



## **Emergency Medical Services for Children (EMSC)**



**CEMSIS-Trauma**

**Emergency Medical Service Authority**



## Acknowledgements

### **Local Emergency Medical Services Agency**

Alameda County EMS Agency  
Contra Costa County EMS Agency  
Los Angeles County EMS Agency  
Orange County Health Care Agency/EMS Program  
Riverside County EMS Agency  
San Diego County EMS Agency  
Santa Barbara County EMS Agency  
Santa Clara County EMS Agency  
Inland Counties EMS Agency  
Northern California EMS Agency

### **Emergency Medical Services Authority**

Bonnie Sinz, RN  
Chief, EMS Systems Division

Donna Westlake  
EMSC Program Manager

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Statewide Data Coordinator

Johnathan Jones, RN, BSN  
Trauma & Specialty Care Coordinator

# MISSION STATEMENT

**The mission of the California's Emergency Medical Services for Children (EMSC) Program is to reduce pediatric morbidity and mortality from injury and illness by developing, implementing, and integrating EMSC activities into each area of EMS.**

**Emergency Medical Services (EMS) systems were dominated by adult cardiac care in the 1970's and by adult trauma care in the 1980's. Pediatric emergency/critical care became an integrated part of EMS in the 1990's. Additionally, the California EMS Authority received a Targeted Issues Grant to develop a comprehensive EMSC model to help local EMS agency medical directors and administrators integrate pediatric-specific components in local and regional EMS systems.**

**The different EMSC clinical and operational components were assigned a multidisciplinary subcommittee to review and recommend changes to their guidelines. The subcommittee process involved an extraordinary collaboration of constituents in EMS, emergency medicine, and pediatric critical care, to create a wide interface with the numerous agencies and organizations involved with children's health and safety.**

**This report is a reflection of the work that is being done to reduce the morbidity and mortality to the pediatric patient. The information contained in this report was collected by the CEMSIS-Trauma database from ten Local EMS Agency reflecting 20 counties and 41 Trauma centers, across the state. As data is collected from other counties, a more complete picture will be presented.**

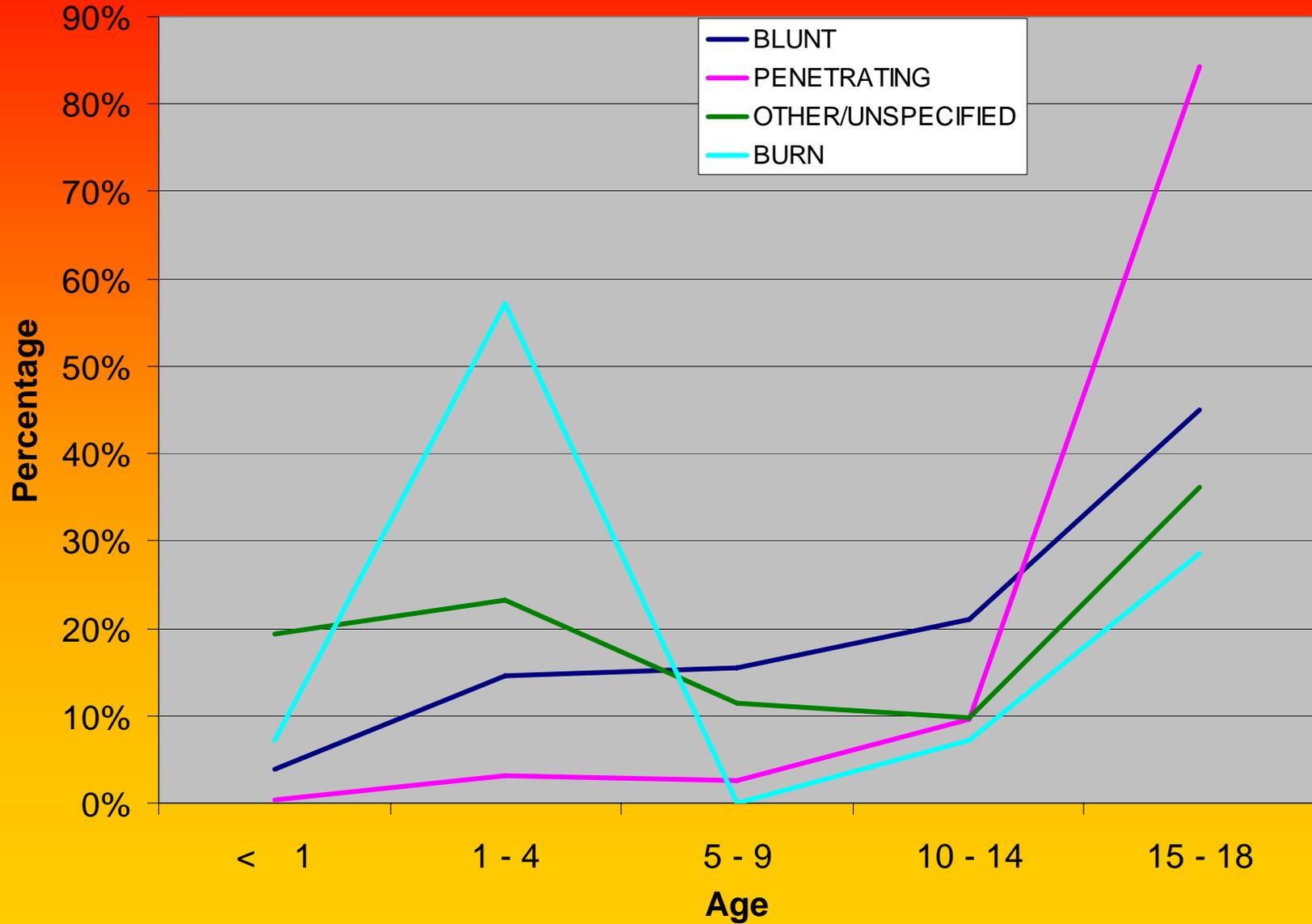
## Type of Injury

	<1	1— 4	5 – 9	10 – 14	15 - 18	Total
<b>Blunt</b>	<b>141</b>	<b>529</b>	<b>563</b>	<b>762</b>	<b>1635</b>	<b>3630</b>
<b>Penetrating</b>	<b>2</b>	<b>18</b>	<b>15</b>	<b>55</b>	<b>482</b>	<b>572</b>
<b>Other/ Unspecified</b>	<b>49</b>	<b>59</b>	<b>29</b>	<b>25</b>	<b>92</b>	<b>254</b>
<b>Burn</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>14</b>
<b>Total</b>	<b>193</b>	<b>614</b>	<b>607</b>	<b>843</b>	<b>2213</b>	<b>4470</b>

