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PROVISION OF OCCUPATIONAL HEALTH AND EMERGENCY CARE IN REMOTE LOCATIONS

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Many industries by the nature of their business have to locate themselves in remote locations often distant from urban centres. This remoteness creates many challenges, not least in the provision of medical care, and in the practice of occupational health for the employees. During this session we will look at different aspects of medical and occupational health care in these remote settings and how some of the challenges can be overcome. My colleagues will discuss the provision of medical services in remote locations, and the particular features of the provision of occupational health services in Russian Siberia, in the Deserts of the Gulf Region in the Middle East and in Malaysia.

Before looking at the examples we will examine elements of the Health Risk Assessment (HRA) that should be carried out to enable the formulation of the Health Plan. Ideally the HRA should be carried out well in advance of the commencement of operations, but that does not always happen. Elements to be considered include:

- Health Hazards of the operation and project
- Local climate
- Patterns of diseases and illness, in the community and local work force
- Levels of education in the local workforce, including awareness of health and safety
- Standards and access to local health care
- Availability of National Medical and Nursing staff – requirements for local employment
- Availability of drugs and medical equipment
- Routes for medical evacuation
- National Legislation
- Industry and International Standards
- Access to food and drinking water
- Security Situation
- Potential Community Health Projects

All these elements and more need to be considered to formulate and execute a comprehensive medical and occupational health plan.

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OCCUPATIONAL HEALTH IN THE ENERGY INDUSTRY – IMPROVING HEALTH IN REMOTE AREAS

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The Energy Industry has had a challenging period with low and fluctuating oil prices driving uncertainty and massive structural impact. This has come at a time when exploration and operations are moving into increasingly remote and challenging areas of the planet. The resultant business changes create pressure on people that is related to job security, to divestments and to organisational redesign. However, these changes also drive efficiencies and include opportunities to

create new ways to improve access to health. One area of health at work that has benefited from this innovation opportunity is the provision of healthcare in remote areas and operations. The session will focus on several specific topics related to driving Health in remote areas:

- Remote Health Care provision. Examining the impact of new medical technologies on both health and business outcomes. An overview of the shift in mindset, competence and the change management required to implement this new paradigm of care and to deliver real outcomes
- Supporting remote populations by moving beyond a medical model of health promotion. Implementing interventions based on positive psychology, linked to specific cultural interventions that boost engagement, thriving, social cohesion and productivity, whilst mitigating health risk
- Health Practitioners in a remote environments in the energy industry – skillset, mindset and qualifications?
- Looking forward – opportunities, paradigms and do we need new types of practitioners and business models?

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OCCUPATIONAL HEALTH IN DESERT ENVIRONMENT

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Occupational Health management in the Middle East presents many interesting and complex challenges. Some of the challenges are due to the climate and topography as might be expected. However other challenges may not be so obvious related to culture demography and politics.

In terms of climate, occupationally it is necessary to protect workers in temperatures of +50C plus, in many areas high temperature is combined with high levels of humidity. This presents a significant challenge and if with WBGT method of worker heat management was used then work would be curtailed for significant portions of the year. More flexible but effective approaches to heat management have to be adopted. The Holy month of Ramadan dramatically compounds the issues relating to heat exposure and resultant heat illnesses.

Distance is also a significant challenge some sites are very remote from health care and it is necessary to arrange medical evacuation routes to centres of medical excellence. Workers often live in work camps, and if not well managed infectious diseases like Norovirus, TB can significantly impact the workforce. Camp Health and Hygiene (food, water, sanitation, etc.) form an integral part of OH responsibilities.

Demographically in some countries in the Gulf of Arabia there are large numbers of migrant workers, >80% of the population in UAE and Qatar. These workers often have existing health concerns, which require ongoing management. Also they can bring diseases from their home locations to the area of work e.g. Malaria. Migrant worker welfare and CSR programs are an integral part of workplace health provision in these environments, which includes local competency building and nationalisation programs ultimately resulting in sustainable developments.

There are also the usual anxieties and psychiatric risk factors of living away from home and family which have significant impact on mental health. Programs need to be arranged

to address these issues. Workplace resilience and wellbeing programs are critical factors in successful health delivery.

