The Journal of the Institute of Remote Health Care

Editorial

Dr Malcolm J Valentine, December 2013 (editor@irhc.co.uk)

The Journal of the IRHC:

"The Journal of the Institute of Remote Health Care (IRHC) exists as a means by which information can be published and ideas exchanged among the International Remote Health Care Community. Provided as a benefit to IRHC Members, Affiliates and Corporate Members, it seeks to broaden understanding of the specialty of Remote Medicine and to promote the interests of all the practitioners and others involved in supporting remote health care provision. The Journal provides a platform for publication of material that will contribute to the quality development of remote health care. The Journal is edited in the UK – but is focussed on issues relevant to wherever there is remote health care provision – all 'corners' of the globe. It is web hosted. In time, it is hoped that the Journal will acquire its own status as a significant contributor to quality development in international remote health care. Further information on publication requirements are listed towards the end of the journal'.


Once again, through either a miracle - or more likely the much valued and appreciated support of many - I think we have managed to pull together a selection of important papers and reports. To all contributors, I continue to express my sincere gratitude. I well understand the effort needed to put pen to paper and to produce something worthwhile. But it is also a good discipline to have and without the effort to disseminate information in an objective and structured way, we would not be able to share these experiences, thoughts and analyses. In reading the journal - maybe you, reader, could consider whether there is something in your work or experience that you want to get out into a wider audience. If so, then the editor would be more than happy to engage in helping with the production of any publishable material.

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The leading article by Agnar Tveten and Tim Carter follows on from the IRHC Conference of September 2013 in Aberdeen. The proceedings from this have been written up and published and appear on the IRHC website. The document is well worth a read comprising a detailed record of the two day programme output. It was my view at the conference and after that the scope of tele-healthcare is now being exponentially explored and that the way it was being utilised particularly by Agnar and Tim in their respective work areas was in a rational and 'for purpose' way was particularly impressive. It’s a recurring theme - as will be found in other articles even in this edition - and so it seemed entirely appropriate that we once again lead off on the issue.

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The follow on from the leading article comprises three excellent original articles. The first, regarding health care in Tristan Da Cunha just makes you ponder how remote can remote get? And without a massive industrial investment back up. Would you cope? Then there are two excellent papers from Mika Frano of Saipem. It’s a fascinating trial of remote screening and management of glycaemia in a remote work site. However, the trial is not just focussed on known individuals with either type 2 diabetes or impaired glucose tolerance, but seeks to risk score the whole population and then screen and manage them appropriately. It’s a great article and raises many thoughts about other clinical areas ripe for monitoring. Have a read and get in touch with Frano. His second article explores more widely his company’s evolving e-health concept and general philosophy. It’s great that we can get insight into all this.

Moving on, we have as usual, Nelson’s Column and he summarises some of the on-going activity within the IRHC at present.

Rosemary Fieldsend publishes an audit of the very real continuing issues relating to the taking of medicines offshore - clearly lots still to be done on that issue. Then Alan Kennedy-Bolam put pencil to paper and recounts his experiences in Burma recently which again makes for sobering reading.

So there is no shortage of on-going activity. It all makes for an interesting read.

Keep these articles coming folks!
Establishing a Register of Remote Healthcare Practitioners (RHCPS) - Evolving Concepts

Dr Malcolm J Valentine
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I wrote in the last issue about how I saw things evolving in terms of Registration of RHCPS and how all the different concepts might fit together. Dick Hooper of International SOS asked if I could paint a thumbnail sketch of where it was all going and so I sent him the following:

- At the moment the challenges are knowing what knowledge and skill set is needed in this rapidly changing world for remote health care practitioners (medics, paramedics, etc.)
- At the moment, there is no autonomous verification available for individuals of having acquired such a core standard (accreditation) and no means of being able to provide verification of continuing attainment (registration)
- Consequently, Halim Mohammed at Shell continues to refine his work arising from the January 2013 Bergen Conference. My feeling is that this will produce a core knowledge and skill set, with modular add-ons that are bespoke for either geography or task (this is basic common sense).
- If you have someone going through such preparation (and continuing development), there may be an argument that training providers should have their programmes verified in some way as coming up to a certain standard for provision. That is what the IRHC TrAC process is about and has potential to mature in time (quality assurance).
- If you have standards for the training, and that the provision is accredited and an individual completes the required training, should they not then be individually accredited as having achieved the desired standard? Thus you have defined standards and accreditation. In medicine we are externally accredited by our academic colleges and in time, the process we are discussing here could yet result in some autonomous end point accreditation too – but that can be left for the future.
- So now you have an accredited practitioner. How do you continue to verify their suitability? This requires entry to a register and then re-registration based on a set of agreed principles around CPD and not doing anything silly or dangerous since your last registration review. Hence the argument for a register. If you are going to have that, then you might as well try to have your register conform to some sort of standard and that is where the Professional Standards Authority comes in. OK – it’s a UK body – but it has set a registration standard and very few other bodies internationally have managed that. If you did register to the level of the PSA, then UK based people would be pleased and international people would at least have the reassurance that any standards being set for continued registration were objective.
- I think that the IRHC – with lots of input and engagement of support, brokerage and also delegation of task – can complete the Bergen work in setting the core standards for knowledge and skill base and could also work up the accreditation leading to registration challenge. The IRHC has an autonomous role as ‘honest brokers’ not subject to commercial restriction. I think it’s a 5 year task and I’m arguing that we need to construct and publish a timeline around this as soon as possible. Widespread support from the industry would be welcome to achieve this.

I hope this brief article is helpful for you too. It gives a broad philosophy of where potentially things might go over the next few years.

Malcolm J Valentine, editor@irhc.co.uk

The journal continues to be keen to receive any worthwhile contributions and help can be given to get material to publishable standards. Contact editor@irhc.co.uk. Please contribute. There is a need for book reviews, equipment and diagnostics reviews and especially letters. The next edition is intended to be published June 2014

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Nelson’s Column

December 2013

Considerable progress in the development of the Institute was reported in this column in the June issue of the journal. The progress reported there has been maintained and further developed since then and many of the projects initiated and suggested at that time have advanced towards completion.

The route chosen by the Institute to achieve its mission has been to listen to the views of both its individual and its corporate members by holding symposia and conferences and also by establishing an external advisory committee, this journal and the website.

This approach has allowed the Institute to forge ahead in sympathy with both members and Industry’s wishes and concerns and its success was underlined by Dr Halim Mohamed in his leading paper in the June journal. This summarised the current position and view of the large number of stakeholders which attended the conference held in January in Bergen where an attempt was made to achieve a consensus opinion of the educational requirements needed to produce fully trained and competent remote practitioners.

The views resulting from that conference were written into a guidance document which may need further development if it is to satisfy and be adopted as the consensus of both the operators and providers across the globe. Implementation and development of this guidance document has been accepted by the Institute, and a major project will be undertaken this year with a view to achieving a document which will be accepted as the ideal standard of training guidance by both operators and providers across the globe.

If this is internationally accepted it will provide a major step forward in the emergence of a new international practitioner capable of independent competent function in a variety of remote situations and assessed by a Royal college in much the same way as physicians, surgeons and anaesthetists are. The conclusions of this project group will be shared as they emerge with all the stakeholders which can be recruited since it will not become the international standard unless approved by the major stakeholders.

It was reported in June that discussions were underway towards the establishment of a Faculty of Remote Healthcare in the Royal College of Physicians and Surgeons of Glasgow in order to provide a professional home for the new breed of remote practitioners and a means of establishing their competence and credibility by assessment. The possibility of establishing a branch of the Institute in the UAE was also reported. Both of these initiatives are moving towards completion.

As the Institute enlarges and achieves standing in the international Industry it has been decided to review the constitution, function and membership of both the council and the executive committee so that the position which the Institute has now achieved is reflected more precisely and it is ready to move forward to further development in support of remote communities. The changes made will be reported on the website in the near future.

JN Norman

December, 2013.
Leading Article

Everyday remoteness, today and in the future

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Quite often we meet people who think remote healthcare is exotic and rare. Sometimes we also meet people that when the term telemedicine comes up, seem to think that telemedicine has to be very advanced and is a new thing. In our corner of healthcare, maritime medicine, remote treatment is everyday business, and telemedicine has been around for more than a century.

International shipping today counts 55-65000 major oceangoing vessels. The sailing pattern for these vessels means that the people on board have a need for telemedical assistance, because healthcare on shore is too far away. Sometimes a hospital could be reached within hours, often it takes days.

The International Labour Organisation has estimated that approximately 1.2 million sailors work on board these vessels. That means that in maritime sector worldwide, each year probably more than 120 000 telemedical consultations occur, and the total cost of medical expenses in the maritime sector, is estimated to be approximately 760 million Euros each year. In our service, Radio Medico Norway, we handle around 2200 patient contacts on board ships each year.

For centuries, medical treatment on board was limited to the medical expertise on board each ship, or on other ships in immediate proximity. Often, the presence of doctors, or the less academic ‘ships surgeons’, was limited to naval ships, while on board merchant ships sailors were left to care for themselves.

The first maritime telemedical services were established in the beginning of the last century. Communication was dependent on radio, which meant that oceangoing vessels were limited to telex with written message communication. For diagnostic and treatment purposes this meant that the doctor was totally dependent on what the personnel on board were able to observe and express. Guidance from the doctor was also limited to what could be explained, often limited to a small amount of text and without any real possibility to make sure the instructions were understood.

On top of this the communication passed through several intermediaries delaying transmission and information was transferred at low speed limiting the amount of information that could be transferred. Over the decades speed improved, and more information could be transferred, but information was still limited to text, and always with a delay. It’s self-evident that this must have resulted in fatal consequences in many emergency cases.

As satellite telephony became commercially available in the 1990’s things changed. To be able to communicate two-way in real-time, with almost global coverage was an enormous improvement. It made a big difference for the doctor to be able to ask directly for more diagnostic information and for the master to ask for more explanation on how to perform procedures, or for both of them to be able to make sure that information given was understood at both ends.

That the doctor and the master of the ship could directly discuss different options for evacuation, and how to best handle the patient until he or she could make it to a hospital, exploring both limitations and possibilities on board and during the transport, undoubtedly improved decision taking compared to a situation where the master had to make the decision themselves based upon a medical advice given by a doctor that previously didn’t have scope to discuss the different ways and means for evacuation.
Still there are qualities to written communication, which in some cases has advantages over verbal communication. To be able to document and be able to go back to see the development in a condition over time, to overcome language barriers in a situation where sometimes neither the doctor or the master are native speakers, and to communicate objective measurable observations unflavoured by perception, are examples of qualities in of written communication. Because of this, as bandwidth made it possible, email also became an important supplement to satellite telephony.

After 2000 email with attachments also became available to most ships, and became an increasingly important addition to the communication between the ships and doctors ashore. It opened the possibility of having visual information about the patient’s condition. In most cases this is about transferring images of things like rashes and wounds, but also ECG and x-ray for more advanced users of the telemedical assistance services. For many practitioners in telemedical assistance services, the possibility to transfer visual information represented a shift of paradigm just like the ability to have two-way real-time communication had been a little more than a decade earlier.

The limits of this visual communication though, is that it’s no longer real time, and with limited dialogue, it represents many of the weaknesses that text based communication had many decades ago. Video consultation through video conference systems is the solution that has the possibility for two- way real-time transfer of visual information and enables dialogue too.

Until recently this hasn’t been an option in maritime medicine, as commercial videoconference systems have demanded bandwidth beyond the available capacity of maritime satellites. This is now changing - partially due to better information transfer protocols that demand less bandwidth and partially because available bandwidth constantly increases and becomes more affordable on board many more ships.

So where is remote medical care heading? It’s always dangerous to predict the future. The only thing you can be sure of when trying to do that is that you will be wrong. I think though, that based upon history and experience we can make some qualified guesses, at least about the near future, 5 to 10 years from now.

First of all I don’t think that the medical community will be able to decide the solutions. Remote medical treatment is based upon transfer of information. How we transfer this information is driven by the technology people use for other communication purposes and the way we communicate to perform remote medicine, will be the same.

What will continue is that we will acknowledge that different ways of communication have different qualities that make them suitable in different situations. For remote medicine in general, and for telemedical assistance to ships in particular, this means that we will continue to use the telephone in the future, but it will increasingly be supported by the use of mail, pictures and videoconferencing when that can add layers of additional quality to the diagnostic process or the guidance of remote treatment.