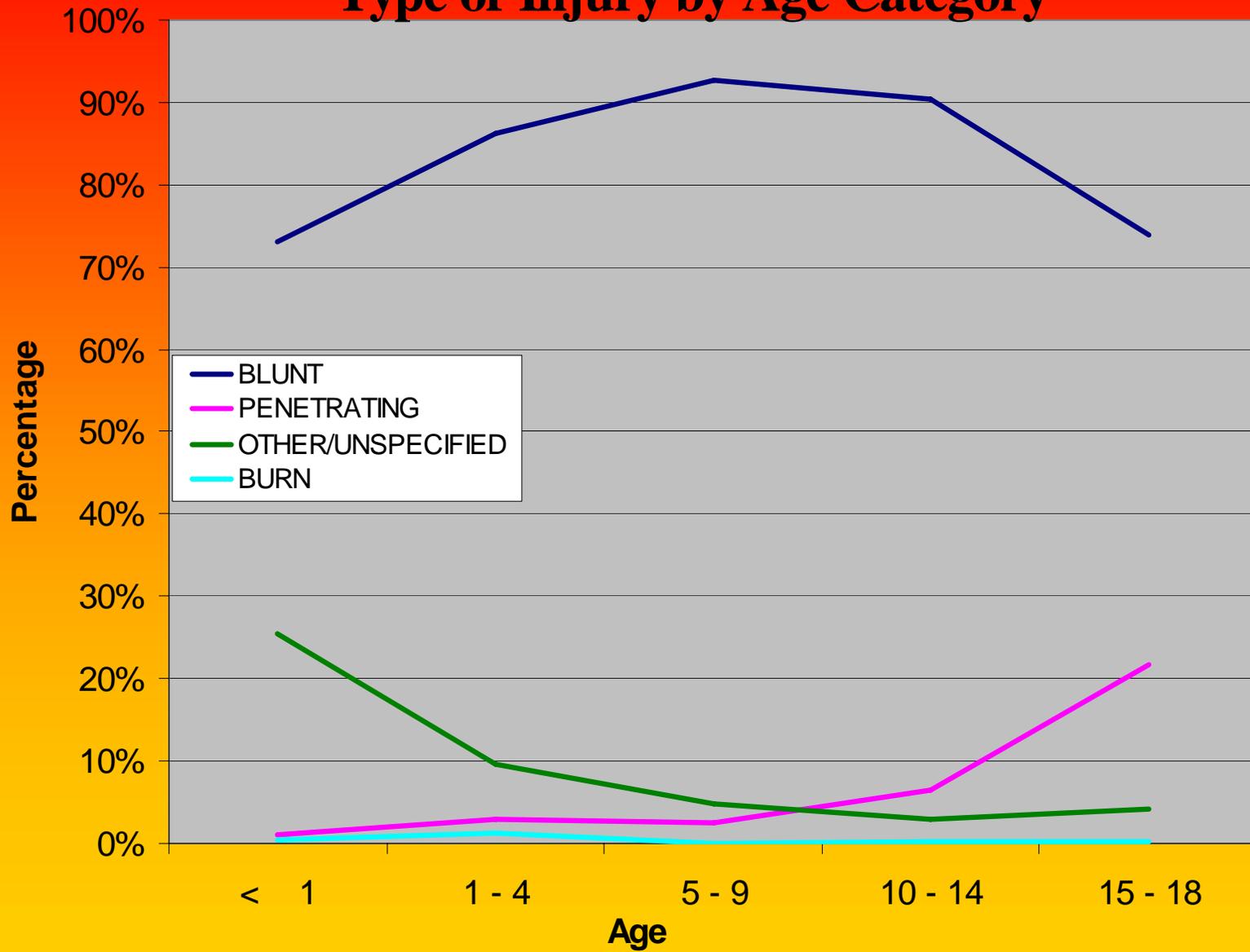
CDC age categories

**Data from January 1, 2009—June 30, 2009**  
(n=4470)

## Type of Injury by Type



# Type of Injury by Age Category



## Top 10 E Codes

	< 1	1 - 4	5 - 9	10 - 14	15 - 18	Total
<b>E814.7</b>	6	91	106	114	158	<b>475</b>
<b>E812.1</b>	13	37	48	51	143	<b>292</b>
<b>E965.4</b>	1	3	4	23	230	<b>261</b>
<b>E884.9</b>	40	42	45	29	54	<b>210</b>
<b>E826.1</b>	0	3	37	78	59	<b>177</b>
<b>E816.1</b>	2	21	29	22	92	<b>166</b>
<b>E885.9</b>	8	41	29	40	48	<b>166</b>
<b>E966.0</b>	0	0	1	9	140	<b>150</b>
<b>E885.2</b>	0	0	5	53	69	<b>127</b>
<b>E960.0</b>	1	0	1	10	98	<b>110</b>
<b>Total</b>	<b>71</b>	<b>238</b>	<b>305</b>	<b>429</b>	<b>1091</b>	<b>2134</b>

