128
trunk	1,549	11.7%	44
arm, hand	4,358	33.1%	110
leg, foot	3,385	25.7%	91
other/unknown	211*	1.6%	4
Diagnosis			
contusions, abrasion, laceration, hematoma	6,246	47.4%	178
fracture	3,603	27.3%	105
concussion and internal organ injury to the head	1,047	7.9%	40
other	2,288	17.4%	54
Disposition			
treated and released	12,112	91.9%	339
hospitalized, transferred	831	6.3%	31
other, unknown	240*	1.8%	7

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

Appendix D:
Comparison of those Cases Where an Interview Was Completed versus those Cases Where an Interview Was not Completed

	Completed		Not completed		Total	
Age distribution	**NEISS wt**	**Percent[8]**	**NEISS wt**	**Percent[8]**	**NEISS wt**	**Percent[8]**
9 years and younger	1,547	20.1%	789	14.4%	2,335	17.7%
10 to 14	2,913	37.8%	1,871	34.2%	4,783	36.3%
15 to 19	1,060	13.8%	644	11.8%	1,704	12.9%
20 to 44	1,248	16.2%	1,308	23.9%	2,556	19.4%
45 years and older	939	12.2%	866	15.8%	1,805	13.7%
Gender						
Male	4,574	59.3%	3,396	62.0%	7,969	60.4%
Female	3,133	40.7%	2,082	38.0%	5,214	39.6%
Body Part						
head, neck	2,261	29.3%	1,420	25.9%	3,681	27.9%
trunk	831	10.8%	718	13.1%	1,549	11.7%
arm, hand	2,024	26.3%	2,334	42.6%	4,358	33.1%
leg, foot	2,592	33.6%	793	14.5%	3,385	25.7%
other	0	0.0%	211	3.9%	211	1.6%
Diagnosis						
contusion, abrasion, laceration, hematoma	3,884	50.4%	2,362	43.1%	6,246	51.3%
fracture	1,973	25.6%	1,630	29.8%	3,603	29.6%
concussion and internal organ injury to the head	648	8.4%	399	7.3%	1,047	8.6%
other	1,202	15.6%	1,086	19.8%	2,288	18.8%
Disposition						
Treated and released	7,303	94.8%	4,811	87.8%	12,112	91.9%
Hospitalized, transferred	398	5.2%	432*	7.9%	831	6.3%
Other, unknown	6*	0.1%	235*	4.3%	240*	1.8%
Total[9]	7,707		5,478		13,183	

* Estimate is based on a small sample size and has a high degree of variability; interpret with caution.

χ^2 tests were performed at the 5% level of significance[10]. The distribution of the age groups did not differ between the completed and not completed interviews (p-value=.3813). No difference was found for the distribution of gender in the completed and not completed interviews (p-value=.5136). The distribution of the diagnosis groups did not differ between the completed and not completed interviews (p-value=.7458). No difference was found for the distribution of disposition in the completed and not completed interviews (p-value=.0805).

[8] The percentages are percent of the total injuries for that column.
[9] Numbers may not add to totals and percentages may not add to 100 due to rounding.
[10] Tests performed using SUDAAN which takes into account the survey design.

The distribution of the injured body part groups did differ between the completed and not completed interviews (p-value=.0151). There was a lower proportion of arm or hand injuries and a higher proportion of leg or foot injuries among the completed cases than among the not completed cases. To examine the possible effect of the difference in distribution of body part groups, the weights of the completed cases were readjusted, controlling for body part group and hospital stratum. The distribution of hazard pattern was compared using the first adjusted weights (controlling for stratum) and the second adjusted weights (controlling for stratum and body party group). The difference between these two distributions was small, less than 1% difference in each group. Thus, the effect of body part groups on the hazard patterns was considered to be minimal.

Appendix E:
Telephone Questionnaire

This telephone questionnaire was administered using the Computer Aided Telephone Interview (CATI) feature of The Survey System, Version 8.1. Copyright © 1983-2003, Creative Research Systems. What follows is a text version of the survey. Skip patterns are never seen by the interviewer and the program uses these skip patterns to determine which question to display next. The lines in brackets and all capital letters are these skip patterns. "S" means skip, "D" means delayed skip, and "A" means avoid. The text in bold is instructions to the interviewer and is not meant to be read to the respondent.

Powered Scooters Telephone Questionnaire
OMB No. 3041-0029

1. Please enter task number.

[REQUIRE ANSWER]

---

2. **INTERVIEWER: In this questionnaire, please do not read the response categories unless indicated, or unless necessary for prompting the respondent to answer the question. Italicized words are meant to serve as a guide to emphasis.**

   If the victim is a child between the ages of 8 and 17, ask the parent's permission to interview the child about the incident. The parent can be present or on another phone line during the interview. If the victim is a child less than 8 years of age, interview the parent.

---

3. Interview begins here (read to respondent):

   Hello, I'm_____**(interviewer's name)** from _____ **(interviewer's company)**. We are working with the U.S. Consumer Product Safety Commission and some hospitals, including _____ **(hospital name)** to learn about how injuries happen, so we can help others avoid similar injuries. We are currently studying injuries involving *powered scooters*, and we'd like to ask you a few questions about a recent powered scooter injury to someone in your household. This should only take 10 or 15 minutes. Your answers will be kept confidential and will be used only for statistical purposes. Will you help us?

[REQUIRE ANSWER]

- ❑ agreed
- ❑ refused
- ❑ other (specify in next window)

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 48]
[S - IF THE ANSWER IS 1, THEN SKIP TO QUESTION 6]

4. Specify

[REQUIRE ANSWER]

5. Continue with interview?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 48]

6. I understand you/**(child's name)** was/were treated at _____ Hospital on _____(**date**) for an injury that involved a powered scooter. Is that correct?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No (specify product in next window)
- ❑ Don't know

[S - IF THE ANSWER IS 1, THEN SKIP TO QUESTION 10]
[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 7]
[S - IF THE ANSWER IS 3, THEN SKIP TO QUESTION 8]

7. Specify correct product information.

[REQUIRE ANSWER]

_____

[D - IF THE ANSWER TO QUESTION 6 IS 2, THEN SKIP TO QUESTION 48]

8. **Ask if anyone else in the household knows more about the incident and can respond. If necessary, set up a time to call back. If no one is available to respond to this questionnaire, please explain below.**

9. Continue with interview?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 48]

10. Respondent is:

[REQUIRE ANSWER]

- ❑ Injured person
- ❑ Parent of an injured person under 18
- ❑ Other (specify in next window)

[S - IF THE ANSWER IS 1, THEN SKIP TO QUESTION 13]
[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 12]

11. Specify relationship:

[REQUIRE ANSWER]

---

12. Did you witness the accident?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No

13. The types of scooters we are interested in are *unlicensed powered scooters*. For this study, we are *not* investigating unpowered scooters, scooters used for mobility of an elderly/handicapped person, or registered motor scooters similar to a moped or small motorcycle. Did your/your child's accident involve one of the *unlicensed powered scooters* we're looking for?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No (specify in next window)

[S - IF THE ANSWER IS 1, THEN SKIP TO QUESTION 15]

14. Specify scooter type.

[REQUIRE ANSWER]

[D - IF THE ANSWER TO QUESTION 13 IS 2, THEN SKIP TO QUESTION 48]

15. Please describe how the accident happened. That is, what were you/was **(child's name)** doing just *before*, *during* and just *after* the injury occurred? Please start with what was going on just *before* the injury occurred. Specify the location of the accident and any environmental factors such as weather, temperature, and type of surface the scooter was on.

