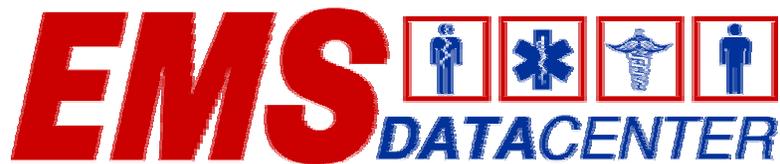




# Ohio Trauma Registry Annual Data Reports 2001 & 2002



Approved by the State Board of Emergency Medical Services, October 20, 2004  
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## **INTRODUCTION**

This first set of annual reports from the Ohio Trauma Registry (OTR) contains the most complete statewide data available to date on trauma in Ohio. The purpose of this report is to provide information to health care professionals as well as the public about the current state of care for seriously injured patients presenting at hospitals of Ohio.

The OTR is operated and maintained by the Ohio Department of Public Safety, Division of Emergency Medical Services. The state Board of Emergency Medical Services has statutory authority over the OTR and supervises its operation via the state Trauma Committee and the Trauma Registry Advisory Subcommittee. Although this report is of primary interest to health care professionals who provide clinical care or who are administrators of health care facilities or EMS agencies, a broader audience of public health officials and health care policymakers will find this report useful and interesting.

This report is designed to emulate several other national injury reports in order to make comparisons of data easier and more appropriate. A format similar to that of the National Trauma Data Bank™ (NTDB™) Report 2002, from the American College of Surgeons is used for this report in order to facilitate benchmarking with the NTDB report.

Data that reports age ranges is done in five-year blocks for patients between the ages of 1 and 25. This format is a common feature in a number of public health and federal health care reports and is the format used by the NTDB™ report. These age ranges will allow for a more focused understanding of the impact of injury on children and young adults in Ohio. Ages between 25 and 105 are reported in 10-year blocks.

The mechanism of injury groups in Appendix B are adopted from the Centers for Disease Control and Prevention (CDC) as published in MMWR 1997, 46(RR14):1-30. This is the framework that has been adopted as the standard for reporting mechanism of injuries. Although this format differs from the NTDB™ 2002 report, future NTDB™ reports will adopt this format.

## **ACKNOWLEDGEMENTS**

Kenneth L. Morckel, Director, Ohio Department of Public Safety  
Richard N. Rucker, Executive Director, Division of EMS  
David Fiffick, Chair, State Board of Emergency Medical Services  
Joseph Luria, MD, Chair, State Trauma Committee  
F. Barry Knotts, MD, PhD., Chair, Trauma Registry Advisory Subcommittee

Special Thanks to the EMS Data Center Staff, Tim Erskine, EMT-P and Sue Morris, EMT-P for their tireless work in preparing the data for these reports.

## EXECUTIVE SUMMARY

The Ohio Trauma Registry (OTR) began collecting data on January 1, 1999. This report presents data from the years 2001 and 2002. This report will give the reader a strong sense of the type and amount of data available in the OTR. Ohio Revised Code and Ohio Administrative Code restrict the release of data that would identify, or tend to identify a recipient of trauma care. Additionally data that would, or would tend to identify a provider (hospital) of trauma care must be risk-adjusted before release.

- The data in the OTR is limited to that meeting defined inclusion criteria. To be included in the OTR patients must be admitted to the hospital for at least 48 hours or transferred into the hospital, with an acceptable injury ICD-9 diagnosis code. Patients that die after receiving any evaluation or treatment while on hospital premises, and patients who transfer out of the hospital are included.
- The OTR began collecting data on January 1, 1999. Between January 1, 1999, and December 31, 2002, 95,454 trauma records have been submitted.
- 47,124 trauma records submitted to OTR between January 1, 2001, and December 31, 2002, were evaluated for this report. Patients transferred to another hospital generate two records, one from each hospital. The number of records submitted to the OTR will be greater than the number of patients reported.
- Only deaths in the hospital setting are presented in this report. Patients that die at the scene of their injury, or after discharge from the hospital are not included in this report.
- 16,265 patients meeting OTR inclusion criteria were reported for calendar year 2001. 22,419 patients meeting the inclusion criteria were reported in 2002.
- These reports contain data from both trauma centers and non-trauma center hospitals in Ohio.
- Ninety-five percent of the patients who were treated at a hospital for an injury severe enough to be reported to the OTR survived to be discharged, in both 2001 and 2002.
- In 2001, 34.4% of the reported patients who died in the hospital were injured in a fall. 25.9% died from injuries received in a motor vehicle crash.
- In 2002, 28.2% of the reported patients who died in the hospital were injured in a fall. 27.8% died from injuries received in a motor vehicle crash.
- Traumatic incidents that meet OTR inclusion criteria, peak in three distinct age groupings: older teens age 15-19, adults age 35-44 and older adults age 75-84. This has important connotations for injury prevention and the resources needed for acute care and rehabilitation of trauma patients.
- The patients' disposition from the emergency department may be a rough indication of the severity of injury. In 2001, 19.4% trauma patients were transferred to a trauma center following evaluation in the emergency department and 22.3% were admitted to the intensive care unit or the operating room. In 2002, 16.8% were transferred to another hospital, while the admission rates to the ICU and OR were 24.9%.
- Falls remain the number one cause of trauma in Ohio, followed by motor vehicle crashes and physical assaults.
- The members of the Trauma Committee feel that there is marked under-reporting of data to the OTR in certain areas; this represents an area of concern that needs to be addressed.

## A LOOK AHEAD...

These reports of data from the Ohio Trauma Registry (OTR) from the years 2001 and 2002 are the first summary data to be presented. It is the intent of the Division of Emergency Medical Services and the State Board of Emergency Medical Services to produce a yearly report from the OTR. Each subsequent OTR report will contain more detail than the year prior, and will address questions being asked by the Emergency Medical Services (EMS) and Trauma communities.

The OTR data set was developed between 1997 and 1998. No changes were made to the dataset for the first three years of operation. In 2002, the Trauma Registry Advisory Subcommittee began the task of reviewing the 1999 dataset and recommending changes to the database. The first significant revision of the OTR was implemented January 1, 2003. A number of important changes were made to the OTR to address specific weaknesses.

Some of the important changes that have been implemented and whose effect will be seen in data reported in 2003 are:

- Addition of fields to record the hospital that transfers out a trauma patient. With the addition of this new field, both the sending and receiving hospitals can be identified and thus greatly improve the ability to report the number of “patients” versus the number of “records”. This also permits better analysis of data on transferred patients.
- Elimination of “Other”, “Unknown” and “Not Applicable” in many fields. The original dataset allowed for the reporting of “Other”, “Unknown” and “Not Applicable” in many of the fields. In the vast majority of fields, use of these three variables is inappropriate. For example, the patient’s gender is never “Not Applicable” and should never be “Unknown”. This change results in much better reporting of information that is available.
- Clearly defined uses for the variables of “Unknown”, and “Not Applicable”. In the few fields where the data is truly unknown or not applicable, very clearly defined parameters for using these are provided. Additionally the variable of “Not Documented” was created. “Not Documented” is the more appropriate choice when the data required does exist but is not documented in the medical record.
- Fields were added to specifically record data for prehospital trauma triage. These fields in combination with data from the EMS Incident Reporting System (EMSIRS), while not the complete answer to analysis of triage issues, will allow for some baseline evaluation of EMS trauma triage.
- Addition of fields to allow for reporting of Abbreviated Injury Score (AIS) and Injury Severity Score (ISS) data. All trauma centers, as well as a number of acute care non-trauma center hospitals, use AIS and ISS coding to measure injury acuity. This data adds an important new dimension to the analysis of injured patients. Special software (ICDMAP<sup>®</sup>) to assign AIS codes to injuries from hospitals that do not perform this coding permits an additional layer of injury severity analysis. The diagnosis codes are now categorized using a “primary” diagnosis and an ability to collect up to 19 additional injury diagnosis codes. This facilitates use of other developing measures of severity that depend on analysis of diagnosis codes.
- Probabilistic Linkage software has been obtained and will be used to link records between the OTR and EMSIRS. This software, LinkSolv, is a very powerful and reliable process for matching records between different data sets.

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- The inclusion criteria that requires a greater than 48 hour length of stay eliminates many minor injuries. Unless the patient is transferred, either into or out of a hospital, minor trauma requiring a hospital stay less than 48 hours and patients treated and released from the Emergency Department are not reported to the OTR.

The changes implemented in 2003 profoundly affect the accuracy and reliability of the data in the OTR. A statewide data validation study has been performed. Review of 1000 randomly selected records will establish, for the first time, a baseline of validity of data in certain critical fields. We anticipate that this process will be an ongoing process improvement project and will lead to further improvements in data collection.

## **CAVEATS**

### **OTR Participation**

Ohio Administrative Code (OAC) 4765-4-03 requires all hospitals to participate in the OTR, however, the Division of EMS has no statutory authority to compel any facility to participate. Despite this fact, all eligible Ohio hospitals have at one time submitted data to the OTR. In 2001, 148 (87%) of the 170 hospitals participated by submitting data. In 2002, 147 (87.5%) of 168 eligible hospitals submitted data.

### **Trauma Center vs Non-Trauma Center Data**

Trauma centers employ dedicated Trauma Registrars that maintain a computerized database of trauma patient information. Individual hospital trauma registries are required by the American College of Surgeons for verification as a trauma center. Trauma Centers extract data from their hospital based registry to send to the OTR. In non-trauma center hospitals, the data collection and submission process is done by various hospital personnel. The Medical Records department is most often charged with this duty although this is not uniformly the case. There continues to be debate in the literature as to the accuracy and specificity of trauma data coded by trauma registry personnel versus that coded by staff in the medical records department.

### **Records vs. Patients**

The data presented in much of this report reflects the calculated number of patients reported to the OTR. The calculated number of patients is determined by subtracting the number of records for patients transferred to another hospital from the ED disposition field and the hospital disposition field. This is done to avoid double counting, once at the initial hospital and again at the receiving hospital. Between 1999 and 2002 the identity of the receiving hospital during a transfer was not reported. Individual patients transferred to a trauma center may have two records submitted to the OTR, one from the community hospital which initially treated the patient and a second from the receiving trauma center. Changes to the OTR database for 2003 and the use of probabilistic linkage of records permits better analysis of transferred patients in future reports.

### **Deaths**

The data presented in these reports on deaths is limited. There is no data presented here from the vital statistics department at the Ohio Department of Health. All data on deaths reported here are deaths reported by the hospitals. Patients who die outside of the hospital are not reported to the OTR. Future reports will include deaths reported in Ohio from hospitals, as well as those patients that die without being treated at a hospital or trauma center.

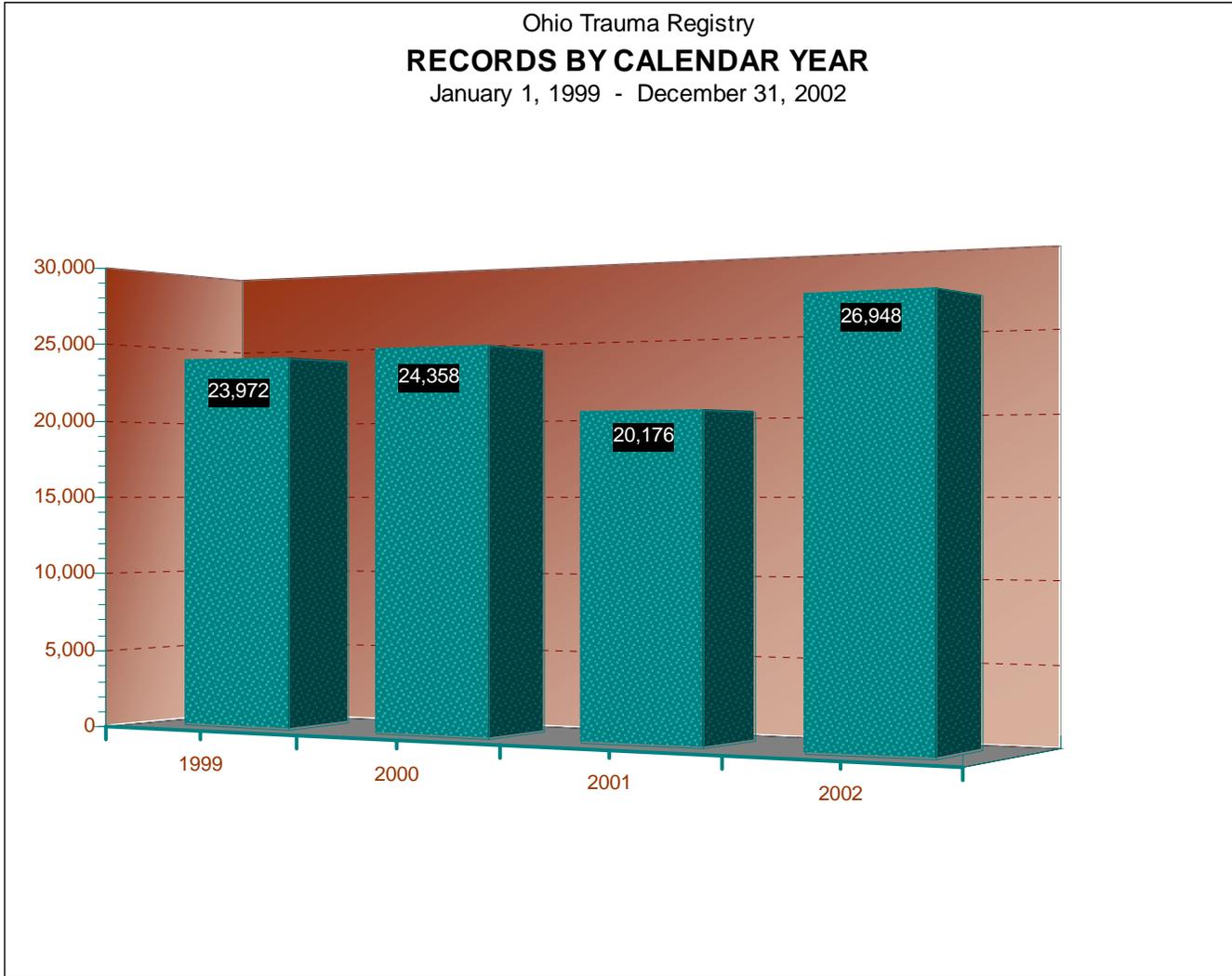
### **Percent Labels on Graphs**

For ease of reading, the percent labels on the graphs have been rounded off to whole numbers. The data presented in the data tables is reported in tenths of a percent.

### **Under Reporting**

The state trauma committee, based upon their clinical experiences, feels that there are areas of under reporting which need to be addressed.

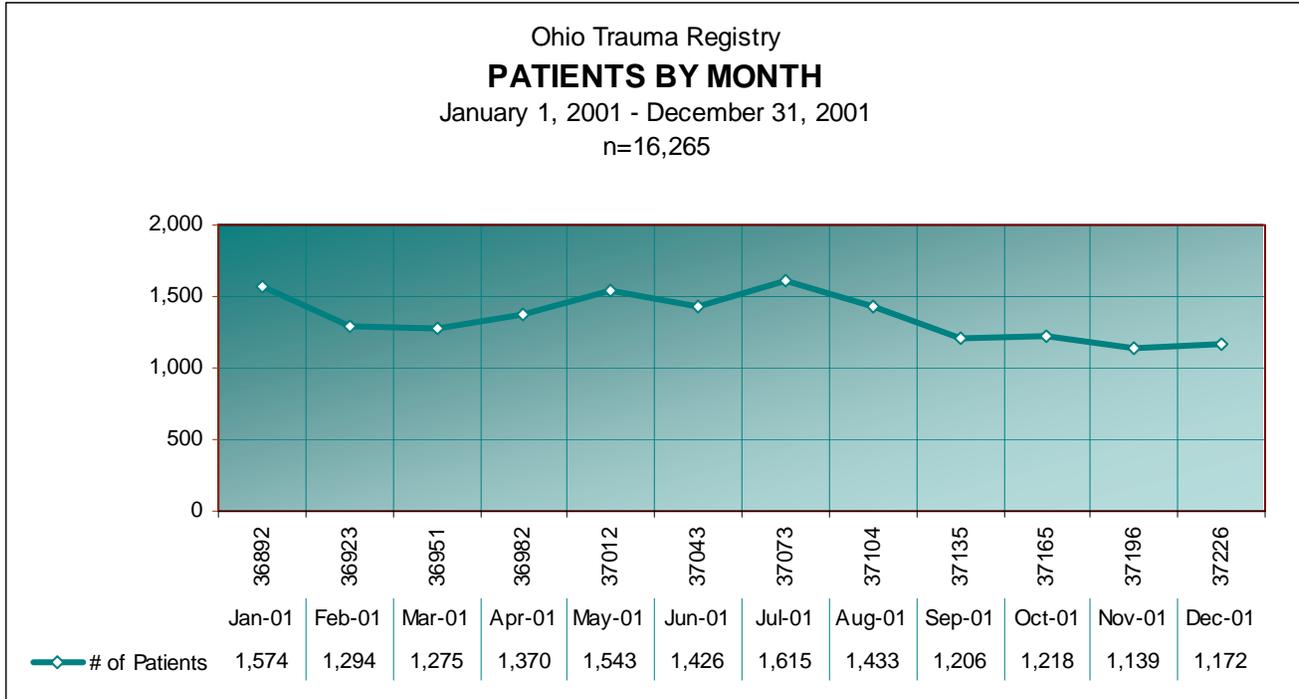
**RECORDS BY CALENDAR YEAR – 1999 – 2002**



	1999	2000	2001	2002	Total
<b>Records</b>	23,972	24,358	20,176	26,948	<b>95,454</b>

**Trauma Records by Year**

This is the total number of records submitted to the OTR for each calendar year. These are *records* submitted, not *patients*. Some patients have more than one record if they are treated at more than one hospital following their injury. This means that the number of records submitted to the OTR cannot be interpreted as equaling the number of patients suffering an injury, but rather each record is reflective of one episode of utilization of healthcare resources and services for an injury. The following reports will indicate if the data presented are records or patients.

**PATIENTS BY MONTH – 2001**

2001		
Month/Year	# of Patients	% of Patients
Jan-01	1,574	9.7%
Feb-01	1,294	8.0%
Mar-01	1,275	7.8%
Apr-01	1,370	8.4%
May-01	1,543	9.5%
Jun-01	1,426	8.8%
Jul-01	1,615	9.9%
Aug-01	1,433	8.8%
Sep-01	1,206	7.4%
Oct-01	1,218	7.5%
Nov-01	1,139	7.0%
Dec-01	1,172	7.2%
<b>Total</b>	<b>16,265</b>	<b>100.0%</b>

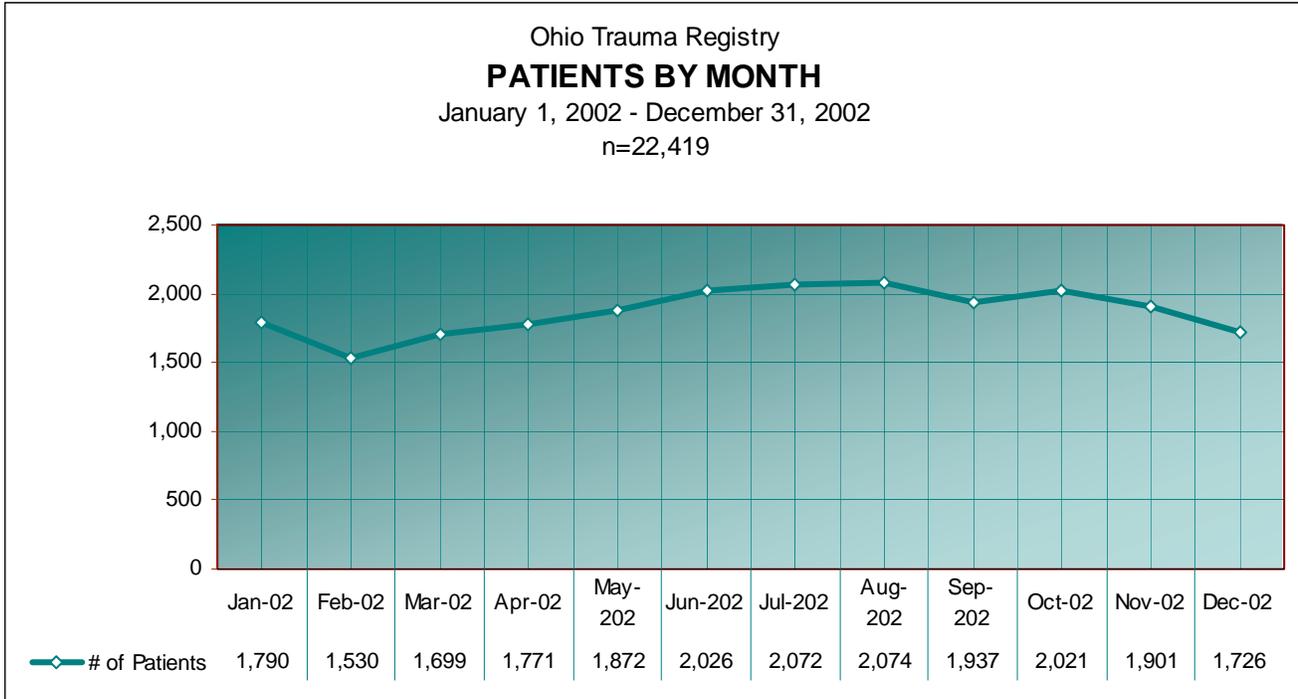
**Patients by Month**

This is the number of patients submitted to the OTR by month. This reflects the month that the patient arrived at the hospital, not necessarily the month that the injury occurred. The number of patients admitted to the hospital in 2001 peaked in July and was lowest in November. The number of Patients is calculated by subtracting from the total number of records submitted, those who are transferred to another hospital.

**Calculated Patients**

# of Records submitted subtracted from the # of Records with "ED Disposition" equal to "Transfer to another Ohio hospital" or "Transfer to an out of state hospital", or with "Discharge Disposition" equal to "Transfer to another Ohio hospital" or "Transfer to an out of state hospital".

**PATIENTS BY MONTH – 2002**



2002		
Month/Year	# of Patients	% of Patients
Jan-02	1,790	8.0%
Feb-02	1,530	6.8%
Mar-02	1,699	7.6%
Apr-02	1,771	7.9%
May-02	1,872	8.4%
Jun-02	2,026	9.0%
Jul-02	2,072	9.2%
Aug-02	2,074	9.3%
Sep-02	1,937	8.6%
Oct-02	2,021	9.0%
Nov-02	1,901	8.5%
Dec-02	1,726	7.7%
<b>Total</b>	<b>22,419</b>	<b>100.0%</b>

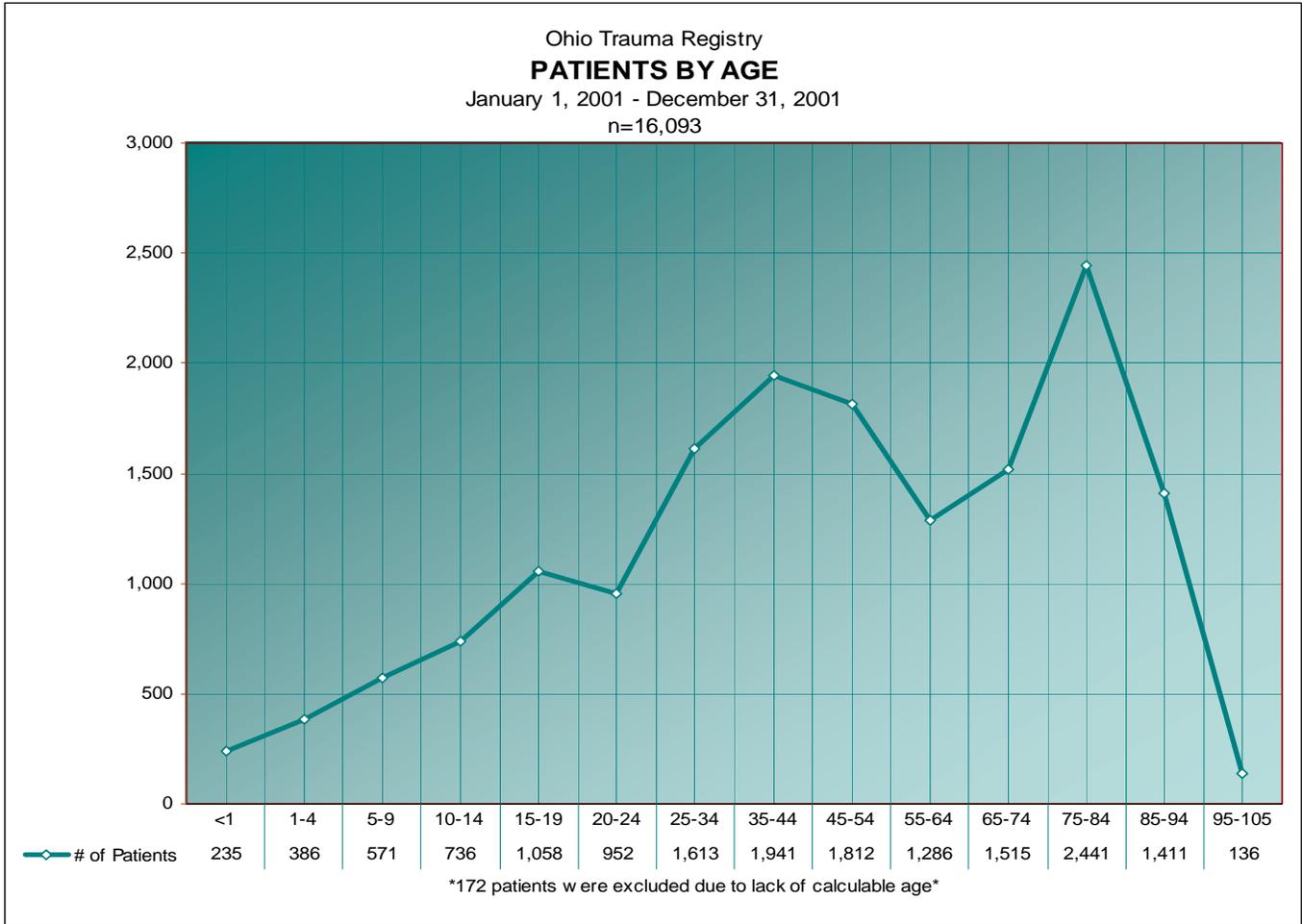
**Patients by Month**

The number of patients submitted to the OTR by month. This reflects the month that the patient arrived at the hospital, not necessarily the month that the injury occurred. The number of patients admitted to the hospital in 2002 peaked in August and was lowest in February. The number of Patients is calculated by subtracting from the total number of records submitted, those who are transferred to another hospital.

**Calculated Patients**

# of Records submitted subtracted from the # of Records with “ED Disposition” equal to “Transfer to another Ohio hospital” or “Transfer to an out of state hospital”, or with “Discharge Disposition” equal to “Transfer to another Ohio hospital” or “Transfer to an out of state hospital”.

