Matching up child passenger safety resources to needs in Michigan

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Assistant Professor

Lifesavers Conference 2018
You Don’t Need a PhD to Evaluate Your Program
Conflicts of Interest

• I have no financial relationships to disclose or conflicts of interest to resolve.

Funding Sources

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The Impetus
The Target Population
Key Partners and Data Sources

- Michigan Office of Highway Safety Planning
  - Lists of CPSTs
  - Records of distributed child restraint systems
  - Michigan State Police crash reports

- Safe Kids Michigan
  - Seat check forms

- Michigan CPSTs
  - Survey
  - Seat check location

- UM School of Natural Resources and the Environment
  - 2010 US Census / Annie E. Casey Foundation Kids Count Data Center
  - American Community Survey, 2009-2013
The Process

Survey
- Child Passenger Safety Technicians

Quantify and Locate
- Child Passenger Safety Services
- Children <10 Years
- "At Risk" Children

Assess Match of Resources and Needs
- By region
- By county

Measure the Impact
- Changes in child restraint practices
Step 1 : Characterize Michigan CPSTs

• Online survey
  • September 2015
  • Using the Qualtrics® platform, distributed via email

• Nearly 500 CPSTs responded (of 971 in OHSP database)

• Phone/email follow-up with CPSTs who indicated they coordinate seat checks and lead CPSTs in Safe Kids Michigan Coalitions
Michigan CPST Characteristics
Years in the Field

- <3 years: 39%
- 4-5 years: 17%
- 6-10 years: 25%
- >10 years: 19%
Activity Level: Seat Checks per Year

- **High (25+ seats)**: 41%
- **Medium (6-24 seats)**: 33%
- **Low (<6 seats)**: 26%
Step 2a : Quantify the Resources
Safe Kids Michigan Seat Checks and CPSTs per Year
Step 2b: Locate the Resources
Step 2b: Locate the Resources

CPSTs per County

Seat Checks per County

Legend

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<thead>
<tr>
<th>Count</th>
<th>Color</th>
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<tbody>
<tr>
<td>1 - 7</td>
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<td>28 - 59</td>
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<td>60 - 131</td>
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Legend

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<tr>
<td>66 - 81</td>
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</table>

Check Locations
Step 2c: Locate the Children in Need

Children <10 Years
Minority Race/Ethnicity and non-English Speaking

Non-White Population  Hispanic Population  Non-English Speaking Households

Legend
Proportion
0.02 - 0.03
0.04 - 0.06
0.06 - 0.08
0.08 - 0.10
0.11 - 0.14
0.15 - 0.18
0.18 - 0.21
0.22 - 0.25
0.26 - 0.28
0.29 - 0.31
0.32 - 0.34
0.35 - 0.37
0.38 - 0.40
0.41 - 0.43
0.44 - 0.46
0.47 - 0.50

Crashes involving children ≤ 9 who were killed/injured, improperly restrained, or in front seat
Step 3 : Assess Match of Resources and Need
Distribution of Children and CPSTs

Children <10 Years

CPSTs
Children <10 Years per CPST per County
Children <10 Years per CPST per County

175:1 in Baraga to 6536:1 in Jackson
Children <10 Years per CPST per County

**Lowest Ratios**
- Gogebic
- Baraga
- Alger
- Ontonagon
- Schoolcraft
- Mackinac
- Marquette
Children <10 Years per CPST per County

**Lowest Ratios**
- Gogebic
- Baraga
- Alger
- Ontonagon
- Schoolcraft
- Mackinac
- Marquette

**Highest Ratios**
- Gladwin
- Wayne
- Ionia
- Charlevoix
- Huron
- St. Clair
- Jackson
Governor’s Highway Safety Association
Occupant Protection for Children Program Recommended
Levels of Service for children Birth through 4 Years

<table>
<thead>
<tr>
<th>Component</th>
<th>Basic</th>
<th>Intermediate</th>
<th>Comprehensive</th>
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<tbody>
<tr>
<td>Inspection Stations per child</td>
<td>One station per 10,000 children</td>
<td>One station per 5,000 children</td>
<td>One station per 2,500 children</td>
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<tr>
<td>Technician hours per child</td>
<td>One technician hour per 180 children</td>
<td>One technician hour per 90 children</td>
<td>1 technician hour per 12 children</td>
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<td>Restraint inspections per child</td>
<td>One inspection per 60 children</td>
<td>One inspection per 30 children</td>
<td>One inspection per 4 children</td>
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<tr>
<td>OHSP Region</td>
<td>Statewide</td>
<td>Upper Peninsula**</td>
<td>Traverse Bay Area</td>
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<tr>
<td>-------------</td>
<td>-----------</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Level of Service</td>
<td>Intermediate</td>
<td>Intermediate</td>
<td></td>
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<tr>
<td></td>
<td>Seat Check Locations per 5,000 Children ≤4</td>
<td>Estimated One CPST Hour per 90 Children ≤4</td>
<td>Estimated Seat Checks per 60 Children ≤4</td>
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<td>Statewide</td>
<td>1.83</td>
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<td>OHSP Region</td>
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<tr>
<td>Upper Peninsula**</td>
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<td>4.04</td>
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<td>Northern Lower</td>
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<td>Lakeshore</td>
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<td>Saginaw Valley</td>
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<td>Thumb Area</td>
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<td>South Central</td>
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<tr>
<td>Capital Area</td>
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<tr>
<td>Oakland</td>
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<tr>
<td>Macomb/St. Clair</td>
<td>0.91</td>
<td>1.03</td>
<td>0.59</td>
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Step 4: Measure the Impact
Safe Kids Michigan CRS Checks

CRS Types

- Rear-Facing
- Forward-Facing
- Booster
- Seat Belt
- No Restraint
Safe Kids Michigan Seat Checks Resulting in a Change by Seat Type

- Rear-Facing: 0%
- Forward-Facing: 10%
- Booster: 20%
- Seat Belt: 100%
Impact of Safe Kids Michigan Seat Checks

Change in Child Restraint System

Child Restraint System Provided

Legend

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<th>Proportion</th>
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<td>Yellow</td>
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<td>Light Orange</td>
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<tr>
<td>0.41 - 0.60</td>
<td>Orange</td>
</tr>
<tr>
<td>0.61 - 0.80</td>
<td>Dark Orange</td>
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<tr>
<td>0.81 - 1.00</td>
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Distribution of Child Safety Seats from OHSP
Limitations

• Survey respondents represent about half of all CPSTs in Michigan

• Safe Kids Michigan is not the sole program to provide services

• Seat check forms do not include the location of service delivery

• CPSTs and families are not bound by county lines for services
• What MSP has done with the data

  • Use to justify programming

  • Direct the counties and areas of focus

  • Identify potential to reach most at-risk children
Programs

• Muskegon County
• Great Start preschool project
• Program targeting
• Local use and justification
Acknowledgements

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- Research Team: Farideh Almani, Amy Teddy, Halimat Olaniyan, Michael Bota
Questions?

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