Report on Work-Related Surveillance,
## National Academies of Sciences, January 2018

On January 9, 2018, the National Academies of Sciences, Engineering and Medicine (NAS) released a report titled: **A Smarter National Surveillance System for Occupational Safety and Health in the 21st Century. Consensus Study Report.** The full report can be downloaded at www.nap.edu/24835. Data from surveillance of work-related injuries and illnesses are essential to identify and target prevention for all public health activity, including occupational safety and health. Industrial hygienists and safety specialists need accurate and timely surveillance data to plan interventions and to evaluate the success of their work. Physicians, industrial hygienists and safety specialists need to understand the limitations of the surveillance data available to them in order to make the best use of the data in their work. Given the importance of accurate surveillance data in their work, occupational health and safety practitioners should be advocates for strong surveillance systems. Deficits in the system to count work-related injuries and illnesses were identified in a 1987 NAS report[1]. Although improvements were made in the national system in accord with the 1987 report, particularly related to the identification of acute traumatic fatalities, there was less progress made in improving the surveillance of non-fatal work-related injuries and even less progress made in improving the system for both fatal and non-fatal work-related illnesses. In 1992, in response to the 1987 NAS report the Census of Fatal Occupational Injuries (CFOI) was initiated by BLS to conduct a census of acute traumatic fatalities rather than rely on reporting by employers.

This new system, which used multiple data sources, including death certificates, police reports, and news media reports, had the immediate effect of doubling the number of acute traumatic fatalities identified in the United States. Having a similar multi-source for non-fatal conditions would be ideal.

Multi-source surveillance that provides an accurate count of work-related injuries and illnesses in Michigan has been the focus of a Michigan State University (MSU) program for the last 30 years. The new NAS report repeatedly cites publications from the MSU program to highlight deficiencies in the current system and as part of the recommendations to improve the national system[2-6].

Figure 1 compares the results from the Bureau of Labor Statistics employer survey to the Michigan multi-source surveillance system for work-related amputations, burns, crushing injuries, and skull fractures, which rely heavily on hospital and emergency department medical records.

Figure 1. Comparison of Multi-Source Data Surveillance in Michigan vs. the Bureau of Labor Statistics Employer Based Survey for Work-Related Amputations, Burns, Crushing Injuries and Skull Fractures
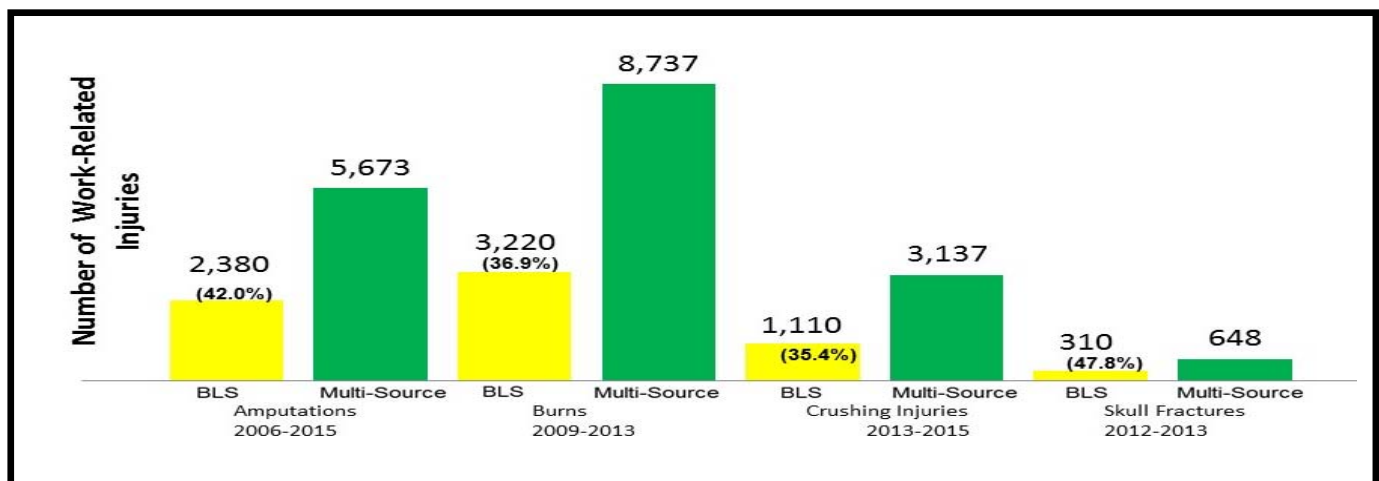
The new NAS document provides a comprehensive description of and deficits in the current system, guiding principles, a blueprint of an ideal system, and a description of systems in other countries. It then makes 17 multipart recommendations to improve the current US system. These 17 recommendations contain 70 specific multiple short and long term recommendations. The largest number of recommendations are directed to the National Institute for Occupational Safety and Health (NIOSH) with multiple recommendations made to the Bureau of Labor Statistics (BLS) and the Occupational Health and Safety Administration (OSHA). The report strongly recommends the integration of state programs such as those in Michigan into an overall national plan.