A limitation though, is that different video communication systems today use different protocols and don’t necessarily function well together. When we look back some years from now this might no longer be a limitation, and it will look as silly as if i-phones only could call i-phones and HTC mobiles only could call other HTCs.

Another significant development is that the electro medical equipment continuously gets better, cheaper and easier to operate, and could improve possibilities for remote diagnostics, treatment and observation almost everywhere and on all levels of medical care. Probably we will see more electro medical equipment outside hospitals, some of them in remote locations but also in family doctors’ offices and people’s homes.

More and more of that equipment will be able to transfer information. As a result more procedures and also diagnostics could be moved out of the hospital. In remote locations this development will continue to improve diagnostic and treatment capabilities.

It’s a more open questions, how this information will be moved, and that has large implications on how, and
how fast remote medical capabilities will improve. Today a lot of equipment is limited to point to point communication because they use protected protocols. Some would reason that this is because you need specific and improved protocols to get the necessary quality; others would argue that it’s the business way of protecting their product.

In a ship moving all over the globe, equipment limiting you to one provider of medical assistance that sometimes will be thousands of miles away is not a good solution if there are other high quality providers nearby with knowledge of local hospitals or other treatment facilities. Therefore the push will be towards open protocols or online database solutions that enable equipment to exchange information between different systems. On shore demands from patients to choose between hospitals or health care providers and the need to be able to implement new technology and equipment in tandem with older solutions, are factors that will push in the same direction.

Probably common electronic protocols for transfer of most medical information is still many years ahead of us. If so, we still have to cope with point to point solutions and protective protocols for quite a while yet. Online solutions and cloud services will be a part of this, and gradually they may integrate more and more devices, but patient confidentiality concerns and the presence of many different systems will limit the use of systems to use within companies, hospitals or parts of national health care systems.

For us who need to deal with “everyday remoteness” in maritime medicine or other areas of remote healthcare, information often will have to cross these organisational borders to be able to provide best medical care. This means that our most valuable tool for many years yet will be “common communications” as the telephone, anonymized or encrypted mail, and with video consultations as the next big improvement to quality and effectiveness.

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(Submitted November 2013)
Original Articles

Health care on Tristan da Cunha - the remotest island community in the world

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Where is Tristan?

“Across that angry or glimmering sea...” on the edge of the roaring 40s there is an archipelago of five tiny islands midway between Africa and South America. Tristan is the largest (seven miles across and 23 miles around) and its volcano [Figure 1] is nearly 7000 feet. Access is by sea and the nearest port is Cape Town 1700 miles away.

There is no airstrip. Ship to shore is hazardous with a lot of kelp and a constant swell. Storm protection in a northerly blow is in the lee of Inaccessible, a smaller island 40km WSW of Tristan.

Figure 1. The volcanic cone of Tristan da Cunha taken from RMS St Helena 2006

There is no sheltered anchorage, only a tiny, shallow harbour [Figure 2] between two breakwaters of concrete dolosses, which need constant repair from the punishing waves. The nine-boat fishing fleet catches 200 tons of lobster a year, the island’s only but lucrative export other than stamps.

Figure 2. Calshot Harbour on Tristan da Cunha

The history of Tristan

Napoleon was exiled to St Helena, 1500 miles to the north, in 1816. To guard against his rescue, Britain built a garrison on Tristan using soldiers drafted from campaigns in South Africa. When Napoleon died two
years later, the garrison was abandoned but Corporal William Glass RA from Kelso negotiated his discharge from the army to remain on the island. His wife and two children were transferred from Cape Town and the couple produced 14 more children.\(^{(2)}\)

A freak accident in 1883 drowned 15 of the island’s 18 men. Island folklore tells of women crying at the time “may God let there be another shipwreck so I may get married”. Today the 275-strong community shares another six surnames originating from more than 20 shipwrecks.

In 1961 the volcano erupted and the entire population was evacuated to a former RAF station at Calshot near Southampton. Whilst in the UK, the Tristanians were subjected to insensitive public curiosity and two years later they voted to return to their island having experienced a lifestyle unlike anything they had previously known. Miraculously, on their return, the volcanic lava flow had skirted the edge of the settlement. Only one house was damaged, but the only usable landing beach for fishing boats was buried beneath 30 metres of black lava.

**Tristan in the 21st century**

So what’s the attraction of the world’s most remote inhabited island, where the single settlement - Edinburgh of the Seven Seas - is no bigger than Hyde Park [Figure 3].

*Figure 3 Edinburgh of the seven seas: The harbour and breakwaters can be seen close to the large grey roofed lobster processing building.*

A modest landing fee entitles the tourist [on a calm day] to one of the world’s rarest passport stamps, some expert boat handling [Figure 4] and generous guesthouse hospitality; there are no hotels. In the post office, a signed photograph of General Sir Peter de la Billiard smiles at visitors. Though he never visited, he did donate a Sherpa Freight Rover to bus the pensioners from the settlement to their allotments [patches] two miles away. Around the lush village, cattle graze peacefully, sheepdogs doze in the sunshine, ducks and chickens scavenge contentedly and sheep graze high up on the slopes of the volcano. It is like Glencoe on a grander scale, without the midgies.

In the gardens, hydrangeas, lilies and wild roses bloom behind windbreaks of New Zealand flax and dark, bubbled lava drystone dykes. Everyone is happy to chat. Women spin their own island wool before speed knitting all kinds of clothing. In the evening they work at the fish factory, processing and packing the day’s lobster catch, after the boats in the harbour have been craned out of the heavy seas.

The flora and fauna are a conservationist’s dream and two of the archipelago islands are World Heritage Sites.\(^{(3)}\)

Between 1939 and 1945 the Island was a Royal Naval listening and observation post. Now there is a scientific monitoring complex for atmospheric and earth sciences, where data are continuously beamed online to

*Figure 4: Approaching the harbour by barge*

**The islanders**

The islanders are ordinary people living in extraordinary circumstances. Their community is small but stable and they are exceptionally kind — showing concern for the weak, the frail and the elderly. Income compared with the UK is very low but anyone who has lived on the island for two years qualifies for Islander status. This entitles subsidised electricity, gas, telephone to the UK, television, internet connection, medical care, and permission to own one cow, two sheep and unspecified numbers of ducks and hens. Food is fresh, plentiful and shared within the community.

Children play freely, there is no crime and the two police cells have never been used; but it is no rural idyll. Fishing, the main source of income is only possible on about 60 days each year as the weather is windy and can be harsh. However the lack of opportunity is compensated by the islanders’ skill, and a day’s catch in a two-man working boat can be half a ton of rock lobster.

**Why we went there**

The authors had just retired from the NHS, enjoyed clinical practice and were comfortable to accept a challenge. They had appropriate previous clinical experience: Principal in General Practice and later Consultant Physician in Palliative Medicine [PL] and Consultant Anaesthetist with experience in the British Antarctic Survey and military Field Hospitals [IL].

**How did we prepare**

We set up a training and re-fresher programme including: accident and emergency, ophthalmology, general practice and chronic disease management, orthopaedics, woman’s health, laboratory analysis and blood transfusion. We observed several elective caesarian sections, had tuition in stitching and wound care, instruction in orthopaedic plastering and demonstration of how to do a burr hole. Our former colleagues, without exception, were happy to be contacted if needed by email or telephone - a unique clinical support network which proved to be invaluable.

We visited consultants in Cape Town’s Groote Schuur Hospital to strengthen formal clinical connections, as Tristan had recently established a referral contract with the Western Cape.

**Tristan’s Medical Service**

The first hospital was built in 1942 as part of a Royal Navy base which also provided the island with its first resident doctor. Tristan’s fortunes changed with the discovery of lobster in the surrounding waters, and since 1950 the British Government has funded a resident doctor, teacher, minister and administrator.

The present hospital has three in-patient beds, a consulting room, pharmacy, x-ray facilities [portable Shimadzu with digital cassette reader], dental surgery and well-equipped operating theatre. Laboratory testing includes a Reflotron Plus® for biochemistry and Hb, HbA1c meter and testing kits for troponin cTn1, H pylori and...
chlamydia. Microbiology plating, culture and microscopy is available and the Island's drinking water is tested for E Coli every four weeks using the Paqualab® system.

There are five Tristanian nurses, a hospital manager, a dental assistant and dental nurse. A dentist and dental technician visit the island annually, when all islanders are reviewed. A psychiatrist and an optometrist visit the island every second year and are available to discuss problems by telephone at other times. Islanders are charged £1 for a prescription (currency is sterling), which can include any number of medications but non-Tristanians pay for medicines and medical care. It is challenging to maintain an adequate supply of drugs, minimise wastage and cover unexpected demands, including the failure of a supply ship from Cape Town [there are eight per year], hence equipment and medications have tended to accumulate over the years.

Until 2011, babies were born on Tristan but pregnant women are now advised to transfer off-island no later than 32 weeks and receive their obstetric care in Cape Town. The hazards involved in travelling and landing by ship, in addition to the disruption to family life, have made this a particularly unpopular move.

The islands doctors

Over the last few years, as in many remote places, it has been difficult to recruit a doctor for longer than a few months. Doctors have been appointed from Australia, India, South Africa and the UK with a diversity of backgrounds and clinical practice. Inevitably, issues of continuity of practice have arisen, hence a Medical Operational Plan and Medical Guidance aide memoir, the latter appropriately adapted, mainly from SIGN, for Tristan, was compiled. (4) The FCO requires information on the quality of medical care in all British Overseas Territories, so an index of medical care - the Tristan 10 index approved by the Island Council, was introduced in 2013. Naval or cruise ships within a few days sailing of Tristan may have a doctor on board but this cannot be guaranteed. Emergency medical evacuation off-island has been provided by ships en route to Cape Town or the Falkland Islands and Tristan has provided medical care in the event of emergencies aboard passing vessels. (5)

Where there is no surgeon or anaesthetist, the possibility of ectopic pregnancy or other acute intra-abdominal crisis is a worry. For the former, ultrasound scanning is available along with misoprostol and methotrexate treatment. However in the event of rupture and bleeding, resuscitation, IV ketamine, a midline incision and direct pressure over the fallopian tubes would have to be attempted. Although the blood group of all islanders is known and there is a list of donors whose blood has been grouped and screened in Cape Town, there is no stored blood on the island. For urgent medical advice, telephone contact with the UK via London and the FCO is reliable. Although digital x-rays and clinical photographs can be e-mailed, the connection is not yet able to support Skype.

A recent Cochrane review concluded that although appendectomy remains the standard treatment for acute appendicitis “antibiotics might be a safe alternative” in conditions where surgery is contraindicated (6) and further recent meta-analysis (7) concluded initial antibiotic treatment was safe. Using this data, the risk of non-operative treatment of appendicitis may be estimated: if the life-time incidence of appendicitis is 7-8% then the predicted likelihood of appendicitis in a population of 275 with an average lifespan of 84 years, is once in four years. Further, the estimated risk of complication from such a conservative approach would be 20%, in other words once in 20 years. Such evidence is reassuring for the non-surgeon in the context of Tristan’s remoteness.

Diverticulitis of the colon and cholecystitis can be treated with antibiotics and supportive management with subsequent referral to Cape Town or the Falkland Islands for further surgical assessment and perhaps operation. The efficacy of proton pump Inhibitors have reduced the need for gastroscopy and malignant bowel obstruction can be managed with the use of antispasmodics, anti-emetics and analgesia thus avoiding surgical intervention in patients with advanced illness.
Island Medical Practice
The consultation rate is high [250 consultations per month] and admissions are mainly medical [Figure 5].