**PATIENTS BY AGE – 2001**



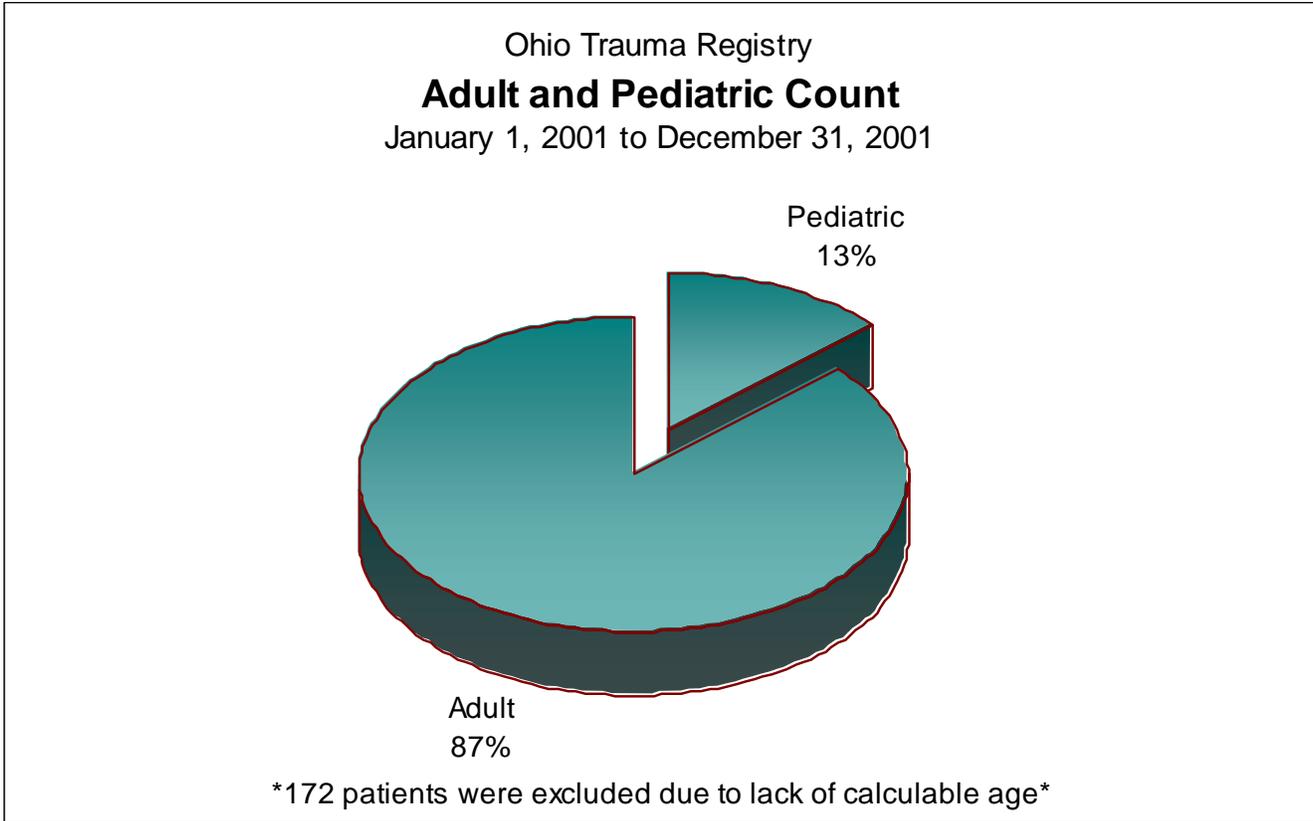
**Number of Patients by Age**

The 75-84 year old age group has the most patients reported, 2,441 (15.2%), followed closely by the 45-54 year old age group with 1,812 (11.3%).

As a group, pediatric patients, age 0-15, accounted for 2,127 (13.2%) of the overall patients reported.

2001		
Age Range	# of Patients	% of All Patients
<1	235	1.5%
1-4	386	2.4%
5-9	571	3.5%
10-14	736	4.6%
15-19	1,058	6.6%
20-24	952	5.9%
25-34	1,613	10.0%
35-44	1,941	12.1%
45-54	1,812	11.3%
55-64	1,286	8.0%
65-74	1,515	9.4%
75-84	2,441	15.2%
85-94	1,411	8.8%
95-105	136	0.8%
<b>Total</b>	<b>16,093</b>	<b>100%</b>

**ADULT VS. PEDIATRIC PATIENTS – 2001**

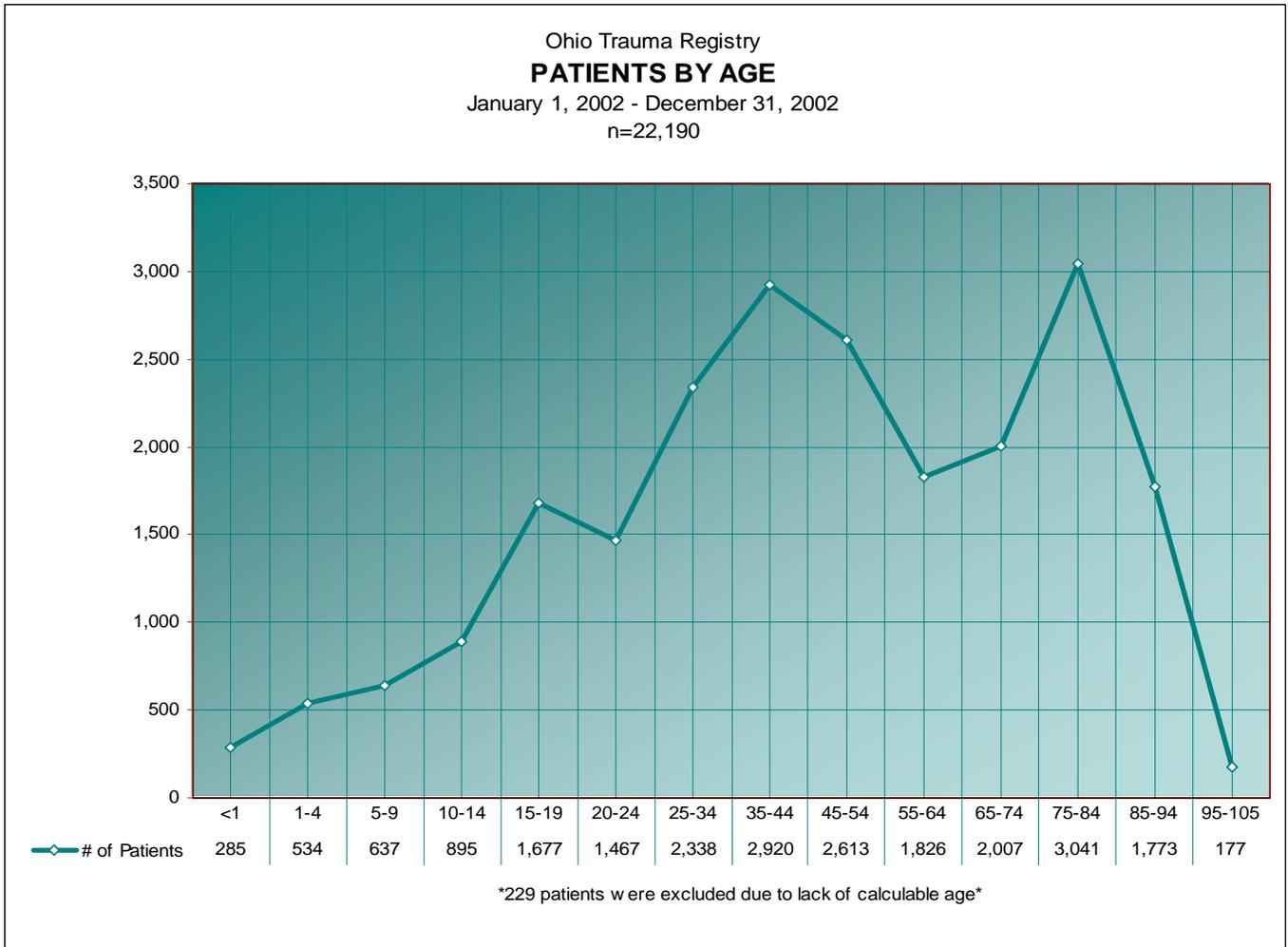


<b>2001</b>		
<b>Age Group</b>	<b># of Patients</b>	<b>% of Patients</b>
Pediatric	2,127	13.2%
Adult	13,966	86.8%
<b>Total</b>	<b>16,093</b>	<b>100.0%</b>

**Adult vs. Pediatric Patients**

Ohio Revised Code has established that pediatric trauma patients are those under the age of sixteen. Trauma patients age sixteen and older are considered adults. In 2001, 13.2 percent of the patients reported were less than sixteen years old.

**PATIENTS BY AGE – 2002**



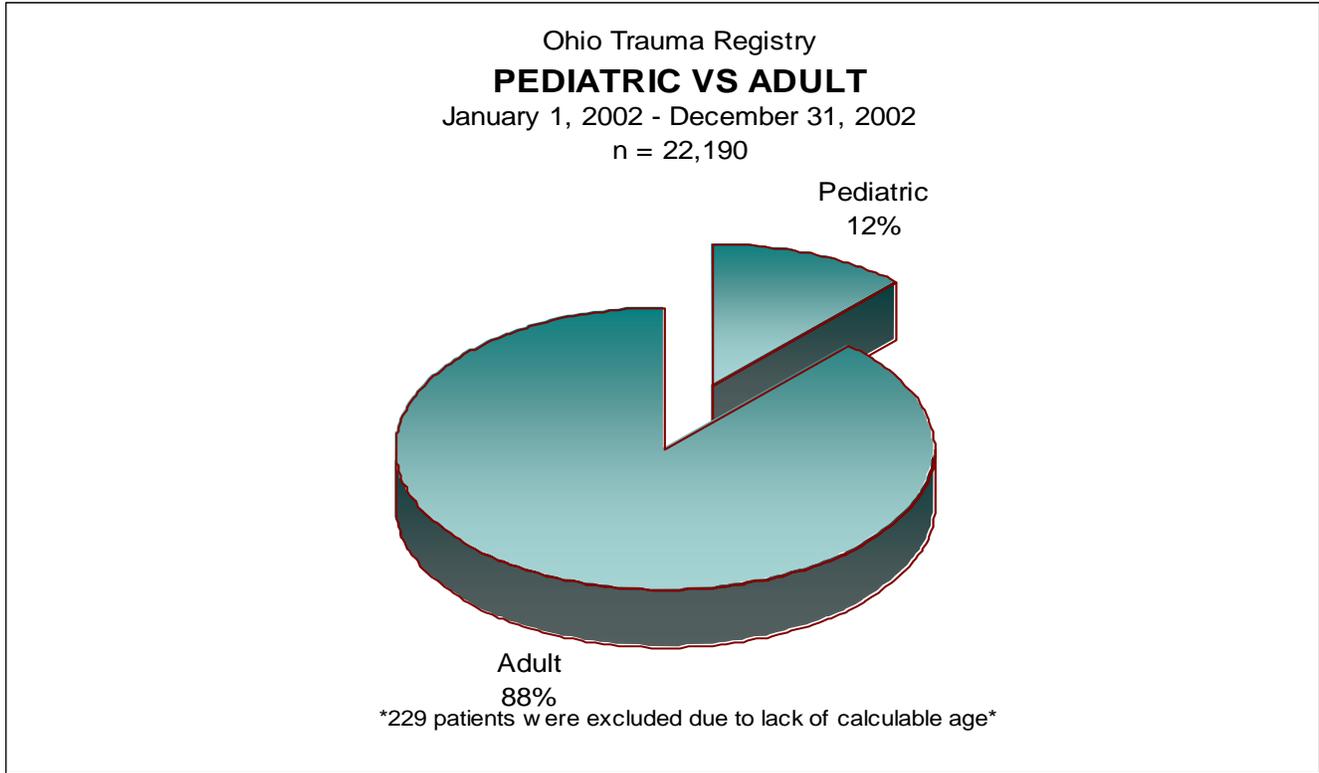
**Number of Patients by Age**

The 75-84 year old age group has the most patients reported, 3,041 (13.7%), followed closely by the 35-44 year old age group with 2,920 (13.2%).

As a group, pediatric patients, age 0-15, accounted for 2,673 (12%) of the overall patients reported.

2002		
Age Range	# of Patients	% of All Patients
<1	285	1.3%
1-4	534	2.4%
5-9	637	2.9%
10-14	895	4.0%
15-19	1,677	7.6%
20-24	1,467	6.6%
25-34	2,338	10.5%
35-44	2,920	13.2%
45-54	2,613	11.8%
55-64	1,826	8.2%
65-74	2,007	9.0%
75-84	3,041	13.7%
85-94	1,773	8.0%
95-105	177	0.8%
<b>Total</b>	<b>22,190</b>	<b>100%</b>

**ADULT VS. PEDIATRIC PATIENTS – 2002**

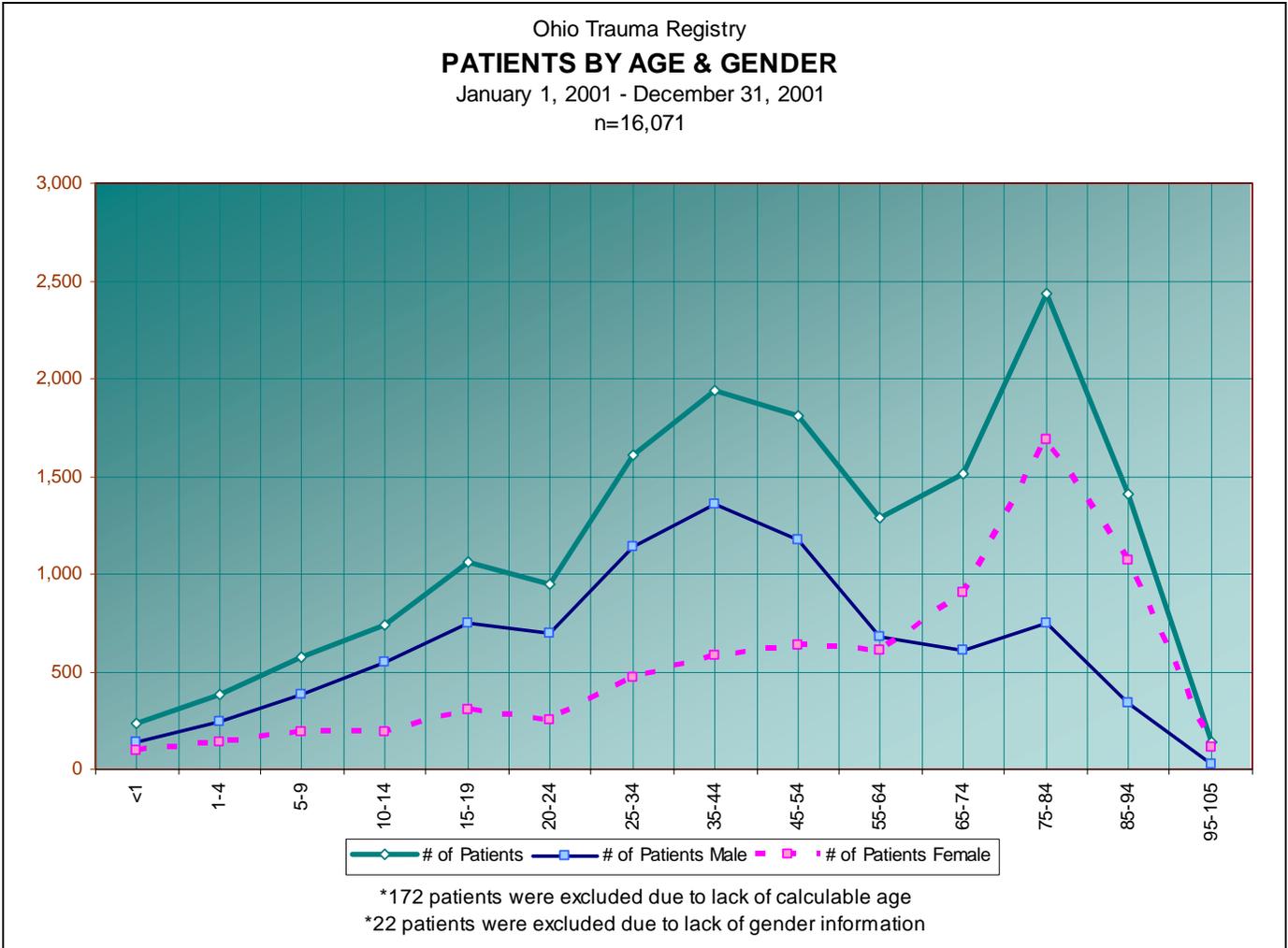


2002		
Age Group	# of Patients	% of Patients
Pediatric	2,673	12.0%
Adult	19,517	88.0%
<b>Total</b>	<b>22,190</b>	<b>100.0%</b>

**Adult vs. Pediatric Patients**

Ohio Revised Code has established that pediatric trauma patients are those under the age of sixteen. Trauma patients age sixteen and older are considered adults. In 2002 twelve percent of the patients reported were less than sixteen.

**PATIENTS BY AGE & GENDER – 2001**



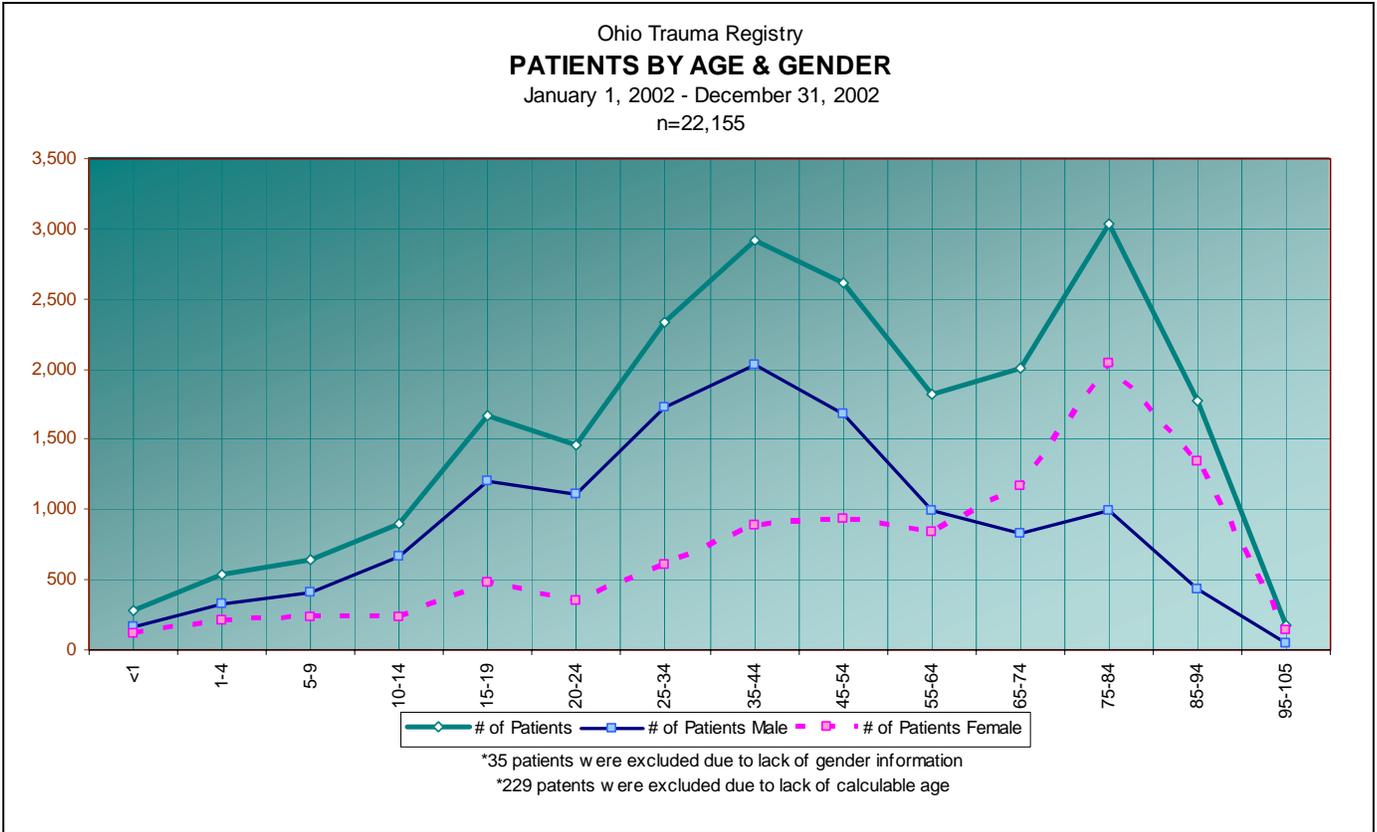
2001					
Age Range	# of Patients	# of Patients Male	% of Age Group Male	# of Patients Female	% of Age Group Female
<1	235	135	57.4%	100	42.6%
1-4	386	246	63.7%	140	36.3%
5-9	571	381	66.7%	190	33.3%
10-14	736	549	74.6%	187	25.4%
15-19	1,057	752	71.1%	305	28.9%
20-24	949	695	73.2%	254	26.8%
25-34	1,610	1,142	70.9%	468	29.1%
35-44	1,939	1,353	69.8%	586	30.2%
45-54	1,806	1,170	64.8%	636	35.2%
55-64	1,286	675	52.5%	611	47.5%
65-74	1,512	605	40.0%	907	60.0%
75-84	2,437	748	30.7%	1,689	69.3%
85-94	1,411	338	24.0%	1,073	76.0%
95-105	136	22	16.2%	114	83.8%
<b>Total</b>	<b>16,071</b>	<b>8,811</b>	<b>54.8%</b>	<b>7,260</b>	<b>45.2%</b>

**Patients by Age and Gender**

Distribution of records submitted by age and gender are similar to national trends. Overall, 54.8% of the patients reported were male, while 45% were female. 13.2% of all the patients reported are under the age of 16. In this pediatric group twice as many patients were male compared to female (67% vs. 33%).

These represent all injuries submitted to the OTR, and include injuries which may have resulted in death.

**PATIENTS BY AGE & GENDER – 2002**



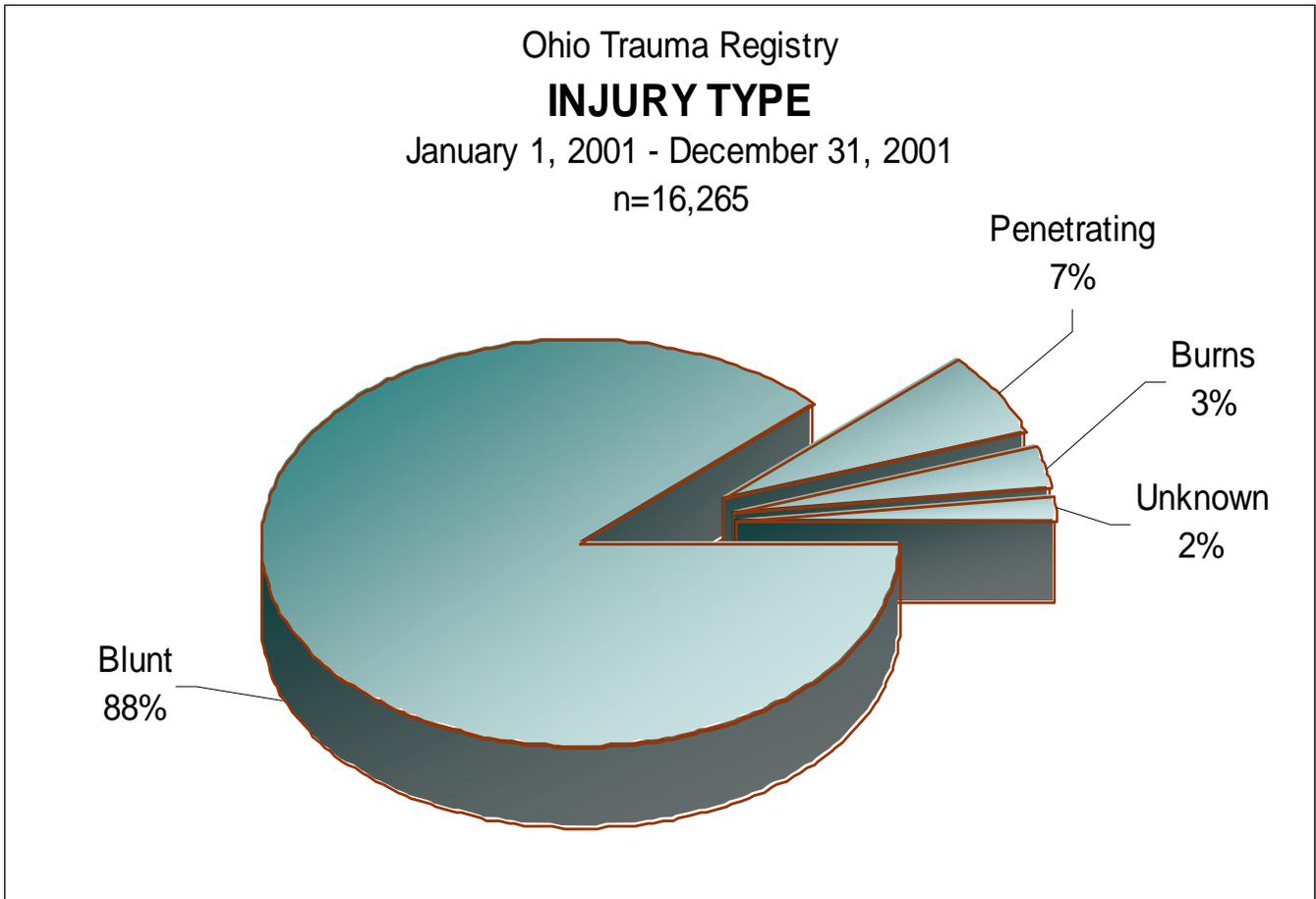
**Patients by Age and Gender**

Distribution of records submitted by age and gender are similar to national trends. Overall, 56.9% of the patients reported were male, while 43.1% were female. Twelve percent of all the patients reported are under the age of 15. In this pediatric group twice as many patients were male compared to female (67% vs. 33%).

These represent all injuries submitted to the OTR, and include injuries which may have resulted in death.

