

1682d IMPROVING AWARENESS OF NANOMATERIALS AMONG U.S. CONSTRUCTION WORKERS

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Introduction The Centre for Construction Research and Training (CPWR) has support from NIOSH to research the use of nano-enabled construction materials in the U.S. The Centre maintains a web-based inventory of 550+ products believed to nano-enabled. The extent to which nano-enabled construction products have been commercialised remains unclear, however, because no U.S. regulation requires manufacturers to identify engineered nanoparticles (ENPs) on labels or Safety Data Sheets (SDSs). Under U.S. OSHA's Hazard Communication Standard, manufacturers of nano-enabled products do not have to identify any component that represents less than one percent of the mix on a weight basis. Given the low mass of ENPs, OSHA's threshold may not be reached, allowing manufacturers to legally withhold information about nanoparticles. In 2008 at an EPA conference, the author recommended that OSHA require all ENPs to be identified on SDSs and that conditional language be included advising against using PELs for the parent material. Lee, *et al.* made similar recommendations about use of PELs in 2013 after evaluating 97 SDSs. They reported that 85% did not provide any nanomaterial-specific data. These authors developed a 2012 ISO technical report (ISO/TR 13329) that provides excellent guidance on preparing SDSs including identifying the nanoform components.

Methods In 2013–2014 CPWR surveyed 79 experienced construction tradespersons with an 11-item written survey. The instrument was designed to gauge perceptions and level of knowledge relating to use of nanotechnology in the construction industry. The survey protocol was approved by CPWR's Institutional Review Board prior to use.

Results Survey participants from various locations across the U.S. self-identified with 22 different construction trades. Masons, plasterers, and carpenters represented the majority of those surveyed (58%). On average, the group reported having 30.5±9.4 years of trade experience and 13.3±7.8 years of training experience. Less than half of respondents (48%) were aware that construction products containing nanomaterials are commercially available in the USA, and only 13% knew of a construction nanomaterial being used on an actual construction job site.

Conclusion This survey of construction health and safety trainers suggests that much more needs to be done to increase awareness of nanotechnology in the construction industry. Better risk communication and dissemination strategies focused on workers are needed. This isn't an American phenomenon. Broekhuizen, *et al.* found even higher levels of ignorance of nanomaterials among European construction workers in surveys conducted in 2009. Positive trends can be seen, however. The European Trade Union Institute has developed training materials for workers. CPWR is providing awareness training to union apprentice instructors and developing toolbox talks aimed at specific trades. Some manufacturers have begun to develop Health Product Declarations for their nano material products. These innovative hazard communication tools may address the well-documented inadequacies of Safety Data Sheets.

1682e UTILISING THE OSHWIKI: LESSONS LEARNED FOR DISSEMINATION AND ENGAGEMENT. THE EU-OSHA EXPERIENCE

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Introduction The European Agency for Safety and Health at Work (EU-OSHA) launched OSHwiki in August 2014 with the aim of being an authoritative source of information that supports government, policy-makers, employers' organisations and workers' representatives around Europe on all aspects of workplace health and safety.

Methods OSHwiki is a dynamic multilingual collaborative web platform based on the wiki concept providing users a new way of networking with the global OSH community and allowing them to collaborate in creating and sharing knowledge on occupational safety and health. It assures quality by restricting authorship to nominated members of the OSH community, providing those authors with recognition of their knowledge.

Results Following a feasibility study carried out to assess the advantages and drawbacks of OSHwiki, the results have shown that the current format does not realise its full potential. The strengths are primarily associated with the high degree of reliability of the OSHwiki content. However the main weaknesses are associated with the low visibility of OSHwiki in the OSH Community.

Conclusions By using this approach, EU OSHA has been able to maintain current information online on a wide spectrum of OSH topics in a number of different languages and is now looking at how to fulfil its full potential through Wikipedia.

1682f PARTNERSHIPS TO EXPAND OCCUPATIONAL SAFETY AND HEALTH CONTENT IN WIKIPEDIA

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Introduction Wikipedia is accessed by hundreds of millions around the world and that makes Wikipedia one of the most powerful platforms for the dissemination of science information. While Wikipedia offers high-quality content about certain topics, a large proportion of articles are insufficiently developed. The Wikimedia Foundation has engaged in partnerships with scientific and academic institutions to improve the coverage and communication of science to the public. These efforts are beneficial to professional and academic associations interested in sharing reliable, vetted information about their discipline with the world.

Methods The U.S. National Institute for Occupational Safety and Health (NIOSH) is one of the research agencies engaged in this effort. NIOSH developed and manages the WikiProject Occupational Safety and Health. NIOSH also participates in a classroom program (where students write Wikipedia articles) to expand and improve Wikipedia's content on public and occupational health. The evaluation of their efforts is conducted using an Altmetrics platform that tracks alternative metrics for information products located on the web that have a persistent tracking number, such as an ISBN or DOI.

