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

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



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
- <u>http://umash.umn.edu/projects/umash_projects.html</u>
- <u>http://umash.umn.edu/projects/pilot_projects.html</u>



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

Source: Worker Injuries in Minnesota's Animal Agriculture industries: An Analysis of Workers' Compensation Data 2003-2012. Hourigan ME, Haycraft D, Zaidman B, Alexander BH, Bender JB

Question

What is the most common source of injuries on Minnesota Swine Operations?

- 1. Needles
- 2. Knives
- 3. Guns
- 4. Floor/ground
- 5. Pigs



Question

On swine operations, what body part is most commonly injured?

- 1. Back
- 2. Wrist
- 3. Knee
- 4. Hand
- 5. Eye



UMASH CENTER Review of Workers' Compensation Data

- 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

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

Top Ten: 553/720

77%





Body Part Injured-MN Pork

Work Comp Data for the 720 Injuries- 2003-2012

Part of body injured	Frequency	Percent	Total Indemnity (Rank)
Knee(s)	131	18.%	\$882,475 (3)
Lumbar region	82	11.4%	\$1,785,898 (1)
MULTIPLE BODY PARTS	61	8.5%	\$691,927 (4)
Shoulder, including clavicle, scapula	53	7.4%	\$996,654 (2)
Finger(s), fingernail(s)	51	7.1%	\$350,947 (6)
Hand(s), except finger(s)	47	6.5%	\$186,119 (12)
Wrist(s)	27	3.8%	\$210,276 (10)
Ankle(s)	24	3.3%	\$209,185 (11)
Back, including spine, spinal cord, unspecified	23	3.2%	\$345,248 (7)
Eye(s)	20	2.8%	\$340,607 (8)
Top Ten	: 519/720	72%	\$5,999,335

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

Agricultural Safety and Health Center

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 Carol Peterson MA 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

OUCH!

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

Most common injuries

- Skin infections
- Allergic reactions
- Deep tissue wounds that require surgery

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



Over 80% of farm workers vaccinating animals have accidentally stuck themselves.

Vaccines are the most common type of drug involved in needlestick injuries.

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. Erysipelas vaccine) Johne's vaccine Hormones - especially if pregnant Antibiotics - especially if allergic

MORE INFORMATION:





NEEDLESTICK PREVENTION PRODUCERS AND VETERINARIANS

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

Most common injuries

- Skin infections
- Allergic reactions
- · Deep tissue wounds that require surgery

Less common injuries

- · Miscarriages due to hormone products
- · Serious cardiovascular events (Micotil/tilmicosin)
- Suppression or coma from sedatives like xylazine
- Systemic infections
- · Allergic reactions to antibiotics

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

Products of Most Concern

Tilmicosin (Micotil) Sedatives (e.g. Xylazine) Oil-based adjuvants Brucella abortus Strain RB51 vaccine Modified live vaccines (e.g. Erysipelas vaccine)

Johne's vaccine



Management Practices

How Common are

Needlestick Injuries?

Needlestick injury research shows

that over 80% of farm workers and

73% of swine veterinarians working in

animal agriculture have accidentally

stuck themselves. Vaccines are

involved in needlestick injuries.

- 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

MORE INFORMATION:

Funding for this publication was made possible (in part) by the cooperative agreement awar of trade names, commercial practices, or organizations imply endorsement by the U.S. Governmen



Videos

- Dairy and Swine workers
- English and Spanish

<u>http://umash.umn.edu/resources/videos.html</u>



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

Jeffrey B. Bender, DVM, MS

Director/Center for Animal Health and Food Safety Veterinary Population Medicine College of Veterinary Medicine, University of Minnesota Email: bende002@umn.edu Phone: 612-625-6203

