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doi:10.1093/occmed/kqu132

Hammerfest: occupational medicine at 70° north

At 70° north and 600 miles above the Arctic Circle, the tiny Norwegian port of Hammerfest is the world's northernmost town. Funding from the Faculty of Occupational Medicine (Mobbs Student Elective Fellowship) and the Nuffield Department of Population Health (Eoin Hodgson Memorial Bursary) gave me the opportunity to learn about occupational medicine in the Arctic. I was able to see and compare a very modern industry with the centuries old traditional occupation of reindeer husbandry which exist side by side.

In 2007, Norwegian company Statoil began processing liquid natural gas (LNG) from the Snøhvit gas field at the Melkøye plant in Hammerfest. Natural gas extracted from the seabed is piped to Melkøye for processing. With no surface installations, Snøhvit is a completely unmanned offshore installation, monitored and controlled from Melkøye. Since workers occasionally visit Snøhvit, Melkøye is classed as both an onshore and offshore development and must satisfy the different health and safety requirements of each location. Natural gas is processed at -162°C , so employees must wear gloves and hard hats to avoid cold injuries and head injuries from falling icicles from overhead apparatus. Strict rules govern how long offshore employees can work outside depending on temperature and wind chill factor. Activities in uncomfortable positions or with raised arms to reach overhead controls predispose to musculoskeletal pain affecting the shoulders, neck and back so occupational health physicians are included in design teams to improve ergonomics. Gas leaks are a potentially catastrophic hazard. Employees carry gas masks and Melkøye is trialling a new system for more accurate detection of poisonous by-products. Melkøye, Hammerfest hospital and the emergency services run catastrophe training to ensure that protocols are in place in the event of a disaster.

The Sami are an indigenous northern Scandinavian population, traditionally reindeer herders, with their own culture and language. Reindeer husbandry follows a strict calendar. During winter reindeer graze inland. In April, the Sami round up the herd into a fence (pen) using snowmobiles. Each family collects their reindeer from the main herd by dragging the animal by the antlers into the family fence. The herds travel to coastal grazing areas over summer. Reindeer herders are twice as likely to die from work-related accidents than other occupations in the region [1]. All herders fear penetrating eye injury from an antler, but eye protection is not used. Fixing the fence requires bare fingers, so the Sami put their hands inside their jackets every 5 min to avoid frostbite. Although an integral part of their work, snowmobiles can cause significant trauma due to powerful, heavy modern vehicles and avalanches.

Whereas Statoil is committed to continually assessing and improving working conditions, the Sami do not have occupational health and continue to work as they have for centuries. There is a campaign to recognize traditional Sami occupations as a degree subject. This would be a good platform from which to educate them about occupational health and to work alongside the Sami to ensure that health and safety alterations in traditional trades are acceptable.

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