



EMERGENCY MEDICAL SERVICES FOR CHILDREN

**REPORT OF PATIENT CARE DATA
FROM 1999 TO 2008**

DRAFT

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Executive Summary

This report describes the data and the analysis for pediatric patients (age 0 through 17 years) that received prehospital treatment or assistance by licensed ambulance services in Pennsylvania from 1999 to 2008. The primary objective of this update was to add the 2008 data to the previously created database (1999 through 2007) and determine if the 2008 data was consistent with previously reported observations about treatments provided pediatric patients for basic life support services, advanced life support services and medications. There were 84,947 pediatric patient care reports (PCRs) completed in 2008. There were a total of 1.8 million patient care reports completed in 2008. 5% of the total PCRs were pediatric in 2008.

The data is derived from patient care reports (PCRs) submitted by each ambulance service. Ambulance service personnel are permitted to perform patient care, within their Pennsylvania-defined scope of practice, when following the appropriate protocol(s) or when following the order of a medical command physician. An ambulance service must file a report for any call to which it responds that results in patient care, assessment or refusal of the patient to be assessed. A report is filed for each patient within 30 days of the incident with the regional emergency medical service council assigned responsibility for the region in which the ambulance is based.

The following were notable observations from the 2008 update and analysis of the pediatric data:

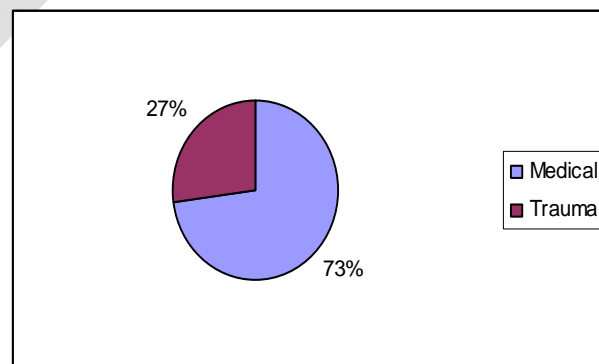
The highest frequency reason for a 2008 pediatric ambulance call was medical (47%).

Medical Command was used in 40% of the 2008 ambulance calls for pediatric patients with protocol being the most frequent type medical command used.

The most frequent ALS pediatric treatment in 2008 was an EKG (48%), followed by Peripheral IV (34%) and medication administration (9%).

The most frequent medication provided a pediatric patient in 2008 was Albuterol (40%).

2008 Types of Patient Care Report Calls



Data Description

The database is derived from patient care reports (PCRs) submitted by each ambulance service. An ambulance service must file a report for any call to which it responds that results in patient care, assessment or refusal of the patient to be assessed. A report is filed for each patient within 30 days of the incident with the regional emergency medical service council assigned responsibility for the region in which the ambulance is based.

This study is based on data contained in the Bureau of EMS's PCR database. Each PCR record contained in this database has information about each patient who received emergency medical treatments or assistance by an ambulance service. These data elements provide information about patient demographics, incident location, ambulance service response times, mechanisms of injury, basic life support treatments, advanced life support treatments, medications administered, medical command used and results of the emergency service response.

The PCR data has limited information about injury severity and only basic clinical signs (e.g., pulse, respiration, Glasgow Coma Score). These data identify patients who were transported to a hospital emergency room, however, it does not provide any final disposition of the patient (i.e., lived, died, impaired).

Case Selection Criteria

In 2007, the coding for the targeted age group (years 0 through 17) was changed. This change was to reflect the correct procedure to obtain the age groups in question. An error in completing the patient care report contributed to this incorrect coding of age groups. As a result, the sample size in 2007 for all measures will decrease.

It should be understood that some treated pediatric patients might not be represented in the database because of an oversight by the ambulance service to submit a PCR, by computer system failures at the ambulance service or Council in transmitting the record or by data field errors in the age or age field indicator. Also, no attempt was made to cross validate the values in related data elements for inclusion in the pediatric study. For example, if a PCR indicated no patient found and the same PCR indicated a treatment was provided, the treatment was counted in the sum of treatments provided.

Ambulance Calls by Type of Incident

Table 1 displays the reasons the ambulance service was called for pediatric patients in Pennsylvania from 1999 to 2008. The highest frequency reason for an ambulance call in 2008 was medical followed by other.

Table 1. Number of PCRs by Year of Incident for People Under Age 18

| Type of Incident | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 00-Not Entered | 2,325 | 8,740 | 10,055 | 11,936 | 13,793 | 2,720 | 403 | 594 | 668 | 493 |
| 01-Assault | 2,177 | 2,620 | 2,350 | 2,154 | 2,508 | 2,778 | 2,715 | 2,854 | 2,638 | 2,567 |
| 02-Bicycle Accident | 1,586 | 1,596 | 1,420 | 1,172 | 1,274 | 1,419 | 1,101 | 1,186 | 951 | 856 |
| 03-Bite/Sting | 764 | 787 | 792 | 832 | 833 | 737 | 707 | 659 | 540 | 539 |
| 04-Fall | 10,286 | 10,454 | 10,685 | 10,547 | 11,264 | 10,873 | 9,700 | 10,180 | 9,346 | 8,715 |
| 05-Fire | 414 | 480 | 429 | 370 | 480 | 481 | 455 | 556 | 571 | 542 |
| 06-Inter Facility Transport | 3,198 | 2,977 | 3,101 | 4,191 | 5,860 | 6,149 | 7,365 | 8,885 | 6,248 | 5,223 |
| 07-Medical Call | 35,093 | 32,704 | 32,857 | 32,916 | 39,684 | 41,978 | 43,220 | 47,448 | 41,351 | 38,604 |
| 08-Motorcycle Accident | 270 | 407 | 409 | 365 | 410 | 389 | 429 | 387 | 319 | 269 |
| 09-Pedestrian Accident | 1,621 | 2,107 | 2,183 | 2,174 | 2,141 | 1,219 | 891 | 1,059 | 867 | 826 |
| 10-RV Accident | 400 | 441 | 496 | 515 | 535 | 618 | 588 | 511 | 495 | 406 |
| 11-Shooting | 192 | 201 | 183 | 209 | 267 | 273 | 270 | 370 | 315 | 310 |
| 12-Stabbing | 99 | 132 | 156 | 130 | 153 | 179 | 177 | 269 | 305 | 278 |
| 13-Vehicular Accident | 19,795 | 20,479 | 18,871 | 14,767 | 19,223 | 18,582 | 16,229 | 16,593 | 13,950 | 11,841 |
| 14-Other | 10,309 | 12,703 | 13,940 | 12,694 | 12,815 | 16,033 | 15,134 | 15,413 | 14,481 | 13,478 |
| All Pediatric PCRs | 88,529 | 96,828 | 97,927 | 94,972 | 111,244 | 104,428 | 99,384 | 106,964 | 93,045 | 84,947 |

Ambulance Calls by Outcome

Table 2 displays the outcomes of the ambulance service calls for pediatric patients made by ambulance services in Pennsylvania during 1999 through 2008. It should be noted that “refused” includes both the patient refused to be treated and/or the patient refused to be transported to a hospital. Care transferred means the patient was transferred to another ambulance. Taken by Private Vehicle indicates the patient was taken, not by the ambulance, but by a private vehicle with the intended destination a local hospital. In 78% of the 2006 ambulance calls, the pediatric patient was transported to a hospital by ambulance and in 14% of the 2006 ambulance calls the pediatric patient refused treatment and/or transport. In 2007, there was a decrease in the amount of ambulance calls by outcome as compared to 2006.