Major recommendations involve BLS/OSHA collecting more information. **Recommendation A** states that BLS should routinely collect detailed case and demographic data for injuries and illnesses resulting in job transfer or restricted-duty work. Currently, BLS only collects information on the nature of injury for injuries with days away from work. As more companies have developed programs that manage injuries by work restrictions or transfers rather than lost work time, information about these injuries is no longer collected. In addition, it was recommended that OSHA amend its injury and illness recording requirements to collect information on race and ethnicity, and on employment arrangement (e.g. self-employed, contractual, employee) to identify vulnerable worker populations and risks that may be associated with the changing nature of work. **Recommendation D** recommends that BLS initiate a worker health survey similar to what is done in a number of European countries. Major recommendations that involve NIOSH are that it both collect more information and release the data in a more timely and coordinated manner. **Recommendations B and I** state that NIOSH should analyze, interpret, and regularly present work-related illness data and economic data for both work-related injuries and illnesses in a comprehensive public report. The data sources for work-related illnesses should include reporting by audiometric providers, disease registries (such as cancer and chronic renal failure), hospitals, laboratories, physicians, poison control centers, and health surveys as well as appropriate exposure databases. **Recommendations C, E, F, N, and Q** address collaboration by NIOSH with other federal agencies. **Recommendations G, J, K, L, M, and P** involve ensuring that information on

work is in the electronic medical record, public health surveys are in a user-friendly format and that there are adequate well-trained personnel to support this effort. Finally, **Recommendation H** recommends that in addition to surveillance for injuries and illnesses, surveillance should be conducted for occupational exposures as an early indicator before injury/illness occurred**.**

How do individual practioners such as allergists, emergency department physicians, family practioners, internists, and pulmonologists who do not practice occupational medicine and who are not involved in policy decisions made by BLS, NIOSH or OSHA factor into the proposed improvements? Many of the recommendations depend on both the recognition and medical charting of work-related injuries and illnesses by clinicians.

Clearly, it is important for health care providers to focus on treatment, but unfortunately all too often basic information on where and what has occurred are missing from the charted history of present illness (HPI) for even acute injuries such as amputations or burns. The recorded information becomes even sketchier for chronic musculoskeletal conditions such as low back strain and illnesses such as cancer. Expected improvements and efficiencies with the use of the electronic health record (EHR) to identify associations and subsequently initiate interventions will require improvements in the collection and incorporation of occupation and industry in a retrievable format in the EHR. In the midst of the time pressure of a clinical encounter, physicians tend to forget that medical records including death certificates will be used by the public health and research community in future epidemiological analyses. Physicians have a responsibility not only to the individuals in their exam room but to the whole community. Generally, that responsibility can be fulfilled by ensuring the collection and charting of key history components, which will include occupation and industry.