Lastly the security situation in the Middle East countries can impact Occupational Health. Not only with increased stress levels, but also impact upon the accessibility of internationally acceptable standards of health care, medical escalations and patient ground/air movements.

1619c OCCUPATIONAL HEALTH IN TROPICAL FISHERIES PRACTICE

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Introduction The Malaysian fishing industry has experienced tremendous growth in recent years due to increase in demand as well as research and development. In many countries, the fishing industry is considered as one of the highest risk occupational group. Therefore, there is a need to address the occupational health issues in local fisheries practice. The work-related diseases, health status and awareness on occupational health have been reviewed in relation to the local fishing industry.

Methods A comprehensive systematic search was conducted on the scientific literature, national legislations and guidelines related to the work-related diseases and health status of workers in local fishing industry. Focus group discussions with key stakeholders were conducted to obtain information about awareness and prevention of work-related diseases in the group of workers.

Results The health problems among workers in the tropical fisheries have been attributed mainly to musculoskeletal disorders, exposures to heat, chemicals, and long hours of work, stress and intravenous drug use. There are national legislations that regulate the occupational health and safety aspect of the fishing industry. However, the provided guidelines may not be sufficient to address specific occupational health issues among these workers. The stakeholders highlighted low awareness and low level of knowledge of occupational health in the sector. Barriers to the issues included low priority, cost of training, management support and safety culture.

Discussion The findings of this review and focus group discussions offer some important insights into the importance of developing an awareness programme for workers in fishing industry. Prevention of work-related diseases and other diseases should be a high priority to protect these workers.

1619d OCCUPATIONAL HEALTH IN SIBERIA AND ARCTIC ZONES

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Siberia and its northern territories in particular represent an extremely problematic region from the point of medical assistance organisation. This is caused by the harsh climate and significant remoteness of settlements and industrial facilities from cities with developed medical infrastructure. In this regard, the activities aimed at developing standards for medical care provision at remote sites and training specialists to

work there represent significant relevance. Centre of Corporate Medicine possesses more than 10 years of experience in this field at remote oil and gas industrial facilities. The standards for medical assistance organisation have been developed with systemic approach to workers' nutrition and rest taking into account climatic and geographical features of the region as well as the labour regime at remote sites. The provision of medical assistance in regular and emergency situations is regulated by the algorithms of medical personnel actions. Telemedicine technologies and consultancy via the 24/7 call-centre are utilised to control the adequacy of diagnostic and treatment procedures. A scientific research program is being currently developed devoted to the estimation of natural and technogenic factors influencing industrial workers' health in order to elaborate targeted programs for occupational diseases prevention and prolongation of productive longevity.

1006 COMPARISONS BETWEEN THE DIFFERENCES IN SCANNING PATTERNS BETWEEN NOVICE AND EXPERIENCED LOAD-HAUL-DUMP OPERATORS PRE- AND POST- MINING EQUIPMENT SIMULATOR TRAINING

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Introduction Previous literature specific to simulator training in the mining industry has mostly been conducted by mining or simulator companies themselves, focusing solely on improvements to efficiency or procedures. There is a lack of evidence for how novice and experienced users perform on objective measures of workload including response times or eye movements. Eye fixations are found to be a useful measure of expertise and confidence along with an indicator of arousal or mental workload. The objective of this study is to determine differences in fixations between novice and expert load-haul-dump (LHD) operators, when completing training in a simulator.

Methods Novice operators completing a four-day training program on an LHD simulator performed the same training run as an experienced operator. Tobii Pro Glasses 2 was used to collect eye movement data during first and last training runs. Particular emphasis was placed on manoeuvring and tramming, two work activities linked to fatal interactions with pedestrians. Scanning patterns of novice operators will be compared to expert using Tobii Pro Lab software.

Results The projected results are that there will be noticeable changes in novice operators scanning pattern between their first and last training run, and will begin to resemble the expert operator's eye behaviour over the period of training. Preliminary results demonstrate that the scanning patterns of the novice are more diverse and less focal than the expert.

Conclusion Operating heavy machinery within dynamic environments of mines can be quite hazardous due to limited line of sight and confined spaces. Simulator training can minimise risk to operators and equipment, by allowing operators to gain skills in a controlled environment. These results will allow training facilities to recognise expert eye movement patterns and provide cues to novice users to rapidly improve their learning and ultimately lead to the prevention of accidents.