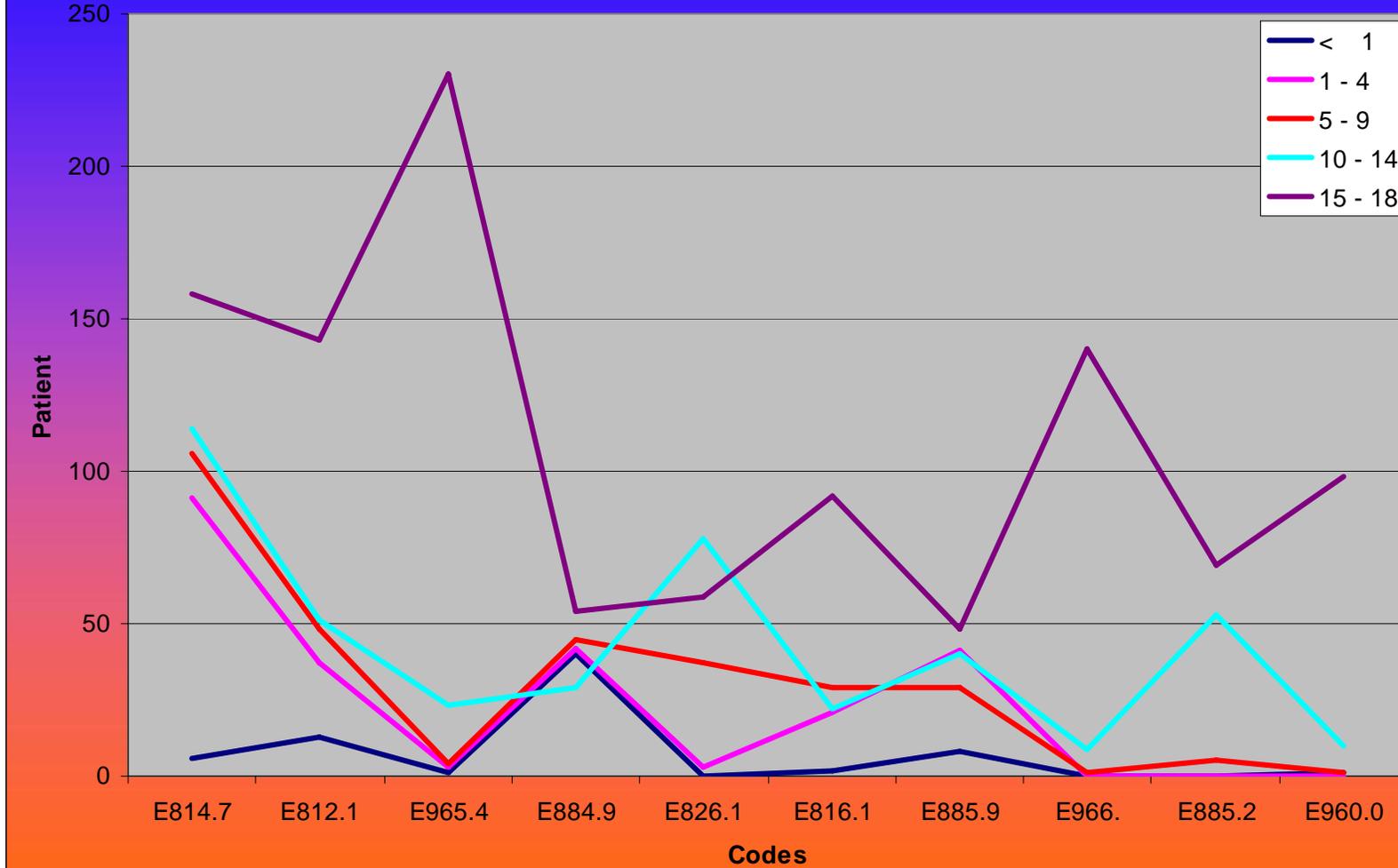
### Code Interpretation

**E814.7** Motor vehicle traffic accident involving collision with pedestrian  
**E812.1** Other motor vehicle traffic accident involving collision with motor vehicle  
**E965.4** Other and other unspecified firearm  
**E884.9** Fall from one level to another  
**E826.1** Bicycle

**E816.1** MVA loss of control no collision  
**E885.9** Fall from same level  
**E966.0** Assault by cutting  
**E885.2** Fall from skateboard  
**E960.0** Brawl-hand, foot

**Data from January 1, 2009—June 30, 2009**  
**(n=4646)**

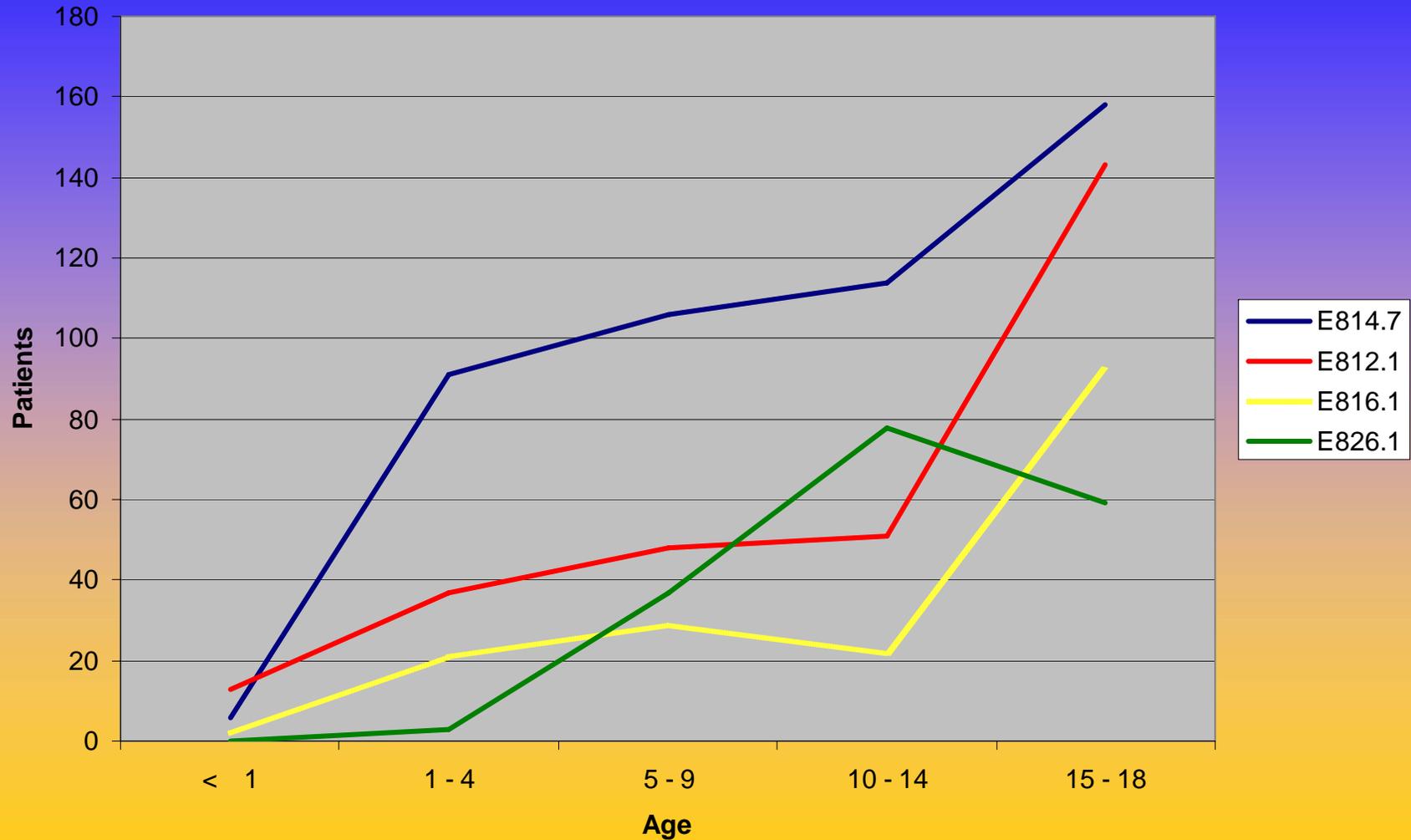
## Top 10 E-Codes



**E814.7** Motor vehicle traffic accident involving collision with pedestrian  
**E812.1** Other motor vehicle traffic accident involving collision with motor vehicle  
**E965.4** Other and unspecified firearm  
**E884.9** Fall from one level to another

