

Medical Services and Emergency Response at Remote Industrial Sites

Challenges and Limitations

By Dr. Thomas Walz, Medical Director Middle East Projects, International SOS MEA (Branch), Dubai Airport Free Zone East Wing 5 A, PO Box 54757, Dubai UAE

ANY INDUSTRIAL SITE with limited or no access to appropriate public Emergency Medical Services (EMS) and healthcare facilities can be considered to be a remote site.

The Middle East region has a substantial number of mega construction projects, many of which fall within the above category.

Fortunately awareness around Health and Safety issues at the workplace has increased over the last 10 years. More and more companies are adopting and implementing international HSE policies and procedures. The safety and wellbeing of the workforce are often real criteria when awarding contracts. Accordingly, work related fatalities and work related illness are taken more seriously. Prevention and health awareness campaigns are being integrated into the Health Management System for the workforce.

"FIRST AID" PROVISION IN THE PAST VERSUS SOPHISTICATED "MEDICAL SITE SERVICES" TODAY

Over the decades, a green "First Aid Box", poorly equipped and often managed by untrained "First Responders" was considered to be appropriate cover in a high risk work environment with a workforce of thousands of people.

Today internationally accepted rules and regulations ensure that even at the most remote workplaces, e.g. on an Oil rig 200 miles offshore, the medical services and medical emergency response meets at least the minimum standards.

Today medical services at remote sites are often comprehensive and are considered part of a more complex Health Management System focusing on the well being of the entire workforce.

These services should include:

- Professional pre-employment screening and the periodical reviewing of fitness to work, specific to the requirements of the different job categories.
- Medical Emergency Response and stabilisation at the site.
- Basic Primary Healthcare and triage for referrals into the next higher level of care off-site, including medical evacuations abroad (if necessary).
- Industrial Hygiene and Occupational Health (site specific health risk assessment and implementation preventive measures).
- Health awareness training and health education.
- Medical emergency drills and disaster preparedness / mass casualty incident exercises.

- First-Aid training for the workforce.
- Case management and follow up of all referred case (e.g. return-to-work fitness, etc.)

OUTSOURCING REMOTE SITE MEDICAL SERVICES TO INTERNATIONAL MEDICAL SERVICE PROVIDERS

More and more Oil and Gas and construction companies are focusing primarily on their core business. Highly specialized contractors and sub-contractors are delivering more professional specialized services and they are often more cost effective at the same time.

International medical service and assistance companies, like International SOS, are often required to be involved from the very beginning of a project to consult and advise on the configuration of an appropriate site medical service, tailored for the project, to meet all the requirements regardless of whether it is for an offshore vessel with a population of 50 or a mega construction project with a population of 50,000.

These mega projects often require a complex medical structure with multiple "First Aid" posts, Medical Emergency Response Units and clinics at the site, as well as labour camps. Big construction or mining projects in very remote locations often require a small



Medical Emergency Response at a remote mining site (©MarkMennie/InternationalSOS, 2007)



Basic Equipment of a Medical Emergency Response Unit at a remote Site (© InternationalSOS, 2007)



full scale hospital to cover the population at the work site.

The provision of high level medical emergency response and stabilisation at really remote industrial sites aims to ensure that appropriate medical care is rendered within the "Golden Hour". Any delay would have a serious impact on the outcome of a serious case and would put an avoidable additional risk on life and wellbeing of the workforce.

WHAT LEVEL OF MEDICAL CARE IS NECESSARY AT REMOTE INDUSTRIAL SITES?

In most countries there are guidelines from the government or the local authorities for the required medical service. Unfortunately most of these guidelines are outdated and/or kept very vague.

The employer is asked to provide "adequate and appropriate" first aid provision based on the number of employees, the nature of construction, size of the project, working hours and distance from outside medical facilities. The employee should have "reasonably rapid" access to first aid.

Without having a very clear and detailed definition of the terms "adequate and appropriate" and "reasonably rapid" a number of companies are still approaching these requirements with the "cheapest solution" while meeting these legal requirements.

The level of medical care provided during a medical emergency response and stabilisation process at a remote place is often the crucial factor in determining the outcome for a critically ill or injured patient.

Fortunately more and more international orientated companies are seeing the value and benefit of defining their own standards and guidelines, strongly focused on the health, safety and wellbeing of their workforce. This has resulted in a very comprehensive definition not only for the level of medical care required but also in the definition of the education and training for medical staff and the provision of medical equipment required. Furthermore companies are seeing the value in developing and implementing health awareness and prevention of work related illness and injury programmes.

MEDICAL EMERGENCY RESPONSE AT REMOTE INDUSTRIAL SITES

Appropriate life saving emergency response at remote industrial sites includes the following three main components:

- Well trained medical staff (including First Aiders) with updated skills.
- Appropriate level of professional and well maintained medical equipment.
- Well prepared and rehearsed site specific Medical Emergency Response Plans (MERP).

The response must be timely, and wide spread operations must be divided into smaller areas, with satellite emergency response units to ensure early advanced life support and stabilisation for the patients.