Figure 5 Admissions to Camogli Hospital Sept – Dec 2012

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Age</th>
<th>Treatment</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant pyrexia</td>
<td>1</td>
<td>Antibiotics</td>
<td>Home</td>
</tr>
<tr>
<td>Biliary colic</td>
<td>75</td>
<td>IV antibiotics, analgesia fluids</td>
<td>Home</td>
</tr>
<tr>
<td>Acute diverticulitis</td>
<td>78</td>
<td>IV antibiotics, analgesia fluids</td>
<td>Home</td>
</tr>
<tr>
<td>Ankle Fracture/dislocation</td>
<td>33</td>
<td>MUA plaster</td>
<td>Home</td>
</tr>
<tr>
<td>Chest pain [ship crew]</td>
<td>22</td>
<td>Observation, analgesia</td>
<td>Return ship</td>
</tr>
<tr>
<td>Miscarriage 2nd trimester</td>
<td>38</td>
<td>IV fluids Ergometrine</td>
<td>Home</td>
</tr>
<tr>
<td>Acute mania</td>
<td>84</td>
<td>Sedation, rehabilitation</td>
<td>Home</td>
</tr>
<tr>
<td>Asthma, LVF</td>
<td>78</td>
<td>Steroids, BP control</td>
<td>Home</td>
</tr>
<tr>
<td>SVT</td>
<td>65</td>
<td>Anti-arrhythmic, anticoagulation</td>
<td>Home</td>
</tr>
<tr>
<td>Vomiting, abnormal ++ LFTs</td>
<td>78</td>
<td>IV fluids, IV dexamethasone</td>
<td>Home</td>
</tr>
<tr>
<td>Ovarian carcinoma stage 4</td>
<td>52</td>
<td>Abdominal paracentesis</td>
<td>Home</td>
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<td>Home</td>
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Hypertension:
32% of the islanders are hypertensive, similar to UK where 32% of men and 30% of women have hypertension as defined by BP ≥140/90. Most patients are on combination treatment as recommended. Of those considered to be at low risk of a cardiovascular event, 66% have BP ≤140/90; at high or very high-risk 61% have BP ≤140/90 and with diabetes 68%.

Asthma “wheezing with a tissick [cough]“:
18% patients have been diagnosed with asthma and there seems to be an increase of wheezy bronchitis when passengers disembark from passing yachts or cruise ships. Between 2008 and 2010, 25% of admissions were for acute asthma or exacerbation of COPD but as the number of patients on inhaled steroids [22%] or long acting bronchodilators [14%] has increased with implementation of asthma guidelines, fewer patients need admission.

Diabetes:
The prevalence of Type 2 diabetes is 7% and there are four Insulin dependent diabetics. Local HbA1c testing will reduce the need to send samples to Cape Town and the frequency of glucose checks [Accu-Chek®], but the management of IDDM remains challenging in physically active fishermen in such an inaccessible place.

Gout:
Unfortunately lobster has a very high purine content hence 17 [6% population] have gout, including some cases of severe, tophaceous gout. Serum uric acid is performed on the Reflotron Plus® and serum urate is sent to Cape Town.

Public Health
Few islanders smoke and cigarettes are costly by islands standards - £5 in the [single] shop and those who do smoke have spent time in the UK. The average alcohol intake is high but in this respect the island is no different to the UK, although many of the older islanders do not drink or drink very little.

As in the UK, obesity is increasing as a result of excessive energy (sugar) intake and insufficient physical exercise.
General observations

Nurses have only “basic training” but are kind and caring. With the help of family and friends, they support the elderly and the sick and despite the lack of specialized mattresses bedsores are almost unheard of and rehabilitation is excellent. The hospital has no cooking facilities, so food is provided by islanders, who make certain that patients have three meals a day and are never alone day or night. Islanders, being farmers, are familiar with death and there seems no need to have cautious and enquiring “testing” conversations about peoples’ understanding of how ill they are – an essential in the UK.

There is a balance in medicine between science and caring. A good knowledge of patients and their lives helps to reach this balance, and it is surprising how well patients can do when an intervention or investigation is simply not possible. There are only two berths reserved for medevacs on each of the eight annual supply ships. So if there are more patients than berths, the Island Council, family and doctor discuss who has priority.

Islanders have immediate access to medical help and in turn the island doctor has rapid telephone access to a specialist opinion. There is an internet connection, which with some investment will enable Skype and high quality telemedicine. With regard to a preferred model of care for the island, a joint appointment either of two medical officers or a medical officer with a paramedic seems logical, combined with a reliable telemedicine link.

In the words of Wilfred Trotter FRS “The practice of medicine should allow intellectual freedom, give character as much chance as cleverness and should be subject to the tonic of difficulty and spice of danger.” For a Medical Officer, Tristan is an unforgettable personal and professional experience.

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(Submitted November 2013)
Tele-Diabetology Trial in Offshore Operations

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Abstract

Diabetes is a common and serious chronic illness facing the world’s population with a continuous rise in its prevalence. The oil and gas industry is not an exception [1]. The number of people with Type 2 diabetes in the industry is increasing dramatically due to a variety of factors including ageing population, rising obesity rates, increasingly sedentary lifestyles, large scale availability of cheap hyper-calorific food, and growing ethnic populations with high rates of diabetes [2,6]. Proper prevention and management of this disease means substantial reduction of co-morbidities, absenteeism and increase productivity at work.

The way that advances in information and communication is changing the face of the world has also brought in a sea change in managing diseases. Treatment is no longer just a prescription for medication but a more personal involvement and touch for better efforts to manage diseases.

With the help of Tele-diabetology, which is an innovative approach to adequately control blood glucose level, the company will be able to effectively assess, monitor and evaluate an employee’s blood sugar level and provide proper management advice to high risk employees in remote locations. Initially, the Tele-diabetology programme was implemented onboard a heavy lifting vessel - Saipem 3000 - with the primary goal of finding a cohort of employees with risk of developing diabetes [3]. This programme includes two-way communication between the vessel medical service and the Diabetes Centre based in Italy.

Their unique team of dieticians, diabetes counsellors and patient care executives that can ensure better glycaemic control are only a call distance away. The system provides periodic sampling of blood sugar from offshore vessel workers, then electronically forwards these results to the diabetic centre for monitoring, evaluation and treatment recommendations. This virtual program of Tele-diabetology, which included no face-to-face contact with patients post prescription, is economically feasible and can be implemented almost anywhere, anytime.

Introduction

Health and safety of employees is fundamental in any industrial organisation including the oil and gas industry [4]. This is not only to fulfill contractual requirements, but also to provide a complete healthy physical and psychological working atmosphere for employees. The health care facilities for the employees become a distinctive sign of the company, putting health and safety in the centre of the production process. Primary prevention, early diagnosis, proper disease management and therapy which includes the education and delivery of responsibilities on workers with diabetes will lead to the prevention of acute and chronic diabetes complications and a reduced rate of hospital admissions.

The programme initiates effective assessment, monitoring and evaluation of hyperglycaemia among the workers by periodic checking of blood sugar values and electronically transferring these values from the offshore vessel to the diabetic centre for monitoring, evaluation and treatment suggestions. The “normal values” of fasting glycaemia are defined as the ones between 3.9 to 5.5 mmols/l (70 to 100 mg/dl), while the values between 5, 6 and 7.0 mmol/l (101 and 125 mg/dl) are considered as prediabetes. [2,5].

The Tele-diabetology personnel monitoring process can cope with both “store and forward” or “real time” modes. The process includes:
Data Collection:
Medics on duty take the readings of glycaemic values of the employees/patients, using common medical devices (glucometers) or the individual (patient) can do this him/herself if properly trained. Employees/patients then answer lifestyle questions for each reading including time of day, correlation with meals, etc. via an automated call-back on a land line telephone or via a mobile application installed on a smart phone.

Transmission:
Data is then transmitted using wireless technology in conjunction with a landline phone or cell phone connection available in the vessel clinic.

Reports:
Report from the specialist are sent back through a web-based system. If a patient’s data indicates the need for immediate action, alerts can be generated and transmitted to a health professional on the vessel. The results are given to the three involved responsible entities (1. Doctor on board, 2. Saipem Telediabetology Coordinator and 3. GIPSI electronic data base system for automatic archive in personal file of the employee). The doctor on board can contact the Diabetology team in Turin or in Olbia by phone or by e-mail in cases of need for further assistance.

Storage:
Patient data is stored in a secure data centre as per Health Information and Privacy regulations.

The screening was mainly focussed on finding out the diabetic risk among employees working on board of Saipem 3000. The “Diabetic Risk Score Questionnaire (DRSQ)” [5] (adopted from American Diabetes Association) (Annex 1) was distributed to the employees. According to the answers given in the questioner the results can vary from zero to above 20. The lower the score, the lower is the risk for diabetes. Out of 216 employees 99.0% or 214 submitted their responses.

Based on the answers given in the DRSQ by the employees, the individual “Diabetic Risk Score” (DRS) was calculated. Depending upon the total score of each individual, the percentage of risk for developing Type 2 diabetic mellitus in the next 10 years was identified and the employees were classified in four different monitoring groups (classes) ranking from NO risk, to HIGH risk [3]. Known diabetic employees are classified according to the therapy and drugs they were receiving.
Classification in the respective monitoring classes according to the evaluated Diabetic scores and related monitoring plan is given in Table 1. Both Diabetic risk score and monitoring mode for respective classes were developed by MedicAir Italia in cooperation with Diabetology centre in Le Molinette Hospital in Turin, Italy.¹

<table>
<thead>
<tr>
<th>Score</th>
<th>Risk level</th>
<th>Monitoring Class</th>
<th>Monitoring Mode</th>
<th>Presence of Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>No risk</td>
<td>Nil</td>
<td>No monitoring required</td>
<td></td>
</tr>
<tr>
<td>1-6</td>
<td>Low risk</td>
<td>5</td>
<td>Fasting glucose once in a month</td>
<td></td>
</tr>
<tr>
<td>&gt;7</td>
<td>Slightly to Very high Risk (Depending on the score)</td>
<td>4</td>
<td>Blood glucose check before and after any meal once in every 15 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Fasting blood glucose once in every week, and before and after any meal once in a month</td>
<td>T2DM controlled in diet and/or oral therapy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Daily fasting blood glucose and six point profile every month</td>
<td>T2DM controlled by oral therapy with Glibenclamide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Daily six point profile blood glucose monitoring</td>
<td>T2DM controlled in insulin treatment</td>
</tr>
</tbody>
</table>

Table 1. Scores classification and monitoring Management plan

Results

A total of 99.1% (214/216) of the crew members voluntarily participated in the DRSQ survey. During the project, a graduated level of monitoring was carried out depending on present risk of diabetes to the particular employees. Counselling sessions were offered to affected employees particularly on issues about dietary regimen and living healthy lifestyles.

Advice received from Diabetologists was followed and relayed to the relevant employees. Among 214 employees, 171 (80%) were found eligible or positive for the blood sugar monitoring program, and 43 (20%) were identified with no risk and hence excluded from continuing follow up.

From 171 eligible individuals, 106 (62.0%) employees with results scoring 1 to 6 were placed in “monitoring class 5” or with low risk. Then, 53 (31.0%) employees were at slightly higher risk (7 to 11 score); they were placed in “monitoring class 4”. In addition, 7 (4.0%) employees belonged to the medium risk group (12 to 14 score) and 2 (1.0%) high-risk employees (15-20 scores) were also placed in “monitoring class 4”. No employees were found above 20 points score (very high risk groups).

There were 2 (1.0%) employees who were already diagnosed with diabetes in diet-therapy; these employees were placed under “monitoring class 3”. The last 1 (0.59%) diabetic employee with oral medication was placed under the “monitoring class 2”. There were no employees on board with diabetes mellitus on insulin therapy in the studied population.
From the total 171 employees (Graph 1) found to be eligible for blood glucose monitoring through the Tele-diabetology programme, 161 (94.2%) employees joined in the program and gave the first blood sample for glycaemic analysis. However, after the first blood glucose value analysis, based upon their respective glycaemia values some of the participants were reclassified. Hence, out of these 161 employees analysed and monitored, 95 employees then belonged to “monitoring class 5”, 58 employees belonged to “monitoring class 4”, 7 employees belong to “monitoring class 3” and 1 employee is under “monitoring class 2”.

Overall 20 employees withdrew or discontinued from the Tele-diabetology programme due to various reasons. 13 employees were not interested to join or continue due to the following reasons:

(i) fear about the job security if being diagnosed as diabetic,
(ii) increased frequency of blood examinations,
(iii) privacy and confidentiality issues,
(iv) lack of other programs to follow up such as dietary and healthy food program, informative and educational programs, lack of therapeutic management, etc.

Six employees couldn’t continue because their transfer to other vessels and 1 employee resigned from the company.

Based on three months data received through the Tele-diabetology programme on board Saipem 3000, from 151 employees enrolled, the results revealed that 127 employees had normal glucose levels during the entire monitoring period, comprising 84% of the covered population.

