Decreasing injury-related trauma in Amish children age 0-16 years in Northeast Ohio

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Rainbow Babies & Children’s Hospital
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The Amish

• Christian religious group unique to the U.S.

• Primarily live in rural Ohio, Indiana, and Pennsylvania

• 17th century lifestyle
The Farm

Where children live, play, and work
Risk Factors for Injury-Related Trauma

Horse and buggy is primary mode of transportation
Implications

• Access

• Rapid population growth
  – 30-40% increase per decade
  – 52% of population is younger than 20 years of age
Hypotheses

1. Amish children are prone to accidental trauma because of their 17th century cultural practices

1. Implementing a culturally-sensitive intervention will reduce the incidence of accidental trauma in Amish children
Specific Aims

1) Identify patterns of injury-related trauma among Amish children age 0-16 years in Northeast Ohio

1) Design and implement an intervention to reduce the pattern of injury-related trauma
Specific Aims

3) Test the intervention among Amish youth in Northeast Ohio and evaluate the results

3) Create a general model for communicating health information to high-risk, culturally isolated populations
Our Research Team

• Divisions of Pediatric Surgery and Pediatric Trauma, Rainbow Babies & Children’s Hospital

• Strong interest in better serving the Amish community and preventing child injuries
Collaborators

- Drs. Jill Korbin & Lawrence Greksa, Dept. of Anthropology
- LouAnn Marx, RN, UH Physician Relations
- Kathy Wesolowski, RBC Injury Prevention
- Dr. Sanjay Ahuja, RBC Hemophilia Treatment Center
Das Deutsch Clinic

DDC Clinic
for Special Needs Children
15809 Madison Road
Preliminary Work

- Ten-year chart review from 1989 to 2009 (n=120) of Amish children in the University Hospitals Trauma Registry
Causes of Injury-Related Trauma in Amish Children

- Barn Accident: 25%
- Buggy vs Motor Vehicle: 7%
- Farm Accident w/ Animals: 9%
- Fall in Home and Recreation: 18%
- Burns: 3%
- Pedestrian Vehicular Crash: 23%
- Miscellaneous: 15%
Pattern of Injury of Non-Barn Falls

- Brain: 28%
- Craniofacial: 7%
- Long Bone Fracture: 3%
- Soft Tissue: 3%
- Visceral Injury: 22%
- Foreign Body: 3%
- Heart Abnormalities: 6%

n = 32
Pattern of Injury of Falls in Barn

- Brain: 32%
- Craniofacial: 21%
- Long Bone Fracture: 26%
- Soft Tissue: 5%
- Visceral Injury: 3%
- Foreign Body: 3%
- Heart Abnormalities: 10%
- Other: 3%
Pattern of Injury of Farm Accidents with Animals
Average Injury Severity Score

- Barn Accidents
- Falls in Home and Recreation
- Buggy vs. MVC
- Farm Accidents
- All Mechanisms
Average Length of Stay
Questionnaire Development

- Assess attitudes towards injury-related trauma in Amish youth age 10-16 years and injury-prevention strategies

- Pilot testing at Das Deutsch clinic
A short questionnaire to assess attitudes towards injury-related trauma among Amish children age 10-16 years in Northeast Ohio and perceived need for harm-reduction intervention

Principal Investigator: Edward Barksdale, M.D.

INSTRUCTIONS: Please circle your answer for each of the 15 questions below. Please think about your children between the ages of 10 and 16 when you are answering questions about activities. If your child is present, you may ask them to give you the information about what activities they are involved with.

Please do not put any identifying information on this sheet like your name or address to protect the confidentiality of your information.

1. Are you Amish?
   a) Yes
   b) No

2. How old are you?

3. What is your job?

4. Which county do you live in?

5. Are you:
   a) Male
   b) Female

6. How many children do you have?

7. How often do your children between the ages of 10 and 16 do the following (please check one):

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(less than once every six months)</td>
<td>(2-3 times per month)</td>
<td>(2-3 times per week)</td>
<td>(more than 4 times per week)</td>
<td></td>
</tr>
<tr>
<td>Play on a Trampoline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ride a Bicycle, Scooter, or Rollerblade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Do you have stairs in your home?
   a. Yes
   b. No

9. How often do your children between the ages of 10 and 16 work with (please check one):

<table>
<thead>
<tr>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
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</table>

   Haylofts
   Saws
   Nail Guns
   Heavy Lumber
   Oil or Kerosene

10. How badly do you think Amish children could get hurt by work and play, on a scale of 1 to 5 (1 being “not serious” and 5 being “very serious,”)?

   5 (very serious)  4  3  2  1 (not serious)
11. How important is safety education for your children between the ages of 10 and 16 for each of the following activities? Following activities, on a scale of 1 to 5 (1 being “not important” and 5 being “very important”),?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very serious</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trampoline use</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Basketball</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Baseball</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Football</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Bicycling, Rollerblading, Scooterizing</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Stairs and other falling hazards in the home</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Barn work</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Water safety (around ponds and lakes)</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Machinery used for carpentry</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Machinery used for farming</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
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</table>

12. How likely are you to change your behavior after learning more about accident prevention in the following areas, on a scale of 1 to 5 (1 being “not likely” and 5 being “very likely”),?

<table>
<thead>
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<th>Very likely</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
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<tr>
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<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Basketball</td>
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<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Football</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<td>3</td>
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13. Who in your community is the best person to give you safety information?
   a. Schoolteachers
   b. Church bishop or other religious leader
   c. Doctors
   d. Elders in your family or community

14. What are some things that prevent Amish children from staying safe during work and play (for example, no protective clothes and shoes, or not knowing how to swim)?

15. What could we do to improve the safety of Amish children?
Data Collection

Amish Health and Safety Fairs on July 17 & July 31, 2010
Data Collection

Amish bishops distributed questionnaires to local families
Preliminary Results

- Approximately 100 surveys completed
Preliminary Results

Strong interest in further education about water safety and proper use of carpentry machinery.
Preliminary Results

• Preference to be educated about safety by Amish elders and schoolteachers
Lessons Learned

- Open Community
- Respect for Outsiders
Next Steps

- Collaborate with Amish bishops
- Develop an educational curriculum for water safety and carpentry machinery
Geauga County: Amish man drowns in pond

GEauga County - The Geauga County Sheriff's department says dive crews pulled the body of a 19-year old Amish man from a pond Friday night.
Thank You