2002					
Age Range	# of Patients	# of Patients Male	% of Age Group Male	# of Patients Female	% of Age Group Female
<1	285	168	58.9%	117	41.1%
1-4	534	325	60.9%	209	39.1%
5-9	636	406	63.8%	230	36.2%
10-14	895	666	74.4%	229	25.6%
15-19	1,674	1,200	71.7%	474	28.3%
20-24	1,460	1,113	76.2%	347	23.8%
25-34	2,335	1,723	73.8%	612	26.2%
35-44	2,916	2,033	69.7%	883	30.3%
45-54	2,612	1,682	64.4%	930	35.6%
55-64	1,824	989	54.2%	835	45.8%
65-74	2,002	832	41.6%	1,170	58.4%
75-84	3,035	993	32.7%	2,042	67.3%
85-94	1,770	427	24.1%	1,343	75.9%
95-105	177	42	23.7%	135	76.3%
<b>Total</b>	<b>22,155</b>	<b>12,599</b>	<b>56.9%</b>	<b>9,556</b>	<b>43.1%</b>

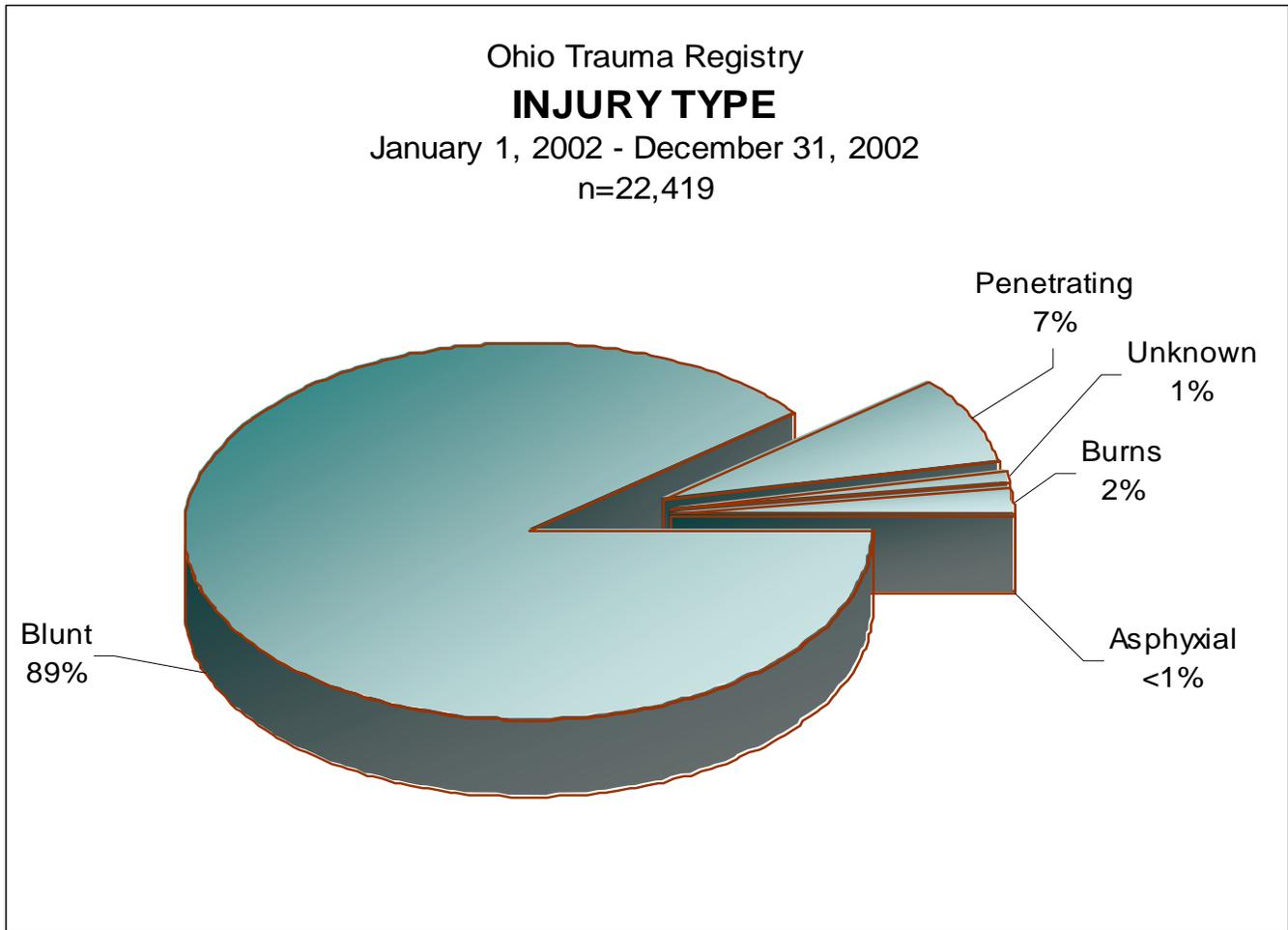
**INJURY TYPE – 2001**



2001		
Injury Type	# of Patients	% of Patients
Blunt	14,333	88.1%
Penetrating	1,070	6.6%
Burns	543	3.3%
Unknown	319	2.0%
<b>Total</b>	<b>16,265</b>	<b>100.0%</b>

**Injury Type**

Trauma has historically been categorized as either “blunt” or “penetrating”. Although exact definitions for these categories are not universally agreed upon, the generally accepted definition of penetrating injury is some type of penetration into the body, such as that produced by a knife or bullet. Blunt injury is generally defined as injury produced by a force which doesn’t penetrate into the body, such as a motor vehicle crash or a fall. Burns are not classified as either and are presented here separately from blunt and penetrating.

**INJURY TYPE – 2002**

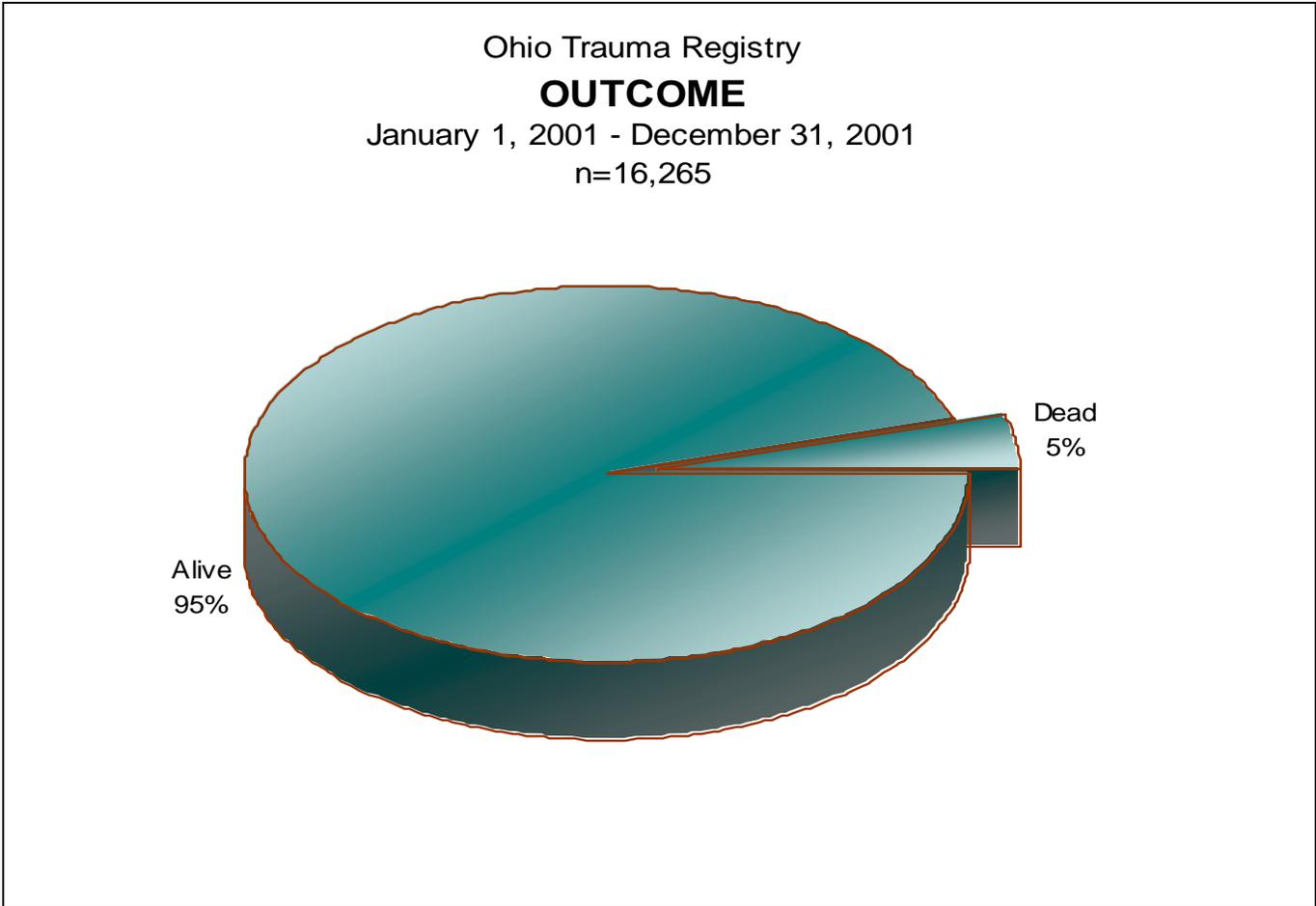
2002		
Injury Type	# of Patients	% of Patients
Blunt	19,996	89.2%
Penetrating	1,652	7.4%
Unknown	245	1.1%
Burns	525	2.3%
Asphyxial*	1	0.0%
<b>Total</b>	<b>22,419</b>	<b>100.0%</b>

**Injury Type**

Trauma has historically been categorized as either “blunt” or “penetrating”. Although exact definitions for these categories are not universally agreed upon, the generally accepted definition of penetrating injury is some type of penetration into the body, such as that produced by a knife or bullet. Blunt injury is generally defined as injury produced by a force which doesn’t penetrate into the body, such as a motor vehicle crash or a fall. Burns are not classified as either and are presented here separately from blunt and penetrating. The number of burns reported has remained stable from data reported in 2001. The number of “unknowns” reported has dropped by almost half compared to 2001 data, but remains unacceptably high. The 2003 dataset does not allow for coding injury type as unknown.

\*Asphyxial – conditions that cause an insufficient intake of oxygen. ***The state trauma committee feels that this data is under-reported, based upon their clinical experience in dealing with asphyxial injuries.***

**OUTCOME – 2001**

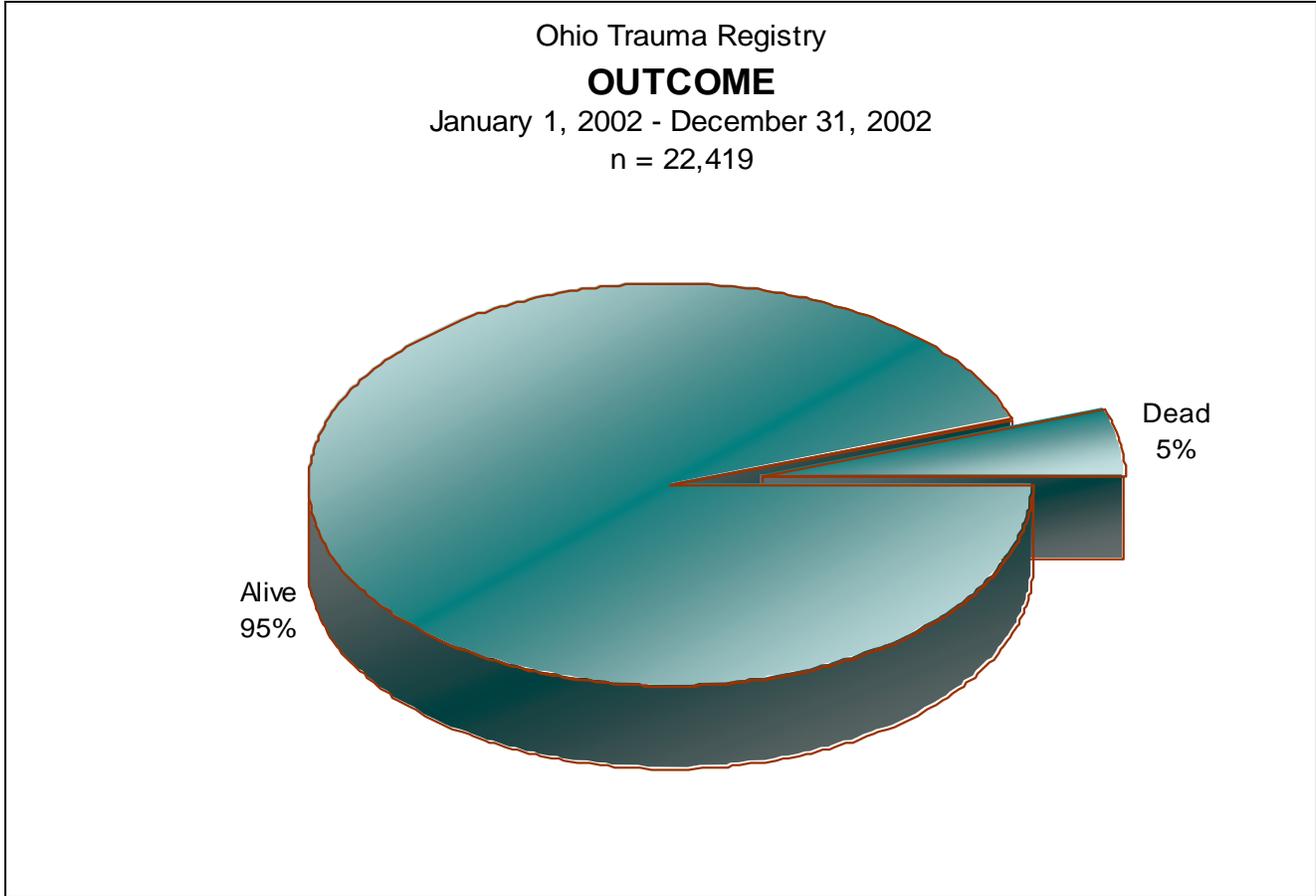


2001		
	# of Patients	% of Patients
Alive	15,500	95.3%
Dead	765	4.7%
<b>Total</b>	<b>16,265</b>	<b>100.0%</b>

**Outcome**

4.7% of the patients reported in 2001 died. ***Please note that these data are only patients treated in the hospital; deaths occurring outside a medical facility are not included in this analysis.***

**OUTCOME – 2002**

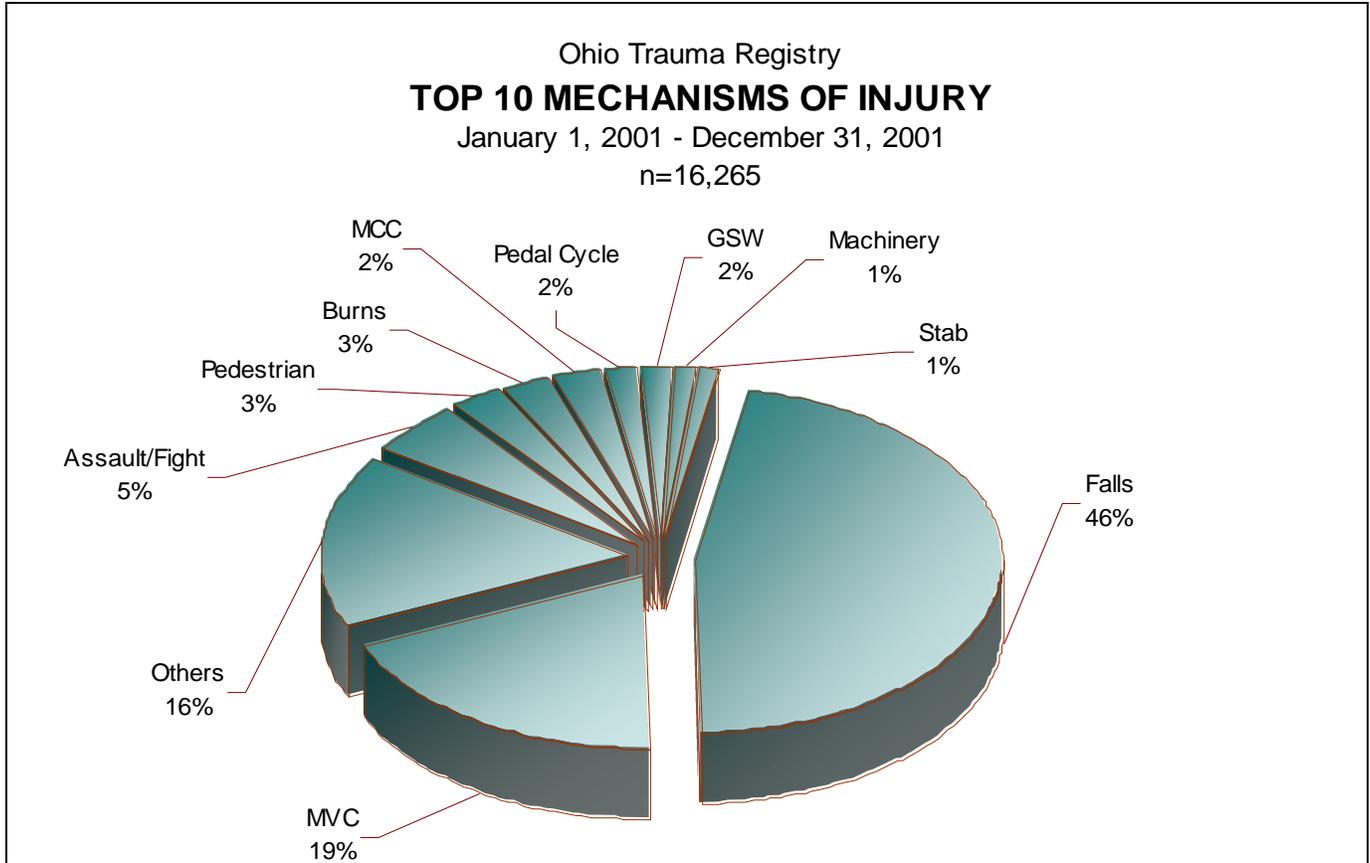


2002		
Outcome	# of Patients	% of Patients
Alive	21,216	94.6%
Dead	1,203	5.4%
<b>Total</b>	<b>22,419</b>	<b>100%</b>

**Outcome**

5.4% of the patients reported in 2002 died. ***Please note that these data are only patients treated in the hospital; deaths occurring outside a medical facility are not included in this analysis.***

**TOP TEN MECHANISMS OF INJURY – 2001**

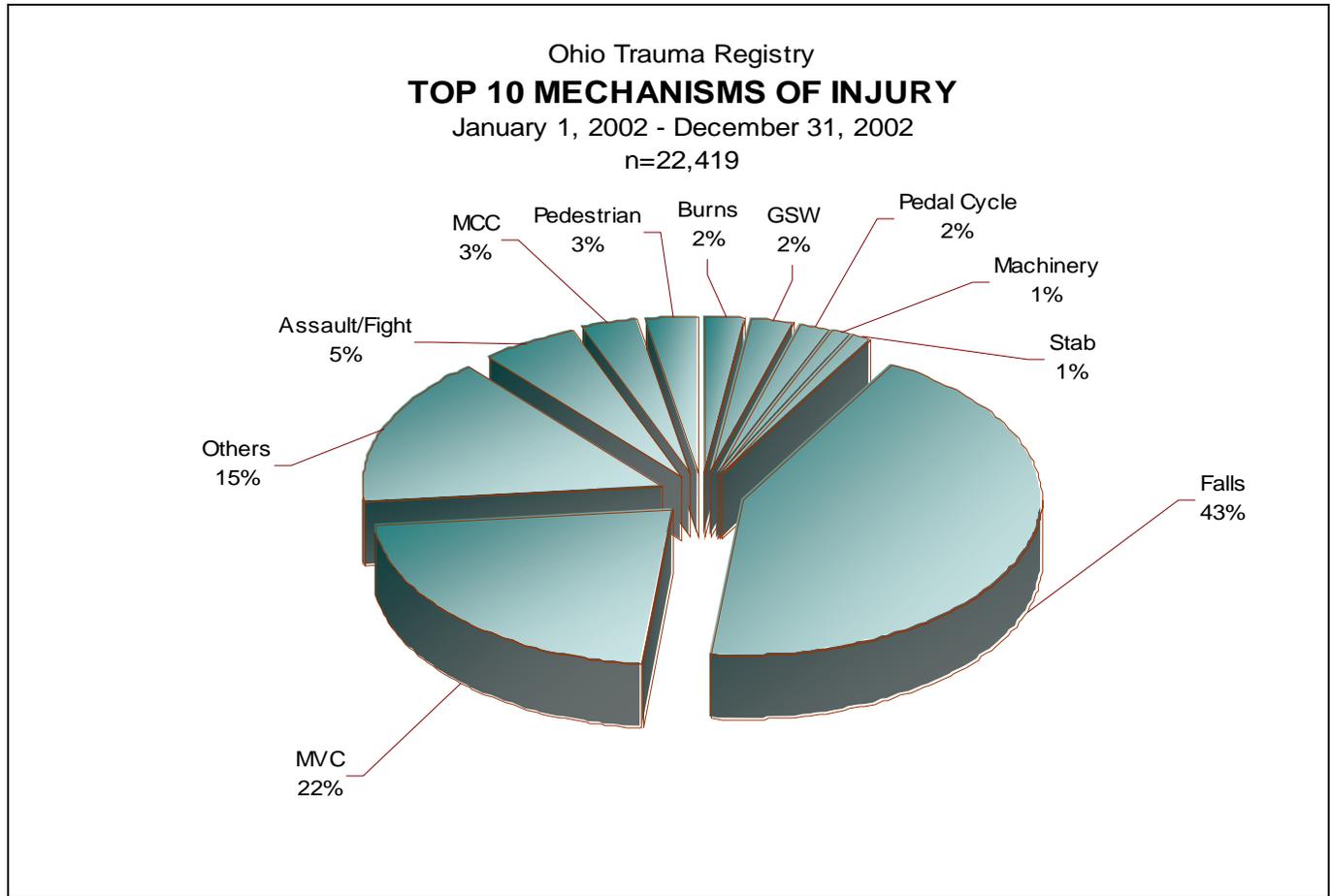


2001		
Top 10 Mechanisms of Injury	# of Patients	% of Patients
Falls	7,628	46.9%
MVC	3,052	18.8%
Others	2,619	16.1%
Assault/Fight	804	4.9%
Pedestrian	439	2.7%
Burns	418	2.6%
MCC	389	2.4%
Pedal Cycle	285	1.8%
GSW	256	1.6%
Machinery	191	1.2%
Stab	184	1.1%
<b>Total</b>	<b>16,265</b>	<b>100%</b>

**Mechanism of Injury**

46.9% of all patients suffered injury due to a fall. 18.8% were injured as a result of a motor vehicle crash. In this graph, the mechanism of injury is reported as the External Cause of Injury code or E-code. The Centers for Disease Control and Prevention place E-codes into groupings reflective of similar causes of injury. This graph presents the top ten E-code groupings. More information about E-codes and the E-code groupings can be found in appendix B. The "Other" category consists of a large number of E-codes, including such things as injuries sustained on a train to boating injuries, see appendix I for a listing of E-codes included in the "Other" category.

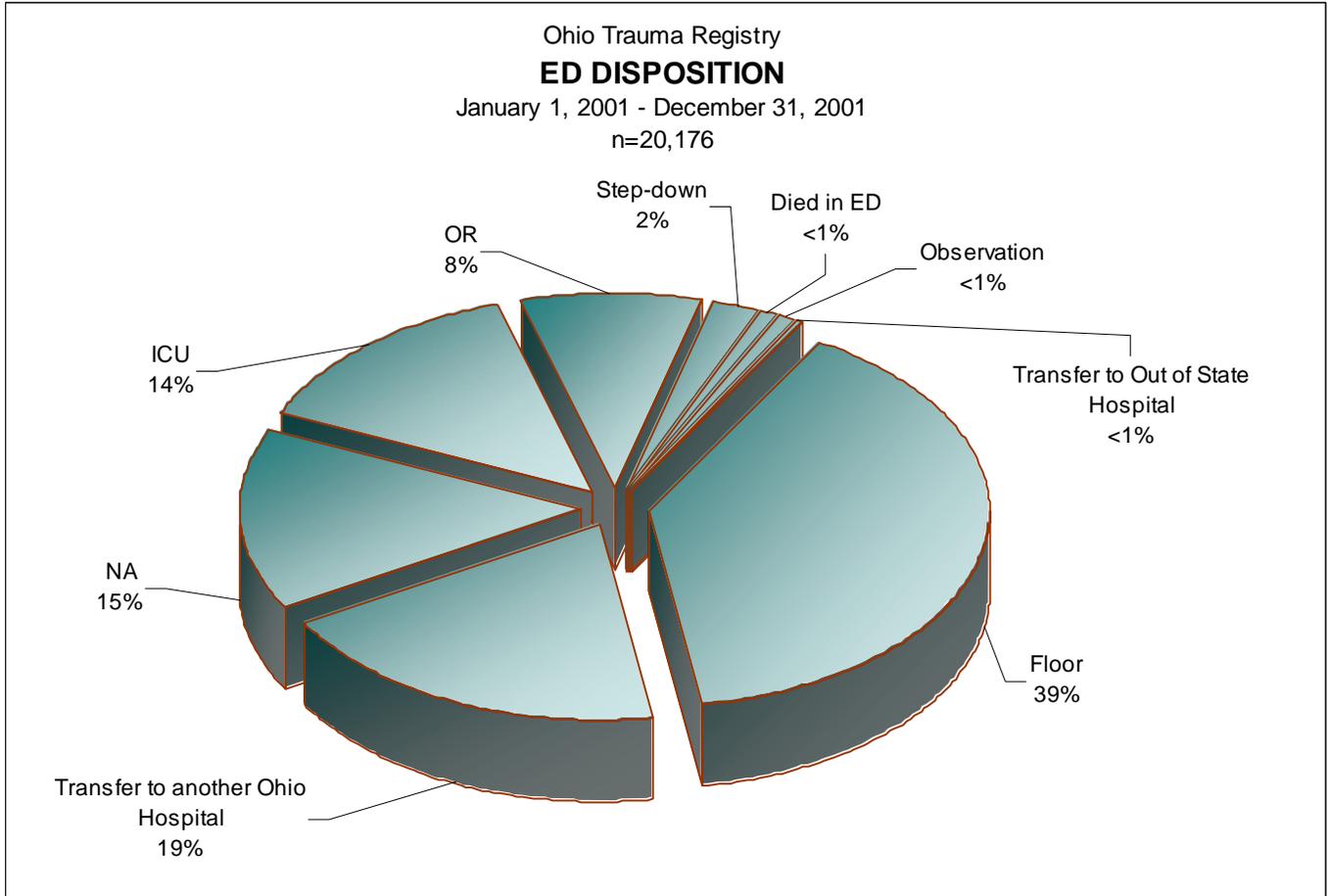
**TOP TEN MECHANISMS OF INJURY – 2002**



2002		
Top 10 Mechanisms of Injury	# of Patients	% of Patients
Falls	9,693	43.2%
MVC	4,905	21.9%
Others	3,456	15.4%
Assault/Fight	1,162	5.2%
MCC	693	3.1%
Pedestrian	656	2.9%
Burns	502	2.2%
GSW	472	2.1%
Pedal Cycle	383	1.7%
Machinery	266	1.2%
Stab	231	1.0%
<b>Total</b>	<b>22,419</b>	<b>100%</b>

**Mechanism of Injury**

In 2002 the reported mechanism of injury of Falls accounted for 43.2% of the patients. 21.9% were injured as a result of a motor vehicle crash. In this graph the mechanism of injury is reported as the External Cause of Injury code or E-code. The Centers for Disease Control and Prevention place E-codes into groupings reflective of similar causes of injury. This graph presents the top ten E-code groupings. More information about E-codes and the E-code groupings can be found in appendix B. The “Other” category consists of a large number of E-codes, including such things as injuries sustained on a train to boating injuries. , see appendix I for a listing of E-codes included in the “Other” category.