It is important to note that 22 (15%) of the eligible group who completed the program, showed abnormal findings at least once in the span of the 3 months analysis. The remaining 2 screened employees are known to have the condition, so there were a total of 24 employees with some form of abnormal results.

Table 2 reports the analyses of the 24 employees with abnormal findings. It is noted that during the first analysis, there are 12 employees having slightly high glucose level and 8 employees with very high glucose level.

These result could imply that these employees are not aware of their blood glucose status and that could lead to early onset of complications if control measures were not immediately put in place. During the process the Diabetology centre provided advice to the employees with abnormal results on how to regain control of their glucose level.
After a short period of three months, from these 22 employees having abnormal results, 13 employees at some point normalised their blood glucose tests, 9 are slightly high and only 1 had persistently very high results.

<table>
<thead>
<tr>
<th>Employees with abnormal results</th>
<th>First Analysis</th>
<th>Second Analysis</th>
<th>Third Analysis</th>
<th>Fourth Analysis</th>
<th>Fifth Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee 1</td>
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<td>Employee 2</td>
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<td>Employee 3</td>
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<td>Employee 4</td>
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<td>Employee 5</td>
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<td>Employee 6</td>
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<td>Employee 7</td>
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<td>Employee 8</td>
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<td>Employee 9</td>
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<td>Employee 10</td>
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<td>Employee 11</td>
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<td>Employee 12</td>
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<td>Employee 13</td>
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<td>Employee 14</td>
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<td>Employee 15</td>
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<td>Employee 16</td>
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<td>Employee 18</td>
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<td>Employee 19</td>
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<td>Employee 20</td>
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<tr>
<td>Employee 21</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Employee 22</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Known Diabetic Employee 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Known Diabetic Employee 2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Table 2 - Employees with abnormal results**

In 7 cases, the Diabetologist gave special individual recommendations, these recommendations are detailed in table 3. These include recommendations for those employees with abnormal values who did not comply with the procedure.

<table>
<thead>
<tr>
<th>Special recommendations from Diabetology Centre</th>
<th>Level of risk</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>Initial</td>
<td>Mid</td>
</tr>
<tr>
<td>Case 1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Case 2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Case 3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Case 4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Case 5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Case 6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Case 7</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Table 3 – List of cases with recommendation** [1]
As shown Tele-diabetology can be used for both detecting pre-diabetic and actual diabetic cases among employees and monitoring the efficiency of treatment of the identified patients. Like many other telemedicine programs, Tele-diabetology shows excellent results in terms of simplicity, applicability, reliability, efficiency, cost effectiveness - especially for remote and extreme remote areas. But there are still barriers for its implementation such as:

- Poor infrastructure and other logistical challenges
- Untrained service providers including diabetologists and technical staff
- Other problems like a broken cable at the host network, faulty machine, and change of IP address and configuration of the receiving network.
- Internet/phone line congestion causing delays and interruptions

Conclusion

The use of telemedicine to support the care of patients with diabetes in Saipem is an important factor in increasing the convenience of treatment and monitoring. The overall findings of the present review provide a generally optimistic picture of Tele-diabetology in remote health care settings.

Tele-diabetology in offshore operating vessels has proved to us its effectiveness in blood sugar management for diabetic employees and can be an effective part of the Saipem Health Service prevention program as a whole. It provides a new perspective in the Telemedicine management of known cases of diabetes and those at risk of developing T2DM in future, due to the lack of awareness, any monitoring and inadequate management of risk factors. Although there were minor technical problems encountered during the study, it confers present and future benefits to the employees and to the company which included improvement in life quality, prevention of occurrences of complications and potential reduction of future health care costs.
Attachment 1: Diabetic Risk Score Questionnaire (DRSQ)

Pilot study on TELE-DIABETOLOGY Application in remote sites

Diabetes Risk Score Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you Diabetics?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If Yes, what is your therapy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If Yes, when were diagnosed (Year)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a. Height (cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b. Weight (Kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Waist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Do you exercise (physical activity) during leisure or at work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you take vegetables or fruits in your daily diet?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Are you taking Antihypertensive drugs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Did you ever experienced Hyperglycemic events in personal anamnesis (i.e. during illness)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Does any of your immediate family members have diabetes (mother, father, siblings or children)?</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>9. Does any of your relatives have diabetes (Uncle(s), Cousin(s), or grandparents)?</td>
<td>Yes / No</td>
<td></td>
</tr>
</tbody>
</table>

Project and information Technologies by MedicAir sponsored by A.MENARINI diagnostics
# Diabetes Risk Score

Fill only orange marked fields

1. **Age**
   - <45: 0
   - 45-54: 2
   - 55-64: 3
   - > 64: 4

2a. **Tall (cm)**
2b. **Weight (Kg)**

2c. **BMI** (Body Mass Index) is
   - <25 kg/m²: 0
   - 25-30 kg/m²: 1
   - >30 kg/m²: 3

3. **Waist**
   - Men: 
     - <94 cm: 0
     - 94-102 cm: 3
     - >102 cm: 4
   - Women: 
     - <80 cm: 0
     - 80-88 cm: 3
     - >88 cm: 4

4. **Exercise during leisure or work**
   - Yes: 0
   - No: 2

5. **Vegetables or fruit assumption**
   - Daily: 0
   - Less frequent: 1

6. **Antihypertensive drugs**
   - No: 0
   - Yes: 2

7. **Hyperglycaemic events in personal anamnesis (i.e. during illness or pregnancy)**
   - No: 0
   - Yes: 5

8. **Does your parents have diabetes**
   - Yes - uncle(s), cousin(s), grandparent(s): 3
   - Yes - birth mother, father, brother(s), son(s): 5

**ANALYSIS OF DIABETES RISK SCORE**
(Sum of answer score from 1 to 8)

Your risk to having Type 2 diabetes in the next 10 years is:

<table>
<thead>
<tr>
<th>Total score</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;7</td>
<td>Low (1%)</td>
</tr>
<tr>
<td>from 7 to 11</td>
<td>Slightly high (4%)</td>
</tr>
<tr>
<td>from 12 to 14</td>
<td>Medium (15%)</td>
</tr>
<tr>
<td>from 15 to 20</td>
<td>High (33%)</td>
</tr>
<tr>
<td>&gt; 20</td>
<td>Very high (50%)</td>
</tr>
</tbody>
</table>

---

22
References


2. Position statement: Diagnosis and Classification of Diabetes Mellitus, Diabetes Care, Vol 33, Suppl. 1, Jan 2010


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e-Health in Remote and Extreme Remote Locations -
Saipem’s Experience

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Abstract

E-medicine is not and must not be perceived as the sole assistance to a sick person but as the comprehensive management of an individual’s health including health education, health monitoring, health information, creating of shared medical database, management and use of medicines, etc. That is why nowadays we prefer talking about e-health. Due to the fact that business in the Oil and Gas industry is moving more and more towards remote and frontier areas, both off and onshore, the Industry can represent a significant model for the implementation of e-health. Saipem is one of the biggest contractor companies in Oil and Gas industry. Within its organisation, Saipem has an in-house medical department, whose main objective, apart the management of medical emergencies, is prevention, health protection and promotion. To assure the implementation of these principles even in remote and frontier areas, Saipem adopted e-health in its daily operations. The authors are giving Saipem’s experience in e-health care, e-health databases, e-education and training and e-work care.

Apart from the undoubted success of the application which has been shown to be cost effective, user friendly, very well accepted by internal clients and appreciated by the external ones, beneficial for the individual, the company and the society in both medical management and health promotion and protection activities, there is still a lot of room for improvement. The main problems are linked to the attitude of the users and their becoming familiar with a new way of communication between medical doctors, and to data transmission from the off shore units due to their movement or operational procedures.

Key words: e-health, Oil and Gas Industry, Saipem

Introduction

Operations in the Oil and Gas industry are more and more being routinely carried out in remote and extremely remote locations. At the Remote Healthcare Workshop 2013 held between 14 - 15th January 2013 in Bergen (Norway) it was agreed that the Remote locations (RL) are those 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), while the Extreme Remote Locations (EXRL) are sites where medical evacuation to a hospital can never be achieved within 4 hours, even in the best of circumstances. Regardless of the remoteness of the operations it is still the company’s obligation and duty of care to assure the best possible medical assistance to the employees working in such extreme environments. This poses the opportunity for the industry to represent a significant model for the implementation of e-health and telemedicine.

Seen and perceived as a health care system that may be more about the transfer of data and not of actual care or support of the client [1,2,3] (patient, individual and/or medical professional), telemedicine must not just ensure medical treatment for patients far away from health centres, but should also contribute to radically renovating health care system, with particular regard to emergency service provision, medical organization, monitoring of disease and management of health and lifestyle, health education, teaching, training and professional development. That is why we prefer to use the term “e-health”.

As a human being, either as the receiver (in most of the cases patient) or as a supplier of service (most frequently the doctor) this is where the core focus should rest. e-health, in its broadest definition, should not be defined only by technical and technological development but also as a “state of mind” - a way of thinking, an attitude or a direction towards a webbed, global way of thinking in order to improve the health care at local
and global level utilising information and communication technologies.\textsuperscript{[4]}

Nowadays different, or at least the following, concepts are understood under e-health:

- tele-assistance (home care),
- telediagnosis - teleconsultation (second opinion),
- telerobotics – governing electrometrical equipment from distance,
- tele-emergency
- tele-education of medical and non medical personnel
- medical databases
- etc.

All areas where the Oil and Gas (O&G) industry, with its sites spread around the world can represent a significant model for the implementation of all these elements.

\textbf{Saipem}

Saipem\textsuperscript{[5]}, an ENI group company based in San Donato Milanese, is one of the biggest contractor companies in the Oil and Gas industry. Its main activities, structured in the respective business units, are Drilling and Engineering and Construction both off and onshore. Within its organisation, that comprises approximately 50000 employees of 120 different nationalities, the Company has a presence in all five continents carrying out its operations more and more in areas defined as “remote” and/or “extremely remote”. These areas include offshore sites, the African desert, the South American jungle and arctic areas.

As part of the Health Safety and Environment (HSE) Department, Saipem has built an in-house medical department, whose main objective, apart from the management of medical emergencies, is prevention, health protection and promotion. In order to make these principals available and applicable at 119 working sites scattered worldwide \textsuperscript{[6]} Saipem decided to initiate and develop the implementation of e-health in its daily operations.

The aim of Saipem’s e-health project is many-sided. It provides assistance to physicians working in remote areas, where local medical equipment and structure are often the basic ones and the local health care system is either rudimentary or difficult to access. But it also to provides information and training courses to medical and non-medical personnel and provide a complete medical database of its employees for medical or other consultations.

\textbf{e-health implemented at operating sites}

The e-health elements that Saipem implemented, and is implementing in its routine operations are: health care, health database, education and training and work care.

\textit{1. Health care}

1.1 “Pronto dottore”

The first step in Saipem’s telemedicine “evolution” was the establishment, approximately 17 years ago, of a 24/7 dedicated telephone line, named “Pronto dottore”\textsuperscript{[7]}. By calling a single extension in the Company’s phone directory from any telephone located anywhere in the world, Saipem employees could contact one of the Company’s doctors. Any member of Saipem Group of Companies could obtain medical advice, information regarding the epidemiological situation in the world or in a specific country, information regarding vaccination, diseases, therapy, preventive actions and activities, pre-employment or periodical medical fitness examination, or any other health related issues, including the medical assistance (organization of medical examinations, hospitalization, etc.) in case of need. For medical personnel, this service also assured the organisation of long distance air transportation of sick/injured personnel with dedicated aircraft. The service was multilingual and
was provided by Saipem’s medical personnel who are fully familiar with the company, its procedures, organization, working activities, work related peculiarities and, often, with the employee requesting the assistance. There is no numeric evidence of frequency with which this telephone line has been contacted, but it has become the hub of the Medical Department and the extension is one of the first things our new employees learn joining the Company.

1.2. Telecardiology

In 2006 Saipem Med in agreement with Telbios - Ospedale San Raffaele – Milan developed a service for telecardiology assistance in remote areas to be used in both emergency cases and for monitoring purposes of employees/patient with known cardiovascular risks (diabetic, hypertensive, dislipidaemic status, smokers, etc.). The system is available 24/7/365 in both real time and store and forward mode. This service is provided utilising a normal telephone line or cellular phone and a small high reliability transtelephone ECG device, Cardiobios 12, that records and transmits 1/12 ECG derivation.

