Textual synthesis of policies and guidance statements for remote healthcare practitioners on managing medical emergencies in the oil and gas industry: a systematic review protocol

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Review question/objective: The objective of this review is to collate, synthesize and present the available evidence on the policies and guidance statements for remote healthcare practitioners on managing medical emergencies in the offshore oil and gas industry. More specifically, the review seeks to answer the following questions:

- How is the derivation of these policies and guidance statements described?
- What is the content and areas of similarity and difference of the policies and guidance statements?
- What emphasis is placed on the implementation and evaluation within the policies and guidance statements?

Keywords: Medical emergency; offshore; oil and gas; policy and guidance statement; remote healthcare practitioner

Background

Globally, the oil and gas industry with its associated maritime industries are major contributors to the world’s economy despite the remote (difficult and isolated) terrain of operation.\textsuperscript{1} Interestingly, the industry is heavily staffed; in the United States of America, about 34,000 personnel work in 600 staffed offshore facilities and 500 supply vessels in the Gulf of Mexico.\textsuperscript{2} About 53,515 personnel are reported to have travelled offshore in the North Sea in the United Kingdom for various offshore oil and gas activities.\textsuperscript{3} In Norway, about 1800 Statoil personnel work at any given time in the North Sea terrain of the North Sea.\textsuperscript{4} Large numbers of diverse offshore personnel undertake a range of high-risk activities with significant exposures, including exploration and drilling, conventional oil and gas production, and oil processing and pipeline operations.\textsuperscript{1,3}

The offshore oil and gas workplace is a challenging environment evidenced by an array of associated physical, biological, psychosocial, chemical and ergonomic hazards.\textsuperscript{4} The ergonomic risk caused by the layout and design, coupled with the limited and confined space, of offshore installations can predispose workers to falls with resultant musculoskeletal emergencies.\textsuperscript{4} Exposure to some of the chemicals can also result in medical emergencies with resultant injuries.\textsuperscript{4} Prolonged exposure to loud noise and vibration are also examples of the potential for high-risk exposures that workers may encounter, thereby predisposing them to medical emergencies.\textsuperscript{4}

These exposures often result in a variety of medical emergencies, some of which would require medical treatment onshore.\textsuperscript{1} A “medical emergency” within the context of managing health for field operations in oil and gas-related activities is defined by the International Petroleum Industry Environmental Conservation Association (IPIECA) as “...a situation in which, due to an acute illness or injury, there is an immediate risk to a person’s life or long-term health”.\textsuperscript{5(p.5)} Common injuries which constitute emergencies include burns, head injuries,
superficial wounds, dislocations, crush injuries, open wounds, strain and sprains, fractures and contusion. Common illnesses which constitute emergencies are classified under digestive, skin, mental disorder, nervous system, infectious, parasitic, genitourinary, musculoskeletal, digestive, dental, respiratory, food poisoning and cardiovascular.

The risk of such medical emergencies in the offshore industry has increased with the search for more difficult to reach oil and gas, which has led to greater exploratory and production activities in the deep waters of the world and other remote locations. These remote locations also present challenges for medical emergency response (MER) in ready access to secondary and tertiary medical care, which is compounded by delays incurred due to inclement weather conditions.

All companies, whether operators or contractors, have a “duty of care” to protect and promote the health of those affected, either directly or indirectly, by field operations in the oil and gas industry. Ensuring the effective management of medical emergencies requires a site-specific MER plan (MERP), which addresses key factors including: potential for individual and multiple casualties, response to different types of medical emergencies based on health risks and impact assessments, availability of resources (both offshore and within the country in which the company is operating), and specific work activity-related needs. Achieving the effective implementation of MERP requires competent remote healthcare practitioners (RHCPs), who may also be referred to as “rig medics” or “offshore medics”. They provide on-site emergency management (in addition to primary and preventive care) with limited medical supervision and remote support.

Most RHCPs have completed nursing training to a variety of levels and undertake mandatory continuing professional development courses. Given the diverse nature of medical emergencies, RHCPs must possess a wide range of skills and associated competencies. Although a number of oil and gas industries have developed policies and guideline statements for RHCPs on managing medical emergencies, there is no globally accepted standard policies, and the majority of companies within the oil and gas industry typically maintain their own minimum requirements for MER. A textual systematic review of the available evidence on the policies and guideline statements for RHCPs on managing MER would therefore assist in formulating universal policies and guideline statements with clinical governance implications. The findings from this systematic review may lead to a more effective management of medical emergencies, thereby resulting in better clinical and economic outcomes that will have a positive impact on the health and wellbeing of the individual, industry and economy.