An appropriate number of trained First Aiders should deliver immediate First Aid and be able to activate the next level of emergency care at the site. Advanced Cardiac Life support (ACLS®) and Advanced Trauma Life Support (ATLS®) are internationally recognised standards provided by the American Heart Association (AHA) and by the American College of Surgeons (ACS) that should be considered a "must" at remote sites.

Both qualifications are available globally, from recognised and accredited training institutes. The qualifications must be refreshed every 2 years for ACLS and every 3 years for ATLS.

Small remote projects, with only one medical staff member at the site, require topside medical support, for advice, second opinion, or if necessary professional case management after being referred off-site to secondary/tertiary care facilities.

CHALLENGES FOR MEDICAL EMERGENCY RESPONSE AT REMOTE SITES

The aim is to provide the same level and quality of care during an emergency response at a remote site, as would be provided in an urban environment with a well organized emergency medical response.

The first challenge is communication – people are used to having 100% coverage of a mobile phone network, which might not be operational at all in a remote area.

Reliable radio communication has to be established to ensure an independent communication to coordinate all emergency and security resources at any given time.

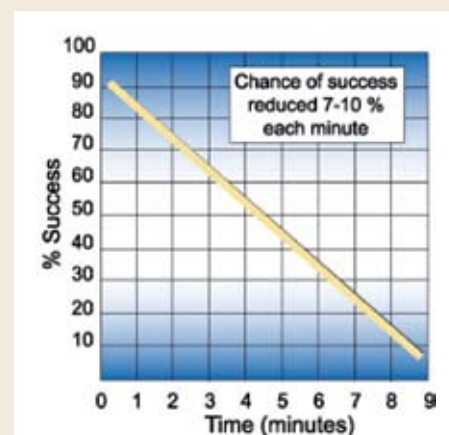
Orientation within the area and localization of the scene might be very difficult, particularly on construction sites for mega projects, often stretched over several square kilometers. Detailed grid maps and GPS coordinates can help to keep the response time short.

Accessibility of the casualties can create an additional challenge for the response team. The off-road environment on a remote site, accidents in deep excavations, or in high rise buildings, demands special training and equipment to rescue the patient.

Patient transfer particularly in offshore operations where rough weather conditions can cut off medical evacuation via helicopter or boat for hours or even several days. The site medical facilities must be equipped to stabilize the patients and to keep them well monitored and treated until transport to the next level of care is feasible.

Only frequent emergency drills and the use of a comprehensive site specific Medical Emergency Response Plan can ensure the preparedness of all the resources involved.

Once a year the entire operation of a remote medical service should be reviewed and audited. At least an external auditor, using an international audit tool, should identify »



If time matters - Success of survival for cardiac arrest patients in relation to response time with early defibrillation



gaps and work on the quality assurance process to guarantee a high standard medical service delivery.

LIMITATIONS OF MEDICAL EMERGENCY RESPONSE AT REMOTE SITES

Even if the goal for remote locations is to set up conditions very similar to, and adequately efficient to a normal urban environment, there are some inevitable circumstances due to the remoteness.

Assuming that the emergency response and the initial stabilisation was perfectly performed, the outcome for some medical conditions is time-dependent (e.g. massive internal bleeding after a blunt abdominal trauma), which can lead to the death of the patient.

Regardless of the transport mean for the fastest evacuation to the nearest medical facility providing specialist care and emergency surgery for this condition, the patient may lose the race against time.

The so-called "Golden Hour" is still crucial for most of the serious medical conditions and injuries. In a case of a Mass Casualty Incident/Accident at a remote site, very limited resour-

ces are challenged to provide the initial response, triage and incident management. Additional support from outside is very often delayed due to the remoteness of the site. Frequent drills for Mass Casualty Incidents have to be performed strictly following the Medical Emergency Response Plan to make sure that all medical and non-medical staff that have to be involved are prepared for these situations.

ARE HIGH END MEDICAL SERVICES AT REMOTE INDUSTRIAL SITES EXPENSIVE?

Professional well trained medical staff and state of the art medical equipment and medical facilities are expensive. Additional annual training maintaining the skills of the medical staff to the required level is also costly.

Utilizing the experience and resources of an internationally recognised medical services company can ensure the highest standards and protocols are met for the various medical needs of a project: Occupational Health, Industrial Hygiene, basic Primary Healthcare and Emergency Response.

Unfortunately some companies learn the

lesson of not having the appropriate level of medical services on a project the hard way, from avoidable, to total and permanent disability and work related fatalities.

They have learned their lesson that there is only one thing more expensive than having comprehensive medical services at a remote industrial site: what it means not to have it. ■

The Trauma, Accident and Emergency Conference is taking place from 26-28th October at the Abu Dhabi National Exhibition Centre. The conference will emphasise the latest techniques in trauma care and emergency medicine, as well as the team approach in caring for the injured patient. For more information, please visit www.emergencycongress.com or call +971 4 3365161



Medical Emergency Drill at a construction site (© InternationalSOS, 2007)