The whole process is given on the Chart 1.

Chart 1
Telecardiology process description

The ECG is recorded at the peripheral unit and is transmitted through a dedicated telephone line to the Hospital receiving centre. After the cardiologist’s interpretation the report is sent to the requesting medical personnel in pdf format and is automatically saved in the individual’s medical record. There are two level of assistance:

1) Emergency. In real time, few minutes after the indication has been set, there is an ECG with report and an online consultation with a Cardiologist.
2) Routine. ECG and Medical cardiologist report within 24 hours for normal cases and the follow up / monitoring of the employees with known risks

This tool could be offered also to International Health Care professionals operating in cooperation projects in remote areas and developing countries supporting sustainable development that the Company is always promoting in its operations. After the program has been implemented we noticed a reduction in repatriation cases due to cardiovascular diseases in respect of previous years. The project has even greater importance in monitoring and health surveillance of employees at risk directly at their working locations, as discussed later in the text. In economic terms it has been estimated that in 2011 and 2012 the project brought an optimisation of direct cost o 935 000 Euro. [9]
Better outcomes of acute events due to immediate recognition of the problem and early application of appropriate treatment resulted in additional “savings”. The feeling of safety and security of the employees in remote, frontier areas cannot be given a monetary value.

1. Health Database

2.1 GIPSI – electronic management of individual medical data

GIPSI (Gestione Informatica Prestazioni Sanitarie Individuali) is an in-house created software (first version back in 1996)[7] especially developed to meet Saipem Med requirements that assures real – time medical information available to duly authorised medical personnel working within Saipem. The system is fed by the Corporate medical unit, with the data related to the medical fitness status of employees, and peripheral medical personnel with data related to health conditions and sickness/injuries that an employee develops on site. In it the medical data of all Saipem Group employees (including those who worked even temporarily for the Company) can be found, whilst respecting legal obligations of medical record keeping. It is a coded and protected application.

Except data concerning Individual health and medical records the program allows management of related medical costs, hygiene inspections and quality of living standards, related medical statistics.

2.2 Medicines Management

Having a defined minimum selection of medicines on operating locations is a statutory[10] but also an Oil and Gas industry[11] and Saipem requirement. Working in a multicultural environment and operating worldwide, different types or medicines may be available in different countries, Saipem decided to standardised the list of medicines to be included in the site pharmacy.[12]

The scope of this in-house developed software is to provide a comprehensive, real time data of medicines stocks on each operating site. It allows the medical personnel to

- assure enough standard medicines in the clinics on the respective project, sites or vessels,
- automatically control the expiration dates of medicines on stock
- to properly plan the replenishment of stock, complying with the quality management system (QMS).

3. Health education and e-learning

3.1 “Health” Intranet site

Saipem Intranet Health portal, offers to all Saipem medical and non-medical personnel, the possibility of “entering” a virtual library. It is structured in 2 parts: public users and medical personnel. It is accessible only through the Saipem intranet. Public users can properly inform themselves before being assigned to any work location, with country/geographical specific information, environmental conditions, vaccination requirements, medical fitness certificates, local Saipem medical support, malaria issues etc. Leaflets, produced in an easy to understand way, introduce non-medical personnel to the complex world of diseases and health related topics. Prevention campaigns (“Alcohol and drug abuse prevention program”, “Stop smoking campaign”, etc.) motivate employees to live healthy. It is continually being updated and added to.

The medical personnel part represents the virtual “briefcase” (composed of Health Standards, Work Instructions, guidelines, etc.), of any Saipem doctor/nurse, in order to support them in coping with challenging medical situations.
3.2 e-learning courses

A “Moodle” [13] platform of e-Learning course is made accessible through Saipem Health portal. GIPSI e-Learning courses and Work Safety with the PC are currently available to Health personnel and to all Saipem employees. Each attendee is provided with an individualised user’s account to enter the e-Learning site.

The course provides educational materials such as lectures and presentations. To evaluate the attendees learned knowledge, an examination is given online at the end of each episode. The course administrator can monitor the level of access of each registered attendee and can evaluate their performance based on examination results.

3.3 MIOGATE

High level training of medical personnel working in remote locations is crucial for the best health protection of workers in these areas. Unfortunately, there are no specific university courses in this topic area. The same applies for the dedicated application of telemedicine, which is important for guaranteeing high level medical assistance in O&G industry.

In 2007, the University of Camerino (Italy) and Saipem developed a postgraduate Qualification Course in Telemedicine and Telepharmacy - MIOGATE (Master In Oil and Gas Telemedicine and Telepharmacy).[14,15] The mission of MIOGATE is to provide health professionals working in oil and gas fields or platforms specific training in e-health, telemedicine, telepharmacy and their practical applications. The course represents a real opportunity to achieve an academic attainment and qualification for improving healthcare to remote patients through e-health learning processes.

Course activity includes 16 ECTS (European credit transfer and accumulation system) and has a modular organization. Teaching is based on e-Learning (150 hours), e-practical activity (50 hours), own study (200 hours), e-examination for each module, a final examination and a dissertation.

Up to now more than 40 doctors have completed this programme.

4. Work - care

The peculiarity of overseas assignment and working shifts implies that an employee spends at least half of his/her life away from home and from his family doctor. Moreover, on site he/she might be exposed to work related risks (noise, stress, vibration, toxic substances, etc.) that require compulsory health surveillance. Not to mention border line health risks each individual might have (diabetes, hypertension, cardiac problems, etc.).

In order to improve on-site health surveillance (compulsory by law) and monitoring (to follow up the employees health conditions) Saipem created a program that developed a “home care” model of telecardiology into a “work care” model.[7]

The process is described in paragraph 1.4 and in Chart 1. In this model the process owner is not the individual, as it is in “home care” but the site doctor who is in charge for the health of the employee and decides on management.

Basically two outcomes are possible (repatriation or remaining at working site) and the process tries to define which is most appropriate in any given case. “Work Care”, telemedicine linked to the Occupational Health, also fulfils the legal obligations of health surveillance.[16]
The schematic presentation of work care is given on chart 2

Chart 2

The model, still in development, has:
- improved specialist’s examinations directly at operating sites
- extended the employees “working life”
- rendered safer the operating sites
- allowed employee to more fully enjoy leave periods
- brought benefits in cost effectiveness and employees’ satisfaction to the individuals, Company and society in general

Conclusion

In the Oil and Gas industry, telemedicine is not now just a tool only for the management of medical cases but as a whole system best solution to provide a comprehensive health care system, particularly for sites and operations in remote and frontier areas where local health structures and organisation do not guarantee adequate and immediate health care.

Starting from 1996 Saipem implemented in its daily health care activities e-health solutions in health care ("Pronto Dottore", Telcardiology), health database (GIPSI, Medicines Management), health related education and training (Health Intranet site, e-learning courses, MIOGATE) and has introduced in 2007 a new element in e-health – “work care”, telemedicine related to occupational health. The implementation of e-health protocols is facilitated by the presence of reliable, medium band, communications systems at all operating sites, which are needed for Company’s core business purposes anyway.

In all the areas of its implementation e-health, as in many other studies\textsuperscript{[17-19]}, has shown to be efficient, cost effective, and beneficial for medical personnel, employees, the Company and society in general opening great possibilities for sustainable development of areas where the operations are carried out.

The problems encountered in its full implementation and further development are similar to those faced in other trials: necessity for medical personnel to start being familiar with the new way of communication and “mind set” in the management of clinical cases\textsuperscript{[20]}; communication problems\textsuperscript{[21]} with off shore units using satellite communication due to their continuous movement and/or operations activities that might interfere with satellite communications (i.e. crane movements); and bandwidth competition with core business need.

Saipem is committed to continue the implementation and development, but above all, the continuous
improvement of its e-health applications. The extension of use of e-health in health information, training, monitoring and particularly in health related Sustainability programs are inevitably challenges for the foreseeable future.

References


11. OGP "Managing Health for field operations in Oil and Gas Activities" report N° 343, May 2003


17. Stroetmann K.A., Jones T., Dobreva A., Stroetmann V.N. eHealth is Worth it The economic benefits of implemented eHealth solutions at ten European sites. European Community. 2006


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Developments in Remote Health Care

Topside Calls regarding Medication – how common? what medication? what outcomes?

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Introduction

At any given time some 15,000 workers are at work on offshore installations in the UK continental shelf, but there is a constant turnover of personnel, with approximately 65 outbound flights per day from Aberdeen alone. Workers travelling offshore can and do take medication (both prescribed and non-prescribed) with them and they are expected to declare this to the onboard medic on arrival. In a proportion of cases this gives rise to contact with a “Topside” medical advisory service.

In mid-2010, Abermed’s Topside medical service advised its medics, for the first time, of the need to consult Topside when personnel arrive offshore with medications of potential concern. This provided the opportunity to conduct an audit of such contacts to ascertain what medications were commonly involved, and the outcome of the calls. The results of that audit are presented here.

Method

All contacts classified as ICD-10 code 21 (relating to medication declaration or other similar issues) made to the Topside medical advisory service of Abermed Ltd for the calendar year 27th June 2011 to 26th June 2012 inclusive were extracted from the Topside records database. The call records were analysed to ascertain the reason for the call, the medication(s) involved, and the outcome of the consultation.

Results

Number of calls
During the study period there were an average of 95 installations on cover, with an average POB of 108 for each installation. The total POB on cover was therefore 10,260. During the year, a total of 4,335 calls for all reasons were received.

274 calls were coded ICD-10 and therefore eligible for analysis; of these, 3 records contained no relevant information and could not be analysed. Thus, 271 calls, 6.3% of all calls received, were analysed. The frequency of calls regarding medication is calculated to be 2.85 calls/installation/year, or 2.64 calls/100POB/year.

Reason for call
Perusal of the call records showed that medics called Topside regarding medications for three reasons – a) because of concern regarding the safety of use of the medication offshore, b) because medication had been forgotten or lost by a worker, and c) because a worker had run out of medication before leaving the installation.
In 208 cases (77% of the 271 calls analysed), the reason for the call was concern on the part of the installation medic in regard to the safety of the medication. 39 (14%) of the calls were for instances of lost or forgotten medication, and 24 calls (9% of the total) were precipitated by a worker running out of medication before departure from the installation (table 1).

**Table 1. Reasons for call**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medic identified medication of concern</td>
<td>208 (77)</td>
</tr>
<tr>
<td>Forgotten or lost medication</td>
<td>39 (14)</td>
</tr>
<tr>
<td>Insufficient medication for duration of trip</td>
<td>24 (9)</td>
</tr>
</tbody>
</table>

*The Medications involved*

The nature of the medications involved in the calls was found to vary with the reason for the call, as described below.

*Medications involved in calls due to Medic concern*

240 medications were mentioned during the 208 calls for this reason, i.e. some calls were for concern about more than one medication. For the purpose of analysis, it was found reasonable to classify medications with features in common into several categories (table 2).

**Table 2. Medications giving rise to medic concern**

<table>
<thead>
<tr>
<th>Category of Medication Involved</th>
<th>% (total = 100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedating (including opiates)</td>
<td>42</td>
</tr>
<tr>
<td>Antidepressants and antipsychotics</td>
<td>25</td>
</tr>
<tr>
<td>Immunosuppressants</td>
<td>8</td>
</tr>
<tr>
<td>Atypical analgesics (gabapentin etc.)</td>
<td>6</td>
</tr>
<tr>
<td>NRT/smoking cessation</td>
<td>6</td>
</tr>
<tr>
<td>Cardiac</td>
<td>4</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>4</td>
</tr>
<tr>
<td>Insulin</td>
<td>2</td>
</tr>
<tr>
<td>Warfarin</td>
<td>2</td>
</tr>
<tr>
<td>Epipen</td>
<td>2</td>
</tr>
</tbody>
</table>

The majority of medications giving rise to concern about safety of use were those with sedating effects (which included opiate-containing analgesics) and psychoactive drugs, typically antidepressants.
Medications lost or forgotten
Once again it was found feasible to analyse lost or forgotten medications by groups with features in common (table 3).