An initial search for policies and guideline statements has been conducted, highlighting a number of relevant documents such as those of IPIECA, Sakhalin Energy (Russia), Petroleum Development Oman, The Oil Industry International Exploration and Production Forum, Institute of Remote Health Care (IRHC), United Kingdom Health and Safety Executive (HSE) and United Kingdom Offshore Operators Association (UKOOA).

A preliminary search of the JBI Database of Systematic Reviews and Implementation Reports, Cochrane Library and NIHR Centre for Reviews and Dissemination has identified that such a systematic review has not been published and that there are no registered protocols.

There is also potential for the systematic review to inform RHCPs within non-oil and gas sectors including industries such as mining, maritime and agriculture.

Inclusion criteria
Population
The current review will consider policies and guideline statements relating to RHCPs, managing medical emergencies of offshore workers in the oil and gas industry, and land-based remotely located industries, for example, seismic industry, military, quarry and construction industry. Remote healthcare practitioner refers to a “health professional who may be a nurse, medic, paramedic, nurse practitioner, physician’s assistant, physician that is competent in providing healthcare in remote locations".

Remote location (RL) is a “site where the medical evacuation of an injured or ill person to a hospital cannot be guaranteed to be achieved within 4 hours in foreseeable circumstances (e.g. inclement weather)”.

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Phenomena of interest
The current review will consider publications and documents with policies and guidance statements for RHCPs and MER in RLs in the offshore oil and gas industry.

Medical emergency refers to “a situation in which, due to an acute illness or injury, there is an immediate risk to a person’s life or long-term health.”

Medical emergency response refers to the emergency management of an ill or injured person.

Offshore oil and gas industry refers to a global industry involving several activities, such as exploration and drilling, oil and gas production and pipeline operations located in the sea.

Types of studies/publications
The current review will consider policies, guidance statements and documents from global and regional organizations (including institutions and companies), training providers, statutory bodies, and government regulatory agencies.

Search strategy
The search strategy aims to find both published and unpublished papers limited to the English language. Identified databases will be searched from 1989 using a three-step search strategy. The year 1989 is the year when the UK Health and Safety Executive published a guide on offshore medic training and qualifications. An initial limited search of institutionalized websites (Australian Petroleum Production and Exploration Association, Institute of Remote Healthcare, International Petroleum Industry Environmental Conservation Association) will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe each paper. A second search using all identified keywords and index terms will then be undertaken across all included databases. Third, the reference list of all identified policies, guidance statements and documents will be searched for additional papers.

Initial key words are: injury, illness, remote, offshore, remote healthcare, oil and gas, medical emergency, policy, guidance, protocol, medevac, telemedicine.

As the search is for non-research literature, that is, policies, guidance statements and documents, a defined search and retrieval method shall be carried out in the following databases, namely:

- Institutionalized websites:
  - Institute of Remote Healthcare (IRHC)
  - MedNar
  - World Health Organization
  - International Labor Organization
  - International Maritime Organization
  - International oil companies (Shell, Chevron, Petroleum Development of Oman, Sakhalin Energy [Russia])
  - Health and Safety Executive
  - International Petroleum Industry Environmental Conservation Association (IPIECA)
  - The Oil Industry International Exploration and Production Forum (E&P Forum) Health and Safety Executive (HSE)
  - United Kingdom Offshore Operators Association (UKOOA)
  - World Wide Science (WorldWideScience.org)
  - ProQuest Dissertations and Theses.

- Gray literature:
  - www.greynet.com
  - Google Scholar
  - Microsoft Academic.

- Conference proceedings:
  - OnePetro (OnePetro provides access to a broad range of technical literature related to the oil and gas industry from a range of professional societies and institutions, including the Society of Petroleum Engineers and the Offshore Technology Conference).

Assessment criteria
Policies, guidance statements and documents selected for retrieval will be assessed by two independent reviewers prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Narrative, Opinion and Text Assessment and Review Instrument (JBI-NOTARI). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Data extraction
Textual data will be extracted from papers included in the review using the standardized data extraction tool from JBI-NOTARI. The data extracted will include specific details such as:
Data synthesis
Textual data will, where possible, be pooled using JBI-NOTARI. This will involve the aggregation or synthesis of conclusions to generate a set of statements that represent that aggregation, through assembling and categorizing these conclusions on the basis of similarity in meaning. These categories are then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the conclusions will be presented in narrative form.

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References