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Journal of Agromedicine Special Issue on Surveillance

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EDITORIAL

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Agricultural injury and illness surveillance has always been a difficult pursuit due to the distinct business and regulatory environment in which farming operates. Traditional occupational health surveillance efforts often fall short in adequately incorporating accurate estimates of agricultural injury or illness for a variety of reasons.[1] Given that half the world's population is employed in the agrifood system, and it consistently ranks as one of the most hazardous jobs, more attention and innovation is needed for agricultural injury and illness surveillance.[2,3]

The *Journal of Agromedicine* special surveillance issue highlights new advancements in surveillance science, with a wide-ranging topical and international scope. The authors present the myriad of unique ways in which they are filling the surveillance gaps. The call for papers solicited research that responded to a variety of factors (Table 1). Manuscripts included in this special issue were responsive to nearly all of the topics sought.

While all manuscripts highlighted the rationale for surveillance research, a few in particular focused on this as a major theme, such as Peachey et al. Australia,[4] McNamara et al.-Ireland,[5] and Johnson et al. Roll-Over Protective Structures (ROPS).[6] How surveillance research is conducted has continued to evolve over time, with emphasis on the role of artificial intelligence and machine learning.[7]

The use of multiple datasets can often provide a more comprehensive count of agricultural injuries. For example, Becklinger[8] used a capture-recapture methodology to study the completeness of cases identified in two publically available datasets. The benefits of employing multiple datasets can also be seen in Gilblom et al.'s[9] research leveraging health data and geographic information systems (GIS) technology, and in Michigan, four datasets are combined to reveal the burden of non-fatal injury in agriculture.[10]

Surveillance systems that represent specialized needs have filled in the gaps for specific countries, regions, or commodities. Tailored approaches are often required as agricultural pursuits are not homogenous around the world. For example, in India, Chopra and colleagues[11] used an approach that engaged with local village leaders to enable the door-to-door collection of injury data. Irish researchers employed national survey data to probe questions related to dairying expansion,[5] and Johnson and colleagues employed facility level trauma databases to identify tractor-related injury.[6]

Existing datasets were often used to answer agricultural injury and illness questions. Moore et al.[12] utilized Florida roadway crash data to track farm related injuries involving roadway tractor and farm worker transportation. In other instances, existing administrative data are being used for other than their original purposes; Walker and colleagues studied electronic health records (EHR) to identify farm related injuries and illnesses occurring among Hispanic/Latinx workers in Illinois,[13] and Jepsen et al. reviewed the relative utility of workers' compensation data and emergency services records for farm injury.[14]

Leveraging partnerships has been an essential component of many agricultural injury and illness surveillance systems.[15] Not only is this evident through the countless data use agreements that support the sharing of existing data, but active cooperation was also shown to be critical. Mohammadrezaei and colleagues explored how multiple Irish agencies contributed to the common goal of accurately surveilling fatal and non-fatal injuries. Gilblom et al. noted that inter-professional collaboration between academia and healthcare systems strengthens the surveillance system in the upper Midwest (USA) by leveraging several sources of data.[9] Partnerships were also used to understand best surveillance dissemination[16] practices.[17]

Increasingly, there is a growing international focus on the critical issue of rural farmer and rancher mental health and well-being. This edition features research papers that delve into this topic,

Table 1. The special issue is responsive to the following.

- Providing rationale and prioritization for surveillance research
- Using information technology effectively to meet surveillance objectives
- New methodologies for using multiple data
- Maximizing regional or population-specific data collection
- Exploring existing surveys and data managed by other agencies
- Using existing data to identify, describe, track, and evaluate risks and injuries
- Surveillance information for prevention, evaluation, and stakeholder use
- Comprehensiveness of the extent, distribution, and characteristics of injuries and exposures

offering valuable insights. One such study examines suicide rates in Kansas, USA,[18] while another investigates medically attended youth suicidality within a Wisconsin, USA cohort.[19] Notably, the latter study explores distinctions between farm, rural, and urban families. These research findings contribute significantly to our understanding of mental health challenges within agricultural communities.

This themed issue has also benefited from the inclusion of two systematic reviews. Summarizing an array of papers within agricultural injury surveillance Li, et al. report findings in hopes of improving future measures and policies within agricultural health and safety.[20] Secondly, Raza et al. provide a comprehensive global literature review of agricultural machine related injuries.[21]

The call for papers for this themed issue was answered by an international group of authors who honed in their research reports on the proposed sub-topics. While most of the pre-defined subtopic areas were discussed in this issue, two key areas were not: 1) identifying and using consistent terminology, and 2) training and support for surveillance practitioners. While not specifically described herein, these topics are of importance for the future of the discipline, in their own rights. To continue to advance the science, the field could benefit from further training of surveillance practitioners as well as a stakeholder-driven data dictionary that contains the basic information to be collected with consistent names, definitions, and field options.

Occupational Safety and Health surveillance techniques allow us to better understand patterns of injury and illness and identify associated risks that require mitigation to improve safety in the AgFF industry. Agriculture safety and health experts need to engage and collaborate with public health professionals, industry, and each other to learn how to conduct surveillance activities that overcome barriers and utilize the latest techniques and technology available. OSH surveillance provides information critical to take action, inform policy, and establish prevention strategies. Recently, the National Academies of Science published a Smarter National Surveillance System for Occupational Safety and Health in the 21st Century.[22] This document provides an assessment of the state of OSH surveillance in the US and describes strategies to evolve the current OSH surveillance system.

We thank the authors of these articles for their thoughtful approach to OSH surveillance in the AFF industry.

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