

important point, patient pain and screams were heard but not cared for. The burn was not treated either immediately and unfortunately washing within the first minute was not observed. Various exchanges taking place following players' comments were rich and constructive and lessons were learnt.

**Conclusion** Our pedagogic tool performed relatively well but needed to be improved taking into consideration players' remarks, our own observations as teachers as well as our final objective. Thus, a new film was created so that the concept be accessible to all OSH professionals and workers.

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#### THE PRACTICAL EXPERIENCE FOR DIPHOTERINE® SOLUTION IN DEALING WITH CHEMICAL BURNS

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**Introduction** Chemical burns represent about 10% of all burns. About 70% of chemical burns are caused by chemical substances used in industrial production, showing the importance of prevention. Water, easily available is often used as emergency management at workplace, and pre-hospital first aid measures. Evidently, the earlier the product is rinsed, better the efficacy, but is the traditional approach the best measure nowadays?

**Methods** This paper demonstrates shared management experience in treating chemical burn incident at a petrochemical plant in Taiwan on corrosive and toxic agents such as sulfuric acid, maleic acid, acetic acid, ammonia, sodium hypochlorite, caustic soda and pure and diluted phenol. Chemical simulation (*in vitro*) and live animal test (*in vivo*) showed that Diphoterine solution can effectively decontaminate 600 kinds of chemical substances, including acids, alkali, oxidants and reducing agents, irritants, tear gas, solvents and alkyl compounds. It can be used as an emergency shower device in factories, emergency devices in factory health centres, clinics and hospital ambulances, decontamination equipment for toxic poisoning systems, CBRN Disaster Prevention and Relief systems while part of Medical Device in European hospitals. Currently this product is positioned as an emergency decontamination solution for chemical splashing, and as emergency decontamination solution in the case of CBRN in Taiwan.

**Results** We have a better understanding of using Diphoterine solution regarding acid and alkali burns management at workplace before hospitalisation. Acid or alkali splashing incidents can be heard of from time to time, and even happened in emergency department.

**Conclusion** Perhaps, it is now time to use Diphoterine, an aqueous decontamination solution with high reverse osmosis for decontaminating eyes and skin splashed by chemical substances as treatment in emergency.

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#### ACCIDENT PREVENTION: FROM VISION TO ACTION THROUGH 'HARM TO ZERO' CONCEPT

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**Introduction** Hundreds of lives are being lost in the Nigerian Electricity Supply Industry as a result of three critical safety factors (unsafe behaviours of the utility workers, poor public perception of safety and the unsafe network conditions in terms of the electrical infrastructure). A critical review of past incidents shows that a lot of the accidents are caused by the workers who are either Non-Compliant or Compliant or Committed with the Non-Compliant workers constituting 85% in the industry. This presentation reviews the accident scenarios and looks at the prevention strategy, 'Harm to Zero' (H2O) concept developed and implemented at Ikeja Electric PLC, the largest distribution company in Nigeria.

**Methods** Data was retrieved through survey, past accident reports, Regulators' report and annual HSE Performance reports. These records were analysed to form the baseline records. The 'Harm to Zero' (H2O) strategy which comprises Network Safety Monitor, Safety Watchdog, Safety Counselling and videos, Hazards Identification Competition, Safety Huddle, IE Safety Code, Public Sensitisation Program and Mandate4 was then developed based on the identified gaps and implemented in 2015, 2016 and 2017.

**Result** Analysis of the results in 2016 shows that staff injury has reduced by 40%, third party injury (non staff) by 56.25% and third party fatality by 25% when compared with 2015 while the Fatality was reduced by 60% in 2015 compared to 2014. The safety survey results in 2015 and 2016 show that there is drastic improvement in safety culture in the company as against previous years. Above all, the zero fatality record in 2017 is unprecedented in the history of the company and the industry at large. The company is now certified to OHSAS 18001:2007.

**Discussion** With this innovative strategy, the company is achieving sustainable safety performance which presently translates into operational excellence and business sustainability.

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#### OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT FOR GENERAL SERVICE EMPLOYEES

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**Introduction** UNIMINUTO Bello is an institution that offers university educational services; The maintenance and cleaning can expose personnel to chemical handling risks, exposure to electrical and mechanical risks, lifting of loads, strenuous working hours, climatic conditions and other damages to their health, it is sought to identify and analyse these risks in the light of the Occupational Safety and Health Management System (SGSST) (Spanish acronym) in order to identify the improvement actions that emerge from these tasks and propose the corrective measures.

**Methodology** It is considered important to analyse the management of SST, using approach of qualitative, descriptive research, which analysed information by employees of general services, a description of their activities in function cleaning, maintenance, gardening, cleaning and working in the cafeteria in contrast to the design of the Risk Matrix.