As always, Dr. Rosenman is happy to consult on diagnosis and/or management of work-related conditions in your patients. Dr. Rosenman was a member of the NAS committee that developed the new report and would be happy to discuss with you any questions you may have about the report 1- 800 -446-7805.

Seventeen NAS Recommendations

Recommendation A: BLS and OSHA should collaborate to enhance injury and illness recording and the Employer Survey of Occupational Injury and Illnesses to achieve more complete, accurate, and robust information on the extent, distribution, and characteristics of work-related injuries and illnesses and affected workers for use at the worksite and at national and state levels.

Recommendation B: NIOSH, working with the state occupational safety and health surveillance programs and across divisions within the agency, should develop a methodology and coordinated system for surveillance of both fatal and nonfatal occupational disease using multiple data sources.

Recommendation C: NIOSH should lead a collaborative effort with BLS, OSHA, the states, and other relevant federal agencies to establish and strengthen state-based occupational safety & health surveillance programs.

Recommendation D: BLS should place priority on implementing its plan for a household survey of nonfatal occupational injury and illnesses.

Recommendation E: OSHA, in conjunction with BLS, NIOSH, state agencies, and other stakeholders, should develop plans to maximize the effectiveness and utility of OSHA's new electronic reporting initiative for surveillance.

Recommendation F: NIOSH with assistance from OSHA should explore and promote the expanded use of workers' compensation data for occupational injury and illness surveillance and the development of surveillance for consequences of injury and illness outcomes, including return to work and disability.

Recommendation G: The Department of Health and Human Services should designate industry and occupation as core demographic variables collected in federal health surveys, as well as in other relevant public health surveillance systems, and foster collaboration between NIOSH and the Centers for Disease Control and Prevention in maximizing the surveillance benefits of including industry and occupation in these surveys and surveillance systems.

Recommendation H: NIOSH, in consultation with OSHA, should place priority on developing a comprehensive approach for exposure surveillance.

Recommendation I: NIOSH should coordinate with OSHA, BLS, and other relevant agencies to measure and report, on a regular basis, the economic and health burdens of occupational injury and disease at the national level.

Recommendation J: NIOSH should build and maintain a robust internal capacity in biomedical informatics.

Recommendation K: NIOSH should work with the National Library of Medicine to incorporate core occupational safety and health surveillance terminologies, including those for industry and occupation, into the Unified Medical Language System (UMLS).

Recommendation L: NIOSH should lead efforts to establish data standards and software tools for coding and using occupational data in electronic health records.

Recommendation M: NIOSH and BLS, working with other relevant agencies, academic centers, and other stakeholders should coordinate and consolidate, where possible, efforts to develop and evaluate state-of-the-art computational and analytical tools for processing free-text data found in occupational safety & health surveillance records of all types.

Recommendation N: To identify emerging and serious injuries, illnesses, and exposures in a timely fashion, NIOSH (in coordination with OSHA, BLS, and the states) should develop and implement a plan for routine, coordinated, rapid analysis of case-level data collected by different surveillance systems, followed by the timely sharing of the findings.

Recommendation O: To promote and facilitate the use of surveillance information for prevention, and to present more comprehensive information on the extent, distribution, and characteristics of occupational injuries, illnesses, and exposures, NIOSH (in coordination with and input from OSHA, BLS, and the states) should establish a coordinated strategy and mechanism for timely dissemination of surveillance information.

Recommendation P: NIOSH, OSHA, and BLS should work together to encourage education and training of the surveillance workforce in disciplines necessary for developing and using surveillance systems, including epidemiology, biomedical informatics, and biostatistics. NIOSH should make surveillance training a mandatory component of training programs that they fund.

Recommendation Q: The Secretary of Health and Human Services, with the support of the Secretary of Labor, should direct NIOSH to form and lead a coordinating entity in partnership with OSHA, BLS, and other relevant agencies.

References

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P S *Remember to report all cases of occupational disease!*

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