[REQUIRE ANSWER]

_____

_____

16. **INTERVIEWER READ THE FOLLOWING**: In addition to writing down exactly what you tell me about how the injury happened, I need to ask you some questions that may seem like I'm asking you to repeat yourself. Please bear with me. We want to be sure we *completely understand* everything about how the injury happened.

17. Which one of these categories *best describes* the involvement of you/(victim's name) in the accident? **INTERVIEWER: Read all categories and enter ONE response or select other (3) and write explanation in next window.**

You/(victim's name) were/was:

[REQUIRE ANSWER]

- ❑ riding the scooter
- ❑ pedestrian struck by scooter
- ❑ Other (specify in next window)

[A - IF THE ANSWER TO QUESTION 17 IS 1 OR 2, THEN SKIP TO QUESTION 19]

18. Specify

_____

19. What type of power did the motor of the scooter run off of?

[REQUIRE ANSWER]

- ❑ Gasoline
- ❑ Electric or battery
- ❑ Don't know

20. What were the brand and model names of the scooter involved in the injury?
(enter brand and model names in next 2 windows, if known.)

[REQUIRE ANSWER]

- ❑ Brand and/or model known
- ❑ Don't know

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 23]

21. Specify brand

_____

22. Specify model
(if brand is known but model is not, enter unknown below)

_____

[D - IF THE ANSWER TO QUESTION 20 IS 1, THEN SKIP TO QUESTION 27]

23. Do you still have the scooter?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 27]

24. It's very important for us to know what brands are involved in these injuries. If I hold on, would you be willing to go look at the scooter and tell me what the brand and model name are?

- ❑ Yes (specify in next 2 windows)
- ❑ No

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 27]

25. Specify brand

_____

26. Specify model
(if brand is known but model is not, write unknown below)

---

27. Does the scooter have brakes of any kind?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No
- ❑ Don't know

28. What type of riding is the scooter typically used for?

[REQUIRE ANSWER]

- ❑ Transportation
- ❑ Tricks, jumping, or competition
- ❑ Fun or play
- ❑ Other (specify in next window)
- ❑ Don't know

[S - IF THE ANSWER IS 1 OR 2 OR 3 OR 5, THEN SKIP TO QUESTION 30]

29. Specify type of riding

30. When was the scooter purchased or if it was a gift, when was it received?

[REQUIRE ANSWER]

- ❑ Date known (enter in next window)
- ❑ Date not known

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 32]

31. Enter Month and Year

---

32. What is the date of birth/age of the rider at the time of the incident?
(date of birth in MM/DD/YYYY format)

[REQUIRE ANSWER]

---

33. I'm going to read a list of *safety equipment* that riders might wear. Please tell me if the rider was wearing any of these at the time of the incident.

    Helmet?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No
- ❑ Don't know

34. Knee pads?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No
- ❑ Don't know

35. Wrist Pads?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No
- ❑ Don't know

36. Elbow Pads?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No
- ❑ Don't know

37. Please specify if there was any safety equipment you/(the rider) was wearing at the time of the incident that I didn't mention.

---

38. Are/Is you/**(child's name)** the owner of the scooter?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No (specify in next window)

[S - IF THE ANSWER IS 1, THEN SKIP TO QUESTION 41]

39. Who is the owner?
    Specify relationship to victim, read appropriate choices below to respondent.

[REQUIRE ANSWER]

- ❑ someone from the neighborhood
- ❑ brother/sister
- ❑ parent/primary care giver
- ❑ baby sitter
- ❑ victim's child
- ❑ friend/relative (not sibling)
- ❑ other (specify in next window)

[S - IF THE ANSWER IS 1 OR 2 OR 3 OR 4 OR 5 OR 6, THEN SKIP TO QUESTION 44]

40. **Specify**

[REQUIRE ANSWER]

_____

41. Are/Is you/**(child's name)** the primary user of the scooter?

[REQUIRE ANSWER]

- ❑ Yes
- ❑ No (specify in next window)
- ❑ Don't know

[S - IF THE ANSWER IS 1 OR 3, THEN SKIP TO QUESTION 44]

42. Who is the primary user?
Specify relationship to victim, read appropriate choices below to respondent.

[REQUIRE ANSWER]

- ❑ someone from the neighborhood
- ❑ brother/sister
- ❑ parent/primary care giver
- ❑ baby sitter
- ❑ victim's child
- ❑ friend/relative (not sibling)
- ❑ other (specify in next window)

[S - IF THE ANSWER IS 1 OR 2 OR 3 OR 4 OR 5 OR 6, THEN SKIP TO QUESTION 44]

43. **Specify**

[REQUIRE ANSWER]

_____

44. Is there *anything else* about this accident or the scooter involved that you would like me to know?

[REQUIRE ANSWER]

- ❑ Yes

❑ No

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 46]

45. **Explain**

_____

46. We may be interested in sending a CPSC investigator to your home to gather more information and take pictures of the scooter and how the accident occurred. This investigation would be set up at your convenience. May we have an investigator contact you to set up a visit?

[REQUIRE ANSWER]

❑ Yes
❑ No

[S - IF THE ANSWER IS 2, THEN SKIP TO QUESTION 48]

47. When would be the best time to call?

_____

48. Thank you very much for your time and your help.

_____

Appendix F:
Injury Cost Model (ICM)

The Injury Cost Model (ICM) is a computerized analytical tool designed to measure the direct and indirect costs associated with consumer product-related injuries. In addition to providing a descriptive measure of injury hazards in monetary terms, the ICM is also used to estimate the benefits of regulatory actions designed to reduce consumer product injuries and to assist the Commission in planning, budgeting, and evaluating projects.

The ICM is structured to measure the four basic categories of injury costs: medical costs, work losses, pain and suffering, and product liability and legal costs. Medical costs include doctor and hospital-related costs as well as costs for diagnostic procedures, prescription drugs, equipment, supplies, emergency transportation, follow-up care, and administrative costs. Both the initial treatment costs and the costs of long term care are included in the medically-treated injury costs.

Work-related losses represent the value of lost productivity, the time spent away from normal work activities as the result of an injury. Work-related losses include both the short-term losses resulting from being absent from work and the long-term losses resulting from permanent partial or total disability and their impact on lifetime earnings. They also include the value of work lost as a result of caring for injured children, the value of housework lost due to an injury, and the loss to the employer resulting from the disruption of the workplace.

Pain and suffering represents the intangible costs of injury, and is based on jury verdicts for consumer product-related injuries. Product liability and legal costs represent the resources expended in product liability litigation. These costs include the costs of administering the product liability insurance system (including the plaintiff's legal costs and the costs of defending the insured manufacturer or seller), the costs of claims investigation and payment, and general underwriting and administrative expenses; however, medical, work loss, and pain and suffering compensation paid to injury victims and their families is excluded, thus avoiding double counting.

The ICM estimates the costs of injuries reported through the NEISS, a national probability sample of hospital emergency departments. The injury cost estimates depend on a number of factors, and vary by the age and sex of the injured person, the type of injury suffered, the body part affected, and whether or not the victim was hospitalized, held for observation, transferred, or treated and released. The ICM also uses empirically derived relationships between emergency department injuries and those treated in other settings (e.g., doctor's offices, clinics) to estimate the number of injuries treated outside hospital emergency departments and the costs of those injuries.