Table 3. Forgotten/lost medications

<table>
<thead>
<tr>
<th>Category of Medication Involved</th>
<th>%(total = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI/ H2 Antagonists</td>
<td>33</td>
</tr>
<tr>
<td>Inhalers</td>
<td>26</td>
</tr>
<tr>
<td>Diclofenac</td>
<td>10</td>
</tr>
<tr>
<td>Undocumented</td>
<td>8</td>
</tr>
<tr>
<td>Cardiac</td>
<td>5</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>5</td>
</tr>
<tr>
<td>Steroid cream</td>
<td>5</td>
</tr>
<tr>
<td>Cocodamol 30/500mg</td>
<td>2.5</td>
</tr>
<tr>
<td>Epipen</td>
<td>2.5</td>
</tr>
<tr>
<td>Amitriptylline</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Run out of/insufficient medication
The medications involved where workers ran out of/brought insufficient for the duration of their trip are categorised below (table 4)

Table 4. Run out of/insufficient medication

<table>
<thead>
<tr>
<th>Category of Medication Involved</th>
<th>%(total = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI/H2 Antagonists</td>
<td>38</td>
</tr>
<tr>
<td>Inhalers</td>
<td>27</td>
</tr>
<tr>
<td>Cardiac</td>
<td>11</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>8</td>
</tr>
<tr>
<td>Codeine phosphate</td>
<td>4</td>
</tr>
<tr>
<td>Gliclazide</td>
<td>4</td>
</tr>
<tr>
<td>Diclofenac</td>
<td>4</td>
</tr>
<tr>
<td>Undocumented</td>
<td>4</td>
</tr>
</tbody>
</table>

In the case of both lost/forgotten medications and those of which the worker had an insufficient supply to last the duration of their trip, the most common medications involved were those for dyspepsia and asthma.
Outcome of Consultations

Calls regarding medications were found to end in the giving of advice, the return of the worker at the scheduled end of their trip, or the worker’s medevac or dentevac (table 5). These outcomes were found to vary by the reason for the call (table 6).

Table 5. Overall outcome of consultations.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice (and continue trip)</td>
<td>226 (83)</td>
</tr>
<tr>
<td>Medevac</td>
<td>42 (15)</td>
</tr>
<tr>
<td>Demob as scheduled (trip not extended)</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Dentevac</td>
<td>1 (0.3)</td>
</tr>
</tbody>
</table>

The overwhelming majority (83%) of all Topside calls for reasons related to medication were resolved by some form of advice to the Medic. Workers were typically allowed to continue their trip as scheduled, sometimes with the dispensing of items from sickbay stock (e.g. to replace unsuitable/forgotten/ insufficient medication), and/or in some cases after discussion with the operator’s medical advisor.

Table 6. Outcome of consultation by reason for consultation.

<table>
<thead>
<tr>
<th>Outcome of call</th>
<th>Reason for call</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medic concern number (%)</td>
</tr>
<tr>
<td>Advice (and continue trip)</td>
<td>166 (80)</td>
</tr>
<tr>
<td>Medevac</td>
<td>41 (20)</td>
</tr>
<tr>
<td>Dentevac</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Demob as scheduled</td>
<td>0</td>
</tr>
<tr>
<td>All</td>
<td>208 (100)</td>
</tr>
</tbody>
</table>

Of the Topside calls ending in advice, most (208/271 = 73%) were generated by medics identifying medication of concern. However, approx. 17% (39/271) arose from lost/forgotten medication, and some 10% (24/271) arose when workers declared insufficient medication for the duration of their trip, or running out of medication during their trip.
Nature of advice given.
The nature of the advice given was analysed and is summarised below (table 7)

Table 7. Nature of advice given

<table>
<thead>
<tr>
<th>Nature of advice given</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue medication</td>
<td>76 (32)</td>
</tr>
<tr>
<td>Retain in sickbay (CD cupboard)</td>
<td>49 (21)</td>
</tr>
<tr>
<td>Dispense same from sickbay stock</td>
<td>37 (16)</td>
</tr>
<tr>
<td>Dispense alternative from sickbay stock</td>
<td>23 (10)</td>
</tr>
<tr>
<td>Discuss with Operator’s Medical Advisor</td>
<td>11 (5)</td>
</tr>
<tr>
<td>Various other</td>
<td>36 (16)</td>
</tr>
<tr>
<td>All</td>
<td>242 (100)</td>
</tr>
</tbody>
</table>

(note: total number is >226 as some calls ended with more than one type of advice being given.)

The two commonest forms of advice were 1) to allow the worker to continue their medication (if risk assessment was favourable) and 2) for the medication to be retained in the sickbay cupboard (with the worker’s consent), and returned to them on their departure for home. It was found that approximately 5% of cases had included discussion with the operator’s medical advisor, due to the nature of the medication and the underlying medical conditions declared.

It was possible to further explore the relationships between the nature of advice given and the medication involved, as illustrated at sections D3 to D7 below.

Medication involved when advice was to continue

The medications involved where advice was given to continue it are summarised in table 8

Table 8. Medications continued (calls: n=76)

<table>
<thead>
<tr>
<th>Category of Medication</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antidepressants &amp; antipsychotics</td>
<td>35 (46)</td>
</tr>
<tr>
<td>Sedating (inc opiates)</td>
<td>15 (20)</td>
</tr>
<tr>
<td>Immunosuppressants</td>
<td>10 (13)</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>5 (7)</td>
</tr>
<tr>
<td>Oral NRT</td>
<td>5 (6)</td>
</tr>
<tr>
<td>Cardiac</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Phentermine</td>
<td>1 (1)</td>
</tr>
</tbody>
</table>
The most common groups of medication were antidepressants and antipsychotics, and sedating medications. It was found that workers were permitted to continue sedating medications only where risk assessment justified this (e.g. the worker was stood-down/offshift, in a non-safety-critical role, or on short-term low strength opiate).

**Medications retained**

49 calls resulted in advice to retain the worker’s medication in the custody of the installation medic, until the worker left for home (table 9).

<table>
<thead>
<tr>
<th>Medication Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedating</td>
<td>45</td>
</tr>
<tr>
<td>of which</td>
<td></td>
</tr>
<tr>
<td>Tramadol</td>
<td>6</td>
</tr>
<tr>
<td>Other Opiates</td>
<td>26</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>3</td>
</tr>
<tr>
<td>various others</td>
<td>10</td>
</tr>
<tr>
<td>Antidepressant (Mirtazpine &amp; Pramalan)</td>
<td>2</td>
</tr>
<tr>
<td>Antimigraine (Sumatriptan)</td>
<td>1</td>
</tr>
<tr>
<td>Anabolic steroid</td>
<td>1</td>
</tr>
</tbody>
</table>

The majority (92%) of medications retained were sedating analgesics, but also included benzodiazepines (6%) and various others including ‘over the counter’ hypnotics and sedating antihistamines.

**Medications replenished from sickbay stock**

37 calls resulted in the medic being advised to replace lost/forgotten or insufficient supplies of medication with the same item already in the sickbay stock (table 10):

<table>
<thead>
<tr>
<th>Medication Replaced</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salbutamol inhaler</td>
<td>13</td>
</tr>
<tr>
<td>Steroid inhaler</td>
<td>1</td>
</tr>
<tr>
<td>Ranitidine</td>
<td>5</td>
</tr>
</tbody>
</table>
Diclofenac 4
Omeprazole 4
Various others 10

The most common medications replenished were salbutamol inhalers, and ranitidine or omeprazole tablets, consistent with the frequency with which these were lost/forgotten or brought in insufficient quantity (tables 3 and 4).

**Medications replaced by alternative from sickbay stock**
23 calls resulted in the medic being advised to replace a lost/forgotten or insufficient quantity of medication with an alternative from the sickbay stock (table 11).

<table>
<thead>
<tr>
<th>Medication Replaced</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omeprazole</td>
<td>6</td>
</tr>
<tr>
<td>Lansoprazole</td>
<td>4</td>
</tr>
<tr>
<td>“Co-Opiate”</td>
<td>5</td>
</tr>
<tr>
<td>Various others</td>
<td>8</td>
</tr>
</tbody>
</table>

Perhaps not surprisingly (again from tables 3 and 4), omeprazole and lansoprazole were the medications most commonly substituted, typically by ranitidine.

**Medications discussed with Operator’s Medical Advisor.**
11 calls involved the Topside doctor discussing use of the medication with the installation operator’s medical advisor (OMA), as listed at table 12.

<table>
<thead>
<tr>
<th>Medication Discussed</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin</td>
<td>3</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>2</td>
</tr>
<tr>
<td>Mirtazepine</td>
<td>1</td>
</tr>
<tr>
<td>Warfarin</td>
<td>1</td>
</tr>
<tr>
<td>Mesalazine and Prednisolone</td>
<td>1</td>
</tr>
<tr>
<td>Epipen</td>
<td>1</td>
</tr>
<tr>
<td>Alprazolam</td>
<td>1</td>
</tr>
<tr>
<td>Vit B complex</td>
<td>1</td>
</tr>
</tbody>
</table>
Cases were typically discussed with the OMA due to their clinical complexity and/or the need to follow Oil&Gas UK medical guidelines. 3 of the 11 calls involved workers with insulin treated diabetes, following disclosure/declaration of insulin on arrival offshore.

*Outcome of medevacs — disposal on return onshore.*

It will be recalled from table 5 that 42 calls resulted in the worker being medevaced for medical assessment. The outcome of these medevac assessments is summarised below (table 13)

<table>
<thead>
<tr>
<th>Disposal</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred to own GP</td>
<td>35 (of whom 31 had later OH consult)</td>
</tr>
<tr>
<td>Did not attend Medevac appointment</td>
<td>4</td>
</tr>
<tr>
<td>Found fit to return to work</td>
<td>2</td>
</tr>
<tr>
<td>Referred to A&amp;E for clinical assessment of coexisting acute medical problem.</td>
<td>1</td>
</tr>
<tr>
<td>All</td>
<td>42</td>
</tr>
</tbody>
</table>

The majority of these (non-urgent) medevacs were referred to their GP for further management, and most lately returned for an occupational health consultation to assess fitness to return to work offshore. It is notable that 4 of the medevaced workers (some 10%) failed to attend their pre-arranged medevac appointment.

*Medications involved in medevac cases*

The general nature of the medications involved in medevaced cases was ascertained from the consultation notes (table 14):

<table>
<thead>
<tr>
<th>Medication</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedating (inc Opiates)</td>
<td>19 (46)</td>
</tr>
<tr>
<td>Antidepressants and antipsychotics</td>
<td>13 (32)</td>
</tr>
<tr>
<td>Cardiac</td>
<td>4 (10)</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>4 (10)</td>
</tr>
<tr>
<td>Epipen</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Warfarin</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Insulin</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Antiretroviral Triple Therapy Regime</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Immunosuppressants</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Unidentified white powder with needles &amp; syringes</td>
<td>1 (2)</td>
</tr>
<tr>
<td>All</td>
<td>48</td>
</tr>
</tbody>
</table>
Note: some cases involved more than one medication.

The most common groups of medications involved in medevacs, as for those where the call was resolved with advice, were sedating medicines, and antidepressants and antipsychotics. The nature of the sedating medications involved was studied further, as below:

*Sedating medications involved in medevacs*

Sedating medications were the commonest involved in medevacs. The specific medications involved are summarised below (table 15):

<table>
<thead>
<tr>
<th>Sedating Medication</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptylline</td>
<td>4</td>
</tr>
<tr>
<td>Diazepam</td>
<td>3</td>
</tr>
<tr>
<td>Tramadol</td>
<td>2</td>
</tr>
<tr>
<td>Cocodamol 30/500mg</td>
<td>2</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>1</td>
</tr>
<tr>
<td>Codeine phosphate</td>
<td>1</td>
</tr>
<tr>
<td>Zopiclone</td>
<td>1</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>1</td>
</tr>
<tr>
<td>Ropinerole</td>
<td>1</td>
</tr>
<tr>
<td>Codydramol</td>
<td>1</td>
</tr>
<tr>
<td>Kalms (&amp; onshore CBT)</td>
<td>1</td>
</tr>
<tr>
<td>Natrasleep</td>
<td>1</td>
</tr>
<tr>
<td><strong>All</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

With amitriptylline being used as an analgesic in such calls, all analgesics combined accounted for over half the sedating drugs. Diazepam was the most common non-analgesic sedative involved in medevac cases.