**Results** In the measurement of risk perception, low and medium levels were found, it was not identified risk associated with age, sex or educational level; it was identified that the SGSST is in the design and beginning of its

implementation, in accordance with the Colombian requirements and regulations in this matter, having a recent policy and advancing in the design of processes, procedures and manuals; There are no tangible results of the evaluation of the system and specific improvement actions.

**Discussion** There is a need to refine the planning and implementation of strategies that contribute to the proper implementation of the SGSST; To train a greater number of the brigade, minimising the impact by the rotation of the staff. Disseminate in greater degree the politics, strategies and activities in the university community. It is necessary to design workshops according to their functions that allow them to make use of the protection elements available to them, since their perception shows that the main cause of accidents is caused by human errors.

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### SAFE EMPLOYMENT INTEGRATION OF NEWCOMERS TO CANADA

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**Introduction** Settlement and integration involves helping recent immigrants and refugees find work and become economically solvent. Yet many newcomers end up in 'survival jobs' that are precarious, physically demanding and expose workers to hazards. While 'welcome materials' and settlement programs help newcomers find employment, few offer guidance on employment rights, employer responsibilities and how to stay safe at work. We know very little about how newcomers prepare for employment, the types of resources needed or which groups are well-positioned to deliver these resources.

**Methods** Semi-structured interviews were conducted with policy makers, program developers, social service providers involved in immigrant settlement and employment preparation (n=20). Eighteen focus groups were also conducted with newcomers looking for work and those who had found their first jobs in Canada. The study examined the employment preparation and job search process; newcomer experiences in their first jobs; key training and resource needs related to safe work integration. Data were coded by two researchers and a thematic, inductive analysis was carried out. The constant comparative method was used to understand how newcomers come to understand their rights and where there are gaps in resources and training.

**Findings** Our findings suggest that while many programs focus on employment preparation, the delivery of OHS and rights-related resources is haphazardly and hampered by a lack of consistent funding, time constraints and a diffusion of responsibility. Newcomers reported difficulty finding work and taking jobs that were incommensurate with their experience and education. Many took on informal work without training or compensation as a means of gaining Canadian experience. Participants had poor understanding of rights and responsibilities in the workplace and many had not received comprehensive OHS training. The use of community networks, while useful in finding employment, could be a barrier to speaking up in the workplace. Language barriers were an obstacle to finding work and invoking workplace rights.

**Discussion** This study adds to our understanding of what can help recent immigrants and refugees successfully prepare for and stay in good quality, safe jobs. We identify optimal points

in the settlement process where employment-related resources can be provided and the role social service agencies, regulatory bodies and employers should play.

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### DO SELF-REPORTS OF MUSCULOSKELETAL SYMPTOMS PREDICT OCCUPATIONAL ACCIDENTS? EVIDENCES FROM A HOSPITAL-BASED CASE-CONTROL STUDY IN BRAZIL

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**Introduction** It was estimated that there were over 313 million non-fatal occupational accidents worldwide in 2010. In order to reduce occupational accident rate, it is necessary to determine its associated factors. Musculoskeletal symptoms have been shown: to act as a mediating factor between ergonomic conditions and occupational accidents; to be associated with perceived risk of injury; and to increase the probability of accidents. Therefore, the aim of this study was to investigate whether self-reports of musculoskeletal symptoms were associated with occupational accidents occurrence.

**Methods** A hospital-based case control study was conducted among workers aged 17–59 years and residing in Botucatu, Brazil. The study included cases of occupational accidents that required hospitalisation. Controls were patients who suffered a non-work-related accident. Altogether, 80 cases and 125 controls were included. Self-reports of musculoskeletal symptoms were obtained using the Nordic Musculoskeletal Questionnaire, while a standardised questionnaire was used to assess socio-demographic factors. Frequency statistics and logistic regression were conducted to analyse the data.

**Result** The highest musculoskeletal symptoms prevalence was for the low back, followed by shoulders and the upper back. Self-reports of upper back musculoskeletal symptoms in the last 7 days and the occurrence of occupational accidents were associated (OR=3.670, 95% CI: 1.503 to 8.963).

**Discussion** According to our results, musculoskeletal symptoms in the upper back do predict occupational accidents. However, we believe that further studies, with a method of musculoskeletal symptoms assessment capable of discriminating between serious and minor complaints, are necessary to determine whether self-reports of musculoskeletal symptoms in other regions are also associated with the occurrence of occupational accidents.

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### PUSHING AND PULLING ASSESSMENT: HOW TO DEAL WITH INTER-OPERATOR VARIABILITY

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**Introduction** Snook and Ciriello has been the leading methods to assess pushing and pulling for roughly 30 years. ISO11228-2 integrated it providing useful add-ons. On duties, workers apply excessive amount of force, for reasons either related to organisational, technical or legal issues. Therefore, inter-operator variability still remains a main issue to be addressed.