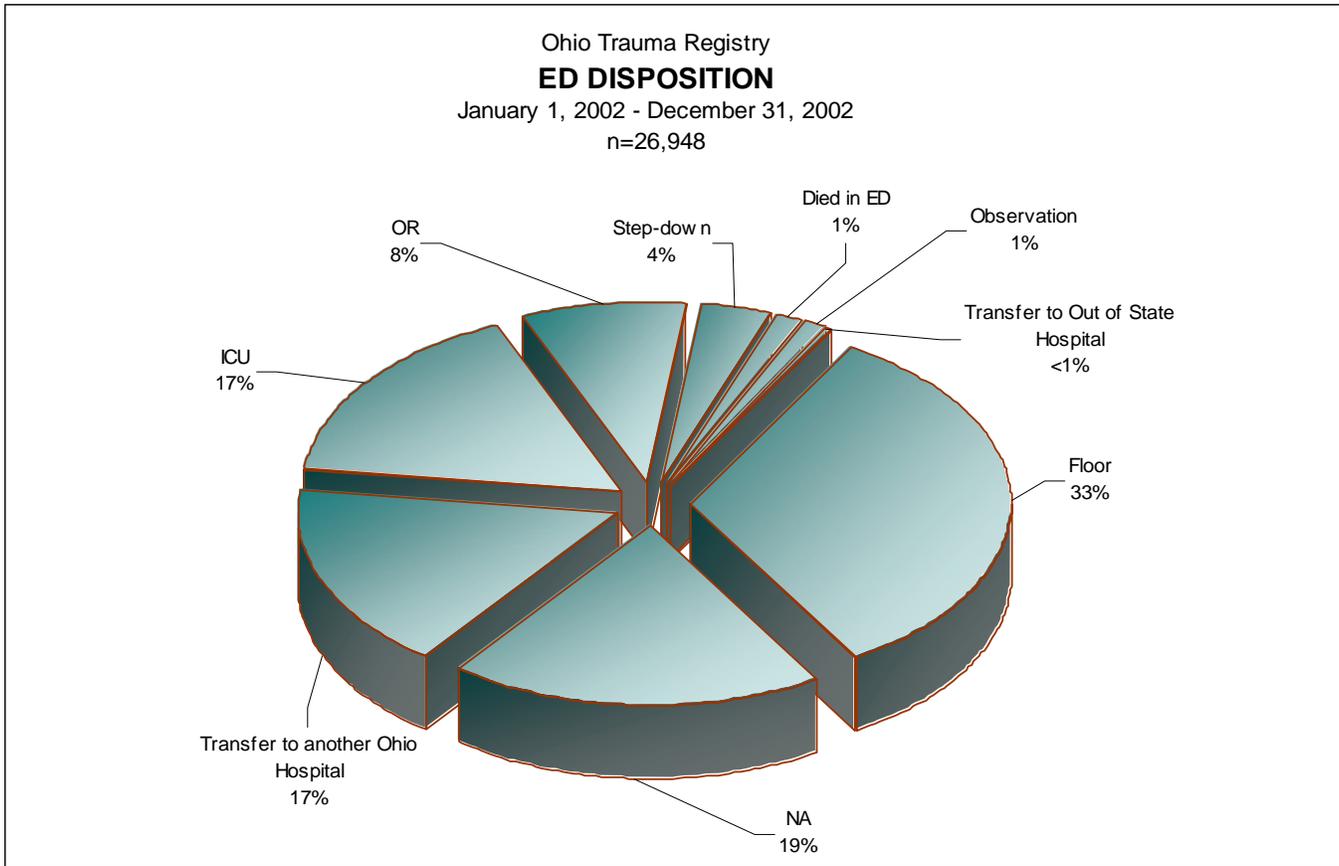
**ED DISPOSITION – 2001**

2001		
Disposition	# of Patients 2001	% for 2001
Floor	7,901	39.2%
Transfer to another Ohio Hospital	3,870	19.2%
NA	3,050	15.1%
ICU	2,800	13.9%
OR	1,700	8.4%
Step-down	453	2.2%
Died in ED	189	0.9%
Observation	172	0.9%
Transfer to Out of State Hospital	41	0.2%
<b>Total</b>	<b>20,176</b>	<b>100%</b>

**ED Disposition**

This graph shows the first place the patient was sent after they were discharged from the emergency department in the first hospital in which they were treated. 39.2% of the patients were admitted to the floor (i.e. a regular medical/surgical hospital room). 22.3% of patients were sent directly to the operating room or an intensive care unit. 19.4% were transferred to another hospital. 15.1% were reported as unknown or not applicable. Clearly, this area represents a need for more accurate reporting. The 2003 data set will not permit the reporting of ED disposition as "Unknown", and "Not Applicable" is narrowly defined for use only with patients who arrived at the hospital without passing through the emergency department (i.e., a transfer from one hospital directly to the intensive care unit of a second hospital).

**ED DISPOSITION - 2002**

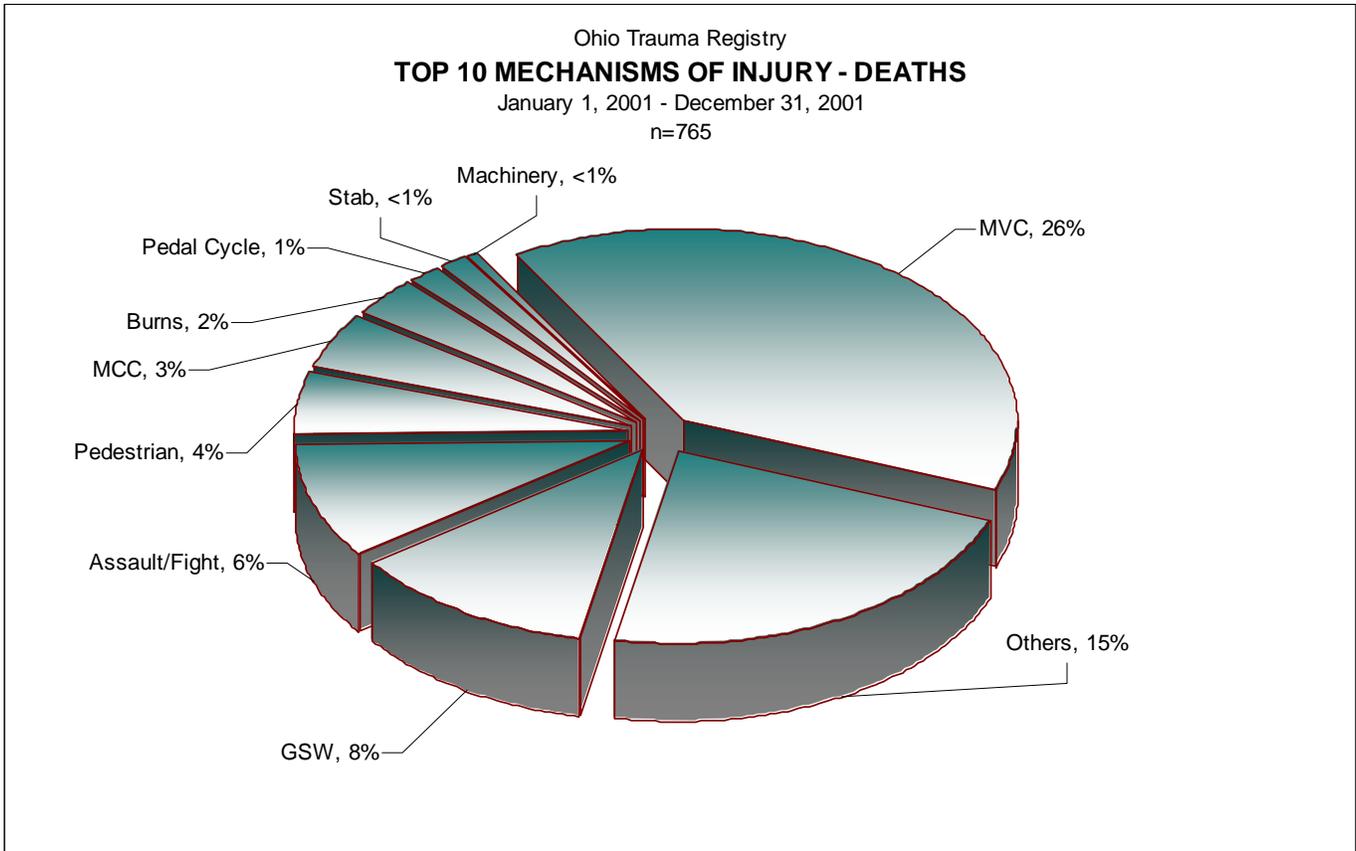


2002		
Disposition	# of Patients	% of Patients
Floor	8,935	33.2%
NA	5,100	18.9%
Transfer to another Ohio Hospital	4,472	16.6%
ICU	4,438	16.5%
OR	2,275	8.4%
Step-down	978	3.6%
Died in ED	364	1.4%
Observation	329	1.2%
Transfer to Out of State Hospital	57	0.2%
<b>Total</b>	<b>26,948</b>	<b>100.0%</b>

**ED Disposition**

This graph shows the first place the patient was sent after they were discharged from the emergency department in the first hospital in which they were treated. 33.2% of the patients were admitted to the floor (i.e., a regular medical/surgical hospital room). 24.9% were sent directly to the operating room or an intensive care unit. 16.8% were transferred to another hospital. 18.9% were reported as unknown or not applicable. This increase in the number of "NA's/Unknowns" reported compared to 2001 highlights a continuing need for more accurate reporting. The 2003 data set will not permit the reporting of ED disposition as "Unknown", and "Not Applicable" is narrowly defined for use only with patients who arrived at the hospital without passing through the emergency department (i.e., a transfer from one hospital directly to the intensive care unit of a second hospital).

**TOP TEN MECHANISM OF INJURY DEATHS – 2001**

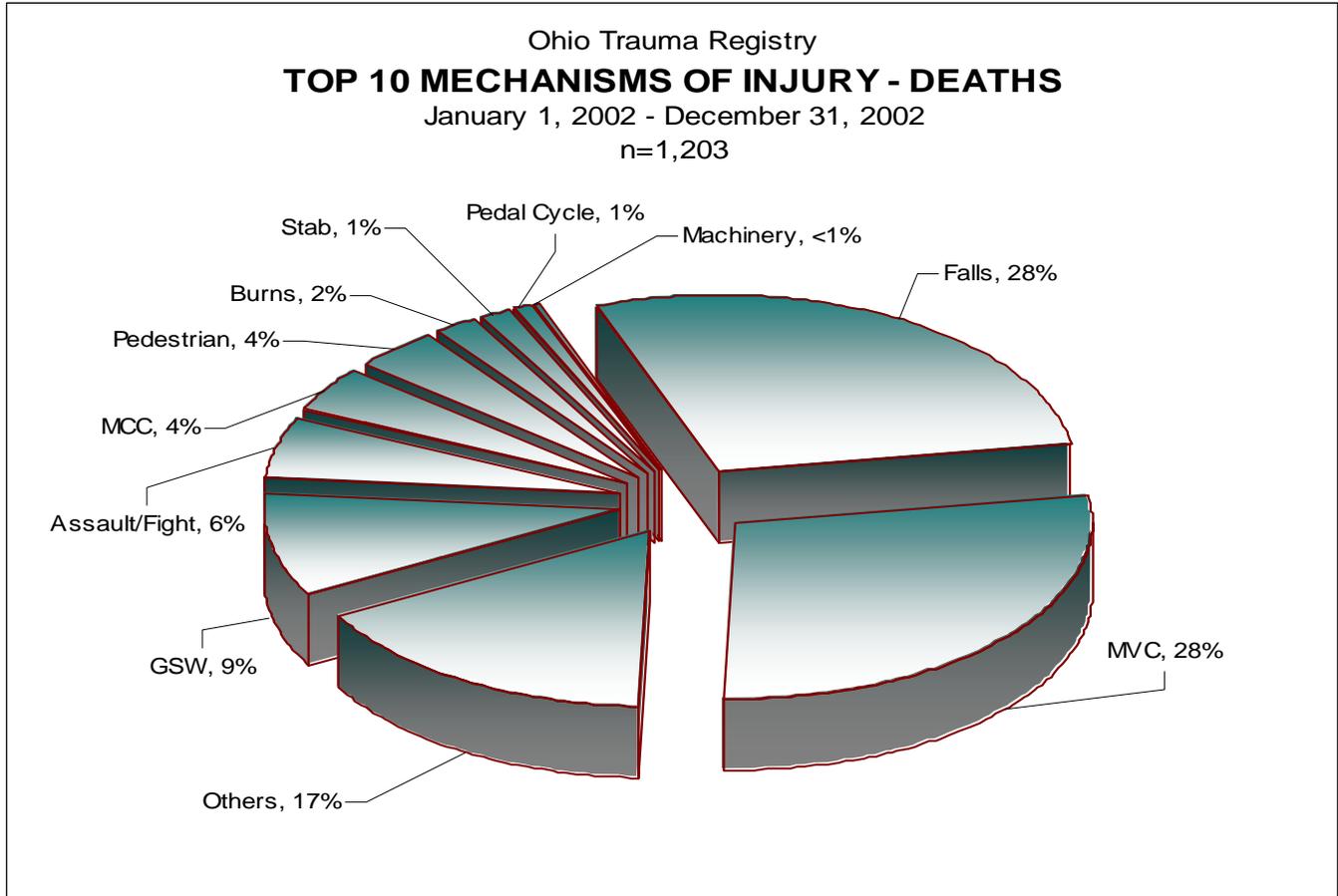


2001		
Top 10 Mechanisms of Injury - Deaths	# of Patients	% of Patients
Falls	261	34.1%
MVC	198	25.9%
Others	112	14.6%
GSW	59	7.7%
Assault/Fight	49	6.4%
Pedestrian	27	3.5%
MCC	24	3.1%
Burns	17	2.2%
Pedal Cycle	8	1.0%
Stab	7	0.9%
Machinery	3	0.4%
<b>Total</b>	<b>765</b>	<b>100.0%</b>

**Deaths by Mechanism of Injury**

Analysis of the patients who died in the hospital in 2001 reveals that *Falls* accounted for 34.1% of patients who died before discharge. *Motor Vehicle Crashes* were the cause for 25.9% of the in-hospital deaths. 7.7% died because of a gunshot wound. It is important to recognize that patients who die at the scene are not reported by the hospitals. These data reflect only patients that died in the hospital.

**TOP TEN MECHANISM OF INJURY DEATHS – 2002**

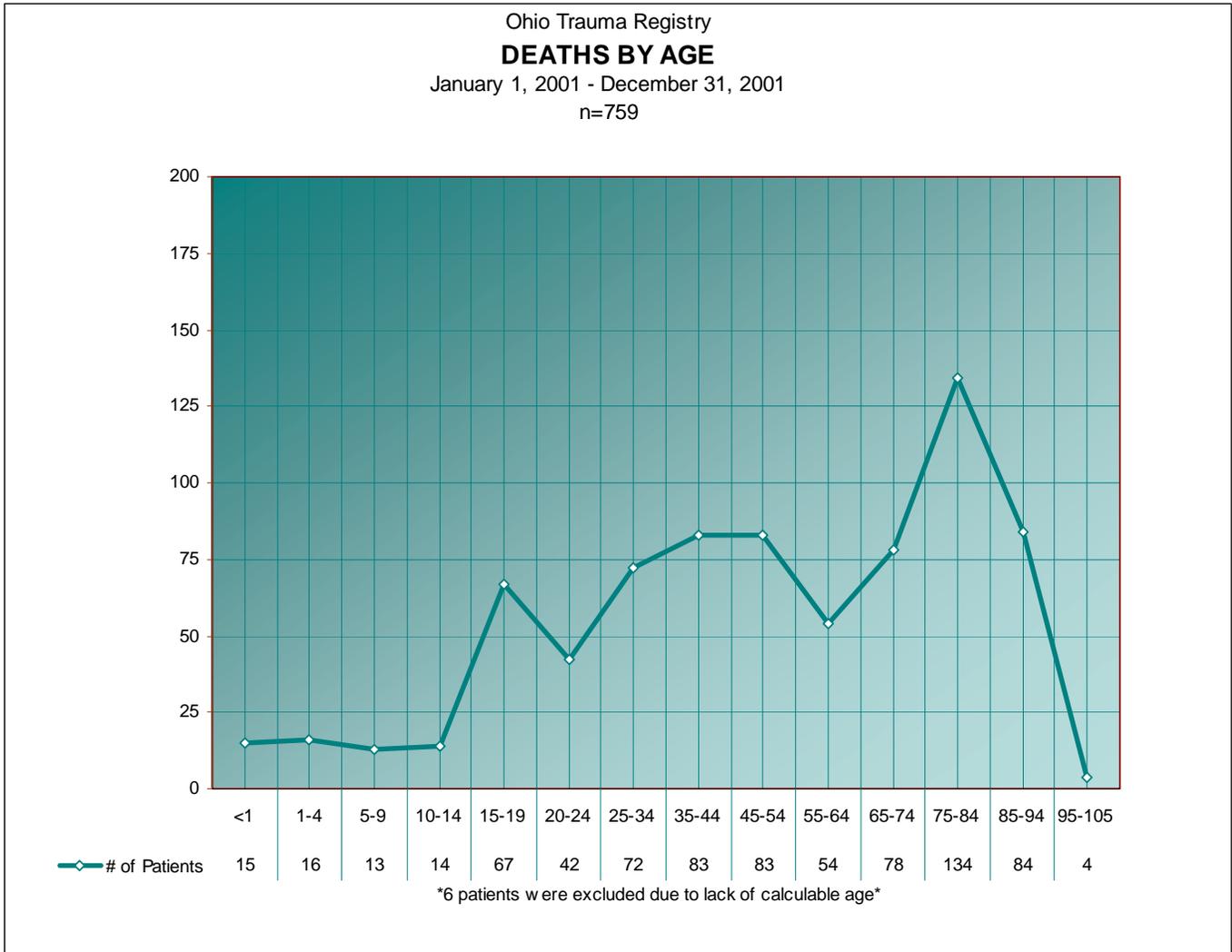


2002		
Top 10 Mechanisms of Injury - Deaths	# of Patients	% of Patients
Falls	339	28.2%
MVC	335	27.8%
Others	198	16.5%
GSW	113	9.4%
Assault/Fight	66	5.5%
MCC	52	4.3%
Pedestrian	47	3.9%
Burns	22	1.8%
Stab	16	1.3%
Pedal Cycle	12	1.0%
Machinery	3	0.2%
<b>Total</b>	<b>1,203</b>	<b>100.0%</b>

**Deaths by Mechanism of Injury**

Analysis of the patients who died in the hospital in 2002 reveals that *Falls* continue to be the leading cause of injury deaths and account for 28.2% of patients who died before discharge. *Motor Vehicle Crashes* were the cause for 27.8% of the in-hospital deaths. 9.4% died because of a gunshot wound. It is important to recognize that patients who die at the scene are not reported by the hospitals. These data reflect only patients that died in the hospital.

**DEATHS BY AGE – 2001**



**Deaths by Age**

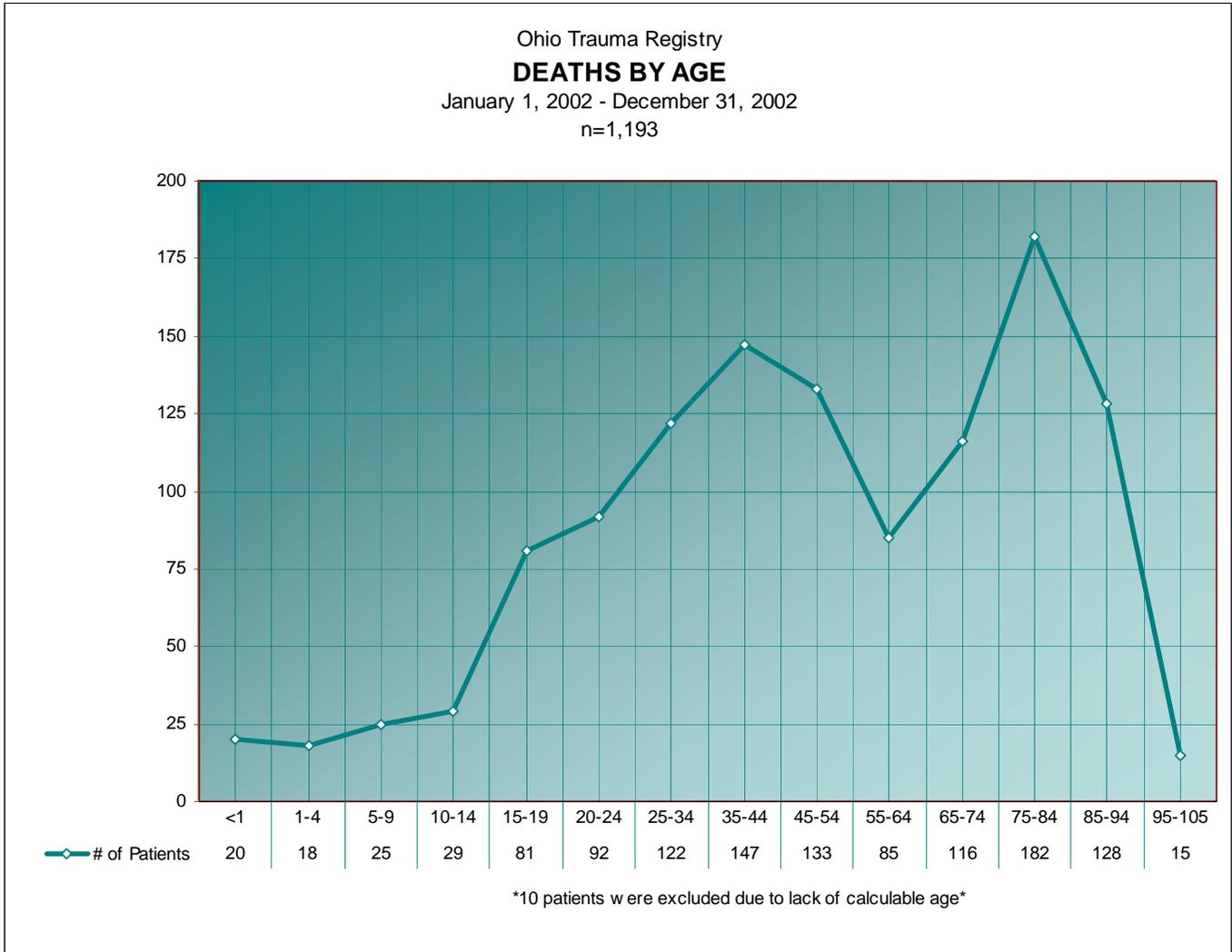
More patients (134) died in the 75-84 year old age group than in any other group. This represents almost eighteen percent of all deaths reported. This is consistent with other national trauma data that recognize the elderly are at higher risk of death than pediatric and adult patients.

Remember that these data reported are deaths occurring in the hospital setting (ED or inpatient). Trauma patients that die at the scene of an injury or following discharge from the hospital are not included in this report.

***The state trauma committee, based upon their clinical experience, feels that this data is under-reported***

2001		
Age Range	# of Patients	% of Patients
<1	15	2.0%
1-4	16	2.1%
5-9	13	1.7%
10-14	14	1.8%
15-19	67	8.8%
20-24	42	5.5%
25-34	72	9.5%
35-44	83	10.9%
45-54	83	10.9%
55-64	54	7.1%
65-74	78	10.3%
75-84	134	17.7%
85-94	84	11.1%
95-105	4	0.5%
<b>Total</b>	<b>759</b>	<b>100.0%</b>

**DEATHS BY AGE – 2002**



**Deaths by Age**

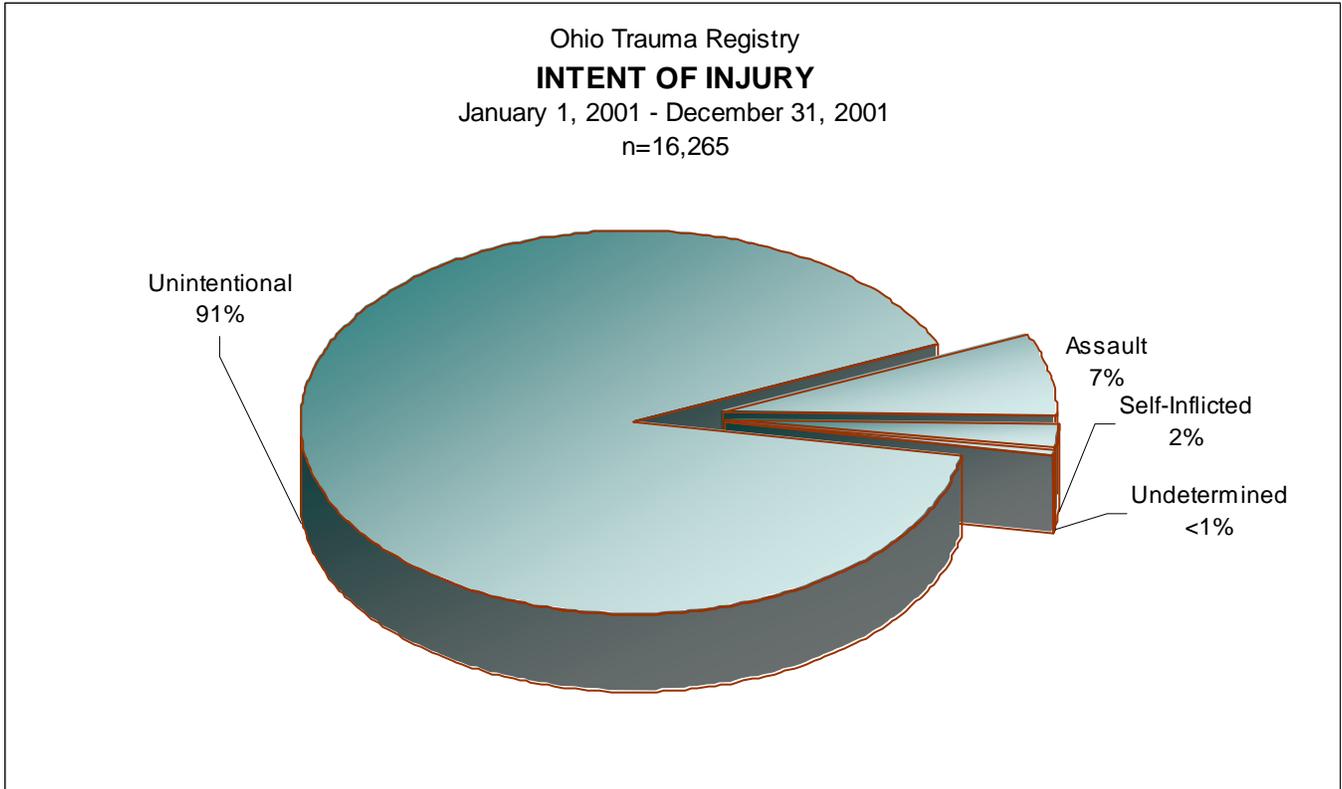
More patients (182) died in the 75-84 year old age group than in any other group. This represents over fifteen percent of all deaths reported. This is consistent with other national trauma data that recognize the elderly are at higher risk of death than pediatric and younger adult patients.

Remember that these data reported are deaths occurring in the hospital setting (ED or inpatient). Trauma patients that die at the scene of an injury or following discharge from the hospital are not included in this report.

*The state trauma committee, based upon their clinical experience, feels that this data is under-reported.*

2002		
Age Range	# of Patients	% of Patients
<1	20	1.7%
1-4	18	1.5%
5-9	25	2.1%
10-14	29	2.4%
15-19	81	6.8%
20-24	92	7.7%
25-34	122	10.2%
35-44	147	12.3%
45-54	133	11.1%
55-64	85	7.1%
65-74	116	9.7%
75-84	182	15.3%
85-94	128	10.7%
95-105	15	1.3%
<b>Total</b>	<b>1,193</b>	<b>100.0%</b>

**INTENT OF INJURY – 2001**

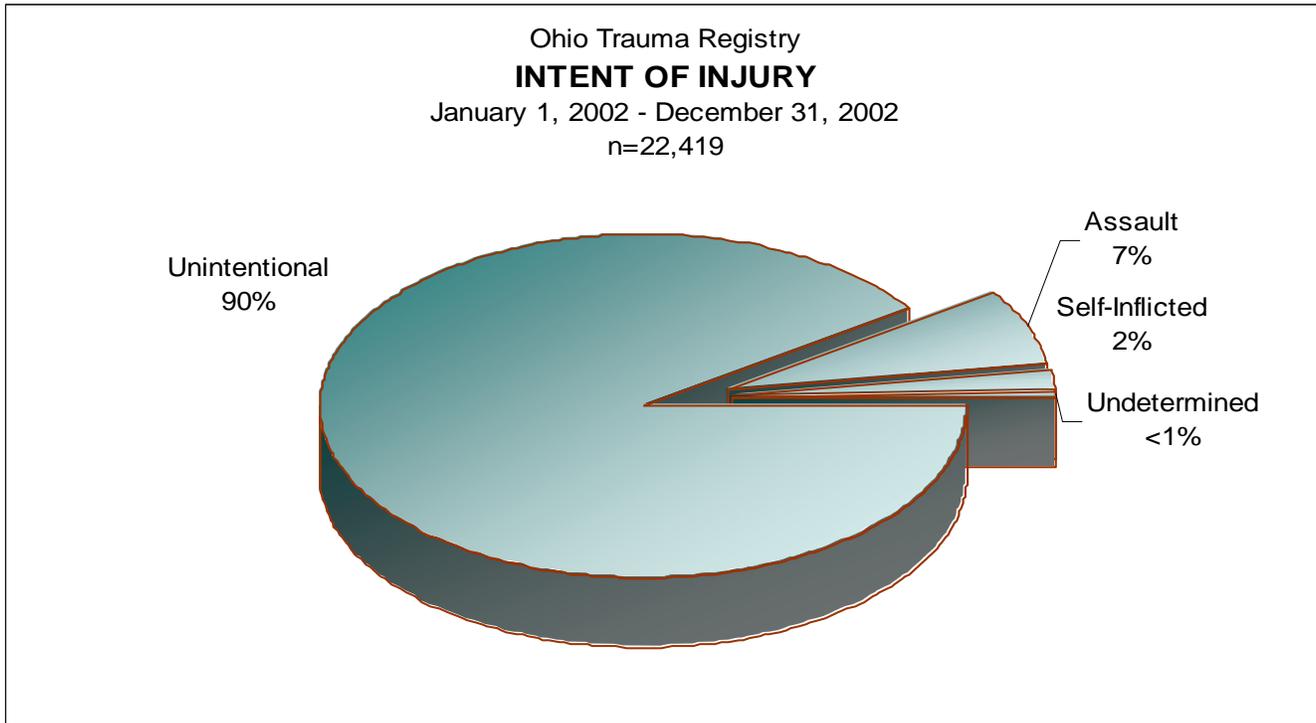


2001		
Intent	# of Patients	% of Patients
Unintentional	14,725	90.5%
Assault	1,137	7.0%
Self-Inflicted	304	1.9%
Undetermined	99	0.6%
<b>Total</b>	<b>16,265</b>	<b>100.0%</b>

**Intent of Injury**

The intent by which the injury was caused is described by *External Cause of Injury Codes (E-codes)*. *Assault* includes all injuries inflicted by another person with the intent to injure or kill. 90.5% of patients reported to the OTR in 2001 were injured unintentionally.

