

Table 1. Contingency Table for Presence of Chart Review Exclusions

| | | Senior Abstractor Identified Chart-Based Exclusion | | Total |
|---|---------|--|--------|-------|
| | | Present | Absent | |
| Abstractor Identified Chart-Based Exclusion | Present | 67 | 2 | 69 |
| | Absent | 0 | 372 | 372 |
| | Total | 67 | 374 | 441 |

Table 2. Contingency Table for Presence of Seizure in Administrative Claims and Charts

| | | Seizure in Claims Based on ICD-9-CM Codes | | Total |
|---|---------|---|--------|-------|
| | | Present | Absent | |
| Evidence of Seizure or Convulsions Documented in Charts | Present | 0 | 0 | 0 |
| | Absent | 1 | 56 | 57 |
| | Total | 1 | 56 | 57 |

*ICD-9-CM codes for seizure 345.2x, 345.3x, 780.33, 780.39.

Table 3. Contingency Table for Presence of Indicators of Increased Intracranial Pressure in Administrative Claims and Charts

| | | Indicators of Increased Intracranial Pressure in Claims Based on ICD-9-CM Codes | | Total |
|---|---------|---|--------|-------|
| | | Present | Absent | |
| Evidence of Indicators of Increased Intracranial Pressure in Charts | Present | 3 | 2 | 5 |
| | Absent | 34 | 18 | 52 |
| | Total | 37 | 20 | 57 |

**ICD-9-CM codes for indicators of increased intracranial pressure: 368.2x, 374.3x, 377.0x, 387.5x, 379.50, 386.2x, 780.02, 780.03, 780.09, 780.4x, 780.97, 781.2x - 781.4x, 781.93, 536.2x, 781.94, 780.0x, 379.41, 348.4x, 348.5x.

Table 4. Sensitivity Analysis with Variation in Claims-Based Exclusion Criteria among Children with Neuroimaging during an ED Visit for Post-Traumatic Headache, Concussion, or General Headache

| | % Variation in Number of Children with Denominator Exclusion for Child Abuse and Neglect | | | | |
|--|--|--------------|--------------|--------------|--------------|
| | 0% | 25% | 50% | 90% | 100% |
| DENOMINATOR EXCLUSIONS | | | | | |
| Abuse and neglect | 450 | 333 | 225 | 45 | 0 |
| Medical conditions that could otherwise warrant neuroimaging | 98 | 98 | 98 | 98 | 98 |
| DENOMINATOR | 2,419 | 2,536 | 2,644 | 2,824 | 2,869 |
| NUMERATOR EXCLUSIONS | | | | | |
| Loss of consciousness, skull fracture, intracranial hemorrhage | 0 | 117 | 225 | 405 | 450 |
| Indicators of increased intracranial pressure | 343 | 343 | 343 | 343 | 343 |
| Seizure or convulsions | 67 | 67 | 67 | 67 | 67 |
| NUMERATOR | 2,009 | 2,009 | 2,009 | 2,009 | 2,009 |
| Overuse percentage using administrative claims | 83.0% | 79.2% | 76.0% | 71.1% | 70.0% |

Table 5. Overuse Percentage within the Chart Review Sample using Claims or Chart Review Criteria

| | Chart Review Sample N=204 | |
|---------------------------|-------------------------------|-------------------------------|
| | Criteria identified in Claims | Criteria identified in Charts |
| Denominator | 198 | 57 |
| Numerator | 187 | 8 |
| Overuse percentage | 94.4% | 14.0% |

Table 6. Sample Size Calculation for 95% Confidence Intervals around Expected Overuse Percentages

| Expected Overuse Proportion | Required Sample Size for CI half-width=2.5% | Required Sample Size for CI half-width=5% | Required Sample Size for CI width=8% |
|-----------------------------|---|---|--------------------------------------|
| 5.0% | 292 | 73 | N/A |
| 8.0% | 292 | 114 | 45 |
| 10.0% | 554 | 139 | 55 |
| 15.0% | 784 | 196 | 77 |
| 20.0% | 984 | 246 | 97 |
| 25.0% | 1153 | 289 | 113 |

Table 7. Per Group Sample Size for Two-Sample Proportion Test (control proportion 15%)

| Power | 5% Difference | 10% Difference | 15% Difference | 20% Difference |
|-------|---------------|----------------|----------------|----------------|
| 80 | 906 | 250 | 121 | 73 |
| 90 | 1,212 | 335 | 161 | 97 |
| 95 | 1,498 | 413 | 199 | 119 |

