



National Farm
Medicine Center

2020 YEAR IN

REVIEW



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MISSION STATEMENT:

"With the ultimate goal of improving human health, wellbeing and safety of rural and agricultural communities, the National Farm Medicine Center acts as a national resource by conducting high quality research, developing and delivering health and safety information, exploring innovative intervention models, and leading initiatives and networks."

MESSAGE FROM THE DIRECTOR, CASPER BENDIXSEN, PH.D.



The year 2020 has become synonymous with challenging disruptions. There is no doubt that the COVID-19 pandemic has and will continue to leave indelible marks on our society. It has simply changed the world in which we live. Agricultural work was deemed essential early on in the pandemic, so our work has never been more so as well. Our team adapted quickly to remote working conditions in March of 2020. Through video conferencing technologies, complete with pets and children, we stayed connected and in pursuit of our mission to improve the health and safety of farming and ranching communities. Our team joined other agricultural health and safety experts across the globe in efforts to provide guidance to agricultural employers, farm families, and rural communities to prevent the spread of the virus. We also continued our current projects, adapting them when necessary to social distancing protocols, and successfully funded important new ones. To say it plainly, I could not be more impressed with our team's resiliency and adaptability.

We did not do it alone. Our funding agencies, Marshfield Clinic Health System, Marshfield Clinic Research Institute, Marshfield Clinic Health System Foundation, and our donors supported our work without hesitation during these trying times. We are very grateful to have such an institutional home and network of supportive people.

I'm very proud to share this Year in Review with you.

A handwritten signature in black ink, appearing to read "C. G. Bendixsen". The signature is stylized and fluid.

NATIONAL CHILDREN'S CENTER CONTRIBUTES TO CDC/NIOSH FARM WORKER GUIDELINES

The current pandemic is global, but it is affecting farmers, their workers, and families on a very local level. Farms, ranches, and other production agriculture worksites are essential to powering America's food supply chain. The Centers for Disease Control and Prevention (CDC) and U.S. Department of Labor have introduced joint guidelines and accompanying checklists to help agricultural employers keep workers safe and healthy while continuing to work during the COVID-19 outbreak.

The diverse nature of agriculture in the United States means that older teens and young children can be found in agricultural work sites, some of which are family-owned and not subject to labor laws. The National Children's Center for Rural and Agricultural Health and Safety worked with colleagues at CDC/National Institute for Occupational Safety and Health to ensure that special conditions for children were addressed in the new guidance document.

"Taking children to a work site not only exposes them to the hazards in the environment, but also distracts adults from their tasks, increasing the risk of injury for children and adults," said Barbara Lee, Ph.D., director of the National Children's Center.

Child supervision challenges have been further exacerbated by the COVID-19 pandemic, with many child care centers and schools closed and activities canceled.

"We hear from parents who are juggling farm work, off-farm work, home-schooling and child care," Lee said. "And yet, children are still depending on adults to keep them safe."

The National Children's Center has a child-specific checklist to help parents and other responsible adults ensure children are kept safe on the farm.



TAKING LEADERSHIP ROLES IN KEY ORGANIZATIONS

Farm Medicine Communications Manager Scott Heiberger, M.S., completed a one-year term as president of the International Society for Agricultural Safety and Health (ISASH). He is the first ISASH president from Farm Medicine since Barbara Lee, Ph.D., 1995-96. In addition, Marsha Salzwedel, Ed.D., is currently serving on the ISASH Board. ISASH (www.isash.org) is the world's largest organization dedicated to the development of agricultural safety and health professionals and to providing leadership in the prevention of agricultural injuries and illnesses. ISASH membership includes engineers, educators, insurers, physicians, nurses, veterinarians, statisticians, communicators, anthropologists, business leaders, and other researchers.

Lee is currently serving on the Board of Directors for the Agricultural Safety and Health Council of America (ASHCA). Lee served as the Executive Director until 2016, and co-led a feasibility study with agri-business and farm organization leaders, which led to the creation of the ASHCA in 2007. ASHCA is an industry-driven, non-profit organization pursuing national strategies to create a less-hazardous work environment and establish an industry-wide culture of safety for American agriculture.

ENVIRONMENTAL INFLUENCES ON CHILD HEALTH OUTCOMES (ECHO)

The Wisconsin Infant Study Cohort (WISC) continues contributing as the only rural and farm cohort in the Environmental influences on Child Health Outcomes (ECHO) study. This study combines pediatric cohorts focused on upper airways; peri-, neo-, and post-natal outcomes; neurocognitive development; obesity; and positive health. Due to COVID-19, study staff transitioned to an e-consent model. This allows staff to consent WISC participants into ECHO without having face-to-face contact. Interested participants can review the consent form, ask questions live on the phone with study staff, select whether they want to participate and their preferences, and even sign the document with their computer mouse or finger. Participants receive a completed consent form by e-mail or mail. This process allows staff to collect data on e-mailed questionnaires, as well as samples, via the same contactless method used in WISC and Children's Respiratory and Environmental Workgroup (CREW)



Data collection is being launched while COVID-19 rages through the country. Enormous work has gone into a survey queue enabling participants to complete questionnaires on their own time on their personal computer or device. This includes two new COVID-19 questionnaires for parents to answer about themselves and their child. The questionnaires inquire about COVID-19 status, symptoms, home/school adjustments, as well as impact on daily activities. The questionnaires also inquire about internet access, which has become more important than ever as adults and children transition to working from home. These questions also help underscore the importance of including underrepresented rural populations in research. The staff can better explore internet connectivity in rural areas and explore its intersection with health and coping during the pandemic.