**E816.1** MVA loss of control no collision  
**E885.9** Fall from same level  
**E966.0** Assault by cutting  
**E885.2** Fall from skateboard  
**E960.0** Brawl-hand, foot

## E-Codes (MVA/Cycle/Pedestrian)



**E814.7 Motor vehicle traffic accident involving collision with pedestrian**

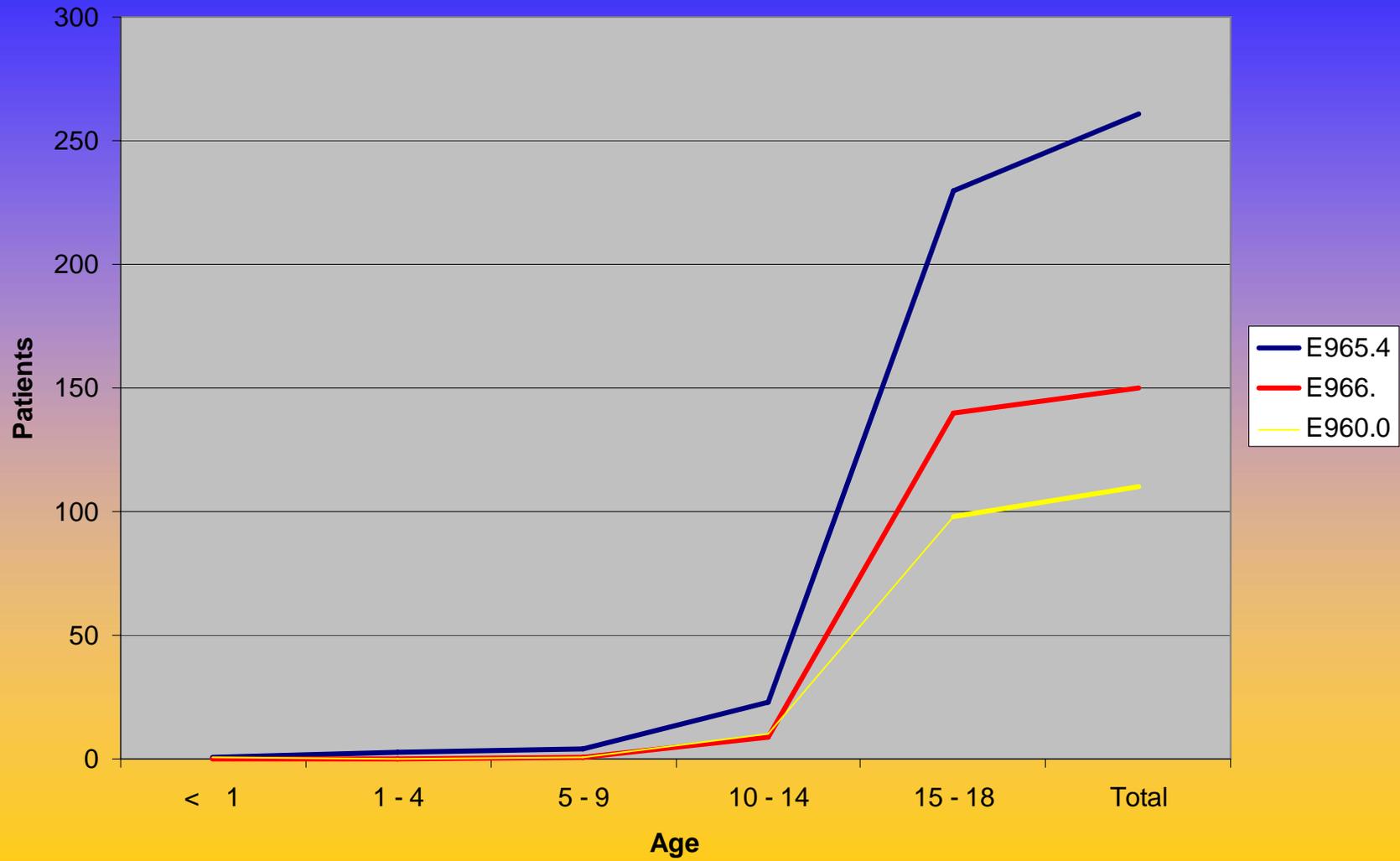
**E812.1 Other motor vehicle traffic accident involv-**