Table 2. Number of PCRs by Outcome of Ambulance Calls for People Under Age 18

| Outcome Of Call | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 00-Not Entered | 531 | 272 | 678 | 543 | 515 | 459 | 134 | 84 | 55 | 52 |
| 01-Transported Hosp | 66,574 | 74,517 | 76,058 | 75,030 | 87,082 | 80,854 | 78,187 | 83,956 | 72,761 | 65,835 |
| 02-Care Transferred | 3,539 | 3,721 | 3,551 | 4,169 | 4,516 | 3,971 | 3,594 | 3,573 | 2,588 | 2,147 |
| 03-Call Cancelled | 579 | 307 | 277 | 213 | 247 | 210 | 211 | 485 | 1,883 | 2,663 |
| 04-Refused By Patient | 13,994 | 14,897 | 14,486 | 12,165 | 15,755 | 15,521 | 13,770 | 14,802 | 11,918 | 10,596 |
| 05-False Call | 48 | 53 | 60 | 45 | 46 | 39 | 10 | 11 | 25 | 8 |
| 06-No Patient Found | 44 | 95 | 41 | 35 | 20 | 43 | 26 | 60 | 64 | 32 |
| 07-Taken By Private Vehicle | 427 | 372 | 378 | 337 | 358 | 358 | 298 | 312 | 223 | 188 |
| 08-Treated, No Transport | 1,220 | 1,296 | 1,284 | 1,328 | 1,439 | 1,322 | 1,274 | 1,378 | 1,123 | 945 |
| 09-Ambulance On Standby | 105 | 59 | 61 | 74 | 100 | 61 | 69 | 149 | 171 | 192 |
| 10-Patient DOA | 127 | 135 | 66 | 64 | 142 | 94 | 145 | 140 | 150 | 96 |
| 11-Other | 1,341 | 1,104 | 987 | 969 | 1,024 | 1,496 | 1,666 | 2,014 | 2,084 | 2,193 |
| All Pediatric PCRs | 88,529 | 96,828 | 97,927 | 94,972 | 111,244 | 104,428 | 99,384 | 106,964 | 93,045 | 84,947 |

Pre-hospital Practitioner Use of Medical Command

Table 3 shows ambulance service practitioners' use of Medical Command for pediatric patients in Pennsylvania during 1999 through 2008. Medical Command is an order given by a Medical Command physician to a pre-hospital practitioner in a pre-hospital, inter-facility, or emergency care setting in a hospital, to provide immediate medical care to prevent loss of life or aggravation of physiological or psychological illness or injury, or to withdraw or withhold medical treatment. On average, Medical Command was used 40% (average all years) of the time during the treatment of pediatric patients.

Table 3. Number of PCR's by Medical Command Use for Ambulance Calls for Under Age 18

| Medical Command | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------------|--------|--------|--------|--------|---------|---------|--------|---------|--------|--------|
| Medical Command Used | 37,853 | 38,649 | 37,626 | 36,354 | 43,982 | 40,452 | 41,229 | 44,229 | 38,996 | 34,298 |
| Command Not Required | 19,663 | 26,382 | 34,940 | 36,131 | 41,858 | 35,057 | 27,489 | 24,910 | 26,401 | 24,997 |
| Medical Command None | 7,608 | 7,506 | 5,774 | 5,216 | 5,206 | 5,128 | 12,045 | 14,525 | 6,808 | 5,668 |
| No Response Entered | 23,405 | 24,288 | 19,587 | 17,271 | 20,198 | 23,781 | 18,621 | 22,715 | 20,840 | 19,984 |
| All Pediatric PCR's | 88,529 | 96,828 | 97,927 | 94,972 | 111,244 | 104,428 | 99,384 | 106,964 | 93,045 | 84,947 |

Table 4 shows the type of medical command used by ambulance service practitioners for pediatric patients in Pennsylvania during 1999 through 2008. It should be noted the sum of the Medical Command by type of command does not agree to the total Medical Command Used in the previous table because more than one type of command could have been used on a given call. Protocol was the highest frequency (60%) type medical command used in 2008.

Table 4. Number of PCR's by Medical Command Type for Ambulance Calls for Under Age 18

| Medical Command Type | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Telephone | 2,242 | 1,691 | 1,525 | 1,418 | 1,348 | 1,084 | 1,229 | 1,130 | 867 | 554 |
| Cellular | 7,742 | 6,680 | 7,165 | 6,960 | 8,238 | 10,395 | 11,419 | 11,371 | 10,301 | 9,546 |
| Radio | 11,318 | 9,897 | 9,474 | 8,798 | 9,470 | 7,909 | 6,383 | 5,714 | 4,209 | 3,078 |
| Protocol | 21,250 | 24,351 | 23,415 | 22,339 | 27,975 | 23,172 | 23,464 | 27,666 | 23,162 | 20,773 |
| MD On Scene | 876 | 574 | 583 | 526 | 619 | 638 | 597 | 563 | 457 | 347 |
| All Pediatric PCR's | 43,428 | 43,193 | 42,162 | 40,041 | 47,650 | 43,198 | 43,092 | 46,444 | 38,996 | 34,298 |

Ambulance Calls by Age of Patient

Table 5 shows the percentage of PCRs for pediatric patients completed by ambulance services in Pennsylvania during 1999 through 2008 by age grouping. The distribution of PCRs by age has remained very constant over time. As noted previously, the highest frequency reason for an ambulance call in 2008 was medical (44%) followed by other (16%).

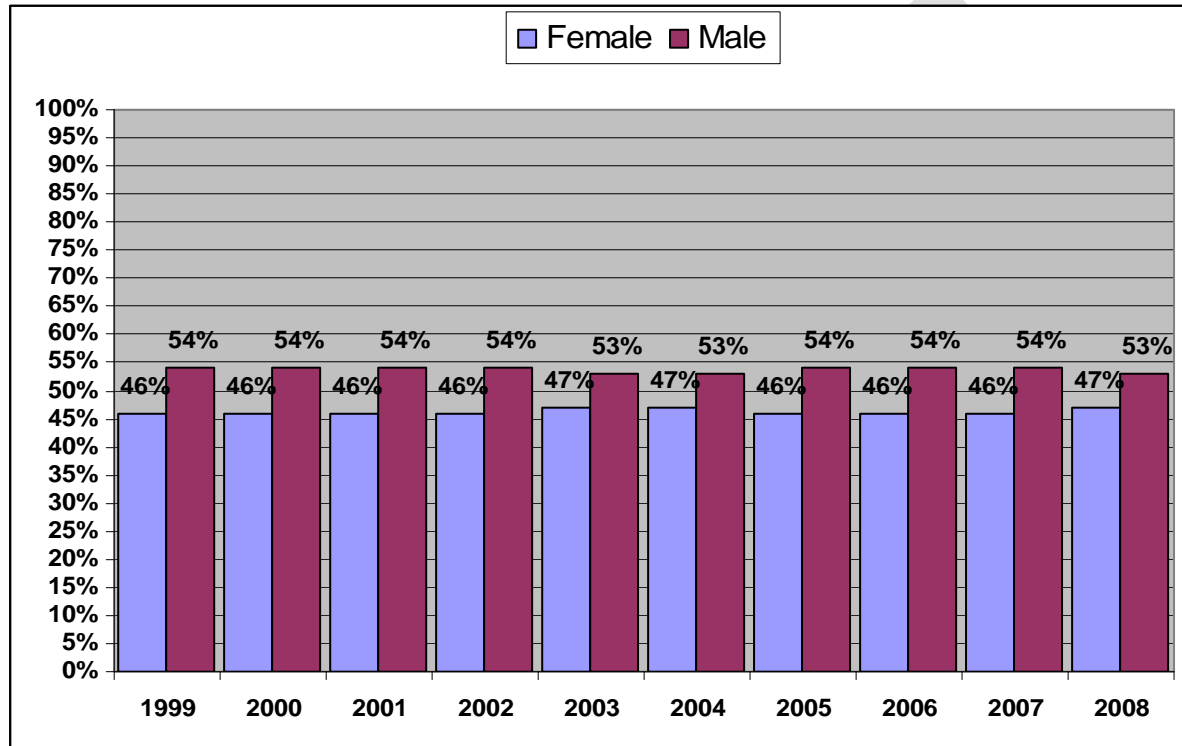
Table 5. Number of PCRs by Age of Patient for Ambulance Calls for People Under Age 18

| Age In Years | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0 | 8% | 9% | 9% | 10% | 10% | 10% | 9% | 10% | 7% | 8% |
| 1 | 8% | 10% | 10% | 9% | 8% | 8% | 8% | 8% | 7% | 8% |
| 2 | 6% | 9% | 7% | 7% | 6% | 5% | 6% | 6% | 6% | 6% |
| 3 | 4% | 4% | 4% | 4% | 5% | 4% | 4% | 4% | 5% | 5% |
| 4 | 3% | 3% | 3% | 3% | 4% | 4% | 4% | 3% | 4% | 4% |
| 5 | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| 6 | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| 7 | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| 8 | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| 9 | 4% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| 10 | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| 11 | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| 12 | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| 13 | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| 14 | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 7% | 6% |
| 15 | 7% | 7% | 7% | 7% | 7% | 8% | 8% | 8% | 8% | 8% |
| 16 | 11% | 9% | 9% | 10% | 9% | 10% | 10% | 10% | 10% | 10% |
| 17 | 13% | 12% | 12% | 12% | 12% | 12% | 13% | 13% | 13% | 13% |
| PCRs | 88,529 | 96,828 | 97,927 | 94,972 | 111,244 | 104,428 | 99,384 | 106,964 | 93,045 | 84,947 |

Ambulance Calls by Gender of Patient

Figure 1 shows the proportion of PCR by gender for pediatric patients made by ambulance services in Pennsylvania during 1999 through 2008. In all years, there are substantially more males than females. This holds true for every age until age 15.