**INTENT OF INJURY – 2002**

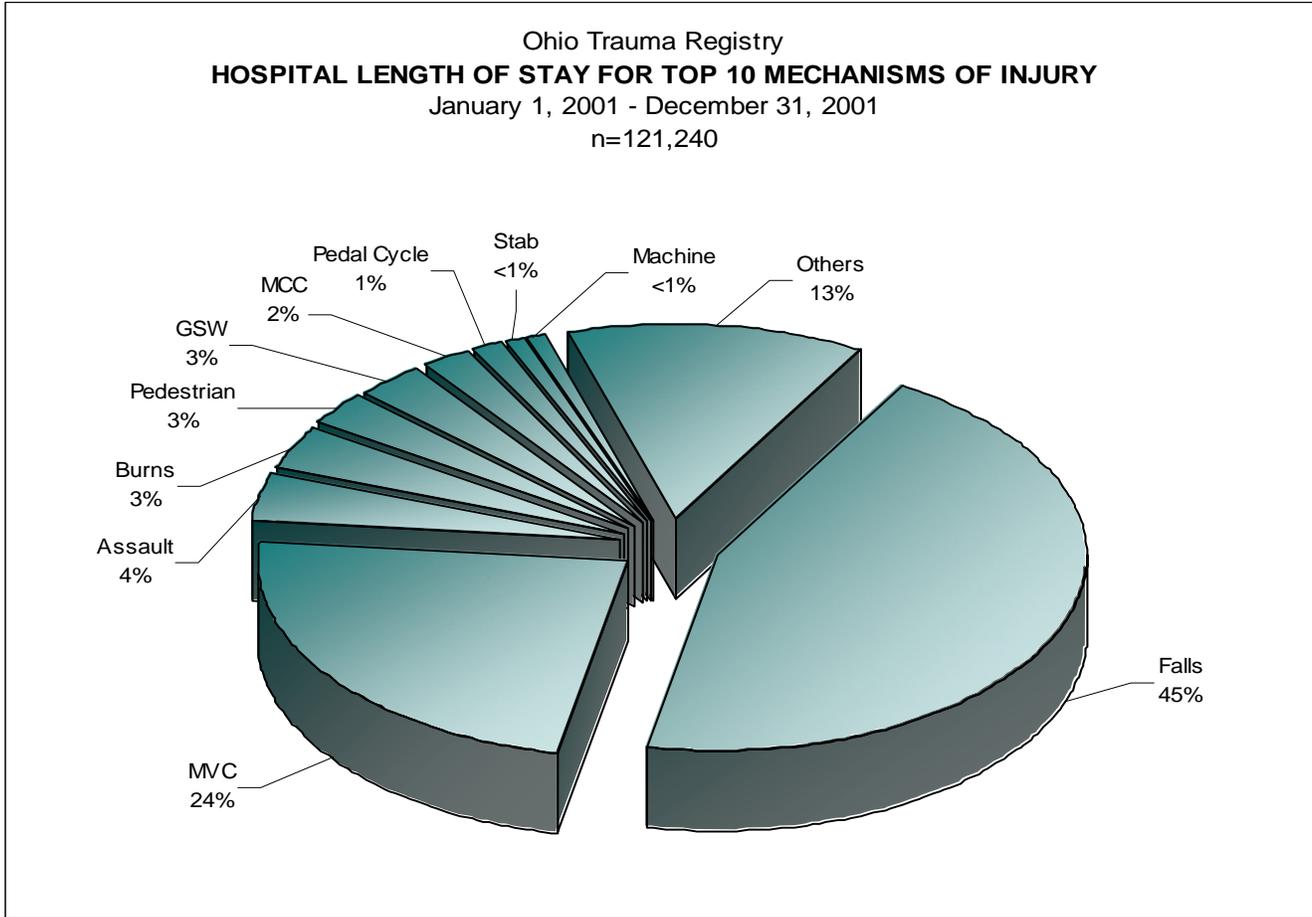


2002		
Intent	# of Patients	% of Patients
Unintentional	20,222	90.2%
Assault	1,663	7.4%
Self-Inflicted	416	1.9%
Undetermined	118	0.5%
	<b>22,419</b>	<b>100.0%</b>

**Intent of Injury**

The intent by which the injury was caused is described by *External Cause of Injury Codes (E-codes)*. *Assault* includes all injuries inflicted by another person with the intent to injure or kill. 90.2% of patients reported to the OTR in 2002 were injured unintentionally.

**HOSPITAL LENGTH OF STAY FOR TOP TEN MECHANISMS OF INJURY – 2001**

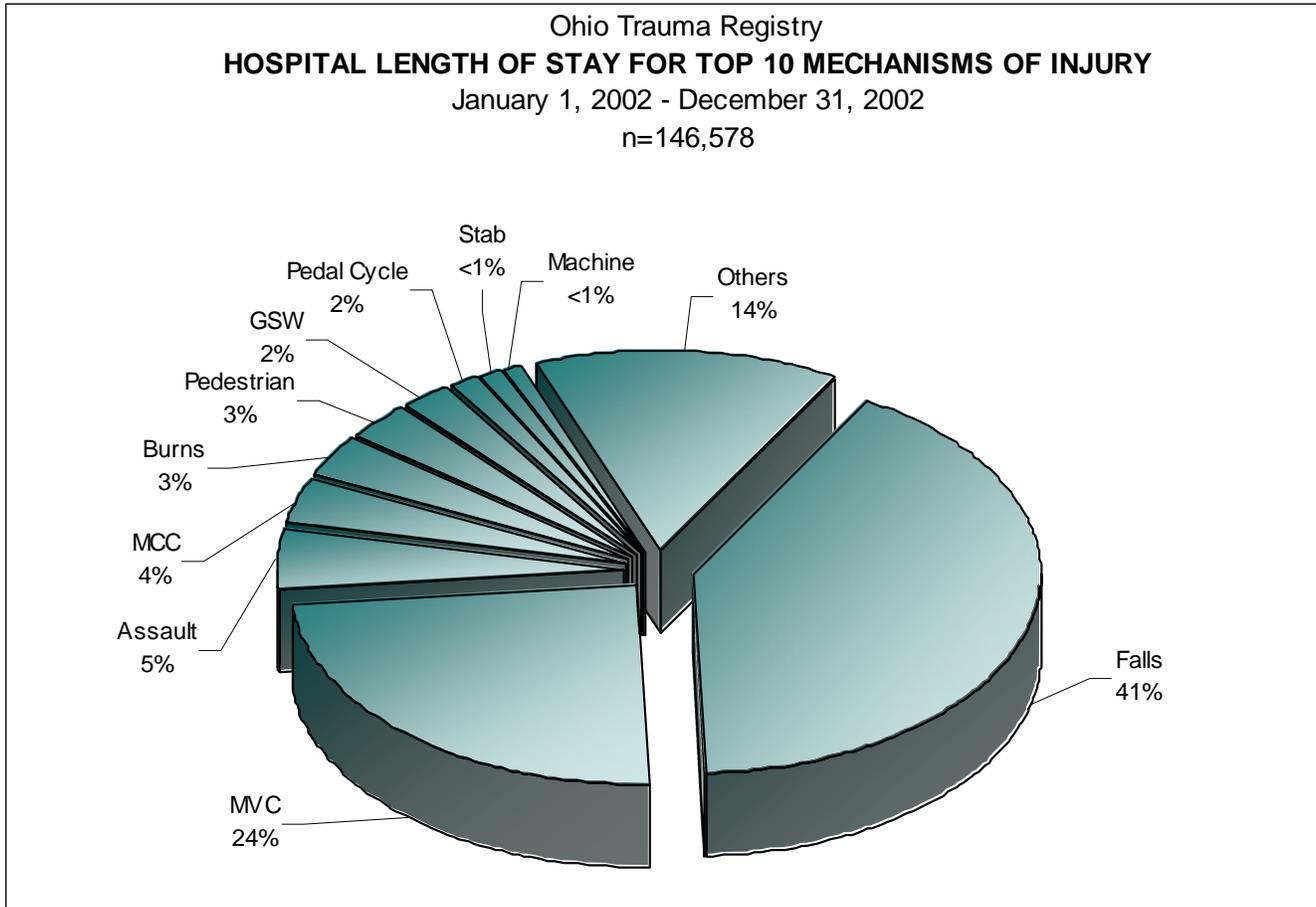


2001		
Mechanism of Injury (MOI)	Hospital LOS (days)	% of Hospital LOS
Falls	54,225	44.7%
MVC	28,468	23.5%
Assault	5,022	4.1%
Burns	4,092	3.4%
Pedestrian	3,612	3.0%
GSW	3,610	3.0%
MCC	2,705	2.2%
Pedal Cycle	1,558	1.3%
Stab	1,060	0.9%
Machine	1,050	0.9%
Others	15,838	13.1%
<b>Total</b>	<b>121,240</b>	<b>100.0%</b>

**LOS by Mechanism of Injury (MOI)**

The total length of stay (LOS) in the hospital can be used as a general gauge of the utilization of healthcare resources for an injury. 121,240 total hospital days were reported for patients in 2001. Falls account for 44.7% of hospital days reported to the OTR. 23.5% of the hospital days reported are the result of a motor vehicle crash. 8% of the length of stay in hospital is attributable to assaults, gunshot wounds and stabbings. 15,383 hospital days were coded with a variety of other MOI codes, aggregated here as "Other".

**HOSPITAL LENGTH OF STAY FOR TOP TEN MECHANISMS OF INJURY – 2002**

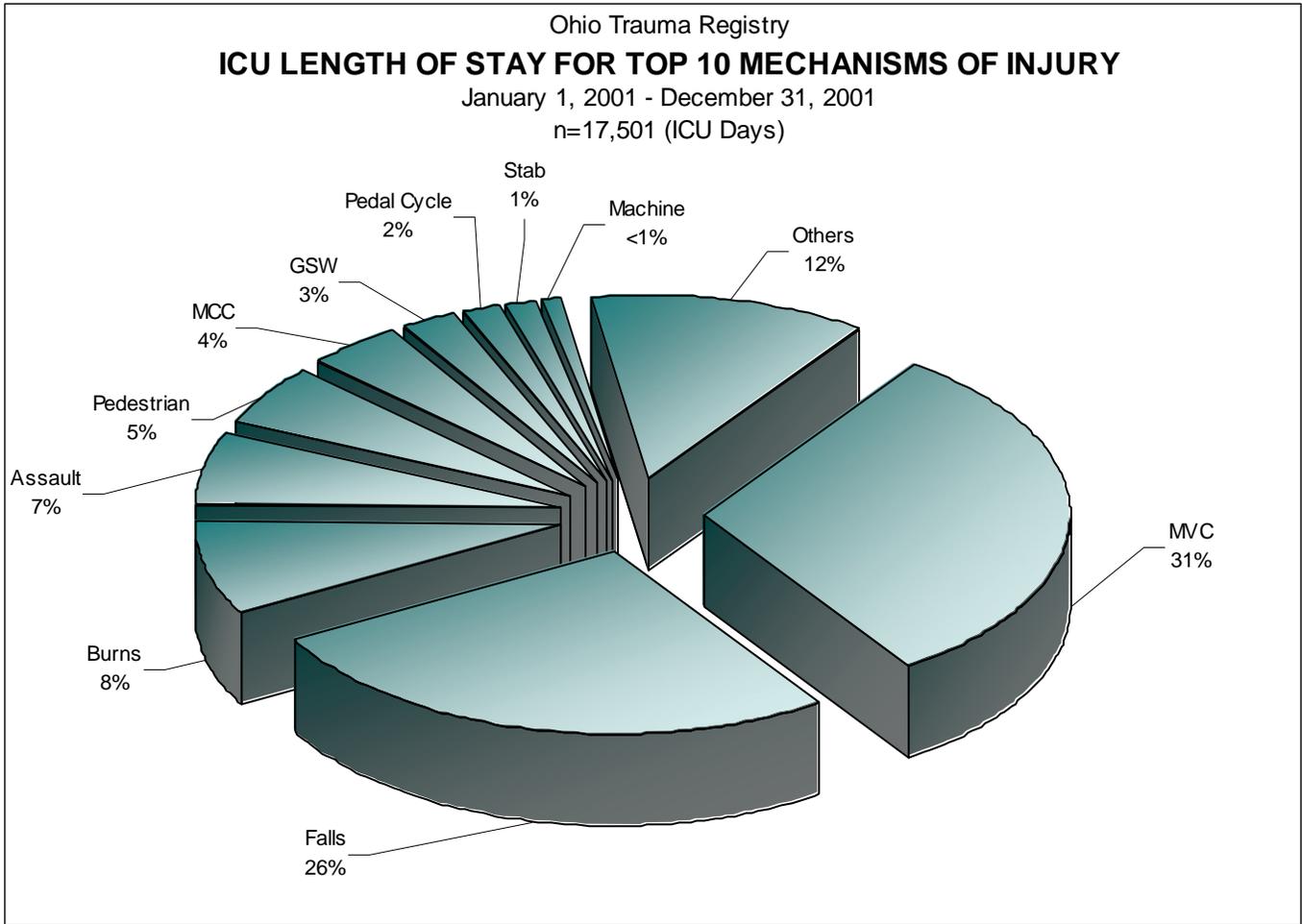


2002		
Mechanism of Injury	Hospital LOS (days)	% of Hospital LOS
Falls	60,209	41.1%
MVC	35,048	23.9%
Assault	7,306	5.0%
MCC	5,237	3.6%
Burns	4,855	3.3%
Pedestrian	4,747	3.2%
GSW	3,497	2.4%
Pedal Cycle	2,260	1.5%
Stab	1,354	0.9%
Machine	1,320	0.9%
Others	20,745	14.2%
<b>Total</b>	<b>146,578</b>	<b>100.0%</b>

**LOS by Mechanism of Injury (MOI)**

The total length of stay (LOS) in the hospital can be used as a general gauge of the utilization of healthcare resources for an injury. A total of 146,578 hospital days were reported for patients in 2002. Falls account for 41.1% of hospital days reported to the OTR. 23.9% of injury hospital days reported are the result of a motor vehicle crash. 8.3% are attributable to assaults, gunshot wounds and stabbings. 20,745 hospital days were coded with a variety of other MOI codes, aggregated here as "Other".

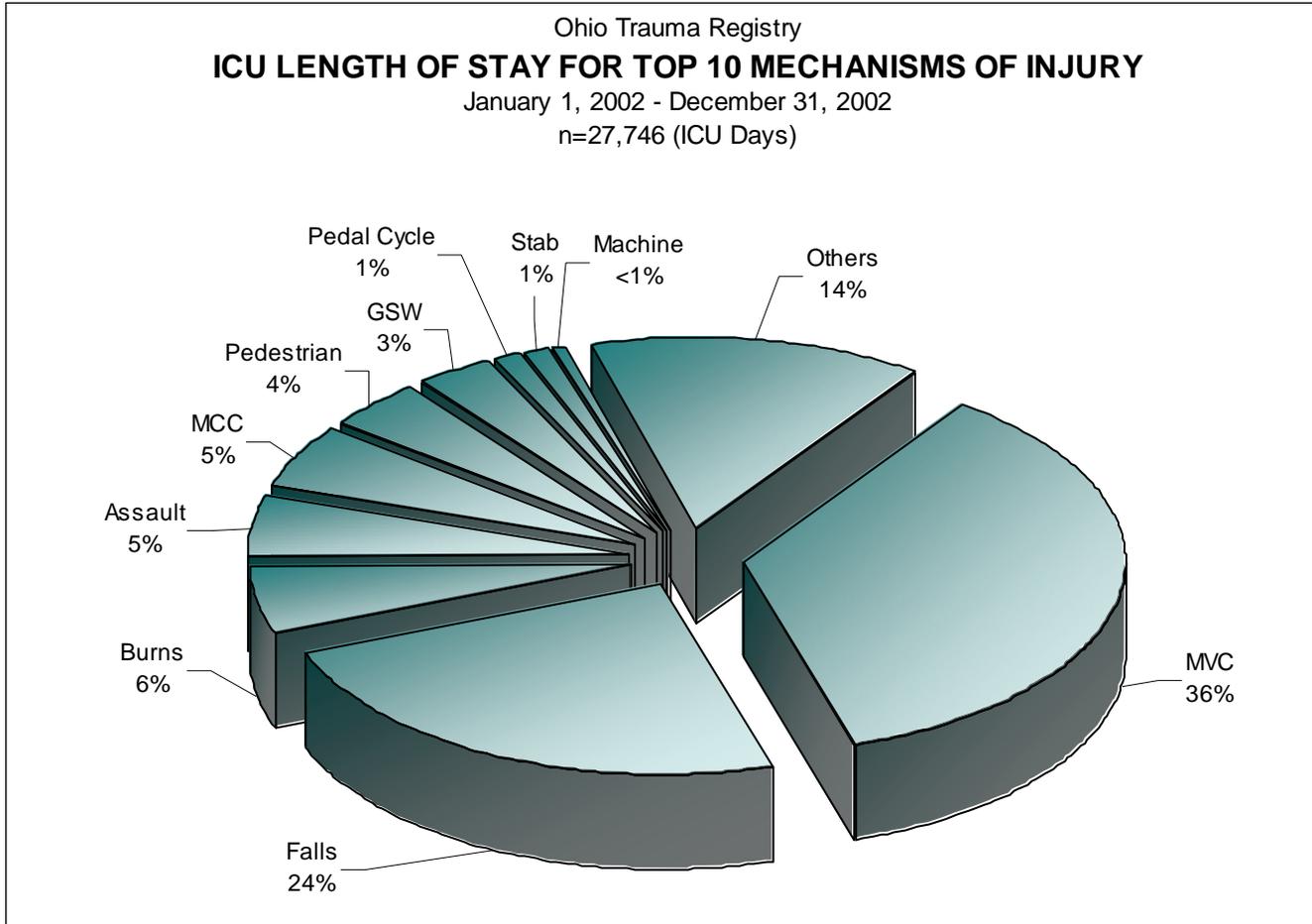
**ICU LENGTH OF STAY FOR TOP TEN MECHANISMS OF INJURY – 2001**



**Intensive Care Unit (ICU) Length of Stay by Mechanism of Injury (MOI)**

Length of stay (LOS) in the intensive care unit (ICU), like overall hospital LOS, can be used as a rough gauge of the utilization of healthcare resources and severity of an injury. Patients requiring a stay in the ICU are, generally speaking, more severely injured than those who do not require ICU care. A total of 17,501 ICU days were reported in 2001. Injuries sustained in a motor vehicle crash account for the largest percentage, with 31% of the LOS in the ICU. *Falls*, although they account for 44.7% of the overall hospital length of stay, have a much lower percent of the ICU days, 26.2%. *Burn* injuries resulted in 8.4% of the ICU length of stay. *Assaults*, *GSW* and *Stab* injuries account for 10.1% of ICU length of stay. This data includes all records submitted, and includes patients that were transferred and admitted to more than one hospital for the same injury event. 2,155 ICU days were coded with a variety of other MOI codes, aggregated here as “Other”.

2001		
Mechanism of Injury (MOI)	ICU LOS (days)	% of ICU LOS
MVC	5,417	31.0%
Falls	4,582	26.2%
Burns	1,470	8.4%
Assault	1,137	6.5%
Pedestrian	901	5.1%
MCC	722	4.1%
GSW	447	2.6%
Pedal Cycle	319	1.8%
Stab	203	1.2%
Machine	148	0.8%
Others	2,155	12.3%
<b>Total</b>	<b>17,501</b>	<b>100.0%</b>

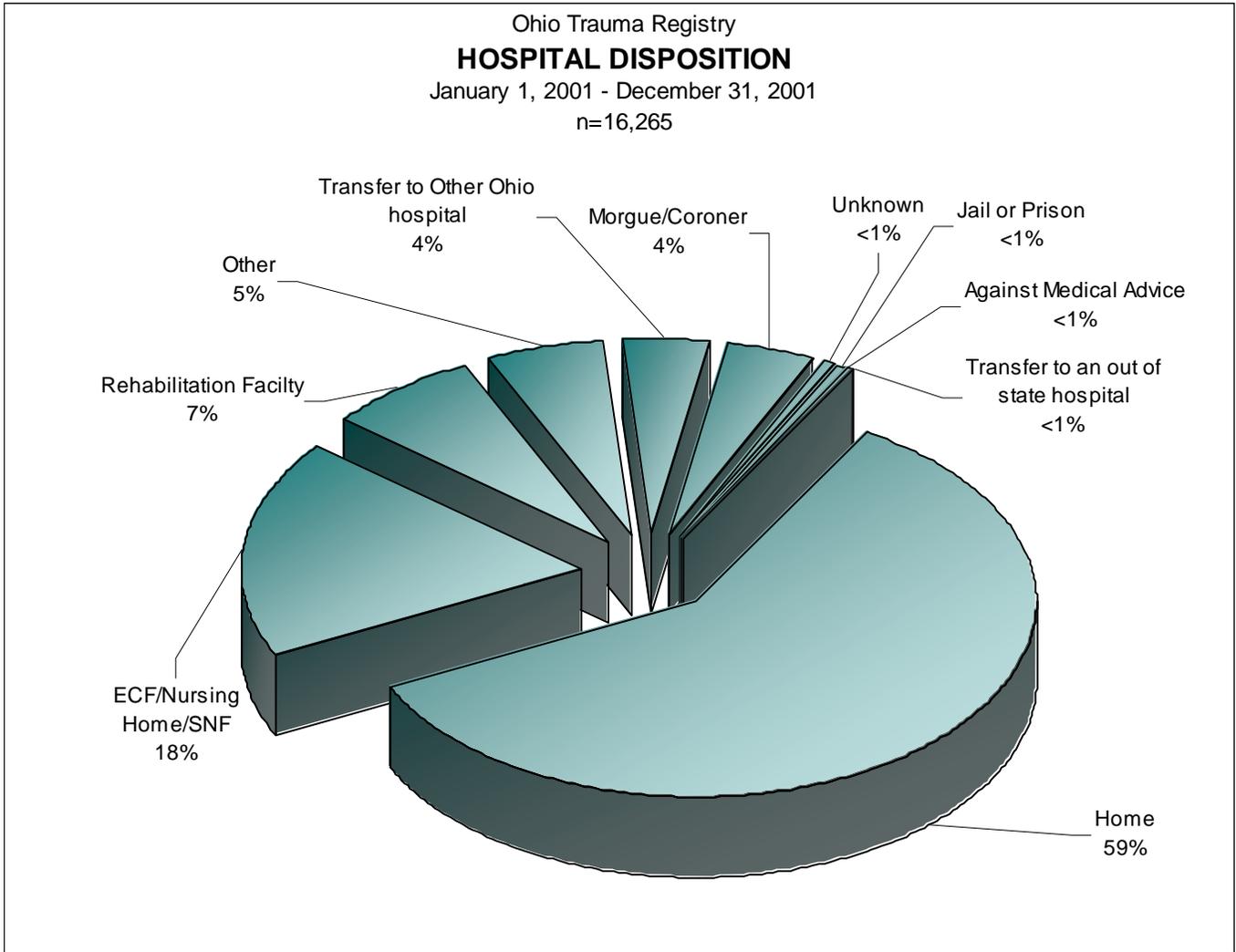
**ICU LENGTH OF STAY FOR TOP TEN MECHANISMS OF INJURY – 2002****Intensive Care Unit (ICU) Length of Stay by Mechanism of Injury (MOI)**

Length of stay (LOS) in the intensive care unit (ICU), like overall hospital LOS, can be used as a rough gauge of the utilization of healthcare resources and severity of an injury. Patients requiring a stay in the ICU are, generally speaking, more severely injured than those who do not require ICU care. A total of 27,746 ICU days were reported in 2002. Injuries sustained in a motor vehicle crash account for the largest percentage, 35.7%, of the LOS in the ICU. *Falls*, although they account for 41.1% of the overall hospital length of stay, have a much lower percent of the ICU days, 23.7%. *Burn* injuries resulted in 5.6% of the ICU length of stay. *Assaults*, *GSW* and *Stab* injuries account for 9.7% of ICU length of stay. This data includes all records submitted, and includes patients that were transferred and admitted to more than one hospital for the same injury event. 3,931 ICU days were coded with a variety of other MOI codes, aggregated here as "Other".

2002		
Mechanism of Injury (MOI)	ICU LOS (days)	% of Patients
MVC	9,892	35.7%
Falls	6,573	23.7%
Burns	1,543	5.6%
Assault	1,510	5.4%
MCC	1,445	5.2%
Pedestrian	1,189	4.3%
GSW	925	3.3%
Pedal Cycle	279	1.0%
Stab	269	1.0%
Machine	190	0.7%
Others	3,931	14.2%
<b>Total</b>	<b>27,746</b>	<b>100.0%</b>

3,931 ICU days were coded with a MOI of other.