Although launching a large comprehensive research project is always daunting, the WISC team, with their experience and dedication to the study participants, has made significant gains in launching ECHO throughout the COVID-19 pandemic. The participants, in turn, continue giving their time and energy to these important studies. While it is everyone's hope that vaccines will cause the pandemic to wane, the events of this year highlight the role of community in scientific inquiry. The ability to pivot and recalibrate for a global pandemic reflects Farm Medicine's best efforts at coming together during difficult times to answer important questions about children's health. This task is only achievable when research staff and participants come together for a common cause.

You can learn more about the ECHO study by visiting www.echochildren.org.

WISCONSIN INFANT STUDY COHORT (WISC) CONTINUES GROWTH WITHIN CHILDREN'S RESPIRATORY AND ENVIRONMENTAL WORKGROUP (CREW)

COVID-19 brought many unique challenges. As a respiratory study, participants in WISC normally have several procedures that are considered high risk for transmitting SARS-CoV-2 to study staff. While circumstances prevented many of these procedures from being performed, the project's experienced and dedicated staff transitioned to a novel model of remote collection. Similar to contactless pick-up and delivery offered by many businesses during the pandemic, WISC staff mail out sample collection supplies along with instructions for parents to collect samples from their children. Staff then schedule a time with parents to procure the samples. Parents are provided ice packs and lunchbox coolers branded with the WISC logo. Parents put samples and ice packs into the coolers and leave them out for study staff to pick up, which also prevents mail delays. "We sincerely thank our dedicated participants and study staff who allow us to continue with this important aspect of the study despite the pandemic," said Kathrine Barnes, M.P.H., M.S., project manager.

NATIONAL CHILDREN'S CENTER RECEIVES COMPETITIVE GRANT

The National Institute for Occupational Safety and Health (NIOSH) awarded the National Children's Center for Rural and Agricultural Health and Safety a competitive grant renewal of \$6 million over 5 years to continue the center's mission of childhood agricultural injury prevention.

New studies being launched address youth operating ATVs for farm work, adolescent mental health, the link between child care and farm safety, and other safety issues important to the agriculture community.

"Childhood agricultural safety has never been more important than now during the coronavirus pandemic," said Barbara Lee, Ph.D., National Children's Center director. "Children are spending more time on farms, which can be positive from a family perspective, but it also increases their exposure to farm hazards and raises supervision challenges with home-schooling and closure of many child care centers."

The National Children's Center is one of 11 agricultural centers funded by NIOSH, Centers for Disease Control and Prevention. It is the only center dedicated to childhood agricultural injury prevention. NIOSH announced the renewal October 1.

Although the rate of non-fatal injuries to children in agriculture has declined since the National Children's Center was established in 1997, agriculture remains hazardous for children and youth. About every three days, a child dies in an agriculture-related incident, and each day, about 33 children suffer preventable injuries. During the past decade, youth worker fatalities in agriculture have exceeded all other industries combined.

"By working with our partners in agriculture, including farm parents, businesses, and organizations, we're helping ensure that safety interventions and guidelines are sustained beyond the span of the grant period," Lee said.

Casper Bendixsen, Ph.D., is associate director under the new grant. The renewal includes six distinct research studies with Bryan Weichelt, Ph.D., as research core leader, an outreach core led by Marsha Salzwedel, Ed.D., an evaluation core led by Andrea Swenson, Ph.D., an administrative and leadership core, and a national stakeholder advisory board. The center will continue to partner with Migrant Clinician's Network, working with Amy K. Liebman, M.P.A., and her team of professionals dedicated to improving the health of migrant farmworkers and other mobile, underserved populations.



National Children's Center
for Rural and Agricultural Health and Safety

THE PROJECTS

- Surveillance of Medically Attended Agricultural Injuries in Farm Children - Jeff VanWormer, Ph.D.
- Linking Childcare to Farm Children Safety - Florence Becot, Ph.D.
- Farm Kid Paradox: Anthropological Inquiry Into The Benefits and Risks of Child-Livestock Interaction - Casper Bendixsen, Ph.D.
- Assessing the Impact of Traumatic Injury News Articles on Farm Mothers and Educators - Bryan Weichelt, Ph.D.
- Farm Adolescent and Mental Health - Josie Rudolphi, Ph.D.
- Capabilities and Limitations of Youth Operating Agriculture All-Terrain Vehicles - Farzaneh Khorsandi Kouhanestani, Ph.D.

FARM MEDICINE HELPS CONFERENCES MOVE ONLINE

The COVID-19 pandemic forced Farm Medicine scientists and staff to cancel in-person meetings and events, but that did not prevent them from sharing vital agricultural and rural safety information. Farm Medicine helped several organizations adapt to online-only conferences, enabling safety and health professionals to share, learn, and reconnect virtually. Examples included the International Society for Agricultural Safety and Health (ISASH), where President Scott Heiberger, M.S., and Board Member Marsha Salzwedel, Ed.D., helped facilitate the world's largest annual gathering of safety and health professionals over five days with a mix of live and pre-recorded content. The Agricultural Safety and Health Council of America (ASHCA) successfully moved its in-person conference scheduled for March in Las Vegas to an online format packaged into three recorded sessions with the aid of a Farm Medicine team led by Barbara Lee, Ph.D., Kathie Smith, and Amy Marg. In addition, Florence Becot, Ph.D., chair of the Sociology of Food and Agriculture Research Interest Group for the Rural Sociology Society, collaborated with colleagues from the International Sociological Association to organize a virtual mini-conference. Staff members also participated and presented at numerous other events. To see a list of all presentations given by our staff this year visit:

<https://marshfieldresearch.org/nccrahs/presentations>



WISCONSIN FARM FATALITIES, RESURRECTING A FORMAL REPORT, REJUVENATING A PARTNERSHIP

Too often, agricultural fatalities are seen in the obituary sections of local newspapers. Friends, family members, and neighbors are lost to another farm-related tragedy. To address these problems, it is necessary to talk about these losses. What can be done to help bring these stories of agricultural injuries and fatalities to light?

Historically, Wisconsin farm fatality reports have presented a glimpse of the problem. The University of Wisconsin (UW) had compiled reports from 1943 through 2006 based on data from newspaper clippings, death certificates, and other sources.

In early 2020, Farm Medicine connected with long-time UW collaborators John Shutske, Ph.D., and Cheryl Skjolaas about possibly renewing the Wisconsin Farm Fatality Reports, which had been paused nearly 15 years prior due to the university not having a faculty member conducting ag safety-related research. To gain insights into recent Wisconsin injury trends, a partnership was rejuvenated and included UW-Madison Division of Extension and UW's College of Agricultural and Life Sciences, with the team using data from both AgInjuryNews.org and Wisconsin Department of Health Services death certificates to produce the Wisconsin Farm Related Fatalities report for years 2017 (41 fatalities) and 2018 (34 fatalities). Subsequent reports are planned.

Agricultural injury surveillance is stubbornly complex, even at the state level, and even when tracking only fatalities. Agriculture is a diverse and disjointed industry, spanning across demographics, deeply engrained in cultural traditions, yet growing and expanding to meet the demands of global population growth. The diversity of agricultural operations is problematic from a surveillance standpoint, and tracking the fatalities of those working, living, and playing, or who are otherwise exposed to the hazards of the industry, is a challenge. Workers, visitors, children, customers, and even travelers on public roadways are all exposed to these hazards.

The Wisconsin Farm Related Fatalities report and the sub-discipline of agricultural injury surveillance strives to capture farm-related fatalities resulting from exposures to production agriculture. Determining whether incidents and injuries are related to agriculture is complicated. Ag injury surveillance staff strive to capture, collect, and compile data into a realistic and representative story of Wisconsin farm fatalities. Bryan Weichelt, Ph.D., and his team believe stakeholders such as insurance companies, equipment manufacturers, and farm educators are gaining statistical insight from this report.



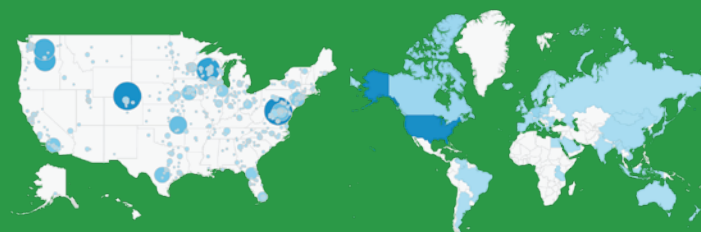
SKIN CANCER SCREENING

This very important service was continued in 2020. Farmers have significant occupational sun exposure and increased risk of skin cancer. While most farmers know the risks of sun exposure, they do not consistently practice sun protection. In February, the National Farm Medicine Center, along with Marshfield Clinic Health System, conducted two skin cancer screenings in central Wisconsin. These events screened 245 people and identified 19 presumed cancers, with 31% of the patients being referred for additional examination. Funding was provided by 2018 Wood County Farm Technology Days Grant Funding and donated funds from the Auction of Champions put on by the Health System Foundation.



AGINJURYNEWS.ORG

In 2020, AgInjuryNews.org observed inbound web traffic from more than 2,700 unique users across approximately 6,100 sessions and 57,000 total page views. This included visitors from 54 different countries, with over 2,600 first-time visitors. The average duration that users remained on the site improved 23% compared to 2019, with typical sessions lasting over 10 minutes per visitor. AgInjuryNews.org also fulfilled 220 new user registrations and new e-newsletter subscriptions, bringing the total subscriber count just under 1,000. This includes more than 50 user accounts within the U.S. Bureau of Labor Statistics, indicated by a "bls.gov" email address. Finally, 724 new cases were published in 2020, bringing the total available reports to over 3,800 and a victim count of nearly 4,200.



MEETING THE CHALLENGES OF RURAL HEALTH AND SAFETY



TRACTOR ROLLOVERS

- Burden:** Tractor rollovers are the No. 1 cause of fatal injuries in agriculture. While modern tractors are the safest ever made, those built before 1985 may lack rollover protection.
- Need:** Financial barriers are often a factor explaining why farmers do not purchase newer equipment. Offering an incentive for farmers to retrofit old tractors with life-saving roll bars helps remove that barrier.
- Impact:** Farm Medicine established the Wisconsin Rollover Protection Structure (ROPS) Rebate Program in 2013, offering retrofit rebates of \$865. Over 300 tractors have been retrofitted to date.

