work suitability. We report the different clinical and instrumental pathological patterns evidenced among the workers.

Discussion Stabylometric footboard seems to be a valid instrument to increase possibility of detection of at-height workers hyper susceptible to fall. Instrumental evaluation must be associate with medical clinical specialised examination. Our results have to be confirmed in larger studies having the aim of better define objective parameters of a normal balance in general population.

62 THE DEVELOPMENT AND TRIAL OF SYSTEMATIC VISUAL SEARCH; A NOVEL METHOD TO IMPROVE THE OBSERVATION OF WORKPLACE HAZARDS DURING INSPECTIONS

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Introduction Visual inspection, as core element in hazard identification, represents a widely used risk assessment method for workplace safety. However, poorly conducted visual inspections are problematical as observable hazards that should be seen, are often missed. Fourteen fatalities from the Rosepark Nursing Home fire in Scotland in 2011, tragically exemplifies this problem. The coroner in this case, reporting under judicial conditions concluded that; if the health and safety consultant who conducted a recent workplace inspection, had correctly observed inappropriately stored flammable materials, the deaths would have been avoided.

Methods To improve the practice of visual inspection, a systematic visual search method was developed and tested under randomised controlled trial conditions. Participants (n=211), previously trained in occupational health and food safety, were tasked with visually inspecting an industrial standard kitchen during a thirty minute period. The experimental group (n=107) received training in the use of systematic visual search while a control group (n=104) conducted their visual inspection as per normal. The kitchens were specially prepared for the experiment and contained a known number of observable hazards, representative of what environmental health and safety professionals, routinely encounter in reality.

Result Control group participants were only able to identify a circa mean 33% of observable hazards in the kitchens. In contrast experimental group participants, using the novel systematic visual search method, observed, a circa mean 50% of observable hazards present. This 17% difference was highly significant, with a large effect size ($p \leq 0.001$, Cohen's $d = 1.85$), and demonstrates the higher performance of systematic visual search compared to current visual inspection practice.

Discussion These base rates reported, remain below what should be expected from environmental health and safety professionals. Visual inspection therefore needs further academic attention in order to improve workplace visual inspection practice and thereby improve the standard of risk assessment.

675 PICTURE BOOKS FOR SAFETY – COMMUNICATING OSH KNOWLEDGE WITHOUT WORDS

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Introduction Forestry and agriculture and are industries with a relatively high number of serious and lethal accidents in Sweden. They also employ a significant amount of foreign seasonal workers, as it is hard to find enough labour force within Sweden. The latter applies also to horticulture, landscaping and outdoor environmental care, and work in golf courses.

During 2015 and 2016, many refugees arrived in Sweden. This arrival of potential workers is seen by the above-mentioned industries, and by the Swedish state, as an opportunity to employ more people in these industries. But to work safely, these people need basic information on occupational health and safety, although they have not learnt Swedish yet.

To meet this need, Prevent together with the social partners, has created picture books on OSH aimed at workers in forestry, agriculture, horticulture, landscaping and outdoor environmental care and golf course keeping.

Methods The books use no text but depict key information and risky situations in the workplace, and show how risks can be mitigated through following existing guidelines and regulations. To decide what situations to show, Prevent worked with experts from the social parties and professionals from the industries. The situations range from specific instructions like how to lead cattle and what PPE should be used, to the importance of taking breaks.

The picture books are free of cost, pocket-sized, and they are also available as pdf and e-publications. The pictures can be used to get started communicating on various operations in the workplace, and to reflect on safety issues.

Result The first book, on forestry, was published in November 2016 and the following four books in spring/summer 2017. The books have created a lot of attention in the media and from other industries who would like their own versions, as well as from training instances.

794 LEARNING BY GAME PLAYING AND USING DIGITAL MEDIA: AN EXAMPLE THROUGH MANAGEMENT OF CHEMICAL EXPOSURE

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Objectives Chemical burn is relatively rare, frightening and potentially invalidating. Simple and effective means are necessary to become actors and not spectators before and during an accident.

Methods We started by designing a movie describing a chemical burn and explaining good practical guidance for management in hospital environment.

After evaluation, we decided to target all occupational and safety professionals: a workshop took place during a congress introducing the gaming and fun notion of learning together. After assessing this workshop, we decided to move forward and improve contents and interactivity by elaborating a symposium workshop with the aim of including all occupational health and safety professionals and workers.

Players commented the different steps and choices regarding their management. Time was given for evaluation followed by exchanges between all.

Results Over hundred professionals participated. They totally adhered to the project and were fully implicated. Confronted to real life situations, panic was observed as the most

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