Figure 1. Number of PCRs by Gender of Patient for Ambulance Calls for Under Age 18



BLS Treatments, ALS Treatments and Medications Provided by Ambulance Service

Table 6 displays the number and proportion of PCRs where BLS treatments, ALS treatments and medications were provided for pediatric patients by ambulance services in Pennsylvania during 1999 through 2008. If multiple treatments were provided during a call, this table only counts the PCR one time. The frequency of BLS treatments over time has decreased, while ALS treatments and medications given have slightly increased.

Table 6. Number of patients who received ALS Treatments, BLS Treatments and Medications Provided for Ambulance Calls for People Under Age 18

| Year | PCRs | BLS Treatment Provided | ALS Treatment Provided | Medications Given | BLS Treatments Provided | ALS Treatments Provided | Medications Given |
|-----------|---------|------------------------|------------------------|-------------------|-------------------------|-------------------------|-------------------|
| 1999 | 88,529 | 41,908 | 18,299 | 5,147 | 47% | 21% | 6% |
| 2000 | 96,828 | 44,304 | 20,372 | 6,028 | 46% | 21% | 6% |
| 2001 | 97,927 | 43,425 | 21,798 | 6,793 | 44% | 22% | 7% |
| 2002 | 94,972 | 40,612 | 22,057 | 6,572 | 43% | 23% | 7% |
| 2003 | 111,244 | 42,596 | 24,954 | 8,182 | 38% | 22% | 7% |
| 2004 | 104,428 | 38,453 | 23,072 | 7,308 | 37% | 22% | 7% |
| 2005 | 99,384 | 35,658 | 23,129 | 7,211 | 36% | 23% | 7% |
| 2006 | 106,964 | 35,516 | 25,102 | 7,575 | 33% | 23% | 7% |
| 2007 | 93,045 | 28,850 | 20,274 | 6,590 | 31% | 22% | 7% |
| 2008 | 84,947 | 25,505 | 18,119 | 5,980 | 30% | 21% | 7% |
| All Years | 978,268 | 351,322 | 199,057 | 61,406 | 39% | 22% | 7% |

BLS Treatments Provided by Ambulance Service

Table 7 displays the number of BLS treatments provided for pediatric patients by ambulance services in Pennsylvania during 1999 through 2008. If multiple treatments were provided during an ambulance call, this table counted one in each unique treatment type, therefore, the number of treatments is greater than the number of PCRs on the previous table. As can be derived from the table below, the reductions (36%) in immobilization treatments (C-Spine Stabilizer, Cervical Collar, C-Spine Immobilization Device, Board Long, Board Short, Splint- Extremity and Splint-Traction) were the major reasons for the decrease in BLS treatments from 1999 through 2008.

Table 7 Number of BLS Procedures Performed On Patients Under Age 18 Identified In Table 6

| BLS Treatments | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| Abdominal Thrust | 145 | 30 | 31 | 57 | 26 | 22 | 22 | 24 | 41 | 60 |
| Back Blows | 108 | 33 | 28 | 55 | 35 | 32 | 25 | 15 | 14 | 8 |
| Airway Manual | 154 | 153 | 164 | 192 | 136 | 114 | 85 | 92 | 56 | 48 |
| Nasopharyngeal | 190 | 208 | 213 | 236 | 164 | 170 | 159 | 155 | 149 | 116 |
| Oropharyngeal | 287 | 190 | 204 | 226 | 180 | 165 | 162 | 123 | 92 | 89 |
| Pocket Mask | 44 | 26 | 34 | 75 | 30 | 15 | 10 | 37 | 21 | 14 |
| Demand Valve | 70 | 10 | 22 | 57 | 7 | 6 | 7 | 4 | 8 | 2 |
| Bag Valve mask | 1,243 | 1,084 | 1,179 | 1,174 | 1,171 | 946 | 754 | 744 | 589 | 455 |
| C-Spine Stabilizer | 15,661 | 15,498 | 13,812 | 12,021 | 11,426 | 9,492 | 8,012 | 7,973 | 6,097 | 4,694 |
| Cervical Collar | 15,623 | 15,435 | 14,306 | 12,875 | 13,181 | 11,062 | 10,017 | 10,496 | 8,607 | 7,092 |
| C-Spine Imm Dev | 13,696 | 13,688 | 12,770 | 11,321 | 11,656 | 9,715 | 8,920 | 9,419 | 7,668 | 6,355 |
| Board Long | 16,182 | 16,500 | 14,539 | 12,741 | 12,595 | 11,689 | 10,695 | 11,225 | 9,116 | 7,654 |
| Board Short | 565 | 430 | 411 | 411 | 363 | 273 | 266 | 350 | 238 | 222 |
| Splint Extremity | 3,346 | 3,556 | 3,306 | 2,913 | 2,918 | 2,611 | 2,268 | 2,453 | 2,044 | 1,803 |
| Splint Traction | 429 | 233 | 208 | 172 | 177 | 136 | 114 | 113 | 121 | 82 |
| Oxygen 1 9LPM | 10,068 | 10,775 | 10,981 | 10,412 | 11,347 | 10,881 | 10,321 | 10,294 | 8,296 | 7,670 |
| Oxygen 10 15LPM | 13,241 | 13,621 | 13,592 | 13,108 | 13,393 | 11,859 | 10,326 | 9,572 | 7,227 | 6,236 |
| Auto Defibrillation | 181 | 42 | 47 | 42 | 35 | 47 | 40 | 26 | 17 | 16 |
| Bandage | 5,455 | 6,357 | 6,054 | 5,787 | 5,454 | 5,360 | 4,784 | 4,668 | 4,233 | 3,613 |
| CPR | 325 | 357 | 385 | 343 | 324 | 307 | 323 | 321 | 252 | 215 |

| | | | | | | | | | | |
|----------------------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|
| Hot Pack | 173 | 123 | 111 | 137 | 168 | 134 | 128 | 143 | 99 | 97 |
| Cold Pack | 4,142 | 4,460 | 4,563 | 4,145 | 4,052 | 3,686 | 3,627 | 3,519 | 3,082 | 2,846 |
| Delivery (OB) | 52 | 61 | 54 | 35 | 59 | 63 | 54 | 49 | 11 | 4 |
| Extrication | 1,573 | 1,293 | 1,303 | 1,231 | 1,294 | 1,077 | 1,034 | 1,034 | 707 | 574 |
| Ipecac | 26 | 15 | 13 | 18 | 9 | 26 | 4 | 6 | 6 | 8 |
| Irrigation | 633 | 636 | 674 | 586 | 543 | 522 | 411 | 422 | 344 | 258 |
| MAST Applied | 49 | 43 | 26 | 29 | 15 | 26 | 6 | 6 | 1 | 1 |
| MAST Inflated | 46 | 29 | 22 | 24 | 14 | 29 | 7 | 4 | 1 | 2 |
| Oral Glucose | 91 | 80 | 85 | 91 | 64 | 78 | 68 | 105 | 91 | 83 |
| Suctioning | 665 | 705 | 820 | 733 | 796 | 754 | 705 | 719 | 540 | 424 |
| Tourniquet | 25 | 7 | 376 | 740 | 1,055 | 1,153 | 1,296 | 236 | 89 | 38 |
| Total BLS Treatments | 104,488 | 105,678 | 100,333 | 91,987 | 92,687 | 82,450 | 74,650 | 74,347 | 59,857 | 50,779 |