A number of databases are used to calculate the four cost categories. National discharge data and discharge data from six states are used to estimate the costs of hospitalized injuries. Data from Department of Defense medical records from almost two million retirees and civilian dependents of military personnel and several National Center for Health Statistics surveys dealing with costs of treatment in different medical settings are used to calculate medical costs for injuries where the victim is treated and released from the emergency department or treated in a clinic or doctor's office. Other major data sources include the Annual Survey of Occupational Illnesses and Injuries and the Detailed Claims Information (DCI) database for work loss estimates; and the Jury Verdicts Research data for pain and suffering estimates. Product liability and legal costs are derived analytically from insurance industry information and several studies of product liability.

Appendix G:
NEISS Completed Cases – Scooter Directly Contributed to the Accident/Injury

Incident Reports (IPII)- scooter directly contributed to the injury/incident

tkno	nek	sex	age	disp	bdpt	diaggrp	Q15
030710HEP2721	30720937	M	35	TR/REL	Trunk (incl sholder)	Fracture	The victim is a 35 year old male who was injured while riding a gasoline powered scooter belonging to his girlfriend's brother. The scooter had been purchased just two days prior to the victim's accident at a store called ***** in *****, however, the victim didn't know the manufacturer. The victim was riding on a street and tried to brake but they didn't work. He stood up with the intention of jumping off and when he did, the scooter rapidly decelerated causing him to be thrown over the handlebars. He sustained a fracture to his tail bone as well as chest contusions and a sprained wrist. The victim adds that the scooter also hit him in the back of the head when he was laying in the street. The victim was taken to the hospital, treated for his injuries, and released.
030805HEP1402	30808712	M	10	TR/REL	Leg, foot	other	The victim is a 10 year old male who was injured at home while getting off a gas powered scooter. His mother is the respondent, she witnessed the accident. The victim just finished riding the parked scooter and hit his right lower leg on the hot muffler while getting off. He sustained 1st degree burns to his leg in the accident. He was taken to the emergency room where he was treated for the burn and then released. The victim's mother said the scooter was brand new and that it was made in China. She could not find a manufacturer or brand name anywhere on it.
030812HEP6402	30823277	F	18	TR/REL	Head (incl neck)	Cont,ab,lac,hema	" The victim is a 15 year old female who was injured while riding her ***** gas powered scooter. The victim received the scooter as a Christmas present December 2001, it was purchased at *****. Her mother is the respondent, she didn't witness the accident. The victim was riding on a street and went to brake, when they "locked up" and didn't function properly. The victim lost control and was thrown over the handlebars, landing on the street. She sustained contusions to her head, back, both knees and her left hand. The victim's mother took her to the hospital where exam and x-rays were taken. The victim was treated for contusions and bruises and was released a short time later. The victim went back to the emergency room a couple days later for follow-up.
030924HEP4801	30953781	M	30	TR/REL	Leg, foot	other	" The victim is a 30 year old male who was injured while riding a friends gas powered scooter (manufacturer unknown) on a street in a residential area. The scooter had been modified or "suped up" with a carburetor and exhaust to make it go faster. The victim was going quite fast, about 25-30 mph, when the front brake stopped working. The victim threw his weight toward the back of the scooter in an attempt to slow it down. When he did this, the scooter went into a wheelie. As he leveled the scooter out he somehow hyper-extended his right knee. A few moments later the victim was thrown off the scooter and onto some grass. He went to the hospital a short time later. He was treated for his knee injury and released.
030924HEP5601	30955628	M	13	TR/REL	Leg, foot	Cont,ab,lac,hema	The victim is a 13 year old male who was injured while riding a ***** gas powered scooter on the road in front of his home. His father is the respondent, he didn't witness the accident. The scooter has a pull-start similar to a lawn mower. The victim was riding the scooter when the engine suddenly seized up causing it to come to an abrupt stop and the victim to fall off. The victim lacerated his left knee on the ground and sustained abrasions to both elbows. He was taken to the emergency room where 13 stitches were applied to close the knee wound. He was released the same day.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

tkno	nek	sex	age	disp	bdpt	diaggrp	Q15
031003HEP1761	31010597	M	8	TR/REL	Leg, foot	Cont,ab,lac,hema	" The victim is an 8 year old male who was injured while riding a battery powered scooter (manufacturer unknown) in the neighborhood. The victim's mother is the respondent, she didn't witness the accident. The scooter is battery powered, however, in order to get the battery to "kick-in" the rider must first use the scooter as if it were manual (ie: use your foot to get it going). The victim was barefoot and was "getting the scooter going" (using his foot) when he his left heel was lacerated on some part on the back of the scooter. The victim was taken to the hospital where a few stitches were used to close the cut. He was released the same day.
031109HEP5922	31112810	M	12	TR/REL	Head (incl neck)	Cont,ab,lac,hema	The victim is a 12 year old male who lacerated his lower leg while riding a friend's power scooter. The victim's step-father is the respondent, he didn't witness the accident. He also didn't have any specific information about the scooter. The victim was riding on a neighborhood street at night in the dark. He was going too fast and tried to stop too quickly when he lost control and he and the scooter fell over. The victim tore his pants and lacerated his lower leg on a bolt on the scooter. The victim was taken to the hospital by ambulance where he was admitted. He went into surgery to repair the leg and received at least 20 internal and external stitches to close the wound. The victim was released two days later.
031231HEP8141	40101108	M	8	TR/REL	Leg, foot	Cont,ab,lac,hema	The victim is an 8 year old male who sustained bruises to his lower legs when he fell off an electric power *****. His mother is the respondent, she didn't witness the accident. The victim just received the scooter a couple days earlier for Christmas. The victim was speeding down a sidewalk when the handle bar control that accelerates the scooter got stuck and he couldn't slow down or stop. He fell off and the scooter flew up and landed on his legs. He was taken to the emergency room, treated for minor contusions, and released.
031231HEP8143	40101117	F	13	TR/REL	Head (incl neck)	Concussion	The victim is a 13 year old female who sustained a concussion while riding a friends gas powered scooter (manufacturer unknown). Her mother is the respondent, she didn't witness the accident. The victim was at a friend's house at the time of the accident. She was riding on the street when the brakes failed. In an attempt to stop the scooter (or slow it down), the victim turned the handlebars, lost control, and ran into a slow moving car. The victim went on the hood and the scooter went under the car. The victim was taken to the hospital where x-rays and CAT Scan revealed a concussion. She was treated and released the same day.
040106HEP8142	40110374	F	21	TR/REL	Head (incl neck)	Fracture	The victim is a 21 year old female who fractured both jaw bones while riding her 12 year old brothers ***** gas scooter. The victim is away at college so her mother responded to the interview. She witnessed the accident. The victim had been riding on a street, but moved to the side to let cars pass. When she attempted to get back on the street, the scooter wheels began to wobble, the victim lost control and fell off. She fractured both jaws on the street and sustained facial lacerations. The victim was taken to ***** and then transferred to *****. She was admitted and went into surgery to wire her jaws shut. She was released two days later.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