**ing collision with motor vehicle**

**E816.1 Motor vehicle traffic accident loss of control no collision**

**E826.1 Bicycle accident**

# E-Codes (Assaults/Weapons)



E965.4 Other and Unspecified firearm  
E966.0 Assault by cutting

E960.0 Brawl- hand, foot

## E-Codes (Falls)



E884.9 Fall from one level to another  
E885.9 fall from same level

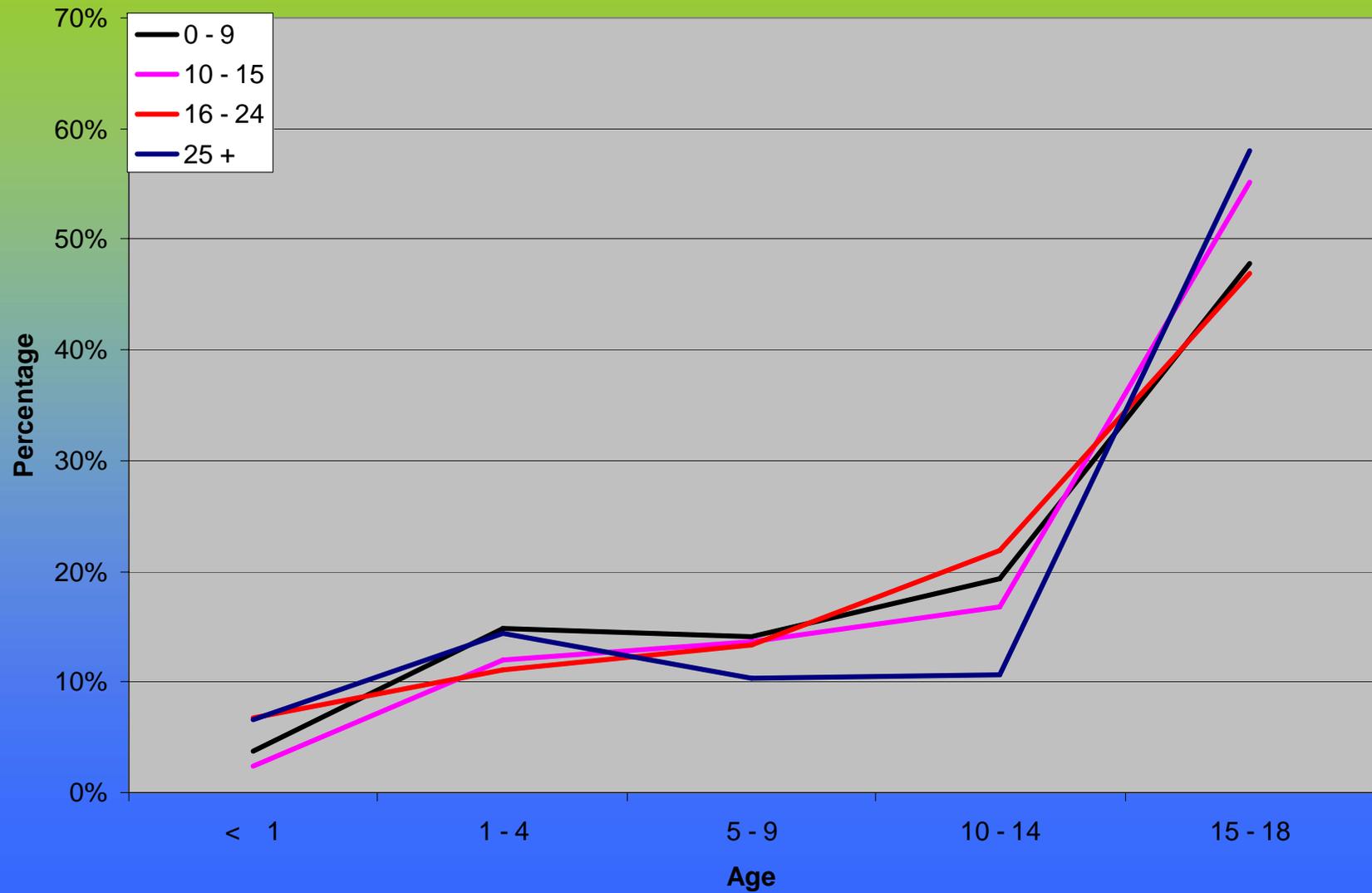
E885.2 Fall from skateboard

## Injury Severity Score

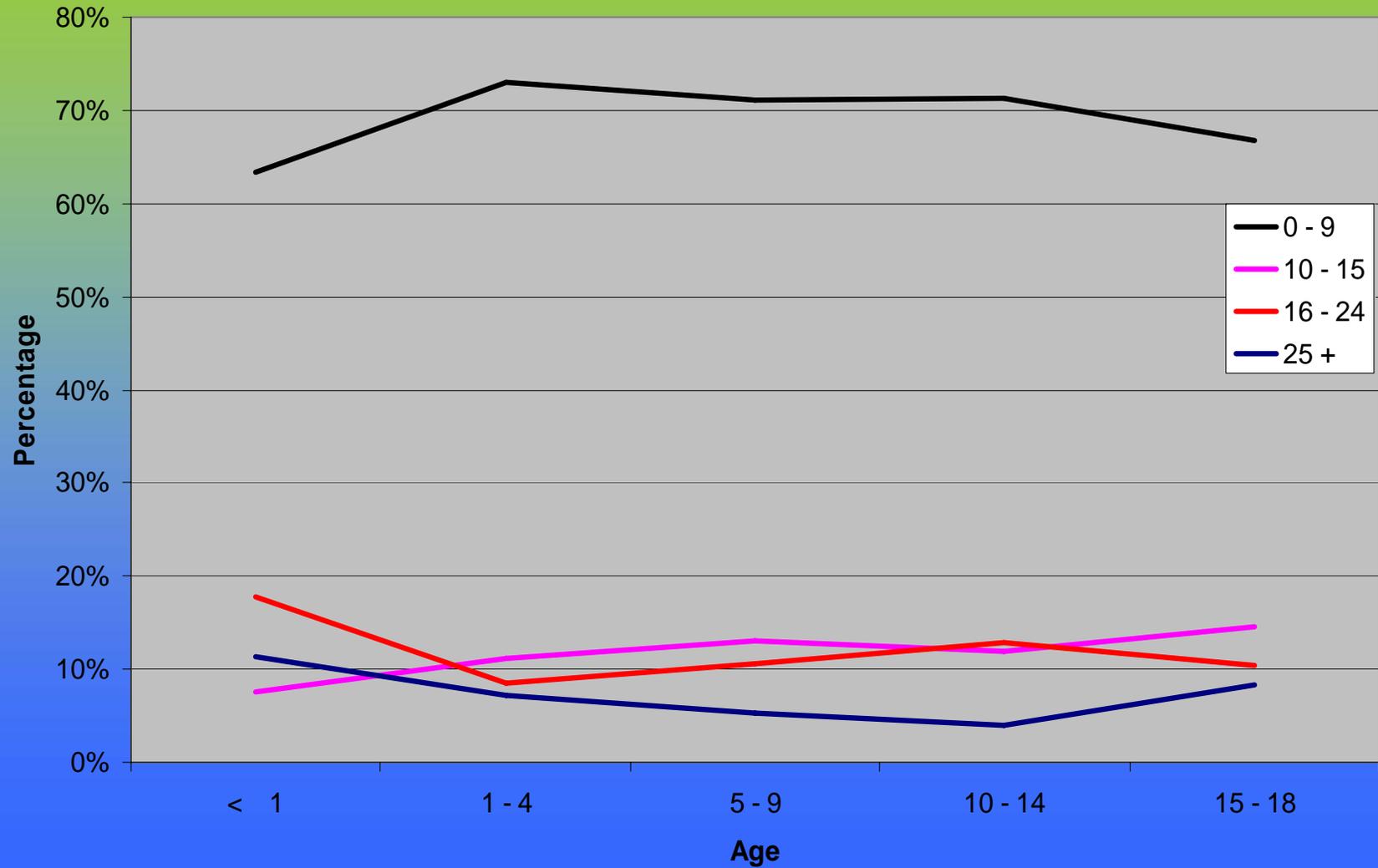
	<b>&lt; 1</b>	<b>1 - 4</b>	<b>5 - 9</b>	<b>10 - 14</b>	<b>15 - 18</b>	<b>Total</b>
<b>0 - 9</b>	118	461	438	597	1479	<b>3093</b>
<b>10 - 15</b>	14	71	80	99	325	<b>589</b>
<b>16 - 24</b>	33	54	65	107	229	<b>488</b>
<b>25 +</b>	21	46	33	34	185	<b>319</b>
	<b>186</b>	<b>632</b>	<b>616</b>	<b>837</b>	<b>2218</b>	<b>4489</b>