**Discussion**

**General Observations**

The results of this audit indicate that calls to Topside services as a result of medication issues are relatively uncommon, comprising 6% or so of all calls, and occurring at a rate of around 3 per installation per year. Most problems were resolved with advice, but a substantial minority of workers were medevaced as a result of the issues raised by their medication. Some general themes emerge from the data, the most obvious being the frequency of concern about the safe use of sedating medications (mostly analgesics) offshore – this is perhaps not surprising in this study given that medics had specifically been advised of this topic the year prior to that to which the data applies. Some specific issues arise from closer perusal of the detail of the data, and from
inspection of some of the individual cases involved (although individual cases will not be reported in detail here).

Costs to operators
97 of 226 calls (43%) not ending in medevac/dentevac resulted in the dispensing of alternative or identical replacement items (for unsuitable/forgotten/insufficient medication) from sickbay stock, in order to enable continuation of a worker's trip. This will have incurred some cost to operators, although it is unlikely that most would regard this as significant or unreasonable. Of greater note are the 43 unscheduled disembarkations on medical/dental grounds due to medication concerns over the course of the year – although difficult to quantify, this is likely to represent a substantial 'opportunity cost' in respect of the need to replace personnel, disruption to work schedules, and so on. Equally of note is that the failure of 10% of medevaced workers to attend their onshore appointment for assessment would have resulted in the cost of a lost opportunity to be found fit to return offshore to continue work.

Occupational health issues in medevaced workers
Some features of the personnel medevaced as a result of issues relating to medication are notable:
43% of these medevaced workers had recently returned to work offshore after a period of illness or injury, but without any medical consultation to confirm their recovery and fitness to do so. This is contrary to Oil & Gas UK guidelines and suggests that the frequency of medevac due to concern about medication could be reduced by better compliance with the procedure of confirming fitness to return to work offshore where a worker continues to take medication for whatever their condition has been.
37% of medevaced workers had declared sedating medication. The medications involved were most commonly psychoactive drugs such as benzodiazepines or tricyclic antidepressants, or opiates such as Tramadol or oxycodone. 24% of medevaced workers had declared multiple unsuitable medications, typically a psychoactive drug plus an opiate, or two psychoactive drugs. Consistent with these observations, 37% of medevaced workers were considered by the Topside doctor to have clinically significant anxiety and/or depression.
17 workers (41% of those medevaced) were found to have a previously undisclosed significant medical condition, as summarised below (table 16):

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac History</td>
<td>6</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>3</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>2</td>
</tr>
<tr>
<td>Warfarin therapy</td>
<td>2</td>
</tr>
<tr>
<td>HIV +ve status</td>
<td>1</td>
</tr>
<tr>
<td>IDDM</td>
<td>1</td>
</tr>
<tr>
<td>Need for immunosuppressive therapy</td>
<td>1</td>
</tr>
<tr>
<td>Alcohol dependence</td>
<td>1</td>
</tr>
</tbody>
</table>

At least 4 of these 17 patients had 'self-sponsored' (i.e. paid for the assessment themselves, as opposed to the examination being paid for by an actual or potential employer) at the Oil & Gas UK medical where the non-declaration had taken place. This is a higher proportion than is generally found at all Oil & Gas UK medicals undertaken at the author's place of work.
It is acknowledged by Oil & Gas UK that since the medical assessment process involves a self-declaration of medical history, the possibility of non-disclosure does exist, and these figures provide some indication of the extent to which this is occurring. The higher proportion of ‘self-paying’ examinees in this group implies an awareness among them of the content of the medical guidelines regarding their medical condition and an expectation that they would not pass the medical if truthful about this. The fact that these diagnoses were made known by the necessity for the workers involved to declare medication to the installation medic illustrates the value of this procedure.

**Decisions in relation to specific medication**

Perusal of the individual cases involved in the calls studied here suggests a degree of variance in the clinical advice given regarding some medications. This was most obvious in the case of Champix (varenicline): 11 calls were made by medics regarding workers taking this drug, with all calls ending in the giving of advice. In 4 cases workers were advised to continue taking the medication, in 4 cases they were advised to stop taking it (but resume when they had returned ashore), in 2 cases to stop taking it and see their GP on return ashore, and in one case to stop taking the medication and resume smoking.

While some of this variation may well be accounted for by patient-specific factors in relation to risk of side-effects, this degree of variation suggests disagreement among Topside doctors about the relative risks of continued smoking compared to the potential side-effects of medication in this particular working population.

**Heliport Security Related Issues**

Contrary to established practice by many installation operators, medication was often declared without its original packaging. In one case, an unidentified powder in an unsealed tin with needles and syringes was declared to the offshore medic.

**Conclusion**

Topside calls regarding medication are a small proportion of those received overall, but nevertheless include cases of medical importance.

Most calls arise from concern regarding sedating medications or psychoactive drugs, and in the case of the former were largely resolved by advice to change to a more appropriate medication. There appears to be a tendency for opiate-containing analgesics to be prescribed to offshore workers without actual need for these, and/or for workers to continue such medications beyond a point where they could be replaced with paracetamol or NSAIDs.

In the case of psychoactive drugs, workers medevaced as a result of calls regarding antidepressants included some who were indeed severely depressed, including one case who demonstrated vivid suicidal ideation.

That such a markedly affected worker could be found offshore may well be linked to the finding that a substantial proportion of workers medevaced due to medication concerns had returned to work after a period of illness or absence, but without any consultation to confirm their fitness to do so. Better adherence to a policy of ensuring assessment of fitness to return to work offshore after periods of illness or absence (which of course can and do occur in the two year periods between offshore medica l) would reduce the cost to operators and employers of avoidable medevacs.

This audit confirms the occurrence of non-disclosure of significant medical conditions among a small proportion of the offshore workforce, and some variation in medical attitudes and/or practices to the safety-related significance of medications, suggesting the need for additional measures to ameliorate the problems arising from these factors.
Acknowledgement: I am grateful to Dr G Furnace, Medical Advisor to Oil & Gas UK, for assistance in the analysis of data and preparation of the text of this article.

Note: The data described here were previously presented at the Oil & Gas UK 'Journal Club' meeting of 1st March 2013 and Examining Doctors' Conference of 6th June 2013.

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Submitted November 2013.

A Field Trip to the Irrawaddy Delta and Irrawaddy River (Myanmar formerly Burma)

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The Project Purpose

My interest in visiting Myanmar sparked from a previous discussion with Paul Strachan who revived the old Burmese Irrawaddy Flotilla Company in 1995. Paul’s company “Pandaw Cruises” were the first since the Second World War to offer pioneering cruises on Burma’s spectacular Irrawaddy River, reaching Bhamo, one thousand miles from the sea, and went on to be a first on the stunningly attractive Chindwin River. The Irrawaddy Flotilla Company was established by Scots merchants in 1865. By the 1920s the company ran over 650 vessels on the rivers of Burma. It had become the largest privately owned fleet of ships in the world. Mainly paddle steamers, the largest class of vessels were 350ft long and licensed for 4,000 passengers. In 1942 the fleet in its entirety was scuppered as an Act of Denial when the Japanese invaded. Paul Strachan found that these logging boats had been built on the Clyde in Scotland as steam ships and he obtained the technical drawings and rebuilt a ship using the identical design apart from the engines which are now modern diesels.

I had travelled on the Mekong River from Saigon to Ankawat in Cambodia and the Yangtze in China and was fascinated by the re-establishment of flat boats navigating the difficult rivers in Asia. Paul Strachan and I spoke about several initiatives including exploring the possibility of my involvement of supporting the Myanmar River Doctors through tele-education and tele-medicine.

In February 2013, my wife (an experienced qualified nurse) and I made the trip to Yangon and travelled the Irrawaddy River by boat to Bagan then Mandalay and included a visit to Inle Lake (a remote area of Shan Province on the borders with Western China and Thailand.) I was privileged to meet up with Moses Aung a young enthusiastic Myanmar business man whose Christian convictions has led him to devote much of his time and resources to expanding the River Doctors scheme in the Irrawaddy Delta region.
It has X ray facilities but has difficulty in recruiting x ray technicians. It also has ultrasound, laboratory services and a dentist room. The boat is in use all year round and is staffed by 3 Doctors, 3 Nurses, 5 Nurse Assistants, 1 dentist and 9 Crew. In a typical month it will provide 12 stopovers with 2 days in each village location, they follow a regular schedule and announcements by loudspeaker alerting the remote delta population of the river boat doctor’s arrival. Mobile communications are almost non-existent.

Together with Paul Strachan’s Pandaw Charity, Moses Aung and the Myanmar Foundation has developed a sustainable project whereby the River Doctors project supports a purpose built boat 8 metres wide and over 100 metres long. It is able to offer outpatient clinic and minor operation facilities.

Kathy and Alan Kennedy Bolam meeting river doctors and nurses from the Myanmar Foundation.

Dr Aung takes Alan’s blood pressure

The Myanmar Healthcare Issues

We arrived in Yangon at the launch of the Myanmar Literary festival along with a number of British visitors attracted by Aung San Suu Kyi’s international profile and Oxford University connection. Her notoriety soars following a wave of political reforms and historic international visits to Yangon, formerly named Rangoon, where T-shirts adorned with pro-democracy icon Aung San Suu Kyi’s face are sold at roadside stalls and Western business people are filling up hotel rooms.

But a half day’s drive away into the delta, it’s harder to sense that energy among the poor who live meal-to-meal in flimsy thatch huts on bamboo stilts along coffee-brown rivers and rice paddies.
It would be an understatement to say that over the last fifty years, healthcare outcomes in Myanmar have not kept pace with those of its neighbours. When the World Health Organization (WHO) last ranked Myanmar’s system against its global counterparts, the country was pegged dead last out of 190 countries with respect to what the WHO calls “overall health system performance.” Myanmar spends roughly 2% of its GDP on healthcare; impoverished Laos spends 4.5%, Cambodia 5.6%. Because of the pitiful amount of money the government has historically spent on healthcare, Myanmar continues to struggle with basic problems related to communicable diseases. Malaria is the leading cause of morbidity and mortality in the country. Many of these deaths occur from a drug-resistant form of the disease common along the country’s border with Thailand. TB rates in Myanmar are estimated to be three times the global rate, and the majority of cases are drug-resistant.

The country needs to grow the number of doctors who graduate every year from 1,200 to 1,500. But in a country with limited access to cadavers for medical students, the level of training these new students receive is lacking badly. Those doctors already in practice are badly under-compensated, an easily identified problem to solve but one that requires precious resources. The country’s trauma care capabilities, especially in rural areas, are extremely inadequate. The country has 61 oncologists in the entire country and only 3 radiation machines in all of Yangon. Cardiovascular diagnostic capabilities barely exist.

Today, when a family member in Myanmar needs medical attention, the vast majority will go to a private-pay polyclinic or monastery where for a small fee, they can receive very basic primary care services. If medicine is prescribed, the individual knows they will have to pay 100% of the costs out of pocket; even in cases where surgery is required, the doctor will provide a written script with all the required disposable materials used during the procedure. The family must go out and purchase these at a local wholesaler before coming back for the procedure. The net of this is that today’s healthcare consumers in Myanmar are used to taking responsibility for their healthcare decisions.

There is a total lack of pre-hospital care in Myanmar. I found this ambulance parked in a market in Bagan which was manned by two drivers:

The intention was to raise donations for a blood bank in the province but not to provide emergency response or immediate care. It will be many years before Myanmar are able to embark on even a basic pre hospital EMS service.
Myanmar healthcare is supposedly provided free at point of need provided treatment or healthcare equipment, so there is a healthy black-market trade in operating equipment, drugs and associated items which patient’s relatives have to buy at the entrance of hospital gates to ensure their relatives get the procedures and treatment required. There is fortuitously the traditional medicine route for many of the population to choose which is less expensive and more readily available.

AIDS kills an estimated 18,000 people a year in Myanmar (source: UNAIDS) The country is one of the hardest places in the world to receive HIV treatment. Myanmar spent less than $1 per person on health in 2008, minus donor money, and ranks among the lowest countries in nearly every category of health care funding.

According to the new WHO guidelines, patients should begin ART (anti-retroviral therapy) when their count of CD4 cells—the white blood cells first attacked by the virus—falls to 500 cells per cubic millimetre of blood or below. The CD4 count indicates the extent to which a person’s immune system has been destroyed, leaving them vulnerable to infections. The previous guidelines, set in 2010, called for treatment at a count of 350 or below.

