Growing Agricultural Education: Embracing Health and Safety
The Question?

• How can we improve agricultural health and safety and reduce injuries through agricultural education?
Or More Specifically?

• Is it time to focus on assuring safety and health as part of our educational curricula?

• How can we target educational strategies for a new generation of farmers and a changing workforce?

• How would we like to see our efforts impact the changing agricultural industry?
Our Work Engaging Partnerships and One Health

University of Minnesota School of Public Health
University of Minnesota College of Veterinary Medicine
National Farm Medicine Center
Minnesota Department of Health

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A Little About Us

• UMASH embraces a One Health philosophy that recognizes the connections between human, animal, and environmental health when addressing occupational health and safety issues in agriculture

• Innovation
• Interdisciplinary
• Emerging issues
Upper Midwest Agricultural Safety and Health Center (UMASH)

- University of Minnesota
  - School of Public Health
  - College of Veterinary Medicine
- Minnesota Department of Health
- Marshfield Clinic
  - National Farm Medicine Center
  - Migrant Clinicians Network
- Funding from the National Institute for Occupational Safety and Health

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Engagement

• UMASH seeks to connect with people and organizations to identify needs, challenges, and opportunities in agricultural health and safety
Research Opportunities

• Small grants are available through the UMASH Pilot Projects Program to explore new opportunities and address emerging issues related to the health and safety of agricultural workers and their families
Examples of Funded Projects

• Surveillance for ag injuries
• Training Hispanic ag workers
• Facilitating “return to work” strategies
• MRSA in swine veterinarians, manure applicators

Examples

• Summary Ag worker’s Compensation data from Minnesota

• Needlestick Prevention Video
Pork Industry Injuries in Minnesota: An Analysis of Workers’ Compensation Data 2003-2012

Question

What is the most common source of injuries on Minnesota Swine Operations?
1. Needles
2. Knives
3. Guns
4. Floor/ground
5. Pigs
On swine operations, what body part is most commonly injured?

1. Back
2. Wrist
3. Knee
4. Hand
5. Eye
Worker compensation data, while imperfect, is an important source of injury data and understanding worker risk/hazards

Limited studies of worker’s compensation data from agriculture
Work Injury and Illness
Injuries by Industry
Minnesota, 2003-2012

All MN Agriculture-ten years: 2518 Injuries
- MN Pork: 720 Injuries
- MN Dairy: 457 Injuries
- MN Poultry: 242 Injuries

• Pork industry injuries-28.5% of all Ag injuries.
• Combined- Dairy, Pork and Poultry- 56% of all Ag injuries

Source: Work Comp data from Minnesota Department of Labor and Industry
Minnesota Workers’ Compensation
Agricultural Injuries- 2003-2012
Indemnity Claim Costs

All MN Ag: $31.3 million for 2,518 Injuries

- MN Pork: $7.5 million for 720 Injuries (24%)
- MN Dairy: $5.6 million for 457 Injuries (18%)
- MN Poultry: $3.3 million for 242 Injuries (11%)

Source: Work Comp data from Minnesota Department of Labor and Industry
## Source of Injury—MN Pork

Work Comp Data: Top ten most frequent source of Injuries 2003-2012

<table>
<thead>
<tr>
<th>Source of Injury</th>
<th>Frequency</th>
<th>Percent</th>
<th>Total Indemnity (Rank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swine</td>
<td>241</td>
<td>33.5%</td>
<td>$2,308,569 (1)</td>
</tr>
<tr>
<td>Bodily motion or position of injured, ill worker</td>
<td>95</td>
<td>13.2%</td>
<td>$1,230,632 (3)</td>
</tr>
<tr>
<td>Floors/Ground</td>
<td>84</td>
<td>11.7%</td>
<td>$1,264,338 (2)</td>
</tr>
<tr>
<td>Unclassified</td>
<td>40</td>
<td>5.6%</td>
<td>$625,085 (4)</td>
</tr>
<tr>
<td>Boxes, crates, cartons</td>
<td>40</td>
<td>5.6%</td>
<td>$246,257 (6)</td>
</tr>
<tr>
<td>Needles and syringes</td>
<td>16</td>
<td>2.2%</td>
<td>$5,666 (53)</td>
</tr>
<tr>
<td>Gates</td>
<td>13</td>
<td>1.8%</td>
<td>$306,672 (5)</td>
</tr>
<tr>
<td>Cart, dolly, handtruck</td>
<td>9</td>
<td>1.3%</td>
<td>$8,719 (41)</td>
</tr>
<tr>
<td>Water</td>
<td>8</td>
<td>1.1%</td>
<td>$8,054 (45)</td>
</tr>
<tr>
<td>Knives</td>
<td>7</td>
<td>0.97%</td>
<td>$31,031 (21)</td>
</tr>
</tbody>
</table>

Top Ten: 553/720 77% $6,035,022

Total Pork Industry claims/Indemnity: 720 claims / indemnity $7,545,120
# Body Part Injured-MN Pork