Melissa Ploeckelman | ploeckelman.melissa@marshfieldresearch.org



INJURY SURVEILLANCE

- Burden:** Agriculture consistently ranks among the nation's most hazardous industries.
- Need:** The current lack of a central repository of agricultural injury data limits researchers, agricultural employers, and policy-makers' ability to track injury patterns and design effective safety interventions.
- Impact:** The National Children's Center built and maintains AgInjuryNews.org, the largest international database (3,000-plus unique incidents) of publicly available agricultural injury and fatality reports, which provides a near real-time snapshot of the distribution and nature of trauma incidents. The initiative has also launched several new research projects, published more than a dozen peer-reviewed manuscripts, and played a role in the formation of an ongoing national surveillance work group.

Bryan Weichelt, Ph.D.
weichelt.bryan@marshfieldresearch.org

CHILD AGRICULTURAL INJURY PREVENTION



- Burden:** Farms and ranches are great places for children to develop work ethic, responsibility and a sense of stewardship for the land and animals. But farms also can be hazardous. About every three days, a child dies in an agriculture-related incident.
- Need:** Ensure that farm parents, educators, insurers and others have easy access to child agricultural injury prevention information and resources through innovative media support.
- Impact:** The National Children's Center developed the Cultivate Safety website (www.cultivatesafety.org). It is a mobile-friendly website that includes the new Resource Library, enabling visitors to search, save, and print resources in one place.

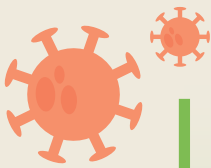
Marsha Salzwedel, Ed.D.
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EMERGENCY RESPONDER TRAINING

- Burden:** Volunteer fire departments in rural America have a long-standing tradition of taking care of their neighbors. However, because of the hazardous nature of the agricultural worksite, farm emergencies can pose unique risks to firefighters and first responders who often lack farm backgrounds.
- Need:** Protect the safety and health of responders by training them to safely handle animals under stress, toxic atmospheres, machinery entrapments, and other hazards specific to farm environments.
- Impact:** Farm Medicine established its Rural Firefighters Delivering Agricultural Safety and Health (RF-DASH) project in 2016, which has provided digital tools and knowledge to rural firefighters in 10 states. Looking forward, 100 Wisconsin firefighters/responders will be trained annually in a new rescue training program led by Farm Medicine and Pittsville Fire Department.

Casper Bendixsen, Ph.D. | bendixsen.casper@marshfieldresearch.org



INFECTIOUS DISEASE

Burden: The COVID-19 pandemic is putting a strain on the health care system. There is much we do not understand about transmission of the virus.

Need: Determine the rate of novel coronavirus infection in children and their family members across a range of demographic characteristics and geographies including rural children.

Impact: Human Epidemiology and Response to SARS-CoV-2 (HEROS) is a national study looking at the role children play in the COVID-19 pandemic. Farm Medicine is participating by enrolling about 200 Wisconsin families, including farm families already enrolled in the ongoing Wisconsin Infant Study Cohort (WISC) project.

Kyle Koshalek | koshalek.kyle@marshfieldresearch.org



CHILD CARE

Burden: 60% of agricultural-related injuries are sustained by children not engaged in farm work.

Need: Farm safety experts have long argued that keeping young children out of the agricultural worksite is an important strategy to keep the children safe. Yet, we know little about the ability and willingness of farm families to use child care off the worksite.

Impact: Farm Medicine scientists along with an Ohio State University collaborator have launched a research project to understand farm families' experiences with child care and the ways in which child care availability and affordability impact safety of farm children. The research findings will then be used to develop actionable recommendations to better support farm parents.

Florence Becot, Ph.D. | becot.florence@marshfieldresearch.org



IMMIGRANT FARM WORKERS

Burden: Pesticides are a health hazard for children of seasonal farm workers.

Need: Educate farm worker parents about children's pesticide exposure and ways to minimize those risks.

Impact: The National Children's Center and long-time collaborator Migrant Clinicians Network teamed up to edit and publish a second edition of "Aunque Cerca... Sano (Pesticides nearby ... but healthy)," a guide to prevent pesticide exposure. This popular resource is a colorful comic book containing messages about ways to minimize exposure and offering preventive concepts through illustration and conversation-style text. The revised book is available in Spanish with plans to update the English version as well.

Amy K. Liebman, M.P.A., M.A.
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MENTAL HEALTH and WELLNESS

Burden: Farmers experience some of the highest rates of stress, anxiety, depression, and suicide.

Need: Rapid intervention is essential to relieving the high mental health burden of farmers, but our understanding of the efficacy and desirability of the existing mental health programs is limited.

Impact: A Farm Medicine scientist, in collaboration with other Midwest researchers, developed an inventory of the programs available and assessed farm service providers' perspectives on the challenges and opportunities to support farmers' mental health. Next they plan on talking with farmers to understand their use of these programs.

Florence Becot, Ph.D.
becot.florence@marshfieldresearch.org

MOBILE HEALTH (mHealth)

Burden: The COVID-19 pandemic curtailed ambulatory care services in many rural health systems.

Need: Identify alternative methods to improve health outcomes, health care services, and health research.

Impact: Data from a survey reaching more than 900 Marshfield Clinic Health System providers, conducted with the help of Farm Medicine, indicated that over 70% of respondents were interested in looking deeper into mHealth (mobile and wireless technologies) to overcome challenges posed by distance and the pandemic.