Some HIV-positive patients—including pregnant women, children under age 5, and anyone who also has active tuberculosis or hepatitis B—should begin treatment immediately after diagnosis, irrespective of CD4 levels, according to the new WHO recommendations.

Ninety percent of all countries have adopted the 2010 recommendation, according to the WHO Burma’s current national protocol for HIV treatment follows the previous 2010 WHO guidelines, calling for treatment when CD4 levels hit 350, but in practice, patients are often denied care until their levels fall much lower, to 150.

MSF (Medicine Sans Frontier), France based international aid organisation operates more than 20 clinics in Burma and treats more than 30,000 HIV-positive patients annually. It provides more than half the HIV drugs in Myanmar. MSF site having to make tough decisions about whom to treat in their Rangoon clinics. There are so many patients they are forced to make a decision to take the sickest people, so they take 150 or below—those people are close to dying, and they ask people with CD4 counts between 150 and 350 to come back in several months to be retested.
Other Health related Hurdles

A stigma against HIV infection also hampers efforts to provide treatment in Burma. Discrimination, in particular against populations at higher risk of HIV [infection], such as homosexuals, sex workers and drug addicts, is fuelled by laws that criminalize such populations, and keep people away from health facilities to access treatment. (source: Myo Thant Aung, Myanmar Positive Group Leader, an advocacy organization that helps HIV-positive patients in Myanmar.)

Burmese democracy icon Aung San Suu Kyi was last year tasked with fighting discrimination against HIV patients when she was appointed an ambassador to the UN’s program on HIV/AIDS, UNAIDS. The Nobel laureate and parliamentarian in May 2013 joined a candlelight vigil in honour of people who have died from the disease, and her National League for Democracy (NLD) party has established a few HIV treatment clinics in Rangoon.

Far from Rangoon, where most of the country’s health facilities are located, HIV is a major problem in mining areas of east Burma’s Shan State and north Burma’s Kachin State, due to a large number of migrant workers, high drug use and the prevalence of sex trafficking. These states are also plagued by fighting between armed ethnic rebels and government soldiers, who continue to clash despite peace talks.

Conclusion

Supporting the Myanmar Foundation is a personal goal, since having spent over 12 years of my career advising governments across the world in developing EMS systems, I have come to realise that small sustainable self-help health projects are more rewarding. The River Doctors project delivers amazing health outcomes despite being starved of resources and support. However an area which would enhance the scheme for relatively low cost is “second medical opinion support” system. I am attempting to raise funds to provide a satellite telemedicine system where River doctors can immediately gain advice from medical specialists worldwide using state of the art telepathology. I have agreement with a specialist US based telemedicine company to provide the communications and support and from a number of medical expert specialist colleagues who will provide the 2nd medical support diagnosis and advice and if you are interested in supporting this project I would be delighted to hear from you.

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(Submitted September 2013)
'Remotely Important'

This section is a sort of ‘soap box’ section that can include hints, tips, ideas, requests for people to respond to an idea or concept or a commentary on a current issue affecting Remote Health Care. Brief articles of up to 500 words can be included here (occasionally longer at the Editor’s discretion); they need to be honest and non-offensive, but not referenced.

Simon Harvey is at it again - he states:

"Hi there recently an old mate from the RN asked me about advice for offshore work so I started jotting stuff down. Well what silly thing to do!

Anyway it may be of interest to some, irritate others so here it. However it is an evolving document so there will be lots of "and another thing" to come. Gives you something to read in the loo!:

Some Advice for working offshore as a Medic

Simon Harvey

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Introduction

HSE Guidelines state people to be considered should be: Registered nurse or military medic with experience, however, professionals such as paramedics did not exist at the time of the regulations and so although a few are getting in so to speak technically the regulation does not say that. What HSE does say is down to the course provider to be satisfied that the person meets the criteria.

The Institute of Remote Health Care (IRHC) is an organisation based in Aberdeen with some of the original consultants who devised the HSE guidelines in the late 70S early 80’s since which the HSE has rather taken a back seat and allowed the industry and in particular the HSE approved medic regulations to become rather vague and poorly audited training providers. The world of offshore medicine has moved on but the regulations have not.

A Jaundiced view!

This has allowed many organisations to spring up especially in the last 10 years offering exciting remote area medical courses and while we’re at it the HSE offshore medics course.

Now the jaundiced bit; this is in part due to the privatisation of war by most European and US governments and the rise of the private security firms. This has led to an increase in Remote health care jobs especially in “High Risk Areas” This will be obvious to most people who watch the news or read the paper, it is a very lucrative growth industry. In reality the edges blur between private contractors and government sponsored contracts so be sure what it is you want to do and spend your money wisely on your chosen course. Why all the controversial stuff above, well this is because there are a lot of scurrilous people out there purporting to be “Remote medical/ HSE offshore/ Hazardous area” training providers and Medics who have skills and experience in tactical situations, sorry if it upsets any of these guys but it does not necessarily mean you will hack it offshore on a drilling rig, however, you have experience and strengths just be advised.

I know I would be out of my depth in a Toyota convoysing through Kabul taking fire so understand that every job requires training, experience and time to make it work well for you. The internet is full of companies offering courses so research them properly; you will also meet people with loads of abbreviations after their name so again, be advised.
Training Providers

One of the best offshore medic’s courses going presently is at CAPITA in Montrose; you will get exposure to the whole world of offshore training and be exposed to experienced offshore medics who will grumble on about their extra roles. The course offers a very good ACLS module which will stretch you more than some companies do.

Aberdeen Centric

The UK offshore scene is very Aberdeen centric, although there is evidence to suggest that some companies are looking at other less expensive locations. Aberdeen styles itself as Europe’s Oil capital and quite right, the industry was born there. However, it is expensive to get too and I think with other UK areas becoming more productive (Shetlands, Dundee and of course fracking on land sites coming soon) I think that some of this power will start to drift away. On the southern area of Britain are there are other places you can take courses, Warsash college in Southampton can provide BOSIET, MIST STCW 95 courses, Ex MED (Hereford), INTERDIVE (Plymouth), offer HSE medics courses, so you don’t have to go to Aberdeen.

As above Aberdeen is expensive to get to and stay in etc. So once you have completed your basic courses consider working abroad. You can get to a lot of places in the same time and expense it takes getting to Aberdeen and likely as not your company will pay travel. If you work abroad you will need to consider Income tax and National insurance, you can make voluntary contributions, and I would advise researching this in more depth.

Other Jobs

Do not think for a minute you will be left alone in your clinic to polish the scalpels and straighten the sheets; you are an expensive piece of kit that provides no value to the company, they have to have a Medic by law. Therefore expect all manner of Shitty little jobs from: running the welfare shop, welcome on-board inductions, OIM secretary, COSHH librarian, Safety officers assistant, Radio op and weekly hygiene inspections. A lot are annoying stupid little jobs, however, sitting in the sickbay with hardly anyone coming to see you will be worse even if you have internet.

IRHC and Voluntary registration

The IRHC confronted HSE a few years ago and said the Offshore medic role is out of date and many providers of medics are being inundated with “dodgy” CV’s and weak or poor training means that many “new” offshore medics have got into trouble when confronted with the actual work offshore on rigs, survey vessels and platforms. The HSE reply was basically this, come up with a voluntary register and as there is a lot of money in the industry start regulating yourselves and we will provide top cover. So that is what IRHC has been trying to do, it has some big players involved who have signed up to its principles, however, I would point out that some seem overly keen to over regulate the training providers and favour the big companies providing care. The IRHC is evolving into a credible organisation and I have taken it upon myself to occasionally voice an opinion as is my right as a middle aged bloke, a bit like I am now.

In the paragraph above this we discussed “Other jobs” one of the things that IRHC is doing is raising the profile of offshore medics by pointing some home truths to the employers. Some of these are that the role of Medic in a remote environment with an aging workforce and an increasingly litigious society is more important now than it has ever been. IRHC is the vehicle pushing this forward, however, there sponsors are the big companies and they are selling Medical products such as “topside” and Occupational health this is not a bad thing in my opinion.

We can no longer nail a packet of Paracetomol to the door. Everything has to be documented (they would not drill a hole without documenting it) and of course the crews avoid showing any weakness as there is a very “macho” culture offshore so instead of coming to you for formal treatment they will hide it or go to the “locker
room pharmacy” in other words self-medicate. This is supposedly regulated at heli ports with medication declared on arrival offshore to the medic, but there are many ways around this. So be advised and remember this, when your first patient says to you “I’ve got chest pain but I can’t go in!” Several years later the claim is made and you have to visit the company solicitor to give your side of the consultation. Remember to the offshore worker time off is money lost. A minor first aid case to you will be a big issue to management as it will mean lost bonuses. You have been warned.

The IRHC is also trying to rid the offshore world of some poor or even dangerous medics. There are documented cases of struck off Doctors and Nurses getting jobs off shore also those with falsified qualification and addiction abuse. Until now there was no “over watch” historically the HSE ignored this issue probably due to lack of funding. The IRHC has created the voluntary register to give surety to employers that the medics or Remote Health Care Practitioner has bona fide qualifications it is also a good joker to play when confronted by angry OIM’s that you have a duty of care and risk losing your registration so if it means upsetting the rig management or losing your livelihood goes which is going to happen!

**Occupational Health**

This is a big issue now offshore and is being pushed by nearly all companies, so read up on HSE website about:
- Noise induced hearing loss (NIHL)
- Hand arm Vibration (HAVS)
- Respiratory protection, Skin conditions affected by chemicals, Night shift working, Display screen equipment, Benzene, etc. depending who you work for they will test for different things and as it is cheap they will use the Medic to test crews offshore, I personally think this flawed as people are working physically hard 12 hour shifts and have little time to come in, but that is my opinion.

**Basic Offshore Courses**

- Minimum Industry Safety Training (MIST)
- HSE Offshore medic’s course,
- Basic Offshore Survival and Emergency Training (BOSIET)
- Safety Training Courses (Merchant navy minimum standard) STCW 95

**Courses that look good for your CV**

- COSHH assessors (Medics on a lot of platforms .rigs run the COSHH library) look at Alcumus
- Potable Water management (Legionella awareness)
- IOSH or NEBOSH (beware the combined jobs of medic /safety officer you will end up doing safety all the time)
- VANTAGE (lots of medics do “Heli admin” this is the system used by most UK rigs to monitor the Persons onboard)
- Presentation skills Well (again) Medics offshore do a lot of welcome onboard inductions, so you need the ability to stand up and talk (deliver) training to people.

**GMDS radio course**

Intermediate food hygiene certificate, for these look up your local council or just Google, there will be loads especially local colleges so cut down on expense.

**First Aid / Casualty handling**

It may seem obvious to me, however, there are medics, Doctors, nurses, paramedics out there who can work wonders inside a formal structure with everything within a hands reach or just down the corridor or surrounded by other experienced health care professionals doing what they were trained to do but take away all the toys. Now you are on a rig at 03:00 in winter during a blizzard you have been pulled from your bed and you are standing on open grating 150ft above a churning north sea trying to work out the best way to get a middle aged obese casualty from the drill floor to the sickbay or heli deck, your time starts now!
Yes, it requires skill and knowledge; also you are the lead resuscitator, and your first aid team leader. Yes you will have a Doctor on the phone but that’s it they are on the phone you are still on the drill floor, so no you won’t have a phone until you get to the sickbay. The AED has worked and re animated the casualty yet you still have long way to go!

The 4-5 roughnecks will be expecting you to take charge the OIM will want a sitrep and that takes skill. They may never have done a first aid course either so be prepared if management will not help with training then you will need to take some action. You could be an hour before a Search and Rescue helicopter gets to you, if you are lucky and the weather is good. It is a long time resuscitating without consultant supervision, blood gases, CT scanner, propaq monitoring, x-ray etc. Also factor this in it is probably 2 years since you last had a serious casualty to deal with so what is the dose for clot busting drugs again?

Useful Websites:

IRHC  
http://www.irhc.org.uk/C  

LINKED IN  
International SOS  

Warsash maritime college  
http://www.warsashacademy.co.uk/home.aspx  

INTERDIVE  
http://www.interdive.co.uk/  

Ex Med  
http://www.exmed.co.uk/  

Frontier medics  
http://www.frontiermedex.com/  

CAPITA offshore  
http://www.capitabehalthandwellbeing.co.uk