**Data from January 1, 2009—June 30, 2009  
(n=4489)**

## Injury Severity Score by Score



# Injury Severity Score by Age Category



## Pediatric Survivor Rate

	< 1	1 - 4	5 - 9	10 - 14	15 - 18	Total
Died	6	14	4	7	37	68
Lived	183	628	620	845	2242	4518
Total	189	642	624	852	2279	4586
Mortality Rate	3%	2%	1%	1%	2%	1%

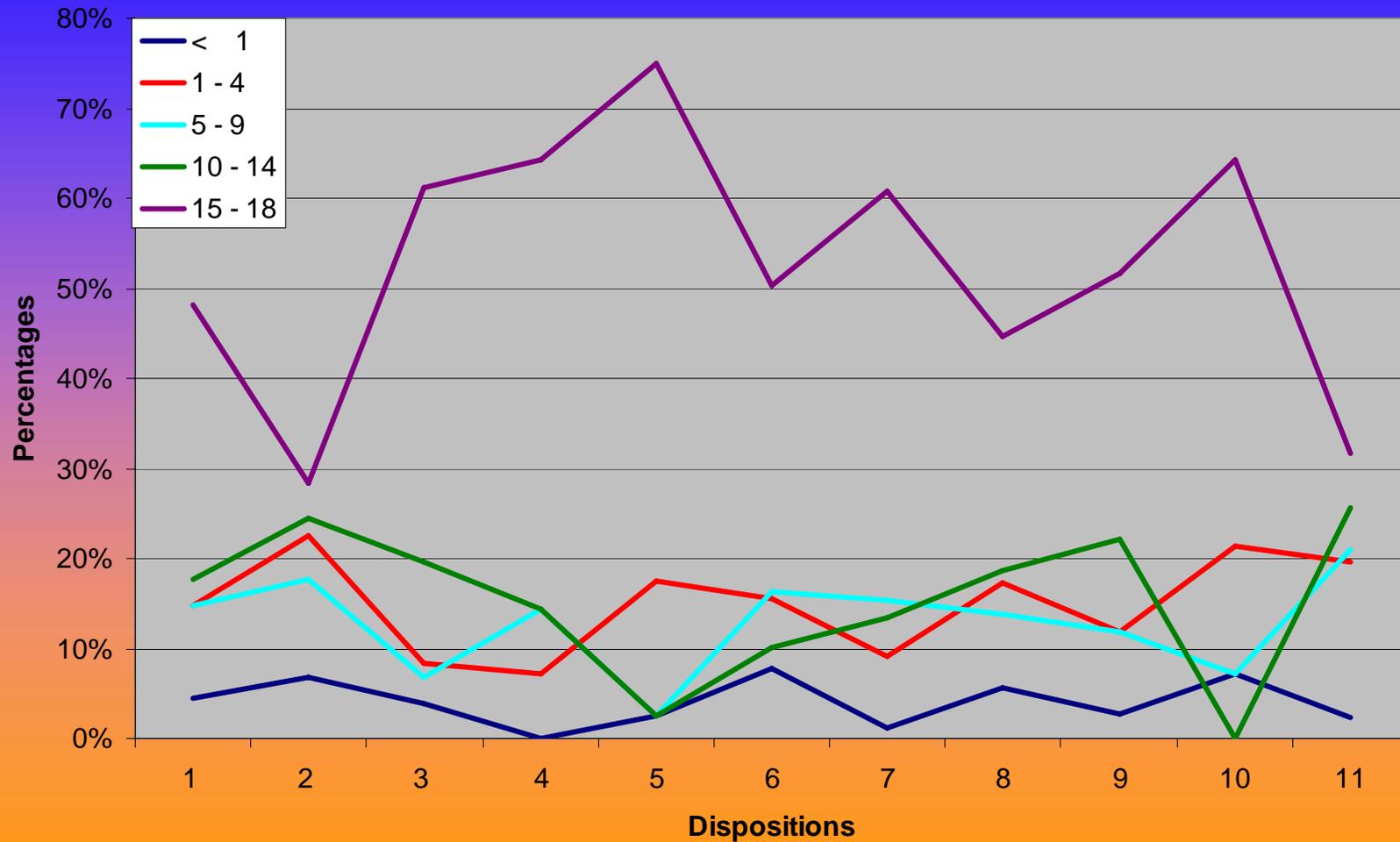
## Emergency Department Disposition

	< 1	1 - 4	5 - 9	10 - 14	15 - 18	Total
1. Floor bed	56	187	187	224	607	1261
2. Observation unit	7	23	18	25	29	102
3. Telemetry/Step-down unit	7	15	12	35	109	178
4. Home with services	0	1	2	2	9	14
5. Died	1	7	1	1	30	40
6. Other	10	20	21	13	65	129
7. Operating room	5	37	62	54	245	403
8. Intensive Care Unit	48	146	117	159	379	849
9. Home without services	33	144	146	270	632	1225
10. Left against medical advice	1	3	1	0	9	14
11. Transferred to another hospital	3	26	28	34	42	133
<b>Total</b>	<b>171</b>	<b>609</b>	<b>595</b>	<b>817</b>	<b>2156</b>	<b>4348</b>

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1. Floor Bed</li> <li>2. Observation unit</li> <li>3. Telemetry/Step-down unit</li> <li>4. Home with services</li> <li>5. Died</li> <li>6. Other</li> </ul> | <ul style="list-style-type: none"> <li>7. Operating Room</li> <li>8. Intensive Care unit</li> <li>9. Home without services</li> <li>10. Left against medical advice</li> <li>11. Transferred to another hospital</li> </ul> |
|--|---|