BLS Treatments by Age Groupings

Table 8 displays the number of BLS treatments provided by age ranges for pediatric patients treated by ambulance services in Pennsylvania during 2008. If multiple treatments were provided during an ambulance call, this table counted one in each unique treatment type, therefore, the number of treatments is greater than the number of PCR's

Table 8. Number of BLS Treatments by Age Groupings for Ambulance Calls for People under Age 18 (Year 2008)

| BLS Treatments | Age 0-4 | Age 5-9 | Age 10-14 | Age 15-17 | Age 0-4 % Total | Age 5-9 % Total | Age 10-14 % Total | Age 15-17 % Total |
|---------------------|---------|---------|-----------|-----------|-----------------|-----------------|-------------------|-------------------|
| Abdominal Thrust | 14 | 14 | 13 | 19 | 0.16% | 0.18% | 0.09% | 0.10% |
| Back Blows | 7 | 1 | 0 | 0 | 0.80% | 0.01% | 0.00% | 0.00% |
| Airway Manual | 25 | 6 | 6 | 11 | 0.28% | 0.08% | 0.04% | 0.06% |
| Nasopharyngeal | 12 | 8 | 26 | 70 | 0.13% | 0.10% | 0.18% | 0.36% |
| Oropharyngeal | 25 | 12 | 17 | 35 | 0.28% | 0.15% | 0.11% | 0.18% |
| Pocket Mask | 5 | 2 | 4 | 3 | 0.06% | 0.03% | 0.03% | 0.02% |
| Demand Valve | 0 | 2 | 0 | 0 | 0.00% | 0.03% | 0.00% | 0.00% |
| Bag Valve mask | 220 | 59 | 66 | 110 | 2.47% | 0.76% | 0.44% | 0.57% |
| C-Spine Stabilizer | 467 | 700 | 1,525 | 2,002 | 5.23% | 8.97% | 10.28% | 10.42% |
| Cervical Collar | 739 | 1,115 | 2,233 | 3,005 | 8.28% | 14.29% | 15.05% | 15.64% |
| C-Spine Imm Dev | 676 | 981 | 2,024 | 2,674 | 7.58% | 12.57% | 13.64% | 13.92% |
| Board Long | 686 | 1,159 | 2,501 | 3,308 | 7.69% | 14.86% | 16.85% | 17.22% |
| Board Short | 131 | 45 | 20 | 26 | 1.47% | 0.58% | 0.13% | 0.14% |
| Splint Extremity | 108 | 310 | 805 | 580 | 1.21% | 3.97% | 5.42% | 3.02% |
| Splint Traction | 1 | 17 | 23 | 41 | 0.01% | 0.22% | 0.15% | 0.21% |
| Oxygen 1 9LPM | 1,603 | 955 | 2,055 | 3,057 | 17.96% | 12.24% | 13.85% | 15.91% |
| Oxygen 10 15LPM | 2,391 | 895 | 1,237 | 1,713 | 26.76% | 11.47% | 8.34% | 8.92% |
| Auto Defibrillation | 4 | 2 | 6 | 4 | 0.04% | 0.03% | 0.04% | 0.02% |
| Bandage | 811 | 760 | 916 | 1,126 | 9.09% | 9.74% | 6.17% | 5.86% |
| CPR | 139 | 17 | 32 | 27 | 1.56% | 0.22% | 0.22% | 0.14% |
| Hot Pack | 11 | 17 | 23 | 46 | 0.12% | 0.22% | 0.15% | 0.24% |
| Cold Pack | 490 | 523 | 963 | 870 | 5.49% | 6.70% | 6.49% | 4.53% |
| Delivery (OB) | 0 | 1 | 1 | 2 | 0.00% | 0.01% | 0.01% | 0.01% |
| Extrication | 81 | 80 | 166 | 247 | 0.91% | 1.03% | 1.12% | 1.29% |
| Ipecac | 3 | 3 | 0 | 2 | 0.03% | 0.04% | 0.00% | 0.01% |
| Irrigation | 30 | 49 | 60 | 89 | 0.67% | 0.63% | 0.40% | 0.46% |
| MAST Applied | 0 | 1 | 0 | 0 | 0.00% | 0.01% | 0.00% | 0.00% |
| MAST Inflated | 1 | 1 | 0 | 0 | 0.01% | 0.01% | 0.00% | 0.00% |
| Oral Glucose | 11 | 10 | 25 | 37 | 0.12% | 0.13% | 0.17% | 0.19% |
| Suctioning | 197 | 53 | 83 | 91 | 2.21% | 0.68% | 0.56% | 0.47% |

| | | | | | | | | |
|----------------------|-------|-------|--------|--------|--------|--------|--------|--------|
| Tourniquet | 6 | 4 | 9 | 19 | 0.07% | 0.05% | 0.06% | 0.10% |
| Total BLS Treatments | 8,924 | 7,802 | 14,839 | 19,214 | 100.0% | 100.0% | 100.0% | 100.0% |

ALS Treatments Provided by Ambulance Service

Table 9 displays the number of ALS treatments provided for pediatric patients by ambulance services in Pennsylvania during 1999 through 2008. If multiple treatments were provided during an ambulance call, this table counted one in each unique treatment type, therefore, the number of treatments is greater than the number of PCRs. The most frequent ALS pediatric treatment was EKG followed by Peripheral IV for all years. For the period 1999 through 2004, medications was third, however, for the period 2005-2007 blood draw was third.

Table 9. Number of ALS Treatments for Ambulance Calls for People Under Age 18

| ALS Treatments | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Peripheral IV | 10,811 | 11,585 | 11,917 | 11,854 | 13,114 | 14,144 | 14,349 | 15,125 | 12,009 | 10,699 |
| ALS EKG | 14,659 | 16,462 | 17,462 | 17,762 | 19,801 | 18,858 | 19,624 | 21,342 | 17,161 | 15,365 |
| Endotrach. Intub | 567 | 576 | 625 | 754 | 762 | 697 | 601 | 547 | 414 | 293 |
| Medications Adm. | 4,202 | 4,666 | 5,335 | 5,398 | 6,485 | 4,839 | 2,466 | 2,552 | 2,738 | 2,865 |
| Blood Draw | 2,758 | 3,002 | 3,436 | 3,825 | 4,159 | 3,831 | 3,584 | 3,817 | 2,936 | 2,302 |
| Central Ven. IV | 105 | 49 | 65 | 63 | 59 | 41 | 56 | 19 | 10 | 9 |
| Cricothyroidotomy | 77 | 34 | 31 | 21 | 13 | 6 | 8 | 6 | 7 | 0 |
| Defib. Cardiovert | 47 | 69 | 48 | 55 | 38 | 50 | 30 | 19 | 11 | 4 |
| EOA | 10 | 10 | 4 | 11 | 17 | 14 | 12 | 12 | 0 | 1 |
| Interosseous IV | 111 | 82 | 94 | 99 | 118 | 117 | 148 | 246 | 282 | 250 |
| Needle Thorac | 39 | 26 | 27 | 24 | 31 | 38 | 16 | 18 | 21 | 11 |
| Pacing | 16 | 21 | 88 | 80 | 88 | 102 | 72 | 114 | 31 | 50 |
| Urinary Cath | 58 | 155 | 90 | 108 | 177 | 145 | 157 | 152 | 135 | 61 |
| Total ALS Treatments | 33,460 | 36,373 | 39,222 | 40,054 | 44,862 | 42,882 | 41,123 | 43,969 | 35,755 | 31,910 |

ALS Treatments by Age Groupings

Table 10 displays the number of ALS treatments provided by age ranges for pediatric patients by ambulance services in Pennsylvania during 2008. If multiple treatments were provided during an ambulance call, this table counted one in each unique treatment type, therefore, the number of treatments is greater than the number of PCRs

Table 10. Number of ALS Treatments by Age Groupings for Ambulance Calls for under Age 18 (Year 2008)

| ALS Treatments | Age 0-4 | Age 5-9 | Age 10-14 | Age 15-17 | Age 0-4 % Total | Age 5-9 % Total | Age 10-14 % Total | Age 15-17 % Total |
|--------------------|---------|---------|-----------|-----------|-----------------|-----------------|-------------------|-------------------|
| Peripheral IV | 1,541 | 1,217 | 2,993 | 4,948 | 22.05% | 30.90% | 36.17% | 38.94% |
| ALS EKG | 4,120 | 2,000 | 3,778 | 5,467 | 58.94% | 50.79% | 45.66% | 43.02% |
| Endotrach. Intub | 126 | 35 | 59 | 73 | 1.80% | 0.89% | 0.71% | 0.57% |
| Medications Admin. | 757 | 436 | 698 | 974 | 10.83% | 11.07% | 8.44% | 7.66% |
| Blood Draw | 321 | 231 | 638 | 1,112 | 4.59% | 5.87% | 7.71% | 8.75% |

| | | | | | | | | |
|----------------------|-------|-------|-------|--------|--------|--------|--------|--------|
| Central Ven. IV | 3 | 0 | 3 | 3 | 0.04% | 0.00% | 0.04% | 0.02% |
| Cricothyroidotomy | 0 | 0 | 0 | 0 | 0.00% | 0.00% | 0.00% | 0.00% |
| Defib. Cardiovert | 1 | 1 | 1 | 1 | 0.01% | 0.03% | 0.01% | 0.01% |
| EOA | 0 | 0 | 0 | 1 | 0.00% | 0.00% | 0.00% | 0.01% |
| Interosseous IV | 98 | 8 | 73 | 71 | 1.40% | 0.20% | 0.88% | 0.56% |
| Needle Thorac | 2 | 0 | 3 | 6 | 0.03% | 0.00% | 0.04% | 0.05% |
| Pacing | 5 | 5 | 14 | 26 | 0.07% | 0.13% | 0.17% | 0.20% |
| Urinary Cath | 16 | 5 | 14 | 26 | 0.23% | 0.13% | 0.17% | 0.20% |
| Total ALS Treatments | 6,990 | 3,938 | 8,274 | 12,708 | 100.0% | 100.0% | 100.0% | 100.0% |

Medications Provided by Ambulance Service

Table 11 displays the number of times medications were provided for pediatric patients by ambulance services in Pennsylvania during 1999 through 2008. If medications were provided during an ambulance call, this table counted one in each unique medication type, therefore, the number of medications is greater than the number of PCRs. The most frequent medication provided a pediatric patient in 2007 was Albuterol (3.3% of all 2007 ambulance service calls).

Table 11. Number of Times Medications Provided for Ambulance Calls for under Age 18

| Medications Provided | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Albuterol | 2,490 | 2,568 | 3,084 | 3,002 | 3,878 | 3,348 | 3,496 | 3,449 | 3,068 | 2,715 |
| Aminophylline | 33 | 51 | 11 | 6 | 4 | 10 | 8 | 2 | 0 | 1 |
| Atropine | 166 | 172 | 167 | 202 | 218 | 233 | 229 | 196 | 155 | 113 |
| Bicarb | 46 | 38 | 26 | 47 | 36 | 58 | 42 | 31 | 32 | 24 |
| Bretylium | 2 | 5 | 1 | 1 | 2 | 6 | 14 | 0 | 0 | 0 |
| Calcium | 2 | 3 | 4 | 5 | 2 | 8 | 18 | 1 | 3 | 1 |
| Dexamethasone | 8 | 9 | 8 | 9 | 5 | 16 | 18 | 6 | 6 | 4 |
| D50 | 260 | 329 | 312 | 248 | 213 | 244 | 231 | 216 | 172 | 127 |
| Diazepam | 285 | 324 | 330 | 320 | 364 | 330 | 324 | 313 | 276 | 285 |
| Diphenhydramine | 151 | 189 | 203 | 197 | 262 | 229 | 237 | 245 | 189 | 204 |
| Dobutamine | 1 | 5 | 0 | 2 | 2 | 8 | 21 | 0 | 0 | 0 |
| Dopamine | 22 | 13 | 10 | 9 | 13 | 16 | 24 | 5 | 3 | 4 |
| Epinephrine | 374 | 359 | 378 | 355 | 338 | 340 | 379 | 347 | 291 | 254 |
| Furosemide | 30 | 31 | 20 | 13 | 24 | 36 | 34 | 10 | 11 | 7 |
| Glucagon | 35 | 32 | 21 | 26 | 17 | 31 | 34 | 20 | 14 | 17 |
| Heparin | 6 | 10 | 7 | 12 | 8 | 6 | 2 | 4 | 6 | 3 |
| Hydrocortizone | 7 | 7 | 7 | 6 | 4 | 3 | 1 | 2 | 1 | 2 |
| Isoproterenol | 1 | 2 | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Lidocaine | 67 | 36 | 53 | 73 | 97 | 86 | 55 | 51 | 27 | 20 |
| Meperidine | 18 | 15 | 11 | 11 | 5 | 4 | 1 | 3 | 1 | 1 |
| Metaproterenol | 47 | 42 | 16 | 11 | 54 | 44 | 44 | 37 | 38 | 10 |
| Morphine | 252 | 323 | 428 | 532 | 709 | 776 | 747 | 890 | 719 | 580 |
| Naxolone | 273 | 373 | 382 | 369 | 384 | 399 | 406 | 426 | 346 | 292 |
| Nitroglycerine | 73 | 161 | 158 | 58 | 90 | 78 | 91 | 78 | 57 | 46 |
| Nitous Oxide | 41 | 27 | 37 | 20 | 37 | 26 | 22 | 23 | 15 | 13 |
| Oxytocin | 148 | 481 | 10 | 7 | 3 | 2 | 1 | 1 | 0 | 0 |
| Procainamide | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| Terbutaline | 15 | 6 | 7 | 3 | 1 | 3 | 2 | 2 | 2 | 0 |
| Verapamil | 7 | 9 | 4 | 1 | 4 | 1 | 0 | 0 | 0 | 2 |
| Other Meds | 968 | 1,130 | 1,915 | 1,842 | 2,317 | 1,974 | 1,751 | 2,103 | 1,974 | 2,033 |
| Total Medications Provided | 5,829 | 6,751 | 7,615 | 7,387 | 9,092 | 8,316 | 8,232 | 8,463 | 7,407 | 6,758 |

Medications Provided by Age Groupings

Table 12 displays the number of times medications were provided by age ranges for pediatric patients by ambulance services in Pennsylvania during 2008. If multiple type medications were provided during an ambulance call, this table counted one in each unique medication type, therefore, the number of treatments is greater than the number of PCR's

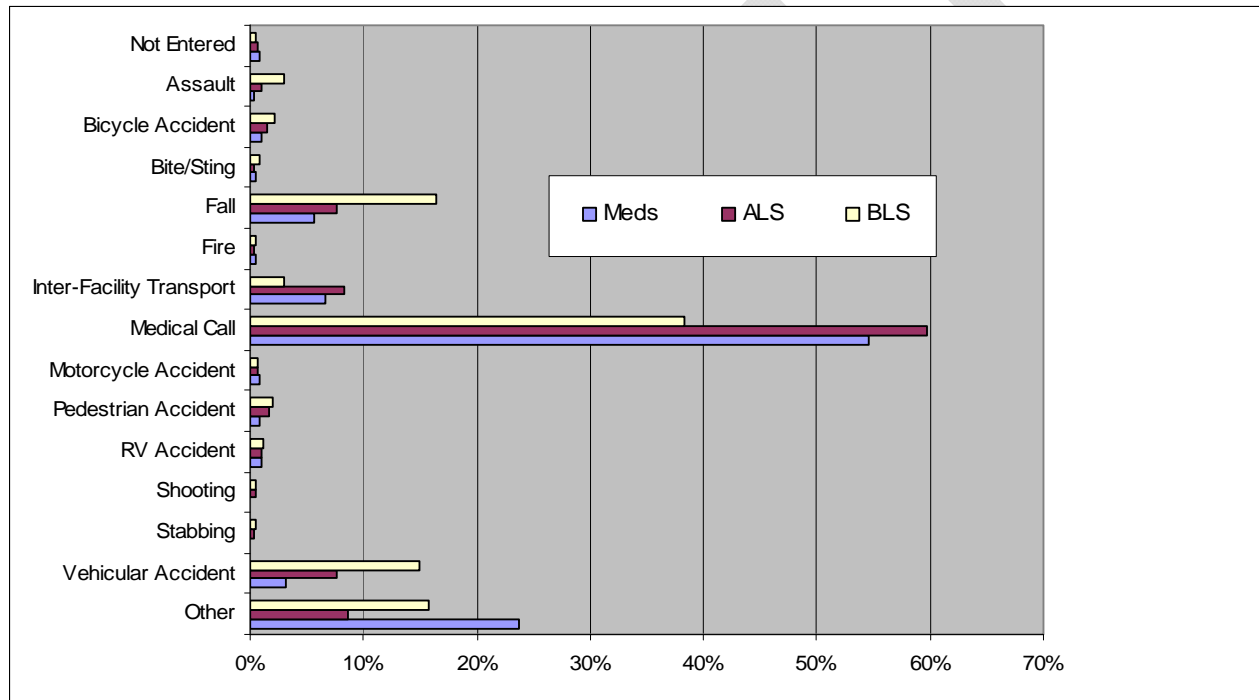
Table 12. Number of Times Medications Provided by Age Groupings for Ambulance Calls for People Under Age 18 (Year 2008)

| Medications Provided | Age 0-4 | Age 5-9 | Age 10-14 | Age 15-17 | Age 0-4 % Total | Age 5-9 % Total | Age 10-14 % Total | Age 15-17 % Total |
|----------------------------|---------|---------|-----------|-----------|-----------------|-----------------|-------------------|-------------------|
| Albuterol | 1,066 | 652 | 555 | 442 | 57.8% | 58.0% | 32.6% | 21.2% |
| Aminophylline | 1 | 0 | 0 | 0 | 0.1% | 0.0% | 0.0% | 0.0% |
| Atropine | 58 | 13 | 18 | 24 | 3.1% | 1.2% | 1.1% | 1.1% |
| Bicarb | 10 | 3 | 5 | 6 | 0.5% | 0.3% | 0.3% | 0.3% |
| Bretylium | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.0% | 0.0% |
| Calcium | 1 | 0 | 0 | 0 | 0.1% | 0.0% | 0.1% | 0.0% |
| Dexamethasone | 0 | 1 | 3 | 0 | 0.0% | 0.1% | 0.2% | 0.0% |
| D50 | 14 | 9 | 30 | 74 | 0.8% | 0.8% | 1.8% | 3.5% |
| Diazepam | 121 | 47 | 51 | 66 | 6.6% | 4.2% | 3.0% | 3.2% |
| Diphenhydramine | 45 | 36 | 62 | 61 | 2.4% | 3.2% | 3.6% | 2.9% |
| Dobutamine | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.0% | 0.0% |
| Dopamine | 0 | 0 | 3 | 1 | 0.0% | 0.0% | 0.2% | 0.0% |
| Epinephrine | 114 | 32 | 52 | 56 | 6.2% | 2.8% | 3.1% | 2.7% |
| Furosemide | 1 | 1 | 3 | 2 | 0.1% | 0.1% | 0.2% | 0.1% |
| Glucagon | 6 | 1 | 3 | 7 | 0.3% | 0.1% | 0.2% | 0.3% |
| Heparin | 0 | 1 | 0 | 2 | 0.0% | 0.1% | 0.0% | 0.1% |
| Hydrocortizone | 1 | 0 | 0 | 1 | 0.1% | 0.0% | 0.0% | 0.0% |
| Isoproterenol | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.0% | 0.0% |
| Lidocaine | 3 | 3 | 4 | 10 | 0.2% | 0.3% | 0.2% | 0.5% |
| Meperidine | 0 | 0 | 0 | 1 | 0.0% | 0.0% | 0.1% | 0.0% |
| Metaproterenol | 6 | 3 | 0 | 1 | 0.3% | 0.3% | 0.0% | 0.0% |
| Morphine | 34 | 74 | 231 | 241 | 1.8% | 6.6% | 13.6% | 11.5% |
| Naxolone | 11 | 4 | 47 | 230 | 0.6% | 0.4% | 2.8% | 11.0% |
| Nitroglycerine | 6 | 1 | 14 | 25 | 0.3% | 0.1% | 0.8% | 1.2% |
| Nitous Oxide | 0 | 3 | 5 | 5 | 0.0% | 0.3% | 0.3% | 0.2% |
| Oxytocin | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.0% | 0.0% |
| Procainamide | 0 | 0 | 0 | 0 | 0.0% | 0.1% | 0.0% | 0.0% |
| Terbutaline | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.1% | 0.0% |
| Verapamil | 1 | 0 | 1 | 0 | 0.1% | 0.0% | 0.1% | 0.0% |
| Other Meds | 345 | 241 | 615 | 832 | 18.7% | 21.4% | 36.1% | 39.9% |
| Total Medications Provided | 1,844 | 1,125 | 1,702 | 2,087 | 100.0% | 100.0% | 100.0% | 100.0% |

BLS Treatments, ALS Treatments and Medications Provided by Type Call

Figure 2 shows the percent of time patients received BLS treatments, ALS treatments and medications by type of call for pediatric patients made by ambulance services in Pennsylvania during 2008.

Figure 2 Percent of Time Patient Received BLS Treatments, ALS Treatments and Medications by Ambulance Call Types for People Under Age 18 in Pennsylvania during 2008

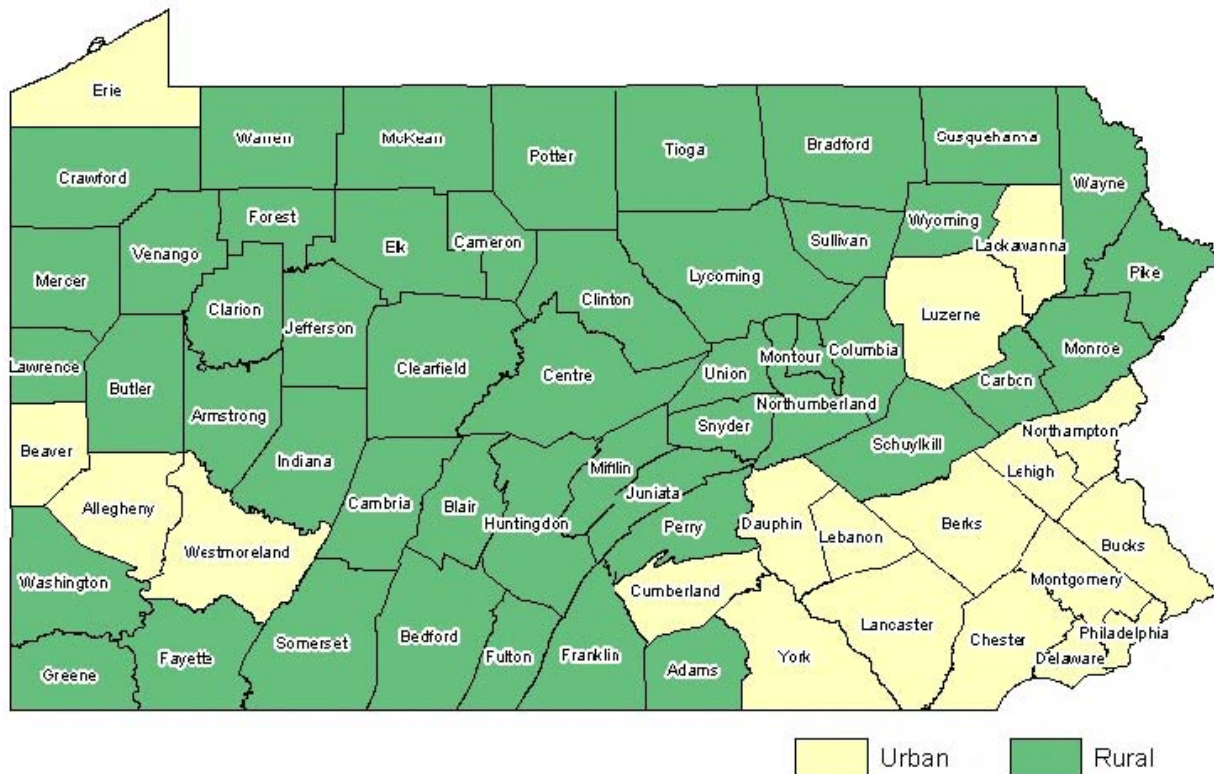


Rural vs. Urban Counties

In 2003, the Center for Rural Pennsylvania adopted a definition of rural and urban based on population density. Population density is calculated by dividing the total population of a specific area by the total number of square land miles of that area. In 2000, the population of Pennsylvania was 12,281,054 and the number of square miles of land in Pennsylvania was 44,820. Therefore, the population density was 274 persons per square mile. By basing the definition on population density, the Center for Rural Pennsylvania can now identify counties, municipalities, and school districts as either rural or urban. A county or school district is rural (Figure 3) when the number of persons per square mile within the county or school district is less than 274. Counties and school districts that have 274 persons or more per square mile are considered urban.

Figure 3

Pennsylvania's Rural Counties



Ambulance Calls by County Type

Table 13 displays the percentage of ambulance service calls by county type for pediatric patients in Pennsylvania during 1999 through the end of 2008. The proportion of ambulance services by county type has remained relatively constant (+/- 3%) over time.

Table 13. Percentage of Ambulance Calls by County Type for People Under Age 18

| County Type | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Out Of State PCRs | 0.4% | 0.4% | 0.4% | 0.5% | 0.5% | 0.7% | 0.6% | 0.5% | 0.5% | 0.4% |
| Rural Counties PCRs | 29.1% | 27.1% | 28.8% | 28.9% | 27.3% | 27.7% | 27.4% | 26.3% | 23.2% | 22.49% |
| Urban Counties PCRs | 70.5% | 72.6% | 70.8% | 70.7% | 72.2% | 71.7% | 72.9% | 73.2% | 76.3% | 77.11% |
| Total PCRs | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

BLS Treatments, ALS Treatments and Medications Provided by Rural vs. Urban Counties

Table 14 displays the number and proportion of PCRs where BLS treatments, ALS treatments and medications were provided for pediatric patients by county type (rural vs. urban) for ambulance services in Pennsylvania during 1999 through 2008. It should be noted that a PCR without a valid county (out of state or missing) was excluded from the table below. The frequency of BLS treatments for 2008 has decreased for both urban and rural from 1999; rural decreased 16.1% while urban decreased 15.8%. ALS treatments for 2007 have increased for rural by 4.5% from 1999 while urban has increased by 0.2%. Medications for 2007 have increased by 5.8% for rural from 1999 while urban has increased by 0.9%.

Table 14. Number of ALS Treatments, BLS Treatments and Medications Provided for Ambulance Calls for People Under Age 18 by Rural and Urban Counties

| Year | County Type | PCRs | BLS Treatment Provided | ALS Treatment Provided | Medications Given | BLS Treatment Provided | ALS Treatment Provided | Medications Given |
|------|-------------|--------|------------------------|------------------------|-------------------|------------------------|------------------------|-------------------|
| 1999 | Rural | 25,781 | 13,997 | 5,607 | 1,061 | 54.3% | 21.7% | 4.1% |
| 2000 | Rural | 26,209 | 13,903 | 5,897 | 1,501 | 53.0% | 22.55 | 5.7% |
| 2001 | Rural | 28,205 | 14,159 | 6,677 | 1,840 | 50.2% | 23.7% | 6.5% |
| 2002 | Rural | 27,414 | 13,734 | 6,924 | 1,846 | 50.1% | 25.3% | 6.7% |
| 2003 | Rural | 30,346 | 13,784 | 7,615 | 2,295 | 45.4% | 25.1% | 7.6% |
| 2004 | Rural | 28,906 | 12,893 | 7,253 | 2,069 | 44.6% | 25.1% | 7.2% |
| 2005 | Rural | 27,205 | 11,830 | 7,437 | 2,185 | 43.5% | 27.3% | 8.0% |
| 2006 | Rural | 28,179 | 11,157 | 7,733 | 2,190 | 39.6% | 27.4% | 7.8% |
| 2007 | Rural | 21,359 | 8,155 | 5,598 | 2,112 | 38.2% | 26.2% | 9.9% |
| 2008 | Rural | 18,864 | 7,016 | 4,853 | 1,829 | 37.2% | 25.7% | 9.7% |
| | | | | | | | | |
| 1999 | Urban | 62,400 | 27,706 | 12,555 | 4,023 | 44.4% | 20.1% | 6.4% |
| 2000 | Urban | 70,268 | 30,175 | 14,354 | 4,480 | 42.9% | 20.4% | 6.4% |
| 2001 | Urban | 69,299 | 29,048 | 14,976 | 4,862 | 41.9% | 21.65 | 7.0% |
| 2002 | Urban | 67,110 | 26,628 | 14,946 | 4,647 | 39.7% | 22.3% | 6.9% |
| 2003 | Urban | 80,322 | 28,516 | 17,119 | 5,783 | 35.5% | 21.3% | 7.2% |
| 2004 | Urban | 74,840 | 25,247 | 15,564 | 5,114 | 33.7% | 20.8% | 6.8% |

| | | | | | | | | |
|------|-------|--------|--------|--------|-------|-------|-------|------|
| 2005 | Urban | 71,536 | 23,507 | 15,432 | 4,908 | 32.9% | 21.6% | 6.9% |
| 2006 | Urban | 78,258 | 24,118 | 17,159 | 5,275 | 30.8% | 21.9% | 6.7% |
| 2007 | Urban | 70,258 | 20,073 | 14,282 | 5,126 | 28.6% | 20.3% | 7.3% |
| 2008 | Urban | 64,685 | 17,847 | 12,878 | 4,795 | 27.6% | 19.9% | 7.4% |

Rural vs. Urban County Ambulance Calls by Type of Incident

Table 15 displays the reasons the ambulance service was called for pediatric patients in rural and urban counties in Pennsylvania during 2007 and 2008. When comparing 2007 to 2006 for ambulance service calls in rural counties, there was less than 1.1% plus or minus change in the percentage of total PCR's by type of incident. In rural counties in both 2007 and 2006, medical type incident was the most frequent reason for the ambulance call followed by vehicular accident. When comparing 2007 to 2008 for ambulance service calls in urban counties, there was slightly more change in several categories; inter-facility increased by 1.6% while the other category increased by 1.3% and vehicular accident decreased by 0.5%. In urban counties in both 2007 and 2008, medical type incident was the most frequent reason for the ambulance call followed by type of incident of "Other".

Table 15. Number of PCR's by Year of Incident for People Under Age 18 by Rural and Urban Counties (Year 2007 and Year 2008)

| Incident Type | 2007 | | | | 2008 | | | |
|-----------------------------|-------------|-------------|--------------|--------------|-------------|-------------|--------------|--------------|
| | Rural PCR's | Urban PCR's | %Rural PCR's | %Urban PCR's | Rural PCR's | Urban PCR's | %Rural PCR's | %Urban PCR's |
| 00-Not Entered | 486 | 167 | 2.3% | 0.2% | 357 | 89 | 1.9% | 0.1% |
| 01-Assault | 283 | 2,324 | 1.3% | 3.3% | 286 | 2262 | 1.5% | 3.5% |
| 02-Bicycle Accident | 314 | 615 | 1.5% | 0.9% | 270 | 566 | 1.4% | 0.9% |
| 03-Bite/Sting | 129 | 397 | 0.6% | 0.6% | 130 | 394 | 0.7% | 0.6% |
| 04-Fall | 2,295 | 6,942 | 10.7% | 9.9% | 2,118 | 6,472 | 11.2% | 10.0% |
| 05-Fire | 81 | 486 | 0.4% | 0.7% | 79 | 450 | 0.4% | 0.7% |
| 06-Inter-Facility Transport | 2,430 | 3,664 | 11.4% | 5.2% | 2,087 | 3,012 | 11.1% | 4.7% |
| 07-Medical Call | 7,944 | 32,912 | 37.2% | 46.8% | 7,186 | 30,879 | 38.1% | 47.7% |
| 08-Motorcycle Accident | 153 | 146 | 0.7% | 0.2% | 131 | 127 | 0.7% | 0.2% |
| 09-Pedestrian Accident | 150 | 696 | 0.7% | 1.0% | 159 | 647 | 0.8% | 1.0% |
| 10-RV Accident | 302 | 170 | 1.4% | 0.2% | 230 | 157 | 1.2% | 0.2% |
| 11-Shooting | 21 | 293 | 0.1% | 0.4% | 26 | 284 | 0.1% | 0.4% |
| 12-Stabbing | 45 | 234 | 0.2% | 0.3% | 50 | 206 | 0.3% | 0.3% |
| 13-Vehicular Accident | 4,291 | 9,435 | 20.1% | 13.4% | 3,613 | 8,001 | 19.2% | 12.4% |
| 14-Other | 2,495 | 11,777 | 11.7% | 16.8% | 2,142 | 11,139 | 11.4% | 17.2% |
| Total PCR's | 21,359 | 70,258 | 100.0% | 100.0% | 18,864 | 64,685 | 100.0% | 100.0% |

Air Service Ambulance Calls

Table 16 displays the number of air ambulance service calls for pediatric patients in Pennsylvania during 1999 through the end of 2008. The percentage of air service ambulance calls increased from 2.43% in 1999 to 3.20% in 2007 for pediatric patients in Pennsylvania. Air ambulance calls for pediatric patients in 2007 are at the lowest recording since 2001.

Table 16. Number of Air Service PCR's by Year of Incident for People Under Age 18

| Description | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| All PCR's | 88,529 | 96,828 | 97,927 | 94,972 | 111,244 | 104,428 | 99,384 | 106,964 | 93,045 | 84,947 |
| Air Service PCR's | 2,147 | 2,249 | 2,436 | 3,475 | 4,073 | 4,212 | 4,083 | 4,518 | 2,978 | 1,725 |
| Air Service PCR's % | 2.43% | 2.32% | 2.49% | 3.66% | 3.66% | 4.03% | 4.11% | 4.22% | 3.20% | 2.03% |

Air Service Ambulance Calls by Type of Incident

Table 17 displays the reason the air ambulance service was called for pediatric patients in Pennsylvania during 1999 through the end of 2008. The highest frequency reason for air ambulance call in 2007 for pediatric patients was inter-facility transport (35%) followed by medical call (23%). The highest frequency reason for all ambulance service calls for pediatric patients in Pennsylvania during 2008 was medical (44%); inter-facility transport was only 6.7% of all pediatric patient calls (see page 6). When comparing 2007 to 2006 air ambulance services for vehicular accident calls increased from 10% in 2006 to 13% in 2007. There was also a decrease for Inter-Facility Transport that went from 38% in 2006 to 35% in 2007.

Table 17. Number of Air Service Ambulance Calls by Year of Incident for People Under Age 18

| Incident Type | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 00-Not Entered | 77 | 64 | 34 | 56 | 12 | 10 | 7 | 40 | 18 | 4 |
| 01-Assault | 22 | 46 | 29 | 38 | 36 | 60 | 38 | 64 | 47 | 21 |
| 02-Bicycle Accident | 44 | 64 | 55 | 70 | 74 | 95 | 88 | 103 | 67 | 57 |
| 03-Bite/Sting | 10 | 6 | 6 | 6 | 13 | 14 | 11 | 23 | 9 | 10 |
| 04-Fall | 179 | 184 | 214 | 260 | 283 | 309 | 274 | 331 | 235 | 188 |
| 05-Fire | 21 | 13 | 21 | 28 | 24 | 20 | 34 | 31 | 10 | 9 |
| 06-Inter-Facility Transport | 186 | 213 | 379 | 947 | 1,275 | 1,191 | 1,472 | 1,731 | 1,045 | 563 |
| 07-Medical Call | 694 | 642 | 704 | 806 | 1,052 | 1,060 | 909 | 962 | 687 | 347 |
| 08-Motorcycle Accident | 16 | 28 | 30 | 43 | 56 | 56 | 56 | 56 | 36 | 22 |
| 09-Pedestrian Accident | 96 | 108 | 99 | 127 | 96 | 102 | 77 | 111 | 59 | 53 |
| 10-RV Accident | 33 | 36 | 49 | 83 | 108 | 97 | 108 | 92 | 66 | 53 |
| 11-Shooting | 10 | 12 | 10 | 12 | 13 | 29 | 25 | 28 | 13 | 6 |
| 12-Stabbing | 3 | 3 | 2 | 5 | 6 | 4 | 7 | 3 | 0 | 2 |
| 13-Vehicular Accident | 465 | 416 | 405 | 636 | 606 | 672 | 542 | 451 | 378 | 195 |
| 14-Other | 291 | 414 | 299 | 358 | 419 | 493 | 435 | 492 | 308 | 195 |
| Total PCR's | 2,147 | 2,249 | 2,436 | 3,475 | 4,073 | 4,212 | 4,083 | 4,518 | 2,978 | 1,725 |

BLS Treatments, ALS Treatments and Medications Provided by Air Service Ambulance

Table 18 displays the number and proportion of PCR's where BLS treatments, ALS treatments and medications were provided for pediatric patients by air ambulance services in Pennsylvania during 1999 through 2008. If multiple treatments were provided during a call, this table only counts the PCR one time. The frequency of BLS treatments, ALS treatments and medications provided for pediatric patients by air ambulance services is significantly higher when compared to all pediatric patients by ambulance services (see page 10). The combined all year average (1999 through 2008) for all pediatric patients by air ambulance was BLS treatments (57%), ALS treatments (61%) and medications services (20%). If the frequency of BLS treatments, ALS treatments and medications provided is used as a measure of severity, it can be conclude that air ambulance services were used for more severe ambulance calls for pediatric patients.

Table 18. Number of ALS Treatments, BLS Treatments and Medications Provided for Air Service Ambulance Calls for People Under Age 18

| Year | Air PCR's | BLS Treatments Provided | ALS Treatments Provided | Medications Given | % BLS Treatment Provided | % ALS Treatment Provided | % Medications Given |
|-----------|-----------|-------------------------|-------------------------|-------------------|--------------------------|--------------------------|---------------------|
| 1999 | 2,147 | 1,370 | 1,146 | 283 | 65% | 53% | 13% |
| 2000 | 2,249 | 1,361 | 1,136 | 257 | 61% | 51% | 11% |
| 2001 | 2,436 | 1,534 | 1,493 | 364 | 63% | 61% | 15% |
| 2002 | 3,475 | 2,172 | 2,397 | 677 | 63% | 69% | 19% |
| 2003 | 4,073 | 2,397 | 2,759 | 1,008 | 59% | 68% | 25% |
| 2004 | 4,212 | 2,424 | 2,695 | 950 | 58% | 64% | 23% |
| 2005 | 4,083 | 2,192 | 2,548 | 909 | 54% | 62% | 22% |
| 2006 | 4,518 | 2,216 | 2,536 | 899 | 49% | 56% | 20% |
| 2007 | 2,978 | 1,452 | 1,681 | 777 | 49% | 56% | 26% |
| 2008 | 1,725 | 898 | 1,035 | 507 | 52% | 60% | 29% |
| All Years | 31,896 | 18,016 | 19,426 | 6,631 | 56% | 61% | 21% |

Air Service Ambulance Calls by County Type

Table 19 displays the percentage of air ambulance service calls by county type for pediatric patients in Pennsylvania during 1999 through the end of 2008. The proportion of rural ambulance service calls has decreased (5.9%) from 1999 to 2008. Rural air ambulance service calls has decreased (3.1%) from 26.3% in 2006 to 23.2% in 2008.

Table 19. Percentage of Air Service Ambulance Calls by County Type for People Under Age 18

| County Type | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Out Of State Air Service | 0.4% | 0.4% | 0.4% | 0.5% | 0.5% | 0.7% | 0.6% | 0.5% | 0.5% | 0.4% |
| Rural Air Service | 29.1% | 27.1% | 28.8% | 28.9% | 27.3% | 27.7% | 27.4% | 26.3% | 23.2% | 22.5% |
| Urban Air Service | 70.5% | 72.6% | 70.8% | 70.7% | 72.2% | 71.7% | 72.9% | 73.2% | 76.3% | 77.1% |
| Total Air Service PCRs | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Recommendations for Further Investigation

This report provides a broad picture of pediatric pre-hospital EMS treatments in Pennsylvania during 1999 through 2008. This report should be updated on an annual basis to determine if implemented changes in policy or protocols have obtained the desired results. Also, the current data should be reviewed to assure any deviation from established trends are noted and explored.