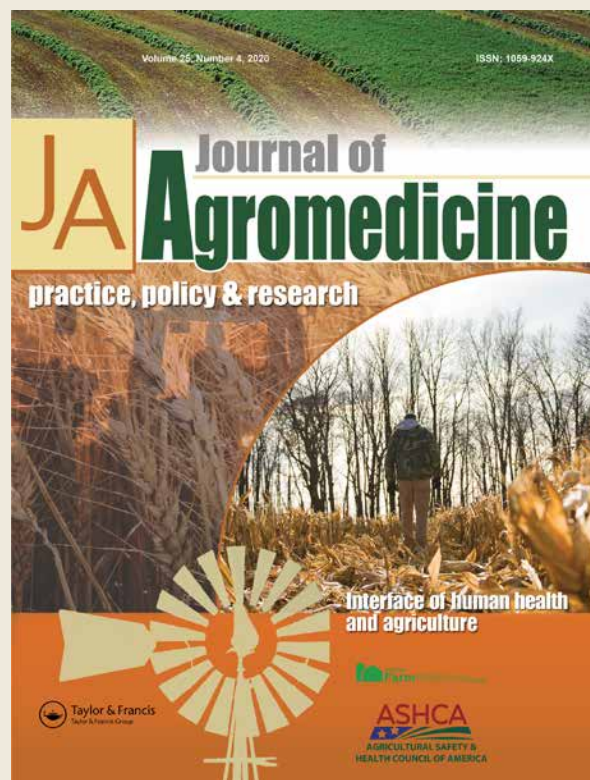
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JOURNAL OF AGROMEDICINE PUBLISHES COVID-19 ISSUE

Farm Medicine staff assembled and edited a special issue of the peer-reviewed Journal of Agromedicine (Volume 25; Issue 4) dedicated to the impact of COVID-19 on the agricultural community, including farmers, farm workers, farm families and the farm economy. Farm Medicine Director Casper Bendixsen, Ph.D., served as guest editor. The Journal of Agromedicine's editorial team put out a call in May for papers related to the pandemic's effect on agriculture (e.g., occupational health, training, PPE shortages, mental health, worker housing, child care issues), to be published in December. These short commentaries gave authors freedom to report on new types of evidence, while forcing them to focus on specific issues, and acknowledge shortcomings. Authors were encouraged to address problems created or exacerbated by COVID-19, give predictions about anticipated short- and long-term impacts of the pandemic, and recommend next steps and strategies. The topics in this collection were diverse and international in scope, encompassing migrant workers, children, fishing, and even mental health. In his editorial, guest editor Bendixsen concluded that COVID-19 has exposed both the strengths and weaknesses of agriculture through global and local food systems, and he called on researchers and interventionists to translate what has been learned into better policies to ensure the future of agriculture. Farm Medicine has edited the Journal of Agromedicine since 2004. The journal is the world's leading source of peer-reviewed translational research related to agricultural health, safety and medicine. The editorial team includes Editor-in-Chief Matthew Keifer, M.D., Senior Associate Editor Barbara Lee, Ph.D., Editorial Specialist Marie Fleisner, and Managing Editor Scott Heiberger, M.S. The journal is published by Taylor & Francis Group.

Also noteworthy is that Fleisner celebrated 40 years with Marshfield Clinic Health System. "Sometimes it feels almost like I was 'born' working here, while other times I can't believe it's been 40 years," Fleisner said. Fleisner spent the first 19 years of her career as a surgical technician in the Department of Urology. She joined the Research Institute in 1998, working in Research Compliance and Office of Scientific Writing, before joining the Farm Medicine team in 2015. "Marie has had a huge impact on the quality and 'heart' of the Journal of Agromedicine," said Lee. "Her skills, combined with knowledge of past and present topics and authors, ensures that solid decisions and clear communications emanate from the editorial team."



BEGINNING FARMERS AND RANCHERS PROJECT WRAPS UP

The Beginning Farmers and Ranchers project has come to a close. After exploring the safety practices of historically underrepresented farmers in agricultural programming, such as African American women, organic farmers, and Native Americans, the project transitioned to assessing the practices of a broader group of producers, said Kathrine Barnes, M.S., M.P.H. Recent findings on this larger group of farmers indicate that most farm parents adopt an authoritative style of parenting, which is associated with a reduction in risky behav-

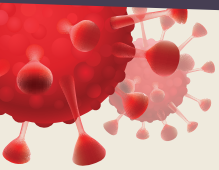
iors, including those leading to serious injury. This is an important reminder that while parents play a pivotal role in preventing injuries on the farm, other factors, including those outside of parents' control such as availability and cost of child care options in rural areas, also impact pediatric farm injuries. Community connections gained through this project provided partners for other scientists' National Children's Center renewal projects, further embedding the Children's Center and Farm Medicine into the agricultural community.



NORTHWOODS PROJECT

Farm Medicine conducts the Substance Abuse and Recovery in the Northwoods project in collaboration with the Family Health Center and the Heroin, Opioid, Prevention and Education (HOPE) Consortium. In-depth interviews and shadowing generates a large amount of data on a small number of participants. Their experiences of substance abuse and recovery are explored with the goal of ultimately improving

delivery of recovery and recovery support services in the Wisconsin Northwoods. Next, the project will focus on analyzing that large amount of data, as well as incorporating focus groups with care providers in the area to gain further input on emerging themes based on their experiences with helping those who are in recovery.