tkno	nek	sex	age	disp	bdpt	diaggrp	Q15
040322HEP0801	40342798	F	12	TR/REL	Leg, foot	other	The victim is a 12 year old female who sustained contusions and abras ions to her knee while riding a gas powered scooter on a neighborhood sidewalk. The victim's grandmother is the respondent, she didn't witness the accident. A couple days before the accident the victim ran the scooter into a curb causing the fender to rub against the tire. On the day of the accident, the victim was riding on a sidewalk when the tire suddenly blew out. The victim was thrown over the handlebars and injured her knee. Two days later the victim was taken to the emergency room because of persistent pain and swelling. She was treated for the contusion and released. The respondent could not find a manufacturer anywhere on the scooter.
040323HEP0401	40340081	M	10	TR/REL	Arm, hand	Fracture	The victim is a 10 year old male who sustained a fractured wrist from a powered scooter. The victim was riding a ***** that had a loose seat. He was making a turn off of a hill when the seat went one way and the victim went the other. The scooter turned to the left and the victim fell to the right and landed on his right wrist. The weather was beautiful and he was riding on a side asphalt path near grass. He was taken to the emergency room immediately where he was treated and released.
040408HEP8141	40414954	M	9	TR/REL	Head (incl neck)	Cont,ab,lac,hema	The victim is a 9 year old male who sustained a laceration to his forehead, requiring 11 stitches, 3 chipped teeth and a broken front tooth from a Powered Scooter Accident. He was slowing down to turn when the brakes on the ***** scooter locked up. He was thrown from the scooter and landed on his head/face. He was treated and released from the Emergency Room.
040426HEP6503	40440501	M	10	TR/REL	Arm, hand	Cont,ab,lac,hema	The victim is a 10 year old male who sustained abrasions to his knees, arm, elbow and hip from a Powered Scooter accident. He was riding a friend's scooter in the street and was coming down a hill. He went over a sandy area in the road and lost control of the scooter. The victim was wearing a helmet but the clip that attaches the straps was broken. The victim said that something was wrong with the front wheel prior to the accident; The front wheel was wobbly. The victim was treated and released at the Emergency room. His arm was put in a soft cast.
040427HEP8855	40447442	M	17	TR/REL	Arm, hand	Fracture	The victim is a 17 year old male who fractured his wrist in a Powered Scooter Accident. He was riding the scooter on a dirt road. The gas accelerator got stuck and hyperextended his wrist. He was trying to prevent the scooter from going into oncoming traffic and he held on to the scooter while the scooter was accelerating. He was treated and released at the Emergency room.
040510HEP0401	40517045	F	14	TR/REL	Trunk (incl sholder)	Cont,ab,lac,hema	The victim is a 14 year old female who sustained abrasions to her upper trunk from a Powered Scooter accident. The victim was riding the scooter on the sidewalk when the bolts came loose and caused the wheel to turn separate from the handle bars, driving the scooter into the fence. The victim flipped face forward onto the cement. She landed on her chest and was having trouble breathing. They took her to the Emergency room. The respondent described the scooter as being one that the handle bars fold down for storage. She was instructed from the store salesperson to tighten the bolts before every ride, which they did on this particular day. The bolts after 30 minutes of ride time had vibrated loose causing the wheel to move separately from the handlebars.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

tkno	nek	sex	age	disp	bdpt	diaggrp	Q15
040611HEP5201	40632330	F	11	TR/REL	Arm, hand	other	The victim is an 11 year old female who was riding a friend's scooter. She went to use the kill switch to stop the scooter but it didn't work. She lost control of the scooter and ran into a fence. The respondent said she got a cut on her face and bruises all over her body.
040614HEP8079	40626645	M	34	TR/REL	Trunk (incl sholder)	other	Victim is a 34 year old male who was riding a friend's powered scooter in a field with no safety gear. Victim hit the gas and the scooter's front wheel came up and the handle bar came loose. The victim fell off the scooter and injured his right shoulder and left knee. Victim went to the Emergency Room and was treated. Victim had x-rays taken and had sprained his shoulder. Victim released.
040616HEP5201	40635109	F	14	TR/REL	Leg, foot	Cont,ab,lac,hema	The victim is a 14 year old female who sustained a contusion to her knee from a power scooter accident. She was riding it on the street when the handlebars came up and out of the scooter. She lost control of the scooter and injured her knee.
040617HEP0401	40638310	M	14	TR/REL	Head (incl neck)	Cont,ab,lac,hema	The victim is a 14 year old male who sustained facial abrasions and Dental injury from a powered scooter accident. The victim was riding the scooter he had just received for his birthday down to the mail box. He was riding on level asphalt and could not have been going fast when the scooter's handlebar came up out and off of the scooter. The scooter went one way and the victim went the other. The victim landed on his face. The victim needed dentistry and plastic surgery to correct the injuries to his face. The area of the face affected was the upper part of his lip.
040618HEP1401	40639661	M	14	TR/REL	Leg, foot	other	The victim is a 14 year old male who was working on the scooter in the garage when he burned the calf of his left leg. He was taken to the Emergency room the next day.
040619HEP7361	40640896	M	10	TR/REL	Leg, foot	Cont,ab,lac,hema	The victim is a 10 year old male who sustained a laceration to his ankle from a powered scooter. The victim's nephew was riding the scooter and ran over the victim's foot causing a bolt on the scooter to cut his skin. He required two staples to treat the wound.
040628HEP7601	40662100	F	10	TR/REL	Head (incl neck)	Cont,ab,lac,hema	The victim is a 10 year old female who was riding a friend's powered scooter in the street. The front wheel was wiggling too much and she lost control and landed in the street. She almost hit her mother's car.
040629HEP2401	40662291	F	10	TR/REL	Arm, hand	Cont,ab,lac,hema	The victim was riding her powered scooter that she received from her father for her birthday. She was riding the scooter and probably going too fast. The front wheel started to wobble and she lost control of the scooter. She sustained a laceration to her upper arm that required 4 stitches. The father blames himself for the accident. She was not wearing any safety equipment.
040630HEP6743	40701697	M	12	TR/REL	Leg, foot	Cont,ab,lac,hema	The victim is a 12 year old male who was riding his scooter barefoot. He caught his heel on the back of the scooter as he was making a turn. He sustained a laceration to his foot that required 11 stitches.
040706HEP1681	40707360	M	13	TR/REL	Leg, foot	other	Victim is a 13 year old male who was riding his neighbor's powered scooter in their neighborhood. Victim put his foot down to make the scooter go faster and accidentally hit the kick stand. When he hit the kick stand, he got a gash on his left ankle and sprained it. Victim went to the Emergency Room and was treated. An x-ray was taken of the victim's ankle and his foot was put in a cast. Victim released.