## Work Comp Data for the 720 Injuries- 2003-2012

<table>
<thead>
<tr>
<th>Part of Body Injured</th>
<th>Frequency</th>
<th>Percent</th>
<th>Total Indemnity (Rank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knee(s)</td>
<td>131</td>
<td>18.0%</td>
<td>$882,475 (3)</td>
</tr>
<tr>
<td>Lumbar region</td>
<td>82</td>
<td>11.4%</td>
<td>$1,785,898 (1)</td>
</tr>
<tr>
<td>MULTIPLE BODY PARTS</td>
<td>61</td>
<td>8.5%</td>
<td>$691,927 (4)</td>
</tr>
<tr>
<td>Shoulder, including clavicle, scapula</td>
<td>53</td>
<td>7.4%</td>
<td>$996,654 (2)</td>
</tr>
<tr>
<td>Finger(s), fingernail(s)</td>
<td>51</td>
<td>7.1%</td>
<td>$350,947 (6)</td>
</tr>
<tr>
<td>Hand(s), except finger(s)</td>
<td>47</td>
<td>6.5%</td>
<td>$186,119 (12)</td>
</tr>
<tr>
<td>Wrist(s)</td>
<td>27</td>
<td>3.8%</td>
<td>$210,276 (10)</td>
</tr>
<tr>
<td>Ankle(s)</td>
<td>24</td>
<td>3.3%</td>
<td>$209,185 (11)</td>
</tr>
<tr>
<td>Back, including spine, spinal cord, unspecified</td>
<td>23</td>
<td>3.2%</td>
<td>$345,248 (7)</td>
</tr>
<tr>
<td>Eye(s)</td>
<td>20</td>
<td>2.8%</td>
<td>$340,607 (8)</td>
</tr>
</tbody>
</table>

**Top Ten:** 519/720 72% $5,999,335

Total Pork Industry claims/Indemnity: 720 claims /Pork $7,545,120

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What does this Tell Us?

• Likely the tip of the iceberg

• More questions than answers

• Maybe we need to consider training materials on how humans should interact with pigs? Stockmanship?
Needlestick Prevention

Mindy Buswell DVM, MPH
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Jeff Bender, DVM MS DACVPM
Needlestick Injuries (NSI) are Common

• 80% of farmers working in animal agriculture have accidentally stuck themselves (Rendell 2008)

• In human medicine, considerable time and resources have been expended to reduce NSI’s
  – This is largely driven by the risk of blood-borne pathogens

• Is this a problem?
Review

• Types of Injuries
  – Some were serious
  – Gangrenous necrosis after accidental needlestick infection of thumb due to *Actinobacillus pleuropneumoniae* vxn 14 days after inoculation

(Rycroft, A. N., et al. 2011)
Factsheets

Needlestick Prevention

On the Farm

Needlestick injuries are usually minor, but they can be serious.

Most common injuries
- Skin infections
- Allergic reactions
- Deep tissue wounds that require surgery

Did You Know?
- Over 80% of farm workers vaccinating animals have accidentally stuck themselves.
- Vaccines are the most common type of drug involved in needlestick injuries.

Don’t Get Stuck
- Slow down - don’t rush with injections
- Restrain animals properly
  - Get help from coworkers
  - Use the correct equipment and techniques
- Don’t recap needles
- No needles/syringes in your pockets
- Don’t hold caps in your mouth
- Discard bent or dull needles
- Use approved sharps containers

Got Stuck?
- Wash the skin with soap and water immediately
- Report injury to your supervisor
- Call your healthcare provider

Be Careful
Especially with these Products
- Tilmicosin (Micotil)
- Sedatives (e.g., Xylazine)
- Oil-based products or vaccines
- Brucella abortus Strain RB51 vaccine
- Modified live vaccines (e.g., Erysipelula vaccine)
- Johnne’s vaccine
- Hormones - especially if pregnant
- Antibiotics - especially if allergic

More Information:
http://www.porkgateway.org/FileLibrary/PIGLibrary/Factsheets/06672v1-0.pdf
http://www.cdc.gov/ohs/sharpsticks/sharpinjuries.html

Implement a Comprehensive Needlestick Prevention Program

Employee Practices
- Slow down - don’t rush with injections
- Restrain animals properly
  - Get help from coworkers
  - Use the correct equipment and techniques
- Don’t put needle caps in your mouth
- Discard bend needles - don’t use or straighten
- Don’t carry needles/syringes in your pockets
- Use approved sharps containers
- Don’t remove needles from sharps container
- Don’t recap needles
- Report all needlestick injuries to management
- Contact your healthcare provider

Management Practices
- Train employees about
  - Safe needle handling
  - Safe injection procedures
  - Type of drugs used
- Routinely re-train employees to reinforce safety procedures
- Provide safe animal handling equipment; ensure proper staffing
- Provide readily accessible sharps container for safe needle disposal
- Provide needle/syringes with protective devices, such as retractable needles or hinged syringe caps
- Remind employees to use caution when using products of concern
- Pregnant employees should not inject hormones
- Encourage employees not to rush
- Encourage employees to report injuries
- Employee should contact a healthcare provider

Products of Most Concern
- Tilmicosin (Micotil)
- Sedatives (e.g., Xylazine)
- Oil-based adjuvants
- Brucella abortus Strain RB51 vaccine
- Modified live vaccines (e.g., Erysipelula vaccine)
- Johnne’s vaccine

More Information:
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Videos

• Dairy and Swine workers
• English and Spanish

• http://umash.umn.edu/resources/videos.html
Future Strategies and Engagement

• Continue to work with various partners
  – Producers
  – Workers
  – Insurance companies
  – Government

• Identify key occupational issues to develop prevention strategies
Summary

• These represent our efforts to listen to workers and industry concerns
• Need a broad network of “listeners”
• Work with varying partners in getting the message out
Contact

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