FARM MEDICINE STUDIES OPPORTUNITIES IN MHEALTH AND TELEHEALTH EXPANSION DURING PANDEMIC

With the COVID-19 pandemic shuttering many ambulatory care services throughout Marshfield Clinic Health System, providers and administrators turned to alternative health care delivery systems. The use of telehealth, delivering services over phone or internet meetings, often with video, spiked dramatically to contain the spread of this virus. Mobile health (mHealth), the use of mobile and wireless technologies to support the achievement of health objectives, can potentially supplement care delivery.

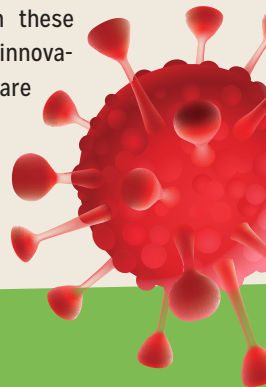
Funded by an internal Marshfield Clinic Research Institute grant, a project team led by Bryan Weichelt, Ph.D., conducted a survey of health care providers at the Health System (MCHS) to determine their attitudes and adoption of mHealth in their practices. The survey was sent to over 2,400 providers via email and received over 900 responses, including over 500 fully-completed surveys.

More than 300 providers reported actively using mHealth in their practice, often as a supplement to traditional care and as an informational resource. Much of their apprehension was due to being overly busy with other work duties and not having enough time to fully investigate and vet mHealth technologies. Providers also echoed concern about their patients' abilities to access and utilize mHealth, citing the complicatedness of mHealth and lack of reliable internet access in some areas. Notable concerns over mHealth were privacy and confidentiality of patient data, as well as confusion over which technologies were approved or endorsed by the Health System.

Nonetheless, over 70% of respondents stated they were interested in looking further into mHealth technologies.

In collaboration with Weichelt and Florence Becot, Ph.D., the telehealth team, including Chris Meyer, Director of Virtual Care and Telehealth, analyzed the expansion of telehealth at the Health System throughout the early stages of the COVID-19 pandemic and discussed the pros and cons of using telehealth in a highly rural patient population. These discussions led to a commentary published in the *Journal of Agromedicine*. That work has led to further qualitative and quantitative assessments of providers' barriers to adopt telehealth technologies with their patients led by Casper Bendixsen, Ph.D., Kathrine Barnes, M.S., M.P.H., and Andrea Swenson, Ph.D.

The Health System's interest and investment in innovative health care delivery models has helped it weather the pandemic. The ever-changing landscape of mHealth and telehealth applications remains an opportunity for growth and improved care. Farm Medicine, along with providers and administrators, see the promise in these technologies and look forward to utilizing new and innovative delivery modes to improve all aspects of healthcare within the Health System.



FARM PARENTS AND COVID-19



To understand how farm parents have been juggling child care, home schooling, off-farm work, and farm work during COVID-19, Florence Becot, Ph.D., launched a national level survey over the summer and received 134 responses from 38 states.

About 50% of those with pre-school children and 80% of those with school-age children reported that their regular childcare options and schools had closed at one point since the start of the pandemic. Some farm parents appreciated having the children on the farm more, but nearly 60% said it became harder to take care of the

children. More time with the children meant they were worried the children would get hurt, they had to change their farm or off-farm work schedule, or less work was getting done on the farm. "We have long known about the challenge of finding available and affordable child care in rural areas, but to help them carry through the pandemic, farm parents wished for more resources from the schools such as computers and educational material, better internet connections, programs to connect rural families to create child care groups, and the reopening of schools and child care," Becot said.

ASSESSING NCCRAHS

Andrea Swenson, Ph.D., assessed the National Children's Center response to the health and safety needs of farm families during a crisis. To achieve this goal, Swenson interviewed National Children's Center scientists and staff to understand how the Children's Center has responded to COVID-19. Findings included the recognition of the different tasks required to respond to the needs of the NCCRAHS audience, unifying messaging across the center and collaboration with other health and safety organizations, and adherence to the mission of NCCRAHS during the response. In addition, farm families were surveyed to identify their needs during COVID-19 in order to increase the Children's Center's capacity to anticipate what will

be needed in the future for farms experiencing emergencies. When asked about changes in how children are cared for during the pandemic, a majority of parents reported children spending more time than usual engaged in activities on the farm, with a little over one-third of parents specifically indicating children spent more time than usual engaged in labor on the farm (paid and unpaid). This assessment will also increase our understanding about how families have experienced change, which could serve as areas for future intervention.



COMMUNITIES RALLY TO SUPPORT FARM SAFETY WHEN IT'S NEEDED MOST

*Supporting farm families through
Marshfield Clinic Health System Foundation*

VIRTUAL 'AUCTION AROUND THE WORLD' TAKES DONORS ON TOUR OF IMPACT

Auction Around the World, this year's virtual Auction of Champions presented by Miron Construction, took attendees on a tour of their impact on farm safety in our rural communities and beyond. Auction Around the World featured videos from farmers, scientists, and community members sharing how support for the National Farm Medicine Center has made a difference for their work and families. The virtual event raised more than \$100,000 for National Farm Medicine Center farm safety programs.

While this year's event showcased many different sights and locations, sometimes the best journey brings us home. For many in our rural communities, home is on the farm. The 2020 Fund-a-Need, sponsored by H&S Manufacturing, was dedicated to preventing the leading cause of death on farms – tractor rollovers.