Appendix H:
Incident Reports (IPII) – Scooter Directly Contributed to the Incident

Incident Reports (IPII)- scooter directly contributed to the injury/incident

docno	tkno	injdt	age	sex	inj	narr
F0366006A	030618HWE6003	06/10/03	20	M	injury	A MAN, AGE 20, SUFFERED MINOR LACERATIONS AFTER THE CHAIN ON HIS MOTORIZED SCOOTER MALFUNCTIONED, THE REAR WHEEL LOCKED, AND HE WENT THROUGH THE GLASS DOOR AT A HOME.
H0360297A		06/25/03	0	?	no injury	ELECTRIC SCOOTER EMITTED SMOKE FROM UNDERNEATH THE HANDLE BAR DURING USE. OWNER WAS UNABLE TO TURN IT'S ENGINE TO "OFF" POSITION. NO INJURY. BURN HAZARD.
H0380057A		06/24/03	0	?	no injury	GAS POWERED SCOOTER EMITTED SPARKS FROM UNDERNEATH IT DURING USE. OWNER NOTICED ALL WIRES UNDERNEATH THE SCOOTER WERE CHARRED & MELTED. ALSO THE SPARKING WIRES WERE UNDERNEATH THE GAS TANK. NO INJURY.
H0390103A		09/06/03	0	M	no injury	A BOY WAS RIDING AN ELECTRIC SCOOTER WHEN HE LOST THE ABILITY TO STEER. CONSUMER DISCOVERED THAT THE SCREW CLAMP WAS NOT PROPERLY CONNECTED TO THE HANDLE BARS. NO INJURY. POSES A SERIOUS SAFETY HAZARD.
H03A0086A		10/05/03	13	M	no injury	NEW ELECTRIC POWERED SCOOTERS HAD IGNITION PROBLEMS, BRAKES THAT FAIL, A LIMITED COVERAGE AREA, AND STEERING COLUMN FAILURE. SCOOTERS ARE USED FOR A 13 YEAR OLD MALE AND HIS FATHER.
H03A0193A	031024CNE1064	10/18/03	12	M	no injury	A BOY, AGE 12, WAS RIDING A GAS POWERED SCOOTER WHEN ITS FRONT WHEEL DETACHED. HE FELL TO THE GROUND BUT WAS NOT INJURED. THE WELDING ABOVE THE SCOOTER'S FRONT WHEEL FENDER HAD CRACKED.
H03A0281A	031031CNE1087	10/10/03	8	F	injury	DURING GAS POWERED SCOOTER USE IT'S LEFT HANDLE BAR DETACHED & SLID OFF THE SCOOTER'S FRAME. A GIRL, AGE 8, RECEIVED SKID BURN MARKS FROM HER BREAST DOWN TO NAVEL & BOTH HANDS.
H03A0311A		10/28/03	0	?	no injury	AFTER AN ELECTRIC SCOOTER WAS CHARGED UP, IT TOOK OFF SUDDENLY. NO INJURY, DANGEROUS FOR CHILDREN.
H03B0148A		09/20/03	11	M	no injury	A MOTORIZED SCOOTER USED FOR AN 11 YEAR OLD MALE SUDDENLY CUT OFF DURING USE. THE SCOOTER WAS REPLACED AND THE REPLACEMENT SCOOTER HAD A TIRE DEFLATE. NO INJURY.
H03C0029A		11/24/03	0	?	no injury	WHILE RIDING A NEW ELECTRIC SCOOTER, THE HAND GRIPS WERE LOOSE. CONSUMER TRIED TO RETIGHTEN THE SCREWS WHEN THE INTERNAL WIRING BECAME LOOSE, CAUSING THE SCOOTER TO GO INTO GEAR WHILE IN NEUTRAL. THE HANDLE BAR SCREWS ALSO FELL OUT ON ANOTHER OCCASION. NO INJURY
H03C0237A		12/25/03	0	?	no injury	(1) WHILE CHARGING THE SCOOTER'S RECHARGEABLE BATTERY, CONSUMER NOTICED THAT THE INTERNAL WIRING HAD MELTED. NO INJURY. POSES A FIRE HAZARD.
H03C0257A		12/20/03	0	M	no injury	A BOY WHILE RIDING ELECTRIC SCOOTER ATTEMPTED TO SLOW DOWN BY LETTING GO OF THE THROTTLE ACCELERATOR BUT THE SCOOTER CONTINUED TO GO FULL SPEED. HE JUMPED OFF THE SCOOTER. NO INJURY. FALL HAZARD.
H0410216A		01/06/04	0	?	no injury	A MOTORIZED SCOOTER PRESENTS SEVERAL PROBLEMS. THE SCREWS DETACHED FROM THE KICK STAND, BASKET, & ELECTRIC CHARGE. THE BRAKES STOPPED WORKING. MOTOR CONTINUED TO TURN ITSELF OFF & THE SCOOTER WOULD NOT IDLE. THE MUFFLER ALSO BROKE OFF. NO INJURY.
H0420057A		01/04/04	12	F	injury	ELECTRIC SCOOTER IN A CAR SHOWROOM & IN OFF POSITION TOOK OFF & DAMAGED SEVERAL OTHER UNITS WHEN IT'S THROTTLE WAS PRESSED. IT'S MOTHER BOARD WAS DEFECTIVE. A GIRL, AGE 12, SUFFERED SCRATCH TO HER KNEE
H0420059A		02/05/04	0	?	no injury	WHILE RIDING AN ELECTRIC SCOOTER, THE HANDLE BARS SUDDENLY DETACHED FROM THE STEERING ROD. CONSUMER DISCOVERED THAT THE WELD THAT ATTACHES THE HANDLE BARS TO THE STEERING ROD HAD COME APART. NO INJURY.
H0420121A		02/10/04	12	M	injury	A 12 YEAR OLD CHILD WAS RIDING MOTORIZED SCOOTER WITH HELMET & PADS WHEN FRONT RUBBER TIRE BROKE AND SON FELL ONTO STREET, PRODUCT WAS RETURNED TO DEALER FOR REFUND. SON HAS SCRATCHES ABOVE RIB AREA & ABOVE KNEES TREATED WITH USE OF ANTIBIOTIC OINTMENT
H0430001A		02/28/04	0	M	no injury	A 184LB., 5'10 TALL MAN WAS RIDING POWERED SCOOTER WHEN FRAME BENT AND BUCKLED, SCOOTER RETURNED. NO INJURY.
H0430109A		12/04/03	0	?	no injury	A BOY, AGE 13, WAS RIDING ON AN ELECTRIC POWERED SCOOTER WHEN SMOKE BEGAN EMITTING FROM THE MOTOR. NO INJURY. POSES A BURN AND FIRE HAZARD.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