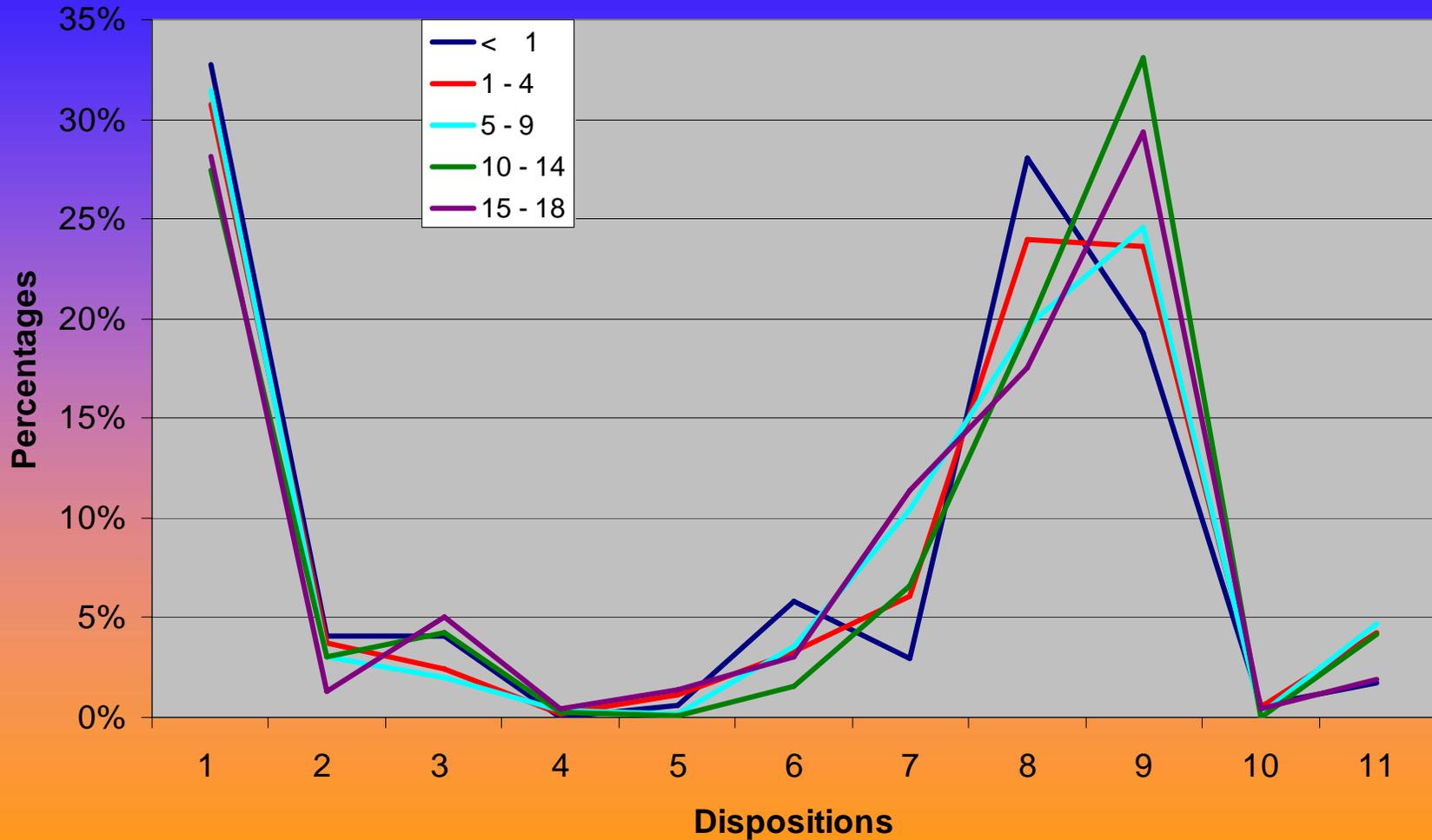
**Data from January 1, 2009—June 30, 2009  
(n=4348)**

## ED Disposition by Disposition



- |   |   |  |   |
|---|---|--|---|
| <p>1. Floor Bed</p> <p>2. Observation unit</p> <p>3. Telemetry/Step-down unit</p> | <p>4. Home with services</p> <p>5. Died</p> <p>6. Other</p> | <p>7. Operating Room</p> <p>8. Intensive Care unit</p> <p>9. Home without services</p> | <p>10. Left against medical advice</p> <p>11. Transferred to another hospital</p> |
|---|---|--|---|

## ED Disposition by Age Category



- |  |  |   |   |
|--|--|---|---|
| <p><b>1. Floor Bed</b></p> <p><b>2. Observation unit</b></p> <p><b>3. Telemetry/Step-down unit</b></p> | <p><b>4. Home with services</b></p> <p><b>5. Died</b></p> <p><b>6. Other</b></p> | <p><b>7. Operating Room</b></p> <p><b>8. Intensive Care unit</b></p> <p><b>9. Home without services</b></p> | <p><b>10. Left against medical advice</b></p> <p><b>11. Transferred to another hospital</b></p> |
|--|--|---|---|

## Mode of Transportation

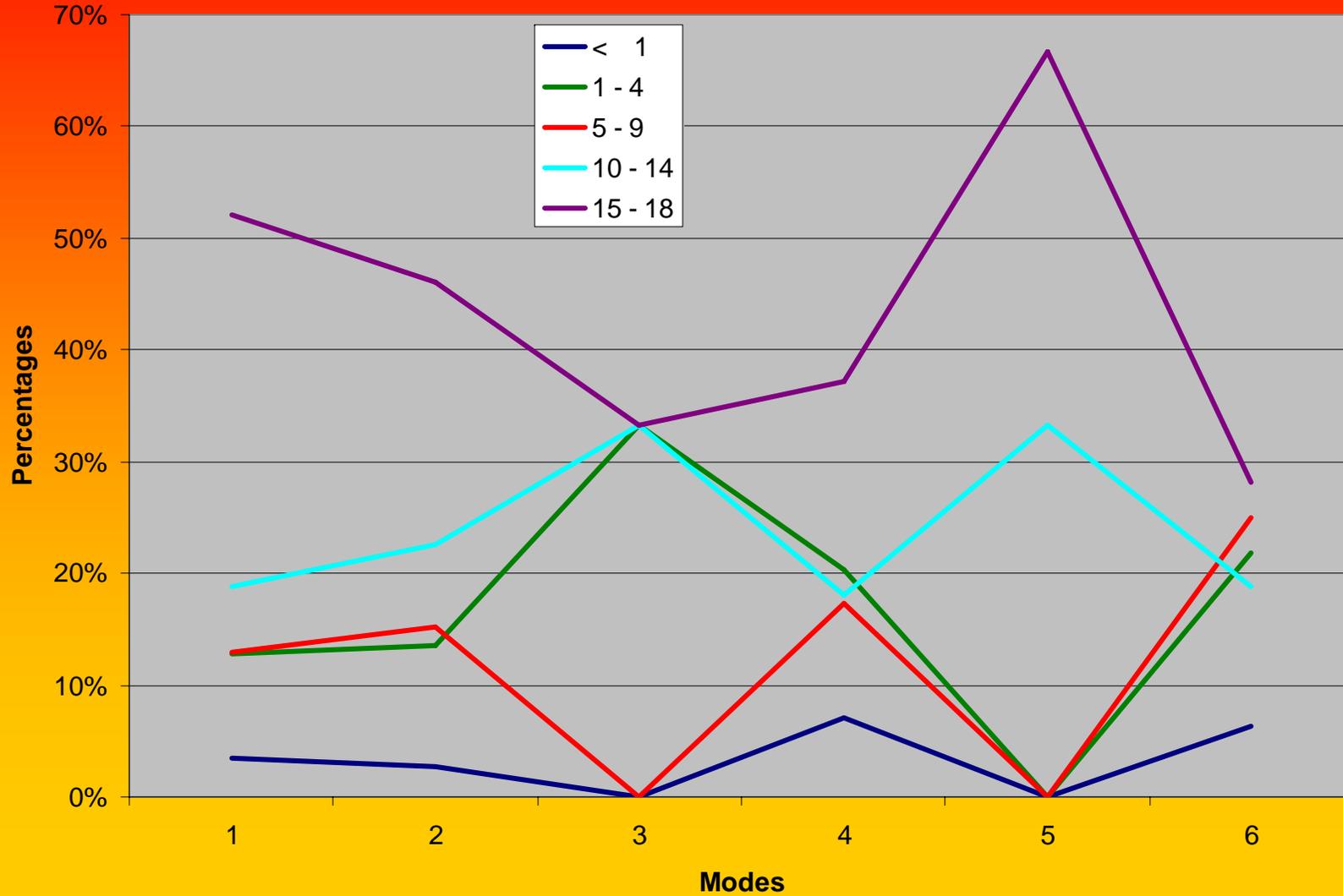
	< 1	1 - 4	5 - 9	10 - 14	15 - 18	Total
<b>1</b>	117	430	434	632	1756	<b>3369</b>
<b>2</b>	14	70	78	116	237	<b>515</b>
<b>3</b>	0	1	0	1	1	<b>3</b>
<b>4</b>	42	120	102	107	220	<b>591</b>
<b>5</b>	0	0	0	1	2	<b>3</b>
<b>6</b>	2	7	8	6	9	<b>32</b>
<b>Total</b>	<b>175</b>	<b>628</b>	<b>622</b>	<b>863</b>	<b>2225</b>	<b>4513</b>