In 2013, the Wisconsin Rollover Protection Structures (ROPS) Rebate Program was launched at Farm Medicine to protect farmers from severe injury and death caused from tractor overturns and rollovers. Since then, ROPS have been installed on more than 300 tractors in Wisconsin. ROPS are one of the most effective known safety interventions and are 99% effective in preventing injury or death in the event of an overturn when used with a seatbelt. Roughly half of Wisconsin tractors do not have rollover protection. By funding the ROPS Rebate Program, donors are saving lives in our communities.

Though COVID-19 has stopped many things, it has not stopped our communities from coming together to support farm safety. Thank you for your continued generosity.

Support the National Farm Medicine Center: marshfieldclinic.org/giving/support-nfmc



2020 total donations

to the National Farm Medicine Center
through Marshfield Clinic Health System
Foundation:

\$100,000

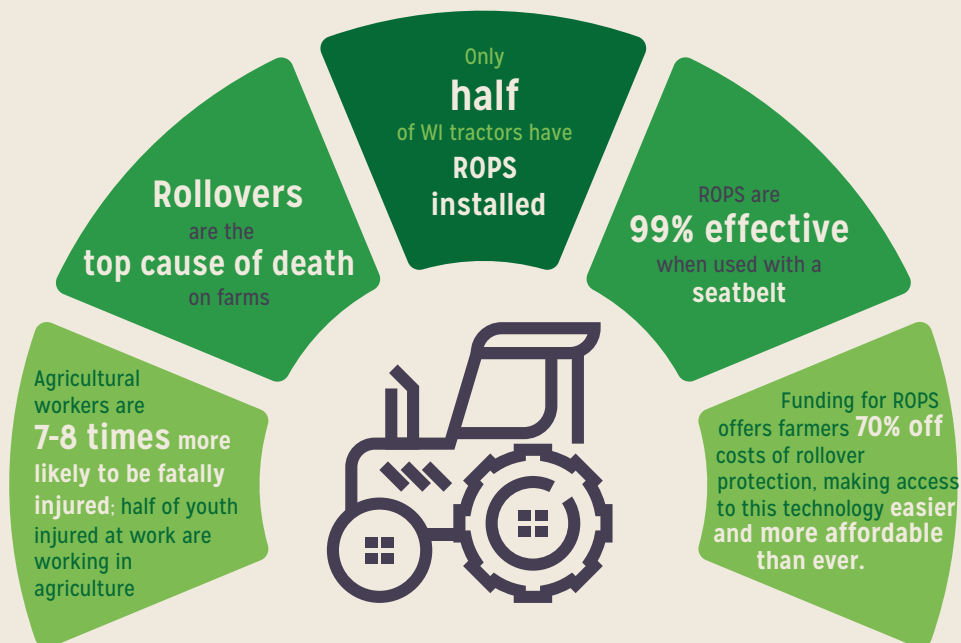
For information regarding how to support the important work of the National Farm Medicine Center, please contact Tiffany Halan, Marshfield Clinic Health System Foundation, at 715-387-9189 or halan.tiffany@marshfieldclinic.org.



*“There are lots of ways to die on the farm,
so it makes sense to eliminate one of them if you can.”*