docno	tkno	injdt	age	sex	inj	narr
H0430152A	040324HCC1542	01/17/04	0	?	no injury	CONSUMER'S SON USED MOTORIZED SCOOTER FOR 15-20 MINUTES WHEN BOLTS THAT HOLD HANDLE BARS, BOLTS IN THE DECK, BOLTS HOLDING SEAT, AND BOLTS THAT HOLD THE ENGINE ALL DETACHED - NO INJURY.
H0430175A	040318CCN0445	03/05/04	12	M	injury	ELECTRIC SCOOTER'S HANDLEBARS SUDDENLY DETACHED DURING USE. A BOY, AGE 12, CRASHED THE SCOOTER & SUFFERED SCRAPES ON HANDS & KNEES.
H0440130A		04/10/04	0	?	no injury	A WOMAN REPORTS THAT HER GAS POWERED SCOOTER'S BRAKE WIRE HAD BEEN REPAIRED SEVERAL TIMES. A DIFFERENT MODEL SCOOTER'S CHAIN KEPT POPPING OFF AND SHE ALSO EXPERIENCED OTHER PROBLEMS. NO INJURY.
H0440220A		04/24/04	0	F	no injury	A WOMAN WAS RIDING AN ELECTRIC SCOOTER WHEN SHE NOTICED THAT THE SCOOTER'S HANDLE GRIP AND SEAT WERE SHAKING. NO INJURY. POSES A FALL HAZARD.
H0450117A	040517CCN0617	05/12/04	12	M	injury	A BOY, AGE 12, WAS INJURED WHILE RIDING A GAS POWERED SCOOTER WHEN ITS REAL WHEEL DETACHED. HE FELL TO HIS RIGHT AND LANDED ON THE ASPHALT.
H0450157A		04/30/04	0	?	no injury	AN ELECTRIC SCOOTER'S STEERING HAD GONE OUT ON DIFFERENT OCCASIONS WHILE IN USE. NO INJURY. CONSUMER TIGHTENED THE CLAMP SEVERAL TIMES, BUT THAT DID NOT RECTIFY THE PROBLEM.
H0450201A	040525CCN0635	05/20/04	6	M	injury	ELECTRIC SCOOTER DID NOT OPERATE WHEN TURNED ON. A BOY, CHANGED A FUSE & TURNED ON THE SCOOTER WHEN IT SUDDENLY TOOK OFF AT FULL SPEED & HIT ANOTHER BOY, AGE 6, IN THE FACE, SPLITTING THE MIDDLE PORTION OPEN.
H0450206A		05/22/04	0	M	no injury	A BOY WAS RIDING ON AN ELECTRIC SCOOTER WHEN HE NOTICED THAT THE SCOOTER HAD ACCELERTED ON ITS OWN. NO INJURY. POSES A SAFETY HAZARD.
H0450244A		05/27/04	9	F	injury	A GIRL, AGE 9, WAS RIDING ON AN ELECTRIC SCOOTER WHEN THE CHAIN CAME OFF OF THE WHEEL, CAUSING THE BACK WHEEL TO LOCK. SHE WAS THROWN FORWARD & LANDED ON THE PAVEMENT. SHE RECEIVED BRUISES TO BOTH OF HER KNEES. SHE WAS WEARING A HELMET.
H0460023A		02/01/04	10	F	injury	A 10 YEAR OLD FEMALE RECEIVED MULTIPLE CONTUSIONS AND ABRASIONS AFTER THE FRONT TIRE ON HER ELECTRIC SCOOTER STARTED TO SPIN AND THE FRAME TORE.
H0460260A		06/01/04	11	M	no injury	A BOY WAS RIDING ON AN ELECTRIC SCOOTER WHEN ITS STEEL BAR, WHICH SUPPORTS THE STEERING WHEEL BROKE OFF. NO INJURY. POSES A SERIOUS SAFETY HAZARD.
I0370108A	030708CCN0689	07/07/03	0	?	no injury	ELECTRIC SCOOTER STARTED SMOKING & THEN CAUGHT FIRE AFTER USE. NO INJURY.
I03C0367A		.	0	?	no injury	RESPONDENT BOUGHT 12 GAS SCOOTERS FOR RESALE OUT OF WHICH 3 HAVE HOLES IN THE BOTTOM OF FUEL TANKS WHERE THE MOUNTING HOLE WAS DRILLED. NO INJURY. FIRE & EXPLOSION HAZARD.
I03C0537A	031230CNE1184	12/24/03	15	M	injury	A 15 YEAR OLD MALE WAS BURNED WHEN THE CHARGING CORD FOR AN ELECTRIC SCOOTER STARTED TO SMOKE AND CATCH FIRE. THE BOY WAS REMOVING THE CORD FROM THE SCOOTER.
I03C0593A	031231CCN0231	12/18/03	0	?	no injury	ELECTRIC SCOOTER DID NOT STOP DURING IST TIME USE & THE MOTOR DID NOT SHUT OFF EVEN WHEN THE KEY WAS TURNED OFF. THE UNIT STOPPED WHEN IT WAS RUN INTO A WALL CAUSING THE FUSE TO BLOW. WHEN FUSE WAS REPLACED THE MOTOR CONTINUED TO RUN. NO INJURY.
I03C0600A	031231CCN0229	12/28/03	11	F	no injury	A GIRL, AGE 11, WAS RIDING A NEW POWERED SCOOTER WHEN ITS ALUMINUM FRONT WHEEL TOTALLY FRAGMENTED AND DISINTEGRATED, CAUSING HER TO CRASH TO THE SIDEWALK. SHE RECEIVED MINOR INJURIES.
I0410049A	040106CCN0249	12/26/03	13	F	injury	A GIRL, AGE 13, WAS RIDING A NEW POWERED SCOOTER WHEN ITS METAL WHEEL FELL APART, CAUSING THE SCOOTER TO COME TO AN ABRUPT STOP. SHE WENT OVER THE HANDLE BARS AND THE SCOOTER CAME DOWN ON HER ARM AND WRIST. SHE RECEIVED A BROKEN WRIST.
I0410113A		12/31/03	12	M	injury	ELECTRIC SCOOTER'S HANDLEBARS BROKE AT THE BASE CAUSING A BOY, AGE 12, TO FALL TO THE GROUND & BRUISE HIS KNEE. THE BRAKES DIDN'T WORK & ALSO THE BASE OF THE SEAT POST ALSO BENT.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