Result Metrics on these efforts are publicly available through Wikipedia, the Wiki Education Foundation and Altmetric so reach can be evaluated continuously by the number of views and quality of entries.

Discussion Several mechanisms exist to motivate researchers to get involved and to evaluate the impact of the efforts in Wikipedia. Throughout these initiatives, new scientific content related to acoustics was successfully added to Wikipedia, and the quality of the entries was improved.

1682g VISION ZERO. WHAT IS IT? WHY SHOULD WE CARE? WHAT SHOULD WE DO?

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Introduction 'Vision Zero' is a prevention strategy with the vision of a world without occupational accidents and work-related diseases. Its highest priority is to prevent fatal and serious work accidents and occupational diseases. Vision Zero is the goal of a comprehensive culture of prevention.

Methods The concept of Vision Zero has gone hand in hand with the work done by the German Social Accident Insurance DGUV and its member institutions for many years. Vision zero in context with safety and health at work is not an illusion or a target of its own; it is a basic strategy and a mindset at the same time. Vision Zero is the fundamental strategy for developing a comprehensive and holistic culture of prevention that takes into consideration the safety, health and well-being of employees. The International Social Security Association ISSA just recently launched a global 'Vision Zero' campaign during the World Congress on Safety and Health at Singapore.

Results In order for Vision Zero to become a reality in practice, prevention work must always be realigned to this goal. This broad global and networked approach requires everyone in society to get involved. Vision Zero is a strategic, comprehensive and qualitative approach: where objectives are formulated and agreed upon; which is geared towards risks and hazards; and which takes into consideration all the circumstances behind accidents at work and on the road, occupational diseases and work-related health hazards.

Conclusions The goal of zero accidents might seem difficult, but it is the only ethically correct goal that we must work on in the future. Vision Zero provides a strategy to achieve this. Under Vision Zero, safety and health at work are values that companies, organisations and society appreciate and strive for.

1682h USING NEW METRICS TO EVALUATE DIGITAL COMMUNICATIONS IMPACT ON OSH STAKEHOLDER'S COMMUNITIES ONLINE

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Introduction Alternative metrics are any digital indicator of online behaviour around a web-native item – these can range from blog posts to comments to shares to download. Since launching in 2012, Altmetric.com collects online metrics and metadata around millions of digital research and communications outputs ranging from press releases to peer reviewed

journal publications. Using automated and manual data gathering techniques, we have conducted sentiment and stakeholder affiliation analyses of data from the National Institutes for Occupation Health and Safety to help identify key stakeholder networks in the OSH community, how they engage, what platforms they use, and what they're saying.

Methods We reviewed NIOSH attention data across the 16 platforms Altmetric tracks using the Altmetric Explorer platform. We grouped those platforms into 'red flag' and 'green flag' platforms with distinct sentiment patterns. Red flag platforms were platforms where the sentiment was most likely to be negative or critical. Green flag platforms were platforms where qualitative engagement was most likely to be positive. Blue flag platforms had no sentiment and simply provided findings without editorialising about them.

Results NIOSH's break out using this flagging system was unique and broke out as follows. Red flags included blogs, Reddit, and peer review sites. News, Twitter, and Wikipedia tend to have non-editorialised reporting of NIOSH communications and solely need to be monitored for accuracy – blue flag platforms. Green flag platforms with high positive sentiment likelihood include F1000, Facebook, YouTube, policy and syllabi citations. Stakeholder analysis is ongoing of who engages on these platforms is ongoing and may not be ready for this presentation.

Conclusions Peer-reviewed OSH journal literature and web-native digital communications are underserved by existing metrics like citations and web analytics. New web-based alternative metrics and provide deep qualitative data on what communities are being reached, when, on what platforms, and what the content of their engagement is. These new metrics can play a vital role in shaping communications across OSH organisations globally

1682i FRAMEWORK FOR A SOCIAL MEDIA STRATEGY TO CREATE COMMUNITIES OF INTEREST AND REACH NON-TRADITIONAL AUDIENCES

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Introduction An organisation must have a communications strategy that is actionable and understands their stakeholders, helps you converse with them, about the things they care about, in the places or platforms where they are already 'hanging out'. Budget, content and vision will not determine your success, instead, organisations must transform their fundamental communication concepts and modify them for this new two-way, end-user empowered medium of Social Media. The organisation's OSH content now must not only drive engagement, but also define whom you want to listen to and communicate with.

This presentation will provide a framework for establishing a social media strategy for OSH and nongovernmental organisations (NGO) to effectively integrate traditional and digital communication strategies and platforms to increase global outreach and access non-traditional and multi-cultural audiences.

It will present innovative approaches to accessing and leveraging new social media channels to create 'communities of interest' in OSH, expand professional networks and increase both research translation and knowledge translation. This discussion will use case studies of organisations increasing impact