**HOSPITAL DISPOSITION – 2001**

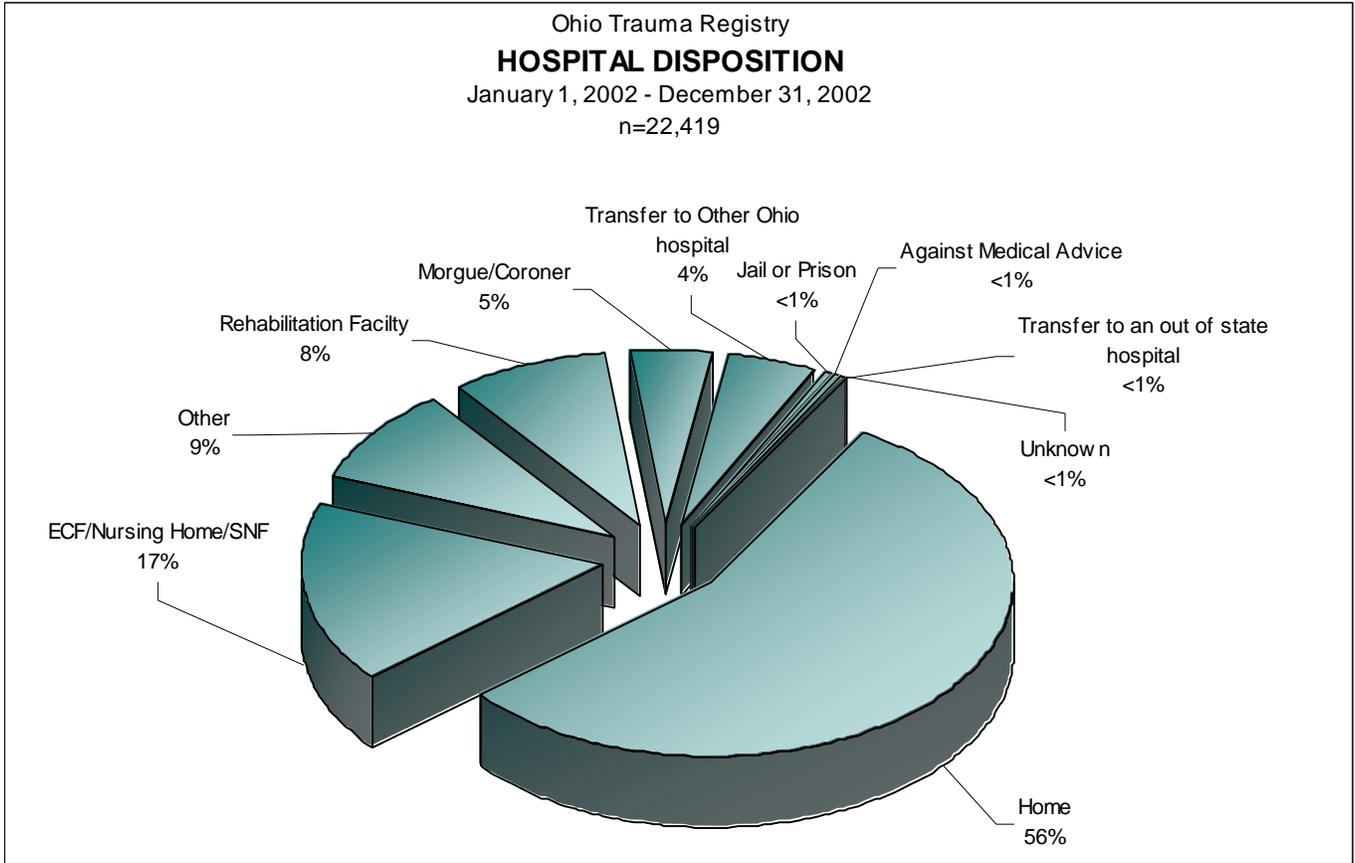


**Hospital Disposition**

Disposition of the patient upon discharge can be a very rough measure of the patient's functional status. This reflects hospital disposition from the first hospital that treats the patient; 59.3% of patients are discharged home, 18.1% are discharged to an extended care facility or nursing home. 7.4% are sent to a rehabilitation facility, while 4.2% are sent to another acute care hospital following discharge. Patients categorized as discharged to "Other" is unusually high. This code may have been misused for cases where the disposition of the patient was not clearly indicated in the medical record. In the 2003 data dictionary, use of "Other" is more clearly defined.

2001		
Disposition	# of Patients	% of Patients
Home	9,647	59.3%
Extended Care Facility/Nursing Home/Skilled Nursing Facility	2,951	18.1%
Rehabilitation Facility	1,197	7.4%
Other	882	5.4%
Transfer to Other Ohio hospital	686	4.2%
Morgue/County Coroner/Funeral Home	662	4.1%
Unknown	103	0.6%
Jail or Prison	77	0.5%
Against Medical Advice	39	0.2%
Transfer to an out of state hospital	21	0.1%
<b>Total</b>	<b>16,265</b>	<b>100%</b>

**HOSPITAL DISPOSITION – 2002**

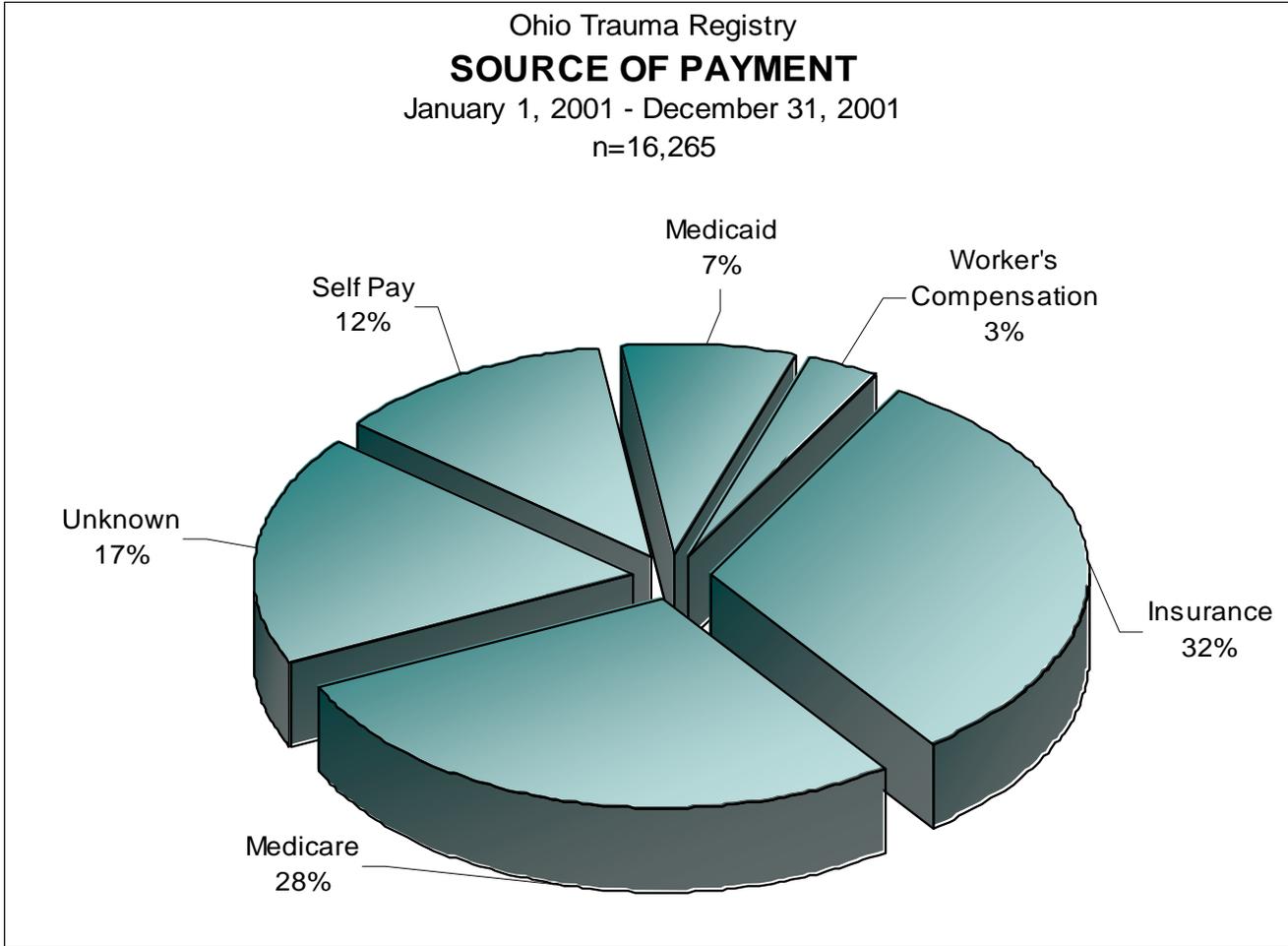


**Hospital Disposition**

Disposition of the patient upon discharge can be a very rough measure of the patient's functional status. This reflects hospital disposition from the first hospital that treats the patient. 55.6% of patients are discharged home; 17% are discharged to an extended care facility or nursing home. 8.7% are sent to a rehabilitation facility, an increase over 2001 reported data. The percent of patients sent to another acute care hospital following discharge remains essentially unchanged from 2001 at 4.5 percent. Patients categorized as discharged to "Other" is unusually high. This code may have been misused for cases where the disposition of the patient was not clearly indicated in the medical record. In the 2003 data dictionary, use of "Other" is more clearly defined.

2002		
Disposition	# of Patients	% of Patients
Home	12,463	55.6%
Extended Care Facility/Nursing Home/Skilled Nursing Facility	3,817	17.0%
Other	1,954	8.7%
Rehabilitation Facility	1,851	8.3%
Morgue/County Coroner/Funeral Home	1,057	4.7%
Transfer to Other Ohio hospital	1,007	4.5%
Jail or Prison	132	0.6%
Against Medical Advice	77	0.3%
Unknown	41	0.2%
Transfer to an out of state hospital	20	0.1%
<b>Total</b>	<b>22,419</b>	<b>100.0%</b>

**SOURCE OF PAYMENT – 2001**

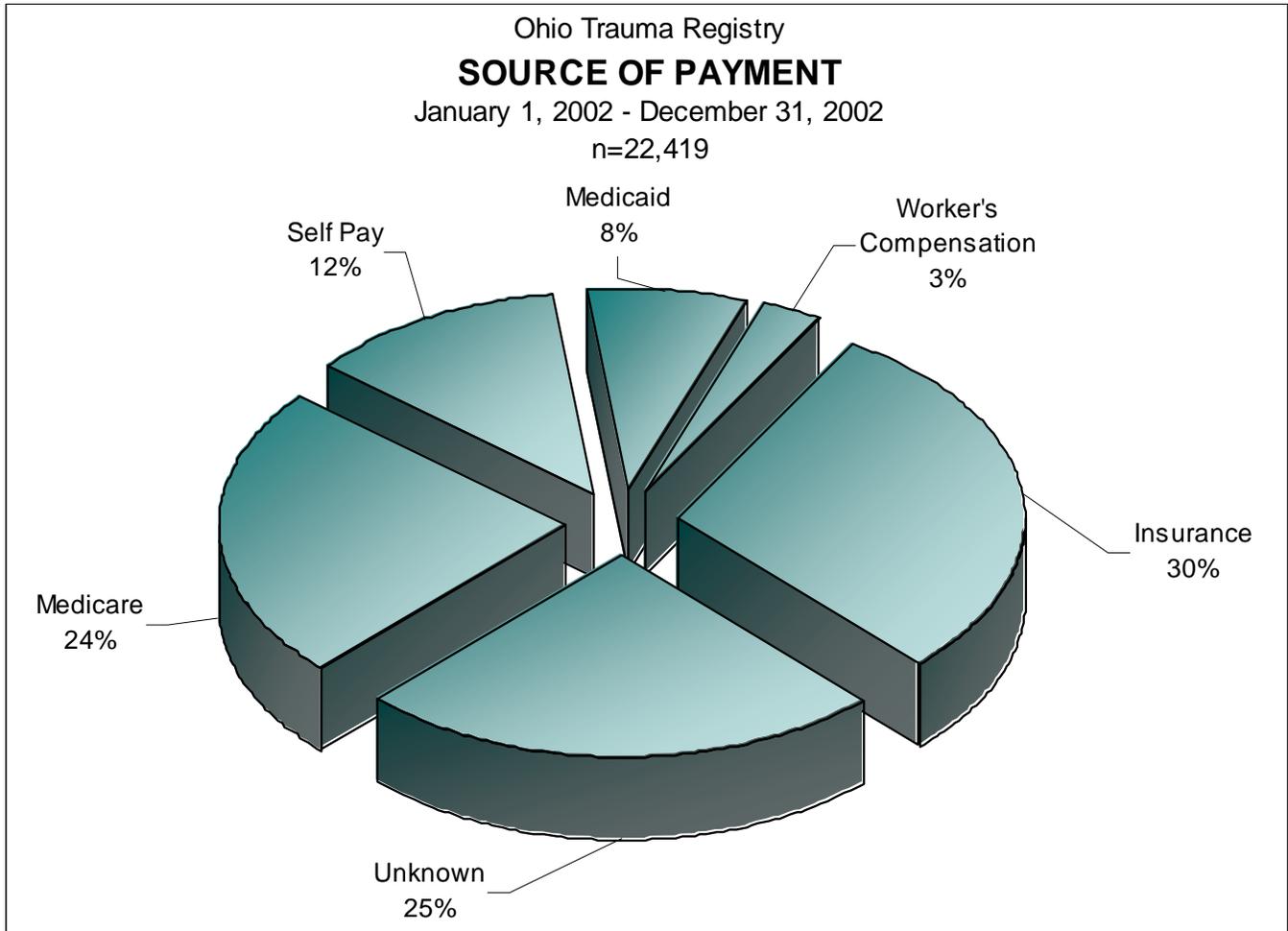


2001		
Payment Source	# of Patients	% of Patients
Insurance	5,142	31.6%
Medicare	4,577	28.1%
Unknown	2,873	17.7%
Self Pay	1,955	12.0%
Medicaid	1,203	7.4%
Worker's Compensation	515	3.2%
<b>Total</b>	<b>16,265</b>	<b>100.0%</b>

**Source of Payment**

*Source of Payment* is reported as the primary source of payment documented during the patient's hospitalization. It can give a rough estimate of how trauma care is reimbursed, but it does not reflect the final source of revenue to the hospital, as this is sometimes not known for many months post-discharge. 31.6% of the records reported to the OTR had commercial insurance coverage. 38.7% of the hospitals expected payment from Medicare, Medicaid or Worker's Compensation, with the vast majority of these reported as Medicare. The large percentage reported as "Unknown", is unacceptable. Revisions to the 2003 OTR data dictionary will not allow for reporting of payment source as "Unknown".

**SOURCE OF PAYMENT – 2002**



2002		
Payment Source	# of Patients	% of Patients
Insurance	6,604	29.5%
Unknown	5,549	24.8%
Medicare	5,309	23.7%
Self Pay	2,665	11.9%
Medicaid	1,693	7.6%
Worker's Compensation	599	2.7%
<b>Total</b>	<b>22,419</b>	<b>100.0%</b>

**Source of Payment**

*Source of Payment* is reported as the primary source of payment documented during the patient's hospitalization. It can give a rough estimate of how trauma care is reimbursed, but it does not reflect the final source of revenue to the hospital, as this is sometimes not known for many months post-discharge. 29.5% of the patients reported to the OTR had commercial insurance coverage. 34% of the hospitals expected payment from Medicare, Medicaid or Worker's Compensation, with the vast majority of these reported as Medicare. The large percentage reported as "Unknown", is unacceptable. Revisions to the 2003 OTR data dictionary will not allow for reporting of payment source as "Unknown".

## APPENDIX A: Inclusion Criteria

### INCLUSION CRITERIA

Patient's first or initial admission for at least 48 hours or transfer into the hospital for at least one injury ICD-9 diagnosis code in the range of 800-959.9 including <sup>1</sup>burns, hypothermia, smoke inhalation, hanging, drowning, abuse, DOAs, patients that die after receiving any evaluation or treatment while on hospital premises, and patients who transfer out of the hospital.

Excluding <sup>2</sup>late effects of injury, <sup>3</sup>blisters, contusions, abrasions, insect bites, <sup>4</sup>foreign bodies, <sup>5</sup>isolated hip fracture, and DOAs that are brought by funeral homes to be pronounced dead.

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<sup>1</sup> ICD-9-CM	991.0 – 991.6	Frostbite, hypothermia and external effects of cold
	994.1 – 994.8	Hanging, drowning, electrocution and abuse
	987.9	Smoke inhalation
<sup>2</sup> ICD-9-CM	905 – 909	Late effects of injury
<sup>3</sup> ICD-9-CM	910 – 924	Blisters, contusions, abrasions and insect bites
<sup>4</sup> ICD-9-CM	930 – 939	Foreign bodies
<sup>5</sup> ICD-9-CM	820 – 820.9	Isolated hip fractures

Defined by consensus conference 01/31/97 and  
 Approved by Trauma Subcommittee of Ohio EMS Board 05/19/98  
 Revised by the State of Ohio Board of Emergency Medical Services 1/99

Ohio Trauma Registry Annual Report 2001 & 2002

The Ohio Trauma Registry collects data from all hospitals in Ohio using the following inclusion/exclusion criteria.

Ohio Trauma Registry Patient Inclusion Criteria

1. Patient's first or initial admission for at least 48 hours, and who meet one of the following inclusion criteria; OR
2. Patients who transfer into or out of any hospital, regardless of their length of stay, and who meet one of the following inclusion; OR
3. Patients that arrive dead on arrival (DOA) and who meet one of the following inclusion criteria; OR
4. Patients that die after receiving any evaluation or treatment while on hospital premises, and who meet one of the following inclusion criteria:

Inclusion Criteria

ICD-9-CM Diagnosis Codes on discharge from acute care hospital			
ICD-9-CM Diagnosis Codes		ICD-9-CM Diagnoses Descriptions	
800.00 – 819.1		Fractures	
821.00 – 904.9		Fractures, dislocations/sprains, intracranial injury, internal injury of thorax, abdomen and pelvis, open wounds, injury to blood vessels	
911.0, 911.1, 912.0, 912.1		Abrasions/friction burns to trunk, shoulder and upper arm	
916.0, 916.1, 919.0, 919.1		Abrasions / friction burns hip, thigh, leg, ankle, other or multiple sites	
920 – 929.9		Contusions and crush injury	
940.0 – 959.9		Burns, injury to nerves and spinal cord, traumatic complications and unspecified injury	
987.9		Smoke inhalation	
991.0 – 991.6		Frostbite, hypothermia and external effects of cold	
994.0, 994.1, 994.7, 994.8		Asphyxiation, strangulation, drowning, and electrocution	
995.50 – 995.59		Child maltreatment and abuse	
***OR***			
ICD-9-CM Diagnoses		AND WITH ANY OF THE FOLLOWING External Cause Codes (E-Codes)	E-CODE
348.4	Uncal herniation		
348.5	Cerebral Edema		E800 – E848.8
348.8	Pneumocephalus		E878 – E905.0
372.72	Subconjunctival hemorrhage		E906.0 – E928.8
518.5	Traumatic ARDS		E950.0 – E998.9
784.7	Epistaxis		
Codes separated by a hyphen indicate a range of codes including both codes AND all codes in between. Example 800.0 – 801.5 Codes separated by a comma indicate a single code. Example 901.1, 901.2, 901.8			

ICD-9-CM Diagnoses Codes EXCLUDED	
820.0 – 820.9	Isolated hip fracture
905 – 909	Late effects of injury
910.0 – 910.9, 911.2 – 911.7, 912.2 - 912.9, 913.0 - 913.9, 914.0 - 914.9, 915.0 - 915.9, 916.2 - 916.9, 917.0 - 917.9, 918.0 - 918.9, 919.2 - 919.9	Superficial Abrasions, blisters, insect bites
930 – 939	Foreign bodies
External Cause Codes EXCLUDED	
E849 – E849.9	Place of occurrence
E850 – E869.9	Poisonings
E870 – E879.9	Misadventures during surgical and medical care
E905.1 – E905.9	Venomous animals and plants (except snakes)
E929 – E929.9	Late effects of Accidental Injury
E930 - E949	Drugs, medicinal and biological substances causing adverse effects in therapeutic use

## APPENDIX B E-Code Groupings

### Matrix table with assignment of E codes for injury mortality data

MMWR August 29, 1997

Manner/intent	Unintentional	Mechanism/cause			Undetermined	Other*
		Suicide	Homicide			
Cut/pierce	E920.0–.9	E956	E966	E986	E974	
Drowning/submersion	E830.0–.9, E832.0–.9, E910.0–.9	E954	E964	E984	—	
Fall	E880.0–E886.9, E888	E957.0–.9	E968.1	E987.0–.9	—	
Fire/burn	E890.0–E899, E924.0–.9	E958.1,.2,.7	E961; E968.0,.3	E988.1,.2,.7	—	
Fire/flame	E890.0–E899	E958.1	E968.0	E988.1	—	
Hot object/substance	E924.0–.9	E958 .2,.7	E961, E968.3	E988.2,.7	—	
Firearm	E922.0–.9	E955.0–.4	E965.0–.4	E985.0–.4	E970	
Machinery	E919 .0–.9	—	—	—	—	
MV traffic†	E810–E819 (.0–.9§)	E958.5	—	E988.5	—	
Occupant	E810–E819 (.0,.1)	—	—	—	—	
Motorcyclist	E810–E819 (.2,.3)	—	—	—	—	
Pedal cyclist	E810–E819 (.6)	—	—	—	—	
Pedestrian	E810–E819 (.7)	—	—	—	—	
Unspecified	E810–E819 (.9)	—	—	—	—	
Pedal cyclist, other	E800–E807 (.3); E820–E825 (.6); E826.1,.9; E827–E829 (.1)	—	—	—	—	
Pedestrian, other	E800–E807 (.2), E820–E825 (.7), E826–E829 (.0)	—	—	—	—	
Transport, other	E800–E807 (.0,.1,.8,.9), E820–E825 (.0–.5,.8,.9), E826.2–.8, E827–E829 (.2–.9), 831.0–.9, E833.0–E845.9	E958.6	—	E988.6	—	
Natural/environmental	E900.0–E909, E928.0–.2	E958.3	—	E988.3	—	
Bites and stings	E905.0–.6,.9; E906.0–.4,.9	—	—	—	—	
Overexertion	E927	—	—	—	—	
Poisoning	E850.0–E869.9	E950.0–E952.9	E962.0–.9	E980.0–E982.9	E972	
Struck by, against	E916–E917.9	—	E960.0, E968.2	—	E973, E975	
Suffocation	E911–E913.9	E953.0–.9	E963	E983.0–.9	—	

## APPENDIX B — Continued

<u>Manner/intent</u>	<u>Mechanism/cause</u>				
	<u>Unintentional</u>	<u>Suicide</u>	<u>Homicide</u>	<u>Undetermined</u>	<u>Other*</u>
Other specified, Classifiable	E846–E848, E914–E915, E918, E921.0–.9, E923.0–.9, E925.0– .5	E955.5,.9; E958.0,.4	E960.1, E965.5–.9, E967.0–.9, E968.4	E985.5; E988.0,.4 E971, E978 E996	E990–E994, E926.9, E929.0– E997.0–.2
Other specified, not elsewhere classifiable	E928.8, E929.8	E958.8, E959	E968.8, E969	E988.8, E989	E977, E995, E997.8, E998, E999 E976, E997.9
Unspecified	E887, E928.9, E929.9	E958.9	E968.9	E988.9	
<b>All injury†</b>	<b>E800–E869, E880–E929</b>	<b>E950–E959</b>	<b>E960–E969</b>	<b>E980–E989</b>	<b>E970–E978, E990–E999</b>
Adverse effects	—	—	—	—	E870–E879, E930.0–E949.9
Medical care**	—	—	—	—	E870–E879
Drugs††	—	—	—	—	E930.0–E949.9
<b>All external causes</b>	—	—	—	—	<b>E800–E999</b>

NOTE: “—” represents categories in which no E codes are assigned.

\*Includes legal intervention (E970–E978) and operations of war (E990–E999).

†Three fourth-digit codes (.4—“occupant of streetcar,” .5—“rider of animal,” and .8—“other specified person”) are not separated because of the minimal number of deaths in these categories. However, because they are included in the overall “Motor Vehicle Traffic” category, the sum of these categories can be derived by subtraction.

§This parenthetical notation implies that the decimal should be applied to each individual three-digit E code in the grouping.

¶Adverse effects have been excluded from the “all injury” category but are included in the “all external causes” category.

\*\*Includes a) adverse effects to patients during surgical and medical care and b) surgical and medical procedures as the cause of abnormal reactions or later complications without mention of negative events at the time of procedure.

†† Includes drugs and medicinal and biological substances causing adverse effects when used therapeutically.

APPENDIX C

ICD-9 CM Diagnosis Code Groupings [http://www.cdc.gov/nchs/data/ice/final\\_matrix\\_post\\_ice.pdf](http://www.cdc.gov/nchs/data/ice/final_matrix_post_ice.pdf)