docno	tkno	injdt	age	sex	inj	narr
I0410150A	040109CCN0260	12/26/03	0	?	no injury	THE CHARGER FOR AN ELECTRIC SCOOTER MELTED DURING USE. NO INJURY.
I0410268A	040115CWE6004	12/26/03	46	F	injury	NEW ELECTRIC SCOOTER CAUGHT FIRE AFTER 1ST TIME USE. A FEMALE, AGE 46, SUFFERED 2ND DEGREE BURNS TO HER HAND, LEG & FEET & WAS HOSPITALIZED.
I0410351A		01/17/04	0	M	no injury	A BOY WAS RIDING A BATTERY OPERATED SCOOTER WHEN THE BATTERY PACK SUDDENLY FELL OFF. HE LOST HIS BALANCE AND FELL. NO INJURY. OWNER FEELS THAT THE PRODUCT HAS A DESIGN FLAW IN HOW THE BATTERY IS ATTACHED & HELD.
I0410379A		12/28/03	0	?	no injury	TWO GAS POWERED SCOOTERS CHAIN BROKE & THE HANDLE BAR BROKE AT THE WELD DURING USE. THE MANUFACTURER REPLACED THE CHAINS & HANDLEBARS BUT THE PROBLEM CONTINUED. ALSO THE METAL OF THE SCOOTERS IS BREAKING. NO INJURY.
I0410412A		01/21/04	0	?	no injury	OWNER FOUND ELECTRIC SCOOTER'S BATTERY WIRES MELTED TOGETHER. THE CONTROLLER & THE MOTOR WERE BURNED UP. NO INJURY. FIRE HAZARD.
I0410418A		01/20/04	11	M	injury	A BOY, AGE 11, WAS RIDING A GAS POWERED SCOOTER WHEN ITS HANDLES FAILED, CAUSING HIM TO LOSE CONTROL AND CRASH. HE WAS THROWN OVER THE HANDLEBARS AND RECEIVED A RASH ON BOTH OF HIS ARMS & A GASH ON HIS LEG.
I0410513A		01/15/04	12	M	injury	THE CHAIN BROKE AND A WHEEL LOCKED UP ON A GAS POWERED SCOOTER BEING USED BY A 12 YEAR OLD MALE. HE FLIPPED AND WAS SCRAPED AND BRUISED.
I0410632A		01/31/04	0	?	no injury	ELECTRIC SCOOTER'S HAND BRAKE BROKE WHEN THE UNIT WAS DROPPED WITHIN ONE WEEK OF USE. THE REPLACED UNIT BROKE IN THE SAME WAY DURING 1ST TIME USE. NO INJURY.
I0420010A		12/01/03	0	M	no injury	FIVE DAY OLD GAS POWERED SCOOTER'S REAR WHEEL BEARING DISINTEGRATED CAUSING THE SPROCKET TO DISENGAGE & WRAP AROUND THE AXLE DURING USE. A BOY WAS NOT INJURED WHEN THE REAR WHEEL IMMEDIATELY LOCKED UP.
I0420080A		01/20/03	0	?	no injury	OWNER OF AN ELECTRIC MOTOR SCOOTER REPORTS THAT THE SCOOTER THROTTLE GOT STUCK AND WOULD NOT TURN OFF UNLESS THE ON/OFF SWITCH IS DEPRESSED. A CRASH RESULTED DUE TO THIS PROBLEM. NO INJURY.
I0420095A		01/30/04	0	?	no injury	ELECTRIC SCOOTER'S BATTERY TRAY & BATTERY DROPPED ONTO THE ROAD DURING USE. THE WELDS HOLDING THE BATTERY TRAY TO THE SCCOTER ARE WEAK. NO INJURY.
I0420163A	040315HWE5010	02/07/04	0	?	no injury	TRIGGER TO APPLY MORE SPEED STUCK ON DURING ELECTRIC SCOOTER USE. NO INJURY. A SAFETY MECHANISM IN BRAKE TURNS THE MOTOR OFF BUT WHEN RELEASED TURNS ON THE UNIT. A SPRING TO RELEASE THE POWER SWITCH TRIGGER HAD BROKEN.
I0420241A		02/10/04	0	?	no injury	AN ELECTRIC SCOOTER CAUSED A HOUSE FIRE WHILE IT WAS BEING CHARGED WITH BAGS OF TRASH AROUND IT. NO INJURY.
I0420352A	040218CCN0354	01/28/04	0	?	no injury	AN ELECTRIC SCOOTER FAILED AFTER TWO WEEKS OF USE. IT WOULD CONTINUE TO MOVE FORWARD UNDER POWER EVEN WHEN THE THROTTLE WAS RELEASED & SPRUNG TO THE OFF POSITION. NO INJURY.
I0420428A		12/19/03	12	M	injury	A BOY, AGE 12, WAS TRYING TO STOP HIS MOTORIZED SCOOTER WHEN A WELD THAT GOES UPTO THE STEERING WHEEL CAME UNDONE. HE FELL & RECEIVED A FEW SCRAPES.
I0420445A		12/01/03	11	M	injury	AN 11 YEAR OLD MALE HAS BEEN INJURED AFTER THE BRAKES MALFUNCTIONED ON HIS GAS POWERED SCOOTER AND HE FLIPPED OVER THE HANDLE BARS. THE SCOOTER HAS ONGOING MECHANICAL PROBLEMS.
I0420499A		01/01/04	13	M	no injury	A BOY, AGE 13, WAS RIDING A POWERED SCOOTER WHEN THE THROTTLE GOT STUCK WIDE OPEN, MARKING IT IMPOSSIBLE TO STOP THE SCOOTER. NO INJURY. THE REAR TIRE WENT FLAT AS HE WAS RIDING ON AN IDENTICAL REPLACEMENT POWERED SCOOTER. NO INJURY.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

docno	tkno	injdt	age	sex	inj	narr
I0420530A		02/24/04	0	?	no injury	ELECTRIC SCOOTER'S FRAME CRACKED. THE REPLACED SCOOTER WHILE IN "ON" MODE AUTOMATICALLY TAKES OFF WITHOUT ANY THROTTLE. OWNER SENT THE PREPRINTED WARRANTY CARD TWICE WHEN IT CAME BACK STATING "NOT AT THIS ADDRESS". NO INJURY.
I0430009A		02/28/03	5	F	injury	A 5 YEAR OLD FEMALE WAS RIDING A POWERED SCOOTER WHEN IT FELL APART AND ONE PIECE PUSHED INTO HER NECK CAUSING INJURY.
I0430160A	040315HWE5009	03/10/04	11	M	no injury	A BOY, AGE 11, WAS RIDING ON A NEW ELECTRIC SCOOTER WHEN IT STARTED TO SMOKE. THE BLACK SMOKE WAS COMING FROM UNDERNEATH OF THE UNIT. NO INJURY. FIRE HAZARD.
I0430243A		02/01/04	13	M	injury	A BOY, AGE 13, WAS INJURED OPERATING A GAS POWERED SCOOTER WHEN THE HANDLEBAR BROKE OFF.
I0440010A	040402CCN0487	03/30/04	11	F	no injury	AN 11 YEAR OLD FEMALE WAS RIDING BATTERY POWERED SCOOTER WHEN SHE HEARD A POPPING SOUND, THE SCOOTER STOPPED WORKING, THEN SHE NOTICED SMOKE AND FLAMES EXITING THE PANEL IN THE BOTTOM. SHE GOT HER PARENTS WHO EXTINGUISHED THE FOOT HIGH FLAMES - NO INJURY.
I0440023A		02/24/00	0	?	no injury	GAS POWERED SCOOTER'S UPRIGHT HANDLE BAR IS PRONE TO BREAK DURING NORMAL OPERATION RESULTING IN THE USER TO LOOSE CONTROL OF THE UNIT. NO INJURY.
I0440052A	040405CCN0495	03/30/04	0	?	injury	GAS POWERED SCOOTER EXPLODED IN FLAMES. OWNER BELIEVES THE PRODUCT IS DEFECTIVE & ALSO THE FUEL LINE IS NOT PROPERLY DESIGNED & CAUSES THE PROBLEM.
I0440154A		02/04/04	36	M	injury	ELECTRIC SCOOTER'S DEFECTIVE THROTTLE SWITCHED SUDDENLY INTO THE OPEN POSITION CAUSING A MALE, AGE 36, TO THROW HIS HEAD INTO A MOTOR VEHICLE.
I0440238A		04/10/04	0	?	no injury	AN ELECTRIC SCOOTER'S FRONT DRUM BRAKE WAS LOOSE, RESULTING IN THE FRONT WHEEL BINDING AND COME TO AN UNEXPECTED STOP. NO INJURY. THE SAME INCIDENT HAPPENED AFTER REPAIRING THE BRAKES.
I0440319A	040427CCN0557	12/26/03	0	?	no injury	OWNER OF TWO POWER SCOOTERS REPORTS THAT THE NUTS & BOLTS CAME LOOSE & THE FRONT TILE CAME OFF ON ONE. THE SCOOTER HANDLE WOULD HOLD UP & STICK & CONTINUE TO GO FORWARD. THE ACCELERATOR HANDLE FELL OFF NUMEROUS TIMES. NO INJURY. FALL HAZARD.
I0440350A		04/02/04	0	?	no injury	ELECTRIC SCOOTER HAS ONGOING PROBLEMS: IT DID NOT STOP DURING USE EVEN THOUGH IT'S THROTTLE WAS NOT STUCK & EVN WHEN IT'S KEY WAS TURNED OFF. NO INJURY. ALSO THE UNIT'S KICKSTAND, REAR FENDER & IGNITION KEY HAVE BROKEN PREVIOUSLY.
I0440373A	040427CCN0555	04/17/04	0	?	no injury	OWNER REPORTS THAT THE GAS TANK ON TWO GAS POWERED SCOOTERS LEAKS GAS WHILE IN USE. THE SCOOTER'S CHAIN HAD RUBBER COMPLETELY THROUGH THE TANK. NO INJURY. POSES A FIRE HAZARD.
I0440470A		04/01/04	9	M	injury	A BOY, AGE 9, SUFFERED BUMPS AND BRUISES AFTER THE SPEED CONTROL WOULD NOT SHUT OFF ON HIS ELECTRIC SCOOTER AND HE CRASHED INTO A CAR.
I0450007A	040505CWE5001	04/25/04	10	M	injury	A 10 YEAR OLD BOY'S LEFT FOOT WAS SLICED OPEN BY THE SHARP EDGES OF AN ELECTRIC SCOOTER DURING USE. THE CUT REQUIRED 20 STITCHES.
I0450137A	040511CCN0598	05/06/04	0	?	no injury	A TIRE RIM FOR AN ELECTRIC SCOOTER EXPLODED AS A REPLACEMENT INNER TUBE WAS BEING MOUNTED ON THE REAR RIM ASSEMBLY. THE TIRE WENT FLAT DURING THE FIRST TWO WEEKS OF USE.
I0450145A	040512HCC3301	05/01/04	0	?	injury	A CHILD WAS INJURED ON THE LEG DURING USE OF A GAS POWERED SCOOTER. SCOOTER PROBLEMS INVOLVED A BROKEN HANDLE, BRAKE FAILURE, CHAIN COMES OFF, WELDS BREAK, SPROCKET FALLS APART, THROTTLE STICKS, SCOOTER TAKES OFF WHEN STARTED.
I0450307A		05/11/04	0	?	no injury	A POWERED SCOOTER'S STEERING POST BROKE OFF WHILE IN USE. NO INJURY.
I0450382A		05/23/04	0	M	injury	NEW ELECTRIC SCOOTER WAS BEING CHARGED WHEN IT STARTED BY ITSELF & TOOK OFF RIDERLESS ACROSS OWNER'S BASEMENT. THE SCOOTER HIT & KNOCKED HIM OFF THE CHAIR HE WAS SITTING IN.

Incident Reports (IPII)- scooter directly contributed to the injury/incident

docno	tkno	injdt	age	sex	inj	narr
I0450414A	040527HCC3344	05/01/04	0	?	no injury	RESPONDENT STATES ELECTRIC SCOOTERS HA VE FAULTY DESIGN. PIECE (GOOSE NECK) THAT GOES INTO THE FORKS & TIGHTENS THE STEERING IS AT LEAST 2 SIZES SMALL. STEERING IS VERY DANGEROUS. NO INJURY.
I0450433A	040528CCN0639	05/25/04	0	?	no injury	AN ELECTRIC SCOOTER WAS NOT IN USE BUT PLUGGED IN FOR CHARGING WHEN IT STARTED TO RUN AT FULL SPEED AND CRASHED INTO NEARBY ITEMS. NO INJURY.
I0450436A	040528CCN0640	05/25/04	0	?	no injury	THE OWNER OF THREE ELECTRIC SCOOTERS AND THREE CHILDREN REPORTS THAT THE SCOOTERS TAKE OFF WHEN TURNED ON BUT THE THROTTLE IS NOT ACTIVATED. NO INJURY. THE CONTROLLER SPARKS, SMOKES AND SMOLDERS.
I0450452A		05/25/04	13	M	injury	A BOY, AGE 13, WAS INJURED WHILE RIDING ON A GAS POWERED SCOOTER WHEN ITS HANDLE BARS SNAPPED OFF RIGHT AT THE WELD JOINT. HE SUFFERED A BROKEN WRIST AND BADLY SCRAPPED KNEES. OTHER PEOPLE HAVE HAD THE SAME PROBLEM.
I0460266A	040616CCN0694	05/01/04	0	?	no injury	TWO DAYS OLD ELECTRIC SCOOTER'S THROTTLE GOT STUCK ON FULL THROTTLE & WHEN THE MAIN POWER SWITCH WAS TURNED ON THE UNIT TOOK OFF BY ITSELF. OWNER'S HOME SIDING WAS DAMAGED. THE UNIT'S MOTOR WAS REPLACED WHEN THE SAME THING HAPPENED AGAIN. NO INJURY.
I0460293A	040628CCC1807	05/01/04	0	?	no injury	THE OWNER OF TWO ELECTRIC SCOOTERS REPORTS THAT THE WIRES AND CIRCUIT BOARD HAVE SHORT CIRCUITED. NO INJURY, FIRE HAZARD.
N0450144A	040519CNE1541	03/01/04	0	?	no injury	A NEW POWERED SCOOTER'S PARTS WERE MISSING AND/OR BROKEN. AFTER ONE SHORT TEST RIDE, THE WHEEL BEARINGS SEIZED & MADE THE SCOOTER NON-OPERATIONAL. NO INJURY.
Y0394418B		.	0	M	injury	A MALE, POWERED SCOOTER OPERATOR, WAS INJURED AFTER THE SCOOTER LOST POWER AND FULL SPEED AND HE WAS THROWN FORWARD.
Y0394418C		06/21/03	0	M	injury	A MALE POWERED SCOOTER OPERATOR HAD HIS HANDS SCRAPED WHEN HIS SCOOTER LOST POWER AND HE FELL FORWARD.
Y0452252A		.	0	?	no injury	ELECTRIC SCOOTER'S BATTERY CHARGER WHILE CHARGING CAUGHT FIRE. THE REPLACED CHARGER ALSO EMITTED BURNING ODOR WHILE IT WAS CHARGING. NO INJURY.
Y0452252B		09/14/03	0	?	no injury	TIRE ON ELECTRIC SCOOTER BLEW UP. OWNER STATES THE SCOOTER WAS NOT PLUGGED IN WHEN 2 DAYS LATER IT CAUGHT FIRE. NO INJURY.
Y0452252C		.	0	?	no injury	ELECTRIC SCOOTER STARTED BY ITSELF WITHOUT KEY & ALMOST WENT THROUGH THE GARAGE DOOR. NO INJURY.
Y0452252D		.	0	?	no injury	ELECTRIC SCOOTER STARTED BY ITSELF. OWNER HAD TO UNPLUG FUSE TO STOP IT. NO INJURY.
Y0452252E		.	0	?	no injury	ELECTRIC SCOOTER STARTED BY ITSELF IN GARAGE & LODGED ITSELF UNDER CAR. THE SCOOTER THEN STOPPED BUT THE WHEEL KEPT GOING ON UNIT OWNER PULLED CORDS OUT. NO INJURY.
Y0452252F		12/29/03	0	?	no injury	OWNER TURNED ELECTRIC SCOOTER ON WHEN IT FLEW INTO A WALL CAUSING RUG TO CATCH FIRE. NO INJURY.
Y0452252G		11/28/03	0	?	no injury	ELECTRIC SCOOTER CAUGHT ON FIRE WHILE SITTING ON THE DRIVEWAY BUT DID NOT CAUSE PROPERTY DAMAGE OR INJURY.
Y0452252H		01/03/04	0	?	no injury	ELECTRIC SCOOTER STARTED BY ITSELF & DAMAGED PROPERTY. OWNER HAD TO CUT WIRES TO SHUT IT OFF. NO INJURY.
Y0452252I		02/08/04	0	?	no injury	ELECTRIC SCOOTER CAUSED A HOUSE FIRE. NO INJURY.
Y0467096A		05/13/04	0	F	no injury	CLAIMANT SAID THAT THE CHAIN BROKE WHILE DAUGHTER WAS RIDING IT AND SHE HIT THE CAR AND DENTED IT. / DAMAGES CLAIMED: DENT IN CAR / PRODUCT: ELECTRIC SCOOTER