JEFF HOOGLAND, FARMER AND ROPS REBATE PROGRAM PARTICIPANT

MORE THAN 300 TRACTORS RETROFITTED IN WISCONSIN



NATIONAL FARM MEDICINE CENTER PROJECTS

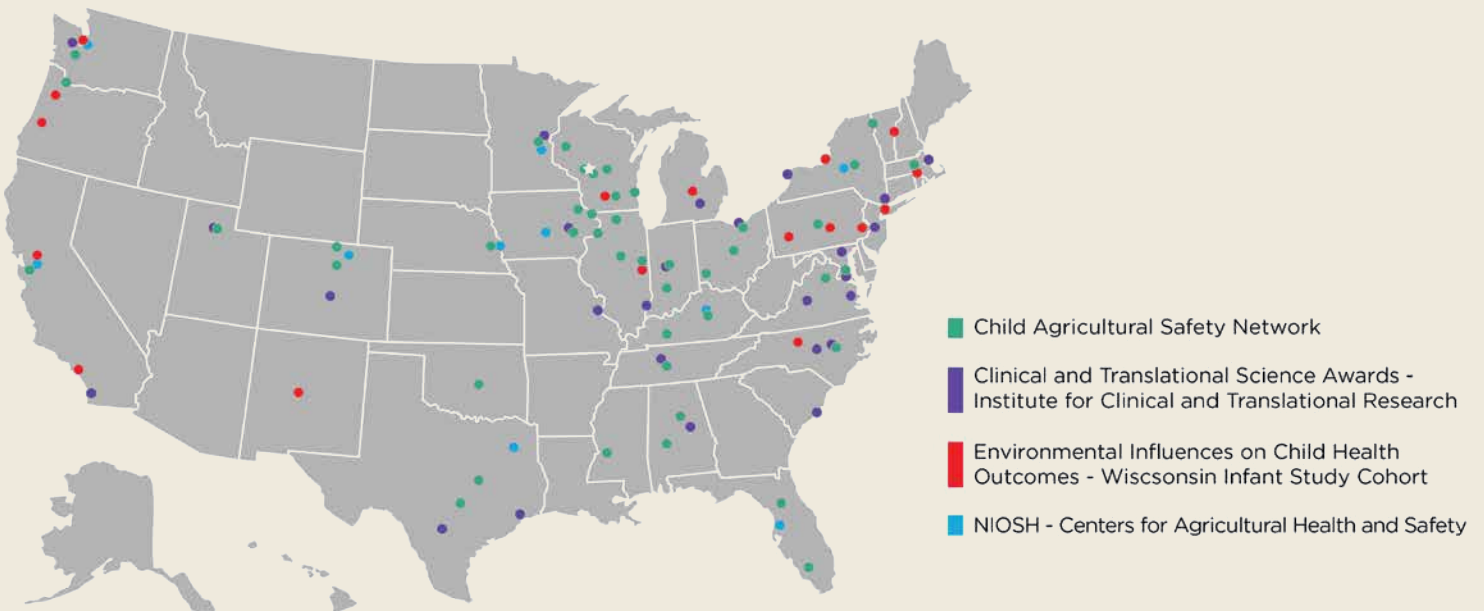
- Analysis of Stakeholders' Usage of a Publicly Available Collection of Agricultural Injury Reports from News Media
- Assessing Facebook Ads Manager as a Participant Recruitment Tool for an Online Health and Safety Survey
- AgInjuryNews.org 🖐️
- Agriculture Rescue Training (ART) 🖐️
- Dairy Microbiome (DOME)
- Environmental influences on Child Health Outcomes (ECHO)
- Farmers' Mental Health and Intervention Models 🖐️
- Geo-Mapping Antimicrobial Resistance in E. coli from Humans and Animals 🖐️
- Health Insurance, Rural Economic Development and Agriculture
- Human Epidemiology and Response to SARS-COV-2 (HEROS)
- Journal of Agromedicine: Practice, Policy, and Research 🖐️
- Providers' Attitudes and Adoption of mHealth at Marshfield Clinic Health System
- Skin Cancer Screening 🖐️
- Social Theories in the Agricultural Health and Safety Field
- Substance Abuse and Recovery in the Northwoods 🖐️
- Telehealth Engagement Research
- Understanding and Addressing the Disparity in Vaccination Coverage Among U.S. Adolescents Living in Rural Versus Urban Areas.
- Veterans to Farmers 🖐️
- Wisconsin Farm Fatalities Report
- Wisconsin Infant Study Cohort (WISC)/Children's Respiratory and Environmental Workgroup (CREW)
- Wisconsin Rollover Protection Structure (ROPS) Rebate Program



The high-five icon indicates National Farm Medicine Center projects made possible by donors.

All donors are a critical part of our success in research, outreach, and providing services.

NATIONAL PARTNERS AND RESEARCH NETWORKS



NATIONAL CHILDREN'S CENTER FOR RURAL AND AGRICULTURAL HEALTH AND SAFETY PROJECTS

2014-2020

- Advanced Knowledge Mobilization and E-Communication (AKME)
- Ag Youth Work Guidelines
- Childhood Agricultural Safety Network (CASN)
- Developed the report: A 2020 Vision for Childhood Agricultural Injury Prevention
- Enhancing Supervisors' Skills and Employer Policies to Promote and Protect the Health of Young Agricultural Workers
- Evaluation
- Evaluation of Safety in Agriculture for Youth (SAY) National Clearinghouse
- Filling the Gaps in Child Agricultural Injury Data
- Grain Handling Safety Coalition via CASN
- Integrating Safety into Agritourism
- Intervention through Inquiry: Understanding Beginning Farmers and Ranchers (BFR)
- Mini-Grants
- Protecting Children While Parents Work in Agriculture
- Responding to Needs during COVID-19
- Strengthening Organizational Capacity in Child Agricultural Injury Prevention
- Taking Care of Farm Children During COVID-19

2020-2025

- Assessing the Impact of Traumatic Injury News Articles on Farm Mothers and Educators
- Capabilities and Limitations of Youth Operating Agriculture All-Terrain Vehicles
- Farm Adolescent and Mental Health
- Emerging Issues Program
- Farm Kid Paradox: Anthropological Inquiry into the Benefits and Risks of Child-Livestock Interaction
- Linking Childcare to Farm Children Safety
- Surveillance of Medically Attended Agricultural Injuries in Farm Children
- Outreach

DEAN EMANUEL ENDOWED CHAIR

- Conducting Meetings & Conferences of National Importance
- Identifying the Legal Side of Child Agricultural Fatalities

UPPER MIDWEST AGRICULTURAL SAFETY AND HEALTH CENTER

- Assessing and Preventing Occupational Injuries in Animal Agriculture
- Rural Firefighters Delivering Agricultural Safety and Health (RF-DASH)
- Telling the Story of Agricultural Safety
- Tickborne Disease Risk for Agricultural Workers and their Families in the Midwest

CENTRAL STATES CENTER FOR AGRICULTURAL SAFETY AND HEALTH

- Assessing the Prevalence and Underlying Causes of ATV/OHV-related Youth Injuries
- Health and Safety Risks among Immigrant Cattle Feedlot Workers in Nebraska and Kansas
- Identifying the Sources of Stress and Prevalence of Anxiety and Depression Symptoms Among Young Farmers and Ranchers in the Midwest
- Improving Safety and Health in the Cattle Feed Yard Industry

PUBLICATIONS

Peer review is the foundation of scientific activities. The peer-review process subjects an author's work to the scrutiny of other experts in the field, thus encouraging authors to produce high-quality research that will advance the field. During 2020, Farm Medicine researchers published 24 peer-reviewed articles. <https://marshfieldresearch.org/nfmc/publications>

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