**1. Ground Ambulance**  
**2. Helicopter Ambulance**  
**3. Fixed-Wing Ambulance**

**4. Private/Public Vehicle/Walk-in**  
**5. Police**  
**6. Other**

**Data from January 1, 2009—June 30, 2009 (n=4513)**

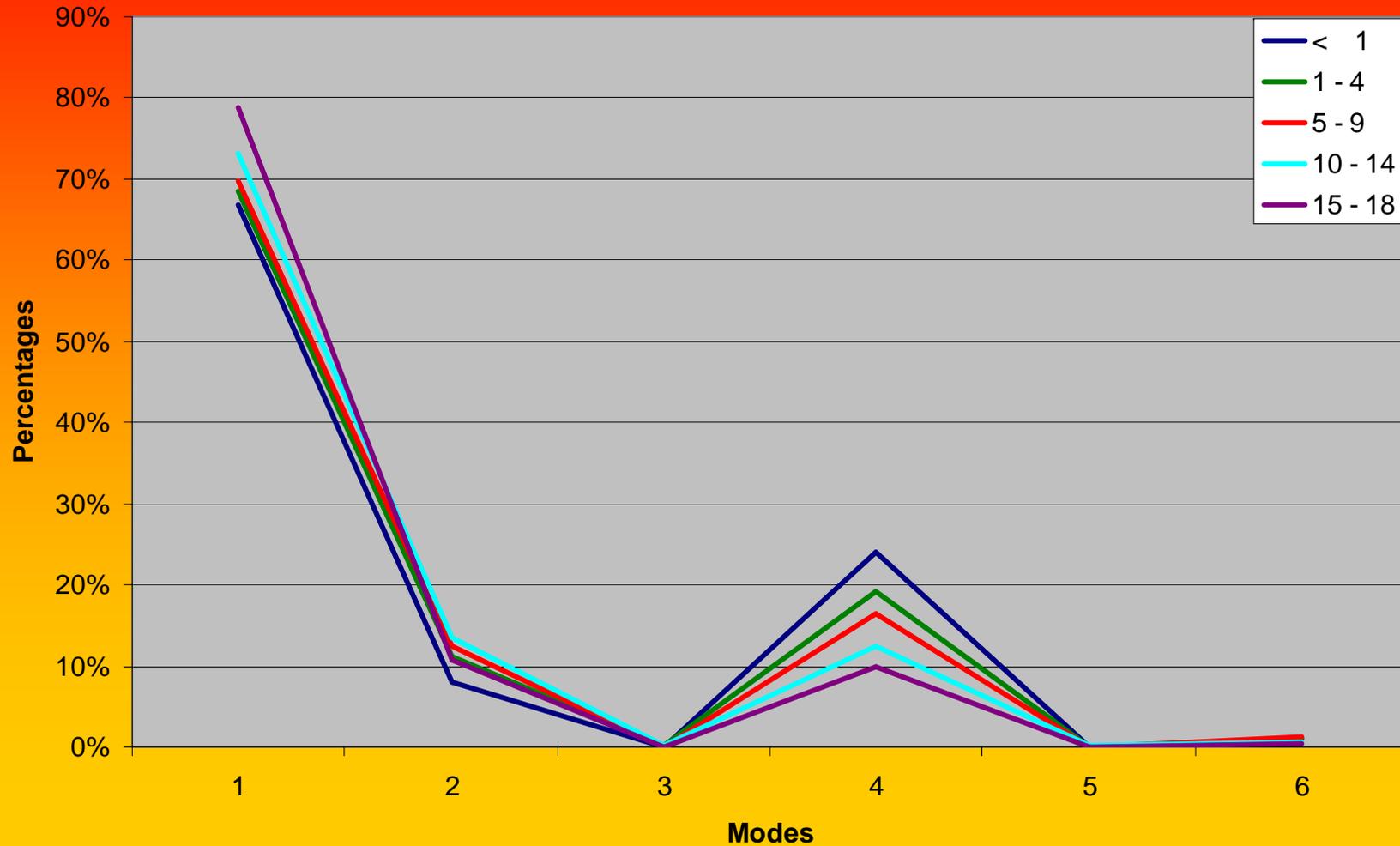
# Transportation Mode by Transportation Category



- 1. Ground Ambulance
- 2. Helicopter Ambulance
- 3. Fixed-Wing Ambulance

- 4. Private/Public Vehicle/Walk-in
- 5. Police
- 6. Other

## Transportation Mode by Age Category



1. Ground Ambulance  
2. Helicopter Ambulance  
3. Fixed-Wing Ambulance

4. Private/Public Vehicle/Walk-in  
5. Police  
6. Other