The Barell Injury Diagnosis Matrix, Classification by Body Region and Nature of the Injury

based on 5 digit icd-9 CM codes

ICD-9-CM codes	FRACTURE		DISLOCATION		SPRAINS & STRAINS		INTERNAL		OPEN WOUND		AMPUTATIONS		BLOOD VESSELS		CONTUSION / SUPERFICIAL		CRUSH		BURNS		NERVES		UNSPECIFIED		
	800-820	830-839	840-848	850-854,860-869	870-884, 890-894	885-887, 895-897	900-904	910-924	925-929	940-949	950-951, 953-955	960-969	970-979	980-989	990-994	995-999	990-994	995-999	990-994	995-999	990-994	995-999	990-994	995-999	
<b>Head and neck</b>																									
1 <b>Type 1 TBI</b>	800,801,803,804(.1-.4, 6-9), (.03-.05, 53-55), 850(.2-4), 851-854, 950(.1-3), 956-55	800,801,803,804(.1-4, 6-9), 800,801,803,804(.03-.05, 53-55)	/	/	/	/	950(.2-4), 851-854, 956-55	/	/	/	/	/	/	/	/	/	/	/	/	/	/	950.1-3	/	/	
2 <b>Type 2 TBI</b>	800,801,803,804(.00, .02, .06, .09), (.50, .52, .56, .59), 950(.0, 1, 5, 9)	800,801,803,804(.00, .02, .06, .09), 800,801,803,804(.50, .52, .56, .59)	/	/	/	/	850(.0, 1, 5, 9)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
3 <b>Type 3 TBI</b>	800,801,803,804(.01, .51)	800,801,803,804(.01, .51)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
4 <b>Other Head</b>	873(.0-1, 8-9), 941 x8, 951, 959.01	/	/	/	/	/	/	/	873.0-1, 8-9	/	/	/	/	/	/	/	/	/	941x8	951	959.01*	/	/		
5 <b>Face</b>	802, 830, 848.0-1, 872, 873.2-7, 941(x1, x3-x5, x7)	802	830	848.0-1	/	/	/	/	872, 873.2-7	/	/	/	/	/	/	/	/	/	941.x1, x3-x5, x7	/	/	/	/		
6 <b>Eye</b>	870-871, 918, 921, 940, 941.x2, 950(.0, 9)	/	/	/	/	/	/	/	870-871	/	/	/	/	/	918, 921	/	/	/	940, 941.x2	950(.0, 9)	/	/	/		
7 <b>Neck</b>	807.5-8, 848.2, 874, 925.2, 941.x8, 953.0, 954.0	807.5-8	/	848.2	/	/	/	/	874	/	/	/	/	/	/	925.2	/	941.x8	953.0, 954.0	/	/	/	/		
8 <b>Head, Face and Neck Unspecified</b>	800, 910, 920, 925.1, 941.x0, x9, 947.0, 957.0, 959.09	/	/	/	/	/	/	/	/	/	/	/	900	910, 920	925.1	/	941.x0, x9, 947.0	957.0	959.09	/	/	/	/		
<b>Spinal Cord (SCI)</b>																									
9 <b>Cervical SCI</b>	806(.0-1), 952.0	806(.0-1)	/	/	/	/	952.0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
10 <b>Thoracic/Dorsal SCI</b>	806(.2-3), 952.1	806.2-3	/	/	/	/	952.1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
11 <b>Lumbar SCI</b>	806(.4-5), 952.2	806.4-5	/	/	/	/	952.2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
12 <b>Sacrum Coccyx SCI</b>	806(.6-7), 952(.3-4)	806.6-7	/	/	/	/	952.3-4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
13 <b>Spine- Neck Unspecified SCI</b>	806(.8-9), 952(.8-9)	806.8-9	/	/	/	/	952.8-9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
14 <b>Cervical VCI</b>	805(.0-1), 839(.0-1), 847.0	805.0-1	839.0-1	847.0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
15 <b>Thoracic/Dorsal VCI</b>	805(.2-3), 839(.21, 31), 847.1	805.2-3	839.21, 31	847.1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
16 <b>Lumbar VCI</b>	805(.4-5), 839(.20, 30), 847.2	805.4-5	839.20, 30	847.2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
17 <b>Sacrum Coccyx VCI</b>	805(.6-7), 839(.41-42), 839(.51-52), 847.3-4	805.6-7	839(.41-42, 51-52)	847.3-4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
18 <b>Spine- Neck Unspecified VCI</b>	805(.8-9), 839(.40, 49), 839(.50, 59)	805.8-9	839(.40, 49, 50, 59)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
<b>Torso</b>																									
19 <b>Chest (Thorax)</b>	807(.0-4), 839(.61, 71), 848(.3-4), 860-862, 875, 879(.0-1), 901, 922(.0-1, 33), 929.19, 942.x1-x2, 953.1	807.0-4	839.61, 71	848.3-4	860-862, 875, 879(.0-1), 901, 922(.0-1, 33), 929.19, 942.x1-x2, 953.1	/	/	863-866, 868	879.2-5	/	902.0-4	922.2	/	942.x1-x2, 947.3	953.2, 953.5	/	/	/	/	/	/	/	/	/	
20 <b>Abdomen</b>	803-806, 809, 879(.2-5), 902(.0-4), 922.2, 942.x3, 947.3, 953(.2, 5)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
21 <b>Pelvis</b>	808, 835(.09, 79), 846, 848.5, 867, 877-879	808	835.09, 79	846, 848.5	867, 877-879	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
22 <b>Upper extremity</b>	902(.5, 81-82), 922.4, 928(.0, 12), 942.x5, 947.4, 953.3	/	/	/	/	/	/	/	/	902.5, 81-82	922.4	/	942.x5, 947.4	953.3	/	/	/	/	/	/	/	/	/		
23 <b>Trunk</b>	809, 870(.6-7), 911, 922(.8-9)	809	/	/	/	/	/	/	879.6-7	/	/	/	/	911, 922.8-9	922.8-9	/	942.x0, 942.x9	954.1, 8-9	959.1	/	/	/	/		
24 <b>Back and Backneck</b>	847.9, 870, 922(.31-32), 928.11, 942.x4	/	/	847.9	/	/	/	/	/	/	/	/	/	922.31-32, 928.11	/	942.x4	/	/	/	/	/	/	/		
<b>Upper extremities</b>																									
25 <b>Shoulder &amp; Upper arm</b>	810-812, 831, 840, 880, 887(.2-3), 912, 923.0, 927.0, 943(x3-x6), 959.2	810-812	831	840	/	/	/	/	880	887.2-3	/	/	/	912, 923.0	927.0	/	943.x3-x6	959.2	/	/	/	/	/		
26 <b>Forearm &amp; elbow</b>	813, 832, 841, 881(x0-x1), 887(.0-1), 923.1, 927.1, 943(x1-x2)	813	832	841	/	/	/	/	881.x0-x1	887.0-1	/	/	923.1	927.1	/	943.x1-x2	/	/	/	/	/	/	/		
27 <b>Wrist, hand &amp; fingers</b>	814-817, 833-834, 842, 881.x2, 882, 883, 885-886, 914-915, 923(.2-3), 927(.2-3), 944, 959(.4-5)	814-817	833, 834	842	/	/	/	/	881.x2, 882, 883	/	/	885-886	/	914-915, 923.2-3	927.2-3	/	944	/	959.4-5	/	/	/	/		
28 <b>Other &amp; unspecified</b>	818, 884, 887(.4-7), 903, 913, 923(.8-9), 927(.8-9), 943(x0-x9), 953.4, 955, 959.3	818	/	/	/	/	/	/	884	887.4-7	903	913, 923.8-9	927.8-9	943.x0, x9	953.4, 955	959.3	/	/	/	/	/	/	/		
<b>Lower extremities</b>																									
29 <b>Hip</b>	820, 835, 843, 924.D1, 928.D1	820	835	843	/	/	/	/	/	/	/	/	924.D1, 928.D1	/	/	/	/	/	/	/	/	/	/		
30 <b>Upper leg &amp; thigh</b>	821, 907(.2-3), 924.D0, 928.D0, 945.x8	821	/	/	/	/	/	/	907.2-3	/	/	/	924.D0, 928.D0	945.x8	/	/	/	/	/	/	/	/	/		
31 <b>Knee</b>	822, 836, 844.0-3, 924.11, 928.11, 945.x5	822	836	844.0-3	/	/	/	/	/	/	/	/	924.11, 928.11	945.x5	/	/	/	/	/	/	/	/	/		
32 <b>Lower leg &amp; ankle</b>	823-824, 837, 845.0, 907(.0, 1), 924(.10, 21), 928(.10, 21), 945(x3-x4)	823-824	837	845.0	/	/	/	/	907.0-1	/	/	/	924.10, 21, 928.10, 21	945.x3-x4	/	/	/	/	/	/	/	/	/		
33 <b>Foot &amp; toes</b>	825-826, 839, 845.1, 902-893, 895-896, 917, 924(.3, 20), 928(.3, 20), 945(x1-x2)	825-826	839	845.1	/	/	/	/	902-893	895-896	/	917, 924.3, 20	928.3, 20	945.x1-x2	/	/	/	/	/	/	/	/	/		
34 <b>Other &amp; unspecified</b>	827, 844(.8-9), 890-891, 894, 907(.4-7), 904(.0-8), 916, 924(.4-5), 928(.8-9), 945(x0-x9), 959.6-7	827	/	844.8-9	/	/	/	/	890-891, 894	907.4-7	904.0-8	916, 924.4-5	928.8, 9	945.x0-x9	959.6-7	/	/	/	959.6-7	/	/	/	/		
35 <b>Other multiple</b>	819, 828, 902(.87, 89), 947(.1-2), 953.8, 956	819, 828	/	/	/	/	/	/	/	/	902.87, 89	/	/	/	/	/	947.1-2	953.8, 956	/	/	/	/	/		
36 <b>Unspecified site</b>	829, 833(.8-9), 848(.8-9), 839, 879(.8-9), 902.9, 904.9, 919, 924(.8-9), 92	829	839.8-9	848.8-9	869	879(.8-9)	/	/	/	902.87, 89	902.9, 904.9	919, 924.8, 9	929	946, 947.8, 9	953.9, 957.1, 8, 9	959.8, 9	/	/	/	/	/	/	/		
37 <b>Systemic side &amp; site effects</b>	905-908, 909(.0, 1, 2, 4, 9), 930-939, 958, 960-994, 995.50-54, 59, 996(.80-85)	Foreign body (900-939), Early complications of trauma (958), Poisoning (960-969), Toxic Effects (980-989), Other and unspecified effects of external cause (990-994) Child and adult maltreatment (965.50-54, 59, 966.80-85) Late effects of injuries, poisonings, toxic effects and other external causes (905-909) excluding 909(3, 5)																							

**Special diagnosis codes for Trauma:** TBI1 Chest (807.4) Pneumothorax (950)  
 For purposes of classification, head injuries are labeled as **Type 1 TBI** if there is recorded evidence of an intracranial injury or a moderate or a prolonged loss of consciousness (LOC), Shaken Infant Syndrome (SIS), or injuries to the optic nerve pathways.  
**Type 2 TBI** includes injuries with no recorded evidence of intracranial injury, and LOC of less than one hour, or LOC of unknown duration, or unspecified level of consciousness. **Type 3 TBI** includes patients with no evidence of intracranial injury and no LOC.  
 \*Note from CDC: 959.01 (added to ICD-9-CM in 1997) is not intended to be assigned to TBI cases; however, in the USA it has been assigned incorrectly to a substantial proportion of cases previously coded 854.  
 The Matrix is available on the net at [www.cdc.gov/nchs/about/otherpublications/barellmatrix.htm](http://www.cdc.gov/nchs/about/otherpublications/barellmatrix.htm)

**APPENDIX D:  
MEMBERS OF THE STATE BOARD OF EMERGENCY MEDICAL SERVICES**

**David Fiffick, Chair**  
Private Ambulance Service  
Struthers, Ohio

**Mark Burgess, EMT-P**  
Fire Chief  
Ashland, Ohio

**Darla Cooper, EMT-P**  
Firefighter/EMT  
Waverly, Ohio

**William Cotton, M.D.**  
Pediatric Emergency Physician  
Gahanna, Ohio

**Jim Cress, EMT-P**  
EMS Instructor  
Bowling Green, Ohio

**Albert Gatka, EMT-P**  
Firefighter/Paramedic  
Parma, Ohio

**Jon Groner, M.D.**  
Trauma Medical Director  
Columbus, Ohio

**Kathy Haley, R.N., B.S.N.**  
Trauma Program Manager  
Worthington, Ohio

**Andrew Hawk, M.D.**  
Air Medical Service Medical Director  
Springboro, Ohio

**James Holcombe, EMT-B**  
EMT  
Pickerington, Ohio

**Timothy Jakacki**  
Non Trauma Center Hospital Administrator  
Fostoria, Ohio

**Carl Jordan, EMT-P**  
Firefighter/Paramedic  
Massillon, Ohio

**Charlene Mancuso, R.N.**  
Trauma Program Manager  
Cleveland, Ohio

**Mark Mankins, EMT-P**  
Firefighter/Paramedic  
Reynoldsburg, Ohio

**Mark Marchetta, R.N., EMT-P**  
Academics Coordinator, Paramedic Program  
Canton, Ohio

**Mark Resanovich, EMT-P**  
Firefighter/Paramedic  
Green, Ohio

**William Rogers, M.D.**  
Adult Emergency Physician  
Lebanon, Ohio

**Mary Tyler**  
Ohio Emergency Management Agency  
Columbus, Ohio

**Ray Walendzak, EMT-B**  
Fire Chief  
Orgeon, Ohio

**Carol Cunningham, M.D.**  
State EMS Medical Director  
Kirtland, Ohio

**Richard N. Rucker**  
Executive Director  
Columbus, Ohio

**APPENDIX D:**

**MEMBERS OF THE STATE TRAUMA COMMITTEE**

**Joseph Luria, M.D. - Chair**  
Pediatric Emergency Medicine  
Cincinnati, Ohio

**Nancie M. Bechtel, R.N., BSN, CEN, EMT-B**  
Emergency Nurse  
Columbus, Ohio

**Melody Campbell, R.N., MSN, CEN, CCRN**  
Trauma Program Manager  
Dayton, Ohio

**Guillermo Chacon, D.D.S.**  
Maxillo-facial Surgeon  
Columbus, Ohio

**John Crow, M.D.**  
Pediatric Trauma Surgeon  
Akron, Ohio

**William Crum**  
Trauma Victim Advocate  
Columbus, Ohio

**Dan Ellenberger, EMT-P**  
Fire Chief  
Hiram, Ohio

**William Emery, M.D., FACS, DABFE**  
Coroner  
Ashland, Ohio

**Gary Englehart, CHE**  
Non Trauma Center Hospital Representative  
Norwalk, Ohio

**Kathy Haley, R.N., BSN**  
Trauma Program Manager  
Columbus, Ohio

**Clarice Hall, R.N.**  
Clinical Nurse Manager  
Marietta, OH

**Lynn V. Horner**  
Non Trauma Center Hospital Representative  
Orrville, Ohio

**Jay Johannigman, M.D., FACS**  
Trauma Surgeon  
Cincinnati, Ohio

**Jason Kinley, EMT-P**  
Firefighter/Paramedic  
Xenia, Ohio

**Michael Mackan, M.D., FACEP**  
Adult Emergency Medicine  
Akron, Ohio

**Sidney Miller, M.D.**  
Burn Surgeon  
Dayton, Ohio

**Greg Nemunaitis, M.D.**  
Physical Medicine & Rehabilitation Physician  
Cleveland, Ohio

**Jennifer Piccione, R.N., BSN**  
Non Trauma Center Hospital Representative  
London, Ohio

**David Pohlman, EMT-P**  
Ambulance Service Operator  
Lima, Ohio

**Jane Riebe, BA, CSTR**  
Regional Trauma Registry Coordinator  
Toledo, Ohio

**Michael Shannon, M.D.**  
Neurosurgeon  
Zanesville, Ohio

**Anthony Stallion, M.D.**  
Trauma Surgeon with Administrative Responsibility  
Cleveland, Ohio

**Howard Werman, M.D.**  
Air Medical Service Medical Director  
Columbus, Ohio

**Bruce Ziran, M.D.**  
Orthopedic Trauma Surgeon  
Youngstown, Ohio

**Mike Glenn, R.N.**  
Assistant Administrator, EMS Division  
Columbus, Ohio

**APPENDIX D:**

**MEMBERS OF THE TRAUMA REGISTRY ADVISORY SUBCOMMITTEE**

**Barry Knotts, M.D., FACS, Ph.D - Chair**  
Director, Trauma Services  
Toledo, Ohio

**Eileen Baker, M.D.**  
Adult Emergency Physician  
New Philadelphia, Ohio

**Carl Parrott, M.D.**  
County Coroner  
Cincinnati, Ohio

**James Begley, M.D.**  
Physical Medicine & Rehabilitation Physician  
Cleveland, Ohio

**Douglas Paul, D.O.**  
Trauma Surgeon  
Dayton, Ohio

**Sally Betz, R.N., MSN, CEN, CCRN**  
Trauma Program Manager  
Columbus, Ohio

**Wendy Pomerantz, M.D., M.S., FAAP**  
Pediatric Emergency Physician  
Cincinnati, Ohio

**Margie Brunn, CSTR**  
Trauma Registrar  
Cincinnati, Ohio

**Vicki Ruppert, R.N., BSN**  
Trauma Program Manager  
Dayton, Ohio

**Paula Fowles, R.N.**  
Rehabilitation Representative  
Macedonia, Ohio

**Michael Smeltzer, MPH**  
Consumer  
Columbus, Ohio

**Elizabeth Gash, RHIA**  
Health Information / Medical Records  
Barberton, Ohio

**Richard Treat, M.D.**  
Trauma Surgeon  
Cleveland, Ohio

**Roxanna Giambri, RHIA**  
Regional Trauma Registrar  
Columbus, Ohio

**Debbie Znosko, CCS**  
Health Information / Medical Records  
Newark, Ohio

**Vickie Graymire, R.N., MS**  
Trauma Program Manager  
Lima, Ohio

**Tim Erskine, EMT-P**  
EMS Data Center Manager, Div. of EMS  
Columbus, Ohio

**Henry Kauffman, EMT-P**  
Fire Chief  
Grandview Heights, Ohio

**Sue Morris, EMT-P**  
EMS Data Center Staff, Div. of EMS  
Columbus, Ohio

**Jon Konves, EMT-P**  
Trauma Registrar  
Mansfield, Ohio

**Mike Glenn, R.N.**  
Assistant Administrator, Div. of EMS  
Columbus, Ohio

## APPENDIX E OHIO HOSPITALS REQUIRED TO REPORT TO THE OTR

### Ohio Hospitals reporting to the OTR 2000-2001

Closed	hospID	HOSPITAL	CITY	COUNTY	EMS REGION
	1100	Adams County Hospital	West Union	Adams	1
	1029	Adena Regional Medical Center	Chillicothe	Ross	5
	1275	Akron City Hospital	Akron	Summit	8
	1276	Akron General Medical Center	Akron	Summit	8
	1219	Allen Memorial Hospital	Oberlin	Lorain	9
	1269	Alliance Community Hospital	Alliance	Stark	7
	1215	Amherst Hospital (EMH)	Amherst	Lorain	9
	1106	Ashtabula County Medical Center	Ashtabula	Ashtabula	10
	1270	Aultman Hospital	Canton	Stark	7
	1279	Barberton Citizen's Hospital	Barberton	Summit	8
	1112	Barnesville Hospital Association	Barnesville	Belmont	6
	1178	Bay Park Community Hospital	Oregon	Lucas	4
	1113	Belmont Community Hospital	Bellaire	Belmont	6
	1254	Berger Health System	Circleville	Pickway	5
	1024	Bethesda North	Cincinnati	Hamilton	1
	1194	Blanchard Valley Regional Health Center	Findlay	Hancock	3
	1101	Blanchard Valley Reg. Health Ctr-Bluffton Campus	Bluffton	Allen	3
	1115	Brown County General Hospital	Georgetown	Brown	1
	1107	Brown Memorial Hospital	Conneaut	Ashtabula	10
	1130	Bucyrus Community Hospital	Bucyrus	Crawford	7
	1277	Children's Hospital Medical Center Of Akron	Akron	Summit	8
	1186	Cincinnati Children's Hospital Medical Center	Cincinnati	Hamilton	1
	1028	Clermont Mercy Hospital	Batavia	Clermont	1
	1151	Cleveland Clinic Foundation	Cleveland	Cuyahoga	9
	1124	Clinton Memorial Hospital	Wilmington	Clinton	1
	1169	Columbus Children's Hospital	Columbus	Franklin	5
3/1/01	1174	Columbus Community Hospital	Columbus	Franklin	5
	1018	Community Health Partners (West Campus)	Lorain	Lorain	9
	1122	Community Hospital of Springfield	Springfield	Clark	2
	1293	Community Hospitals of Williams County - Bryan Community Hospitals of Williams County - Montpelier	Bryan	Williams	4
	1294		Montpelier	Williams	4
	1161	Community Memorial Hospital	Hicksville	Defiance	4
	1129	Coshocton County Memorial Hospital	Coshocton	Coshocton	6
	1280	Cuyahoga Falls General Hospital	Cuyahoga Falls	Summit	8
	1190	Deaconess Hospital	Cincinnati	Hamilton	1
	1152	Deaconess Hospital Of Cleveland	Cleveland	Cuyahoga	9
	1160	Defiance Hospital	Defiance	Defiance	3
	1015	Doctors Hospital -- West	Columbus	Franklin	5
	1016	Doctors Hospital -- Massillon	Massillon	Stark	7
12/31/01	1176	Doctors Hospital -- North	Columbus	Franklin	5
	1110	Doctors Hospital Of Nelsonville	Nelsonville	Athens	6
	1291	Dunlap Memorial Hospital	Orrville	Wayne	7
	1127	East Liverpool City Hospital	East Liverpool	Columbiana	10
	1114	East Ohio Regional Hospital	Wheeling	Belmont	6
	1217	EMH Regional Medical Center	Elyria	Lorain	9
	1133	Euclid Hospital	Euclid	Cuyahoga	9
	1167	Fairfield Medical Center	Lancaster	Fairfield	5

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Closed	hospID	HOSPITAL	CITY	COUNTY	EMS REGION
	1145	Fairview Health System	Cleveland Washington Court	Cuyahoga	9
	1168	Fayette County Memorial Hospital	House	Fayette	5
	1164	Firelands Community Hospital	Sandusky	Erie	4
	1165	Providence Hospital	Sandusky	Erie	4
	1204	Fisher-Titus Medical Center	Norwalk	Huron	4
	1227	Flower Hospital	Sylvania	Lucas	4
	1117	Fort Hamilton-Hughes Memorial Hospital Forum Health/Northside Med Center/Tod Children's Hospital	Hamilton	Butler	1
	1231	Youngstown	Youngstown	Mahoning	10
	1195	Fostoria Community Hospital	Fostoria	Seneca	4
	1026	Franciscan Hospital – Mt. Airy	Cincinnati	Hamilton	1
	1183	Franciscan Hospital-Western Hills	Cincinnati	Hamilton	1
	1177	Fulton County Health Center	Wauseon	Fulton	4
	1132	Galion Community Hospital	Galion	Crawford	7
	1250	Genesis Healthcare System - Bethesda Hospital	Zanesville	Muskingum	6
	1245	Good Samaritan Hospital & Health Center	Dayton	Montgomery	2
	1251	Good Samaritan Medical Center - Genesis Health	Zanesville	Muskingum	6
	1163	Grady Memorial Hospital	Delaware	Delaware	5
	1246	Grandview Hospital	Dayton	Montgomery	2
	1173	Grant Medical Center	Columbus	Franklin	5
	1817	Greene Memorial Hospital	Xenia	Greene	2
	1200	Greenfield Area Medical Center	Greenfield	Highland	1
	1252	H.B. Magruder Memorial Hospital	Port Clinton	Ottawa	4
	1196	Hardin Memorial Hospital	Kenton	Hardin	3
	1022	Harrison Community Hospital	Cadiz	Harrison	6
	1198	Henry County Hospital	Napoleon	Henry	4
	1199	Highland District Hospital	Hillsboro	Highland	1
	1019	Hillcrest Hospital	Mayfield Heights	Cuyahoga	9
	1201	Hocking Valley Community Hospital	Logan	Hocking	6
	1021	Holzer Medical Center	Gallipolis	Gallia	6
	1438	Holzer Medical Center - Jackson	Jackson	Jackson	6
	1148	Huron Hospital	Cleveland	Cuyahoga	9
	1111	Joint Township District Memorial Hospital	St. Mary's	Auglaize	3
	1017	Kettering Memorial Medical Center	Kettering	Montgomery	2
	1030	Knox Community Hospital	Mount Vernon	Knox	5
	1211	Lake East Hospital	Painesville	Lake	9
	1006	Lake West Hospital	Willoughby	Lake	9
	1134	Lakewood Hospital	Lakewood	Cuyahoga	9
	1213	Licking Memorial Hospital	Newark	Licking	5
	1102	Lima Memorial Hospital	Lima	Allen	3
	1234	Lodi Community Hospital	Lodi	Medina	9
	1218	Lorain Community --St. Joseph's	Lorain	Lorain	9
	1149	Lutheran Hospital	Cleveland	Cuyahoga	9
	1011	Madison County Hospital	London	Madison	5
	1289	Marietta Memorial Hospital	Marietta	Washington	6
	1233	Marion General Hospital	Marion	Marion	5
	1214	Mary Rutan Hospital	Bellefontaine	Logan	3
	1136	Marymount Hospital	Garfield Heights	Cuyahoga	9
	1272	Massillon Community Hospital	Massillon	Stark	7
	1119	Mc Cullough-Hyde Memorial Hospital, Inc.	Oxford	Butler	1
	1131	Med. Central Health Syst. - Crestline	Crestline	Crawford	7
	1259	Med. Central Health Syst./ Shelby Hospital	Shelby	Richland	7

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Closed	hospID	HOSPITAL	CITY	COUNTY	EMS REGION
	1257	Med Central Health System - Mansfield	Mansfield	Richland	7
	1228	Medical College Hospitals	Toledo	Lucas	4
	1236	Medina General Hospital	Medina	Medina	9
	1263	Memorial Hospital Fremont	Fremont	Sandusky	4
	1108	Memorial Hospital Geneva	Geneva	Ashtabula	10
	1286	Memorial Hospital Of Union County	Marysville	Union	5
	1240	Mercer County Joint Twp. Community Hospital	Coldwater	Mercer	3
	1193	Mercy Hospital -- Anderson	Cincinnati	Hamilton	1
	1205	Mercy Hospital -- Willard	Willard	Huron	4
6/1/02	1118	Mercy Hospital Hamilton/Fairfield	Hamilton	Butler	1
	1033	Mercy Hospital Of Fairfield	Fairfield	Butler	1
	1267	Mercy Hospital Of Tiffin	Tiffin	Seneca	4
	1271	Mercy Medical Center - Canton	Canton	Stark	7
	1123	Mercy Medical Center -- Springfield	Springfield	Clark	2
	1121	Mercy Memorial Hospital	Urbana	Champaign	2
	1150	MetroHealth Medical Center	Cleveland	Cuyahoga	9
	1247	Miami Valley Hospital	Dayton	Montgomery	2
	1116	Middletown Regional Hospital	Middletown	Butler	1
	1249	Morrow County Hospital	Mt. Gilead	Morrow	5
	1027	Mount Carmel East Hospital	Columbus	Franklin	5
	1175	Mount Carmel West	Columbus	Franklin	5
	1606	Mt. Carmel St. Ann's Hospital	Westerville	Franklin	5
	1109	O'Bleness Memorial Hospital	Athens	Athens	6
	1171	Ohio State University Medical Center	Columbus	Franklin	5
	1170	OSU East	Columbus	Franklin	5
	1007	Parma Community General	Parma	Cuyahoga	9
	1253	Paulding County Hospital	Paulding	Paulding	3
	1299	Pike Community Hospital	Waverly	Pike	5
	1202	Pomerene Hospital	Millersburg	Holmes	7
	1008	Richmond Heights Hospital	Richmond Hgts	Cuyahoga	9
1/27/01	1212	River Valley Health System	Ironton	Lawrence	6
8/26/02	1222	Riverside Mercy Hospital	Toledo	Lucas	4
	1005	Riverside Methodist Hospital	Columbus	Franklin	5
	1255	Robinson Memorial Hospital	Ravenna	Portage	8
	1125	Salem Community Hospital	Salem	Columbiana	10
	1104	Samaritan Regional Health System	Ashland	Ashland	7
	1288	Selby General Hospital	Marietta	Washington	6
	1297	South Pointe Hospital	Warrensville Hgts	Cuyahoga	9
	1181	Southeastern Ohio Regional Medical Center	Cambridge	Guernsey	6
	1264	Southern Ohio Medical Center	Portsmouth	Scioto	5
	1035	Southview Hospital & Family Health Center	Dayton	Montgomery	2
	1140	Southwest General Health Center	Middleburg Hgs.	Cuyahoga	9
	1223	St. Charles Mercy Hospital	Oregon	Lucas	4
	1230	St. Elizabeth Health Center	Youngstown	Mahoning	10
	1034	St. John West Shore Hospital	Westlake	Cuyahoga	9
	1000	St. Joseph Health Center	Warren	Trumbull	10
	1224	St. Luke's Hospital	Maumee	Lucas	4
1/1/00	1154	St. Luke's Medical Center	Cleveland	Cuyahoga	9
	1158	St. Michael Hospital	Cleveland	Cuyahoga	9
	1103	St. Rita's Medical Center	Lima	Allen	3
	1155	St. Vincent Charity	Cleveland	Cuyahoga	9
	1225	St. Vincent Mercy Hospital	Toledo	Lucas	4

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Closed	hospID	HOSPITAL	CITY	COUNTY	EMS REGION
	1031	Sycamore Hospital	Miamisburg	Montgomery	2
	1261	The Bellevue Hospital	Bellevue	Sandusky	4
	1411	The Children's Medical Center	Dayton	Montgomery	2
	1187	The Christ Hospital	Cincinnati	Hamilton	1
	1226	The Toledo Hospital	Toledo	Lucas	4
	1189	The University Hospital, Cincinnati	Cincinnati	Hamilton	1
	1441	Three Gables Surgery Center	Procterville	Lawrence	6
	1191	Tri-Health Good Samaritan Hospital	Cincinnati	Hamilton	1
	1208	Trinity Medical Center-East	Steubenville	Jefferson	6
	1004	Trinity Medical Center-West	Steubenville	Jefferson	6
	1283	Trumbull Memorial Hospital	Warren	Trumbull	10
	1284	Twin City Hospital	Dennison	Tuscarawas	7
	1141	UHHS Bedford Medical Center	Bedford	Cuyahoga	9
	1001	UHHS Geauga Regional Hospital	Chardon	Gauga	9
	1142	UHHS Rainbow Babies and Children's Hospital	Cleveland	Cuyahoga	9
	1285	Union Hospital	Dover	Tuscarawas	7
	1242	Upper Valley Medical Center	Troy	Miami	2
	1287	Van Wert County Hospital	Van Wert	Van Wert	3
	1235	Wadsworth-Rittman Hospital	Wadsworth	Medina	9
	1159	Wayne Hospital	Greenville	Darke	2
	1268	Wilson Hospital	Sidney	Shelby	2
	1295	Wood County Hospital	Bowling Green	Wood	4
	1292	Wooster Community Hospital	Wooster	Wayne	7
	1296	Wyandot Memorial Hospital	Upper Sandusky	Wyandot	5

Eligible Hospitals – Hospitals registered with the Ohio Department of Health as an acute care general hospital (adult or pediatric)

2001 Eligible Hospitals – 170

2002 Eligible Hospitals - 168

**APPENDIX F:**

<b>OTR 1999 - 2002 DATA ELEMENTS LIST</b>	<b>2003 OTR DATA ELEMENTS LIST</b>
<u>DEMOGRAPHICS</u> Hospital Code Patient Identifier Medical Record Number Date Exported Zip Code of Residence Patient's Date of Birth Gender Race/Ethnicity Work Relatedness of Injury Safety Equipment Site at Which Injury Occurred E-Code - Description of Injury Date Injury Occurred State in Which Injury Occurred County in Which Injury Occurred	<u>DEMOGRAPHICS</u> Hospital Code Unique Patient Admission Number Date Exported Zip Code of Residence Patient's Date of Birth Gender Race/Ethnicity Work Relatedness of Injury Safety Equipment Site at Which Injury Occurred E-Code - Description of Injury Date Injury Occurred State in Which Injury Occurred County in Which Injury Occurred
<u>EMS</u> Glasgow Eye Component at Scene Glasgow Verbal Component at Scene Glasgow Motor Component at Scene GCS Assessment Qualifier at Scene Intubated - Scene CPR - Scene MAST - Scene Fluids- Scene Chest Decompression - Scene Thoracentesis/Thoracostomy - Scene Spinal Immobilization - Scene	<u>EMS</u> EMS Run Sheet Present Adult EMS Field Trauma Triage Criteria Pediatric EMS Field Trauma Triage Criteria Glasgow Eye Component at Scene Glasgow Verbal Component at Scene Glasgow Motor Component at Scene GCS Assessment Qualifier at Scene Intubated - Scene EMS CPR - Scene Fluids- Scene Needle/Thoracostomy Chest Decompression - Scene Spinal Immobilization - Scene
<u>EMERGENCY DEPARTMENT</u> ED Arrival Date ED Arrival Time Systolic Blood Pressure (First) Respiratory Rate (Unassisted) Injury Type First Glasgow Eye Component in ED First Glasgow Verbal Component in ED First Glasgow Motor Component in ED First GCS Assessment Qualifier in ED Alcohol Present Drugs Present Drug Category ED Disposition ED Transfer to Hospital ED Transfer Date ED Transfer Time First Temperature in ED Endotracheal Intubation in ED CPR – ED MAST - ED	<u>EMERGENCY DEPARTMENT</u> Hospital Arrival Source Transfer from Hospital Hospital Arrival Date Hospital Arrival Time Systolic Blood Pressure (First) Respiratory Rate (Unassisted) Injury Type First Glasgow Eye Component in Hospital First Glasgow Verbal Component in Hospital First Glasgow Motor Component in Hospital First GCS Assessment Qualifier in Hospital Alcohol Level Range Drug Category ED Disposition ED Transfer to Hospital ED Transfer Date ED Transfer Time First Temperature in Hospital Endotracheal Intubation in ED Chest Compressions – ED (usually indicated as

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Fluids - ED Chest Decompression - ED Thoracentesis/Thoracostomy - ED Spinal Immobilization - ED Head CT Results - ED Abdominal Evaluation - ED	CPR) Needle or Tube Thoracostomy Chest Decompression - ED Spinal Immobilization Initiated- ED Head CT Results - ED Abdominal Evaluation - ED
<u>INPATIENT COURSE</u> Admitting Specialty Total Days in ICU Ventilator Support Days ICD-9-CM Diagnosis Codes Complications Pre-existing Comorbidity Factors	<u>INPATIENT COURSE</u> Admitting Specialty Total Days in ICU Ventilator Support Days ICD-9-CM Principal Diagnosis Code Additional ICD-9-CM Diagnosis Codes/Description for Injuries AIS Severity Score - Hospital Assigned AIS Full Injury Description Code - Hospital Assigned ISS Injury Severity Score - Hospital Assigned Complications Pre-existing Comorbidity Factors
<u>OR VISITS</u> OR Date OR Time ICD-9 Codes for OR Visit	<u>OR VISITS</u> OR Date OR Time ICD-9 Codes for OR Visit
<u>DISABILITY ASSESSMENT- DISCHARGE</u> Self Feeding Score Upon Discharge Status of self-feeding Score Locomotion Score Upon Discharge Status of locomotion score Expression Score Upon Discharge Status of expression score Discharge Disposition Transfer to Other Hospital Date of Discharge or Death Discharge Status Billed Hospital Charges Principal Payment Source Length of Stay in Hospital Organs/Tissue Requested Organs/Tissue Granted Organs/Tissue Taken Autopsy Performed	<u>DISABILITY ASSESSMENT- DISCHARGE</u> Disability Assessment - self-feeding Disability Assessment - locomotion Disability Assessment - expression Discharge Disposition Transfer to Other Hospital Date of Discharge or Death Discharge Status Billed Hospital Charges Principal Payment Source Length of Stay in Hospital Organs/Tissue Requested Organs/Tissue Granted Organs/Tissue Taken Autopsy Performed

**APPENDIX G: Glossary**

- AIS** - Abbreviated Injury Score – A system of classification of injuries by severity and body region. The AIS is used to calculate an injury severity score.
- BARELL MATRIX** - A system of classification of injury by body region and the nature of the injury.
- CDC** - Centers for Disease Control and Prevention
- DOA** - Dead on Arrival
- E-CODE** - External Cause of Injury Code
- ED** - Emergency Department
- EMS** - Emergency Medical Services
- EMSIRS** - Emergency Medical Services Incident Reporting System
- FLOOR** - A general medical surgical room or bed in a hospital. Generally advanced patient monitoring is not performed on a floor bed.
- GSW** - Gunshot Wound
- ICD-9-CM** - International Classification of Disease, 9<sup>th</sup> Revision, Clinical Modification.
- ICU** - Intensive Care Unit
- INTENT** - The intention of causing harm or injury to another human being.
- ISS** - Injury Severity Score. A system for scoring the overall severity of injuries. Ranging from 1 to 75. An ISS of greater than 15 is generally considered a severe injury
- LOS** - Length of Stay
- MCC** - Motorcycle Crash
- MOI** - Mechanism of Injury
- MVC** - Motor Vehicle Crash
- NTDB** - National Trauma Data Bank. A trauma database operated by the American College of Surgeons
- OBSERVATION** - A level of hospital care most frequently utilized for lower acuity, short stays, or during an intermediate period while a decision is being made to admit or release the patient.
- OR** - Operating Room
- OTR** - Ohio Trauma Registry
- OUTCOME** - Used to describe the patients outcome, alive or dead.
- STEP-DOWN** - An intermediate level of care between the “floor” and the ICU.

**APPENDIX H**

**OHIO REVISED CODE**

**§ 4765.06. Incidence reporting system for collecting information on delivery and frequency of services; trauma registries; confidentiality of information.**

(A) The state board of emergency medical services shall establish an emergency medical services incidence reporting system for the collection of information regarding the delivery of emergency medical services in this state and the frequency at which the services are provided. All emergency medical service organizations shall submit to the board any information that the board determines is necessary for maintaining the incidence reporting system

(B) The board shall establish a state trauma registry to be used for the collection of information regarding the care of adult and pediatric trauma victims in this state. The registry shall provide for the reporting of adult and pediatric trauma-related deaths, identification of adult and pediatric trauma patients, monitoring of adult and pediatric trauma patient care data, determination of the total amount of uncompensated adult and pediatric trauma care provided annually by each facility that provides care to trauma victims, and collection of any other information specified by the board. All persons designated by the board shall submit to the board any information it determines is necessary for maintaining the state trauma registry. At the request of the board any state agency possessing information regarding adult or pediatric trauma care shall provide the information to the board. The board shall maintain the state trauma registry in accordance with rules adopted under [section 4765.11](#) of the Revised Code.

Rules relating to the state trauma registry adopted under this section and [section 4765.11](#) of the Revised Code shall not prohibit the operation of other trauma registries and may provide for the reporting of information to the state trauma registry by or through other trauma registries in a manner consistent with information otherwise reported to the state trauma registry. Other trauma registries may report aggregate information to the state trauma registry, provided the information can be matched to the person that reported it. Information maintained by another trauma registry and reported to the state trauma registry in lieu of being reported directly to the state trauma registry is a public record and shall be maintained, made available to the public, held in confidence, risk adjusted, and not subject to discovery or introduction into evidence in a civil action as provided in [section 149.43](#) of the Revised Code and this section. Any person who provides, maintains, or risk adjusts such information shall comply with this section and rules adopted under it in performing that function and has the same immunities with respect to that function as a person who performs that function with respect to the state trauma registry.

(C) The board and any employee or contractor of the board or the department of public safety shall not make public information it receives under [Chapter 4765.](#) of the Revised Code that identifies or would tend to identify a specific recipient of emergency medical services or adult or pediatric trauma care

(D) Not later than two years after the effective date of this amendment, the board shall adopt and implement rules under [section 4765.11](#) of the Revised Code that provide written standards and procedures for risk adjustment of information received by the board under [Chapter 4765.](#) of the Revised Code. The rules shall be developed in consultation with appropriate medical, hospital, and emergency medical service organizations and may provide for risk adjustment by a contractor of the board. Before risk adjustment standards and procedures are implemented, no member of the board and no employee or contractor of the board or the department of public safety shall make public information received by the board under [Chapter 4765.](#) of the Revised Code that identifies or would tend to identify a specific provider of emergency medical services or adult or pediatric trauma care. After risk adjustment standards and procedures are implemented, the board shall make public such information only on a risk adjusted basis.

(E) The board shall adopt rules under [section 4765.11](#) of the Revised Code that specify procedures for ensuring the confidentiality of information that is not to be made public under this section. The rules shall

specify the circumstances in which deliberations of the persons performing risk adjustment functions under this section are not open to the public and records of those deliberations are maintained in confidence. Nothing in this section prohibits the board from making public statistical information that does not identify or tend to identify a specific recipient or provider of emergency medical services or adult or pediatric trauma care.

(F) No provider that furnishes information to the board with respect to any patient the provider examined or treated shall, because of this furnishing, be deemed liable in damages to any person or be held to answer for betrayal of a professional confidence in the absence of willful or wanton misconduct. No such information shall be subject to introduction in evidence in any civil action against the provider. No provider that furnishes information to the board shall be liable for the misuse or improper release of the information by the board or any other person.

No person who performs risk adjustment functions under this section shall, because of performing such functions, be held liable in a civil action for betrayal of professional confidence or otherwise in the absence of willful or wanton misconduct.

**HISTORY: 144 v S 98 (Eff 11-12-92); 148 v H 138. Eff 11-3-2000**

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**APPENDIX I E-CODES GROUPED INTO THE CATEGORY OF "OTHER" 2001**

<b>ECODE</b>	<b>Description of E-Code</b>				
E800	RR Collision NOS*	E827.3	Animal Drawn Veh-Occupan	E917.2	Struck In Running Water
E800.9	RR Coll NOS-Person NOS	E827.8	Anim Drawn Veh-Pers NEC	E917.4	Other fixed object nofall
E801	RR Coll W Oth Object*	E828	Ridden Animal Accident*	E917.5	Object in sport from fall
E804.1	Fall From Train-Passengr	E828.2	Ridden Animal Acc-Rider	E917.9	Struck By Obj/Person NEC
E810	Vehicle-Train Collision*	E828.8	Ridden Anim Acc-Pers NEC	E918	Caught Between Objects
E811	MV Reentrant Collision*	E828.9	Ridden Anim Acc-Pers NOS	E920	Cutting Instrument Accid*
E812	Mot Vehic Collision NOS*	E829	Other Road Vehicle Acc*	E920.1	Acc-Power Hand Tool NEC
E812.4	MV Collision NOS-St Car	E829.4	Oth Rd Veh Acc-St Car	E920.2	Acc-Power House Applianc
E813	MV-Oth Vehicle Collision*	E829.8	Oth Rd Veh Acc-Pers NEC	E920.3	Knife/Sword/Dagger Acc
E813.5	MV-Oth Veh Coll-Anim Rid	E829.9	Oth Rd Veh Acc-Pers NOS	E920.4	Accid-Other Hand Tools
E813.8	MV-Oth Veh Coll-Pers NEC	E831.1	Boat Acc Inj NEC-Power	E920.5	Acc-Hypodermic Needle
E814	MV Collision W Pedest*	E831.4	Boat Acc Inj NEC-Skier	E920.8	Acc-Cutting Instrum NEC
E814.8	MV Coll W Pedes-Pers NEC	E831.5	Boat Acc Inj NEC-Swim	E920.9	Acc-Cutting Instrum NOS
E815	MV Collision W Oth Obj*	E831.8	Boat Inj NEC-Person NEC	E921	Pressur Vessel Explosion*
E815.5	MV Coll W Obj-Anim Rider	E832.5	Submers NEC-Swimmer	E921.1	Gas Cylinder Explosion
E816	Loss Of Control MV Acc*	E833.3	Wtrcraft Stair Fall-Psgr	E921.8	Press Vessel Explos NOS
E817	MV Traf Acc-Board/Alight*	E834.1	W/Craft Fall NEC-Power	E921.9	Press Vessel Explos NOS
E817.4	MV Acc Brd/Alight-St Car	E835.1	W/Craft Fall NOS-Power	E923	Accident D/T Explosives*
E817.8	MV Board/Alight-Pers NEC	E835.2	Wtrcraft Fall NOS-Crew	E923.2	Explosive Gases Accident
E818	MV Traffic Accident NEC*	E837.1	Explosion-Occ Power Boat	E923.8	Explosives Accident NEC
E818.8	MV Traf Acc-Pers NEC	E838.1	Watercraft Acc NEC-Power	E923.9	Explosives Accident NOS
E819	MV Traffic Accident NOS*	E838.3	Watercrtf Acc NEC-Pasngr	E925	Electric Current Accid*
E819.1	Traffic Acc NOS-Pasngr	E838.4	Watercraft Acc NEC-Skier	E925.1	Electr Power Generat Acc
E819.8	Traffic Acc NOS-Pers NEC	E838.9	Wtrcrtf Acc NEC-Pers NOS	E925.2	Indust Wiring/Machin Acc
E820	Snow Vehicle Accident*	E840.5	Tk Off/Land-Aircraft NEC	E925.8	Electric Current Acc NEC
E820.1	Snow Veh Acc-Pasngr	E841.5	Oth Powered Aircraft Acc	E925.9	Electric Current Acc NOS
E820.7	Snow Veh Acc-Pedest	E842.6	Unpower Aircraft Acc-Occ	E926.2	Vis/Ultraviol Lght Expos
E821	Oth Off-Rd MV N-Traf Acc*	E843.3	Fall-Psng Comm Aircraft	E927	Accid From Overexertion
E821.1	Oth Off-Road MV Acc-Psgr	E844	Air Transport Acc NEC*	E928	Accidents NEC & NOS*
E821.2	Oth Off-Road MV-Mocycl	E844.5	Aircrft Acc NEC-Occp NEC	E928.1	Exposure To Noise
E821.3	Oth Off-Road MV-Mcyc Psg	E844.9	Aircrft Acc NEC-Pers NEC	E928.8	Accident NEC
E821.8	Oth Off-Road MV-Pers NEC	E846	Indus Veh Acc On Premise	E928.9	Accident NOS
E821.9	Oth Off-Road MV-Pers NOS	E848	Oth Vehicle Acc NEC	E953	Injury-Strangul/Suffoc*
E822	Oth MV Coll W Moving Obj*	E849	Place Of Occurrence*	E953.8	Injury-Strang/Suff NEC
E822.1	Oth Coll W Mov Obj-Psgr	E849.1	Accident On Farm	E955	Injury-Firearm/Explosiv*
E822.2	Oth Coll Mov Obj-Mocycl	E849.3	Acc On Industr Premises	E955.6	Self Inflict Acc-Air Gun
E822.8	Oth Coll Mov Obj-Per NEC	E849.4	Accid In Recreation Area	E955.9	Injury-Firearm/Expl NOS
E823	Oth MV Coll W Stndng Obj*	E849.5	Accid On Street/Highway	E956	Injury-Cut Instrument
E823.1	Oth Coll Stndng Obj-Psgr	E849.6	Accident In Public Bldg	E958	Injury/Self-Inj NEC/NOS*
E823.2	Oth Coll Stnd Obj-Mocycl	E849.7	Accid In Resident Instit	E958.3	Injury-Extreme Cold
E823.9	Oth Col-Stnd-Obj-Per NOS	E849.8	Accident In Place NEC	E958.8	Injury-NEC
E824	MV N-Traff Board/Alight*	E849.9	Accident In Place NOS	E958.9	Injury-NOS
E824.1	N-Traf Board/Alight-Psgr	E901	Excessive Cold*	E974	Legal Interven-Cut Instr
E824.2	N-Traf Brd/Alight-Mocycl	E901.8	Excessive Cold NEC	E975	Legal Intervention NEC
E824.3	N-Traf Brd/Alit-Mcyc Psg	E901.9	Excessive Cold NOS	E983.8	Undet Circ-Suffocate NEC
E824.8	N-Traf Brd/Alit-Pers NEC	E907	Acc Due To Lightning	E983.9	Undet Circ-Suffocate NOS
E824.9	N-Traf Brd/Alit-Pers NOS	E910	Accidental Drowning*	E984	Undeterm Circ-Submersion
E825	MV N-Traffic Acc NEC/NOS*	E910.4	Drowning In Bathtub	E985	Undet Circ-Firearm/Expl*
E825.1	MV N-Traff NEC/NOS-Psgr	E910.8	Accidental Drowning NEC	E985.6	Undetrmine Accid-Air Gun
E825.2	MV N-Traf Acc NEC-Mocycl	E910.9	Accidental Drowning NOS	E986	Undet Circ-Cut Instrumnt
E825.8	MV N-Traff NEC-Pers NEC	E911	Resp Obstr-Food Inhal	E988	Undetermined Circum NEC*
E825.9	MV N-Traff NEC-Pers NOS	E912	Resp Obstr-Inhal Obj NEC	E988.1	Undeterm Circ-Burn, Fire
E826	Pedal Cycle Accident*	E913.2	Suffocation-Lack Of Air	E988.8	Undetermin Circumst NEC
E826.8	Ped Cycle Acc-Pers NEC	E914	Fb Entering Eye	E988.9	Undetermin Circumst NOS
E827	Animal Drawn Vehicle Acc*	E915	Fb Entering Oth Orifice	E996	War Inj:Nuclear Weapons
E827.2	Anim Drawn Veh-Anim Rid	E916	Struck By Falling Object		
		E917	Struck By Object/Person*		

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**APPENDIX I E-CODES GROUPED INTO THE CATEGORY OF “OTHER” 2002**

<b>ECODE</b>	<b>Description of E-Code</b>				
E800	RR Collision NOS*	E823.1	Oth Coll Stndng Obj-Psgr	E848	Oth Vehicle Acc NEC
E800.0	RR Collision NOS-Employ	E823.2	Oth Coll Stnd Obj-Mocycl	E849	Place Of Occurrence*
E800.9	RR Coll NOS-Person NOS	E823.3	Oth Coll Stn Obj-Cyc Psg	E849.0	Accident In Home
E804	Fall On/From Train*	E823.4	Oth Coll Stnd Obj-St Car	E849.1	Accident On Farm
E804.1	Fall From Train-Passngr	E823.8	Oth Coll Stn Obj-Per NEC	E901	Excessive Cold*
E804.8	Fall From Train-Pers NEC	E823.9	Oth Col-Stnd-Obj-Per NOS	E901.1	Excessive Cold, Man-Made
E805	Hit By Rolling Stock*	E824	MV N-Traff Board/Alight*	E901.8	Excessive Cold NEC
E805.8	Hit By Train-Person NEC	E824.1	N-Traf Board/Alight-Psgr	E901.9	Excessive Cold NOS
E805.9	Hit By Train-Person NOS	E824.2	N-Traf Brd/Alight-Mocycl	E903	Travel And Motion
E806	Railway Accident NEC*	E824.8	N-Traf Brd/Alit-Pers NEC	E904.2	Lack Of Water
E806.8	RR Acc NEC-Person NEC	E824.9	N-Traf Brd/Alit-Pers NOS	E904.3	Exposure NEC
E810	Vehicle-Train Collision*	E825	MV N-Traffic Acc NEC/NOS*	E906	Oth Inj Caused By Animal*
E810.8	MV-Train Coll-Pers NEC	E825.1	MV N-Traff NEC/NOS-Psgr	E906.1	Rat Bite
E811	MV Reentrant Collision*	E825.2	MV N-Traf Acc NEC-Mocycl	E906.3	Animal Bite NEC
E812	Mot Vehic Collision NOS*	E825.8	MV N-Traff NEC-Pers NEC	E906.4	Nonvenom Arthropod Bite
E812.4	MV Collision NOS-St Car	E825.9	MV N-Traff NEC-Pers NOS	E906.5	Animal Bite NOS
E812.5	MV Coll NOS-Anim Rid	E826	Pedal Cycle Accident*	E906.8	Inj NEC Caused By Animal
E812.8	MV Collis NOS-Pers NEC	E826.8	Ped Cycle Acc-Pers NEC	E906.9	Inj NOS Caused By Animal
E813	MV-Oth Vehicle Collision*	E827	Animal Drawn Vehicle Acc*	E907	Acc Due To Lightning
E813.8	MV-Oth Veh Coll-Pers NEC	E827.2	Anim Drawn Veh-Anim Rid	E908.1	Accident D/T Tornado
E814	MV Collision W Pedest*	E827.3	Animal Drawn Veh-Occupan	E908.2	Accident D/T Floods
E814.8	MV Coll W Pedes-Pers NEC	E827.8	Anim Drawn Veh-Pers NEC	E910	Accidental Drowning*
E815	MV Collision W Oth Obj*	E828	Ridden Animal Accident*	E910.2	Swimming Accident NOS
E815.8	MV Coll W Obj-Pers NEC	E828.2	Ridden Animal Acc-Rider	E910.3	Swimming/Diving Acc NEC
E816	Loss Of Control MV Acc*	E828.8	Ridden Anim Acc-Pers NEC	E910.4	Drowning In Bathtub
E816.8	Loss Control MV-Pers NEC	E829	Other Road Vehicle Acc*	E910.8	Accidental Drowning NEC
E817	MV Traf Acc-Board/Alight*	E829.8	Oth Rd Veh Acc-Pers NEC	E910.9	Accidental Drowning NOS
E817.8	MV Board/Alight-Pers NEC	E829.9	Oth Rd Veh Acc-Pers NOS	E911	Resp Obstr-Food Inhal
E818	MV Traffic Accident NEC*	E830.1	Boat Acc W Submers-Power	E912	Resp Obstr-Inhal Obj NEC
E818.8	MV Traff Acc-Pers NEC	E831.1	Boat Acc Inj NEC-Power	E913	Acc Mechanical Suffocat*
E819	MV Traffic Accident NOS*	E831.3	Boat Acc Inj NEC-Passeng	E913.1	Suffocation-Plastic Bag
E819.1	Traffic Acc NOS-Pasngr	E831.4	Boat Acc Inj NEC-Skier	E913.8	Suffocation NEC
E819.8	Traffic Acc NOS-Pers NEC	E831.8	Boat Inj NEC-Person NEC	E914	Fb Entering Eye
E820	Snow Vehicle Accident*	E832	Boat Acc W Submers NEC*	E915	Fb Entering Oth Orifice
E820.1	Snow Veh Acc-Pasngr	E832.4	Submers NEC-Water Skier	E916	Struck By Falling Object
E820.2	Snow Veh Acc-Motorcycl	E834.2	Watercraft Fall NEC-Crew	E917	Struck By Object/Person*
E820.8	Snow Veh Acc-Pers NEC	E834.3	Wtrcraft Fall NEC-Pasngr	E917.0	Struck In Sports
E820.9	Snow Veh Acc-Pers NOS	E834.9	W/Crft Fall NEC-Pers NOS	E917.2	Struck In Running Water
E821	Oth Off-Rd MV N-Traf Acc*	E835.1	W/Craft Fall NOS-Power	E917.3	Furniture w/o fall
E821.1	Oth Off-Road MV Acc-Psgr	E838	Watercraft Acc NEC/NOS*	E917.4	Other fixed object nofall
E821.2	Oth Off-Road MV-Mocycl	E838.1	Watercraft Acc NEC-Power	E917.5	Object in sport from fall
E821.3	Oth Off-Road MV-Mcyc Psg	E838.3	Watercrft Acc NEC-Pasngr	E917.6	crowd caused,fear/panic
E821.5	Oth Off-Road MV-Anim Rid	E838.4	Watercraft Acc NEC-Skier	E917.7	Furniture w/o fall
E821.8	Oth Off-Road MV-Pers NEC	E838.8	Wtrcrft Acc NEC-Pers NEC	E917.8	Object w/o fall
E821.9	Oth Off-Road MV-Pers NOS	E840.2	Tk Off/Land-Crew Aircrft	E917.9	Struck By Obj/Person NEC
E822	Oth MV Coll W Moving Obj*	E840.5	Tk Off/Land-Aircraft NEC	E918	Caught Between Objects
E822.1	Oth Coll W Mov Obj-Psgr	E841.5	Oth Powered Aircraft Acc	E920	Cutting Instrument Accid*
E822.2	Oth Coll Mov Obj-Mocycl	E842.6	Unpower Aircraft Acc-Occ	E920.1	Acc-Power Hand Tool NEC
E822.8	Oth Coll Mov Obj-Per NEC	E843.7	Fall-Parachutist	E920.2	Acc-Power House Applianc
E823	Oth MV Coll W Stndng Obj*	E844.3	Aircrft Acc NEC-Pasngr	E920.3	Knife/Sword/Dagger Acc
E823.0	Oth Coll Stndng Obj-Driv	E844.7	Aircrft Acc-Parachutist	E920.4	Accid-Other Hand Tools
		E846	Indus Veh Acc On Premise	E920.8	Acc-Cutting Instrum NEC

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E920.9 Acc-Cutting Instrum NOS  
E921.1 Gas Cylinder Explosion  
E921.8 Press Vessel Explos NEC  
E921.9 Press Vessel Explos NOS  
E923 Accident D/T Explosives\*  
E923.1 Blasting Materials Accid  
E923.2 Explosive Gases Accident  
E923.8 Explosives Accident NEC  
E923.9 Explosives Accident NOS  
E925 Electric Current Accid\*  
E925.1 Electr Power Generat Acc  
E925.2 Indust Wiring/Machin Acc  
E925.8 Electric Current Acc NEC  
E925.9 Electric Current Acc NOS  
E927 Accid From Overexertion  
E928 Accidents NEC & NOS\*  
E928.8 Accident NEC  
E928.9 Accident NOS  
E953 Injury-Strangul/Suffoc\*  
E953.8 Injury-Strang/Suff NEC  
E954 Injury-Submersion  
E955 Injury-Firearm/Explosiv\*  
E955.9 Injury-Firearm/Expl NOS  
E956 Injury-Cut Instrument  
E958 Injury/Self-Inj NEC/NOS\*  
E958.8 Injury-NEC  
E958.9 Injury-NOS  
E974 Legal Interven-Cut Instr  
E975 Legal Intervention NEC  
E980 Undeterm Pois-Sol/Liquid\*  
E980.4 Undet Pois-Med Agnt NEC  
E982.9 Undet Pois-Gas/Vapor NOS  
E983 Undeterm Circ-Suffocatn\*  
E983.8 Undet Circ-Suffocate NEC  
E984 Undeterm Circ-Submersion  
E985 Undet Circ-Firearm/Expl\*  
E985.6 Undetrmine Accid-Air Gun  
E986 Undet Circ-Cut Instrumnt  
E988 Undetermined Circum NEC\*  
E988.1 Undeterm Circ-Burn, Fire  
E988.2 Undeterm Circ-Scald  
E988.8 Undetermin Circumst NEC  
E988.9 Undetermin Circumst NOS  
E989 Late Eff Inj-Undet Circ  
E991.9 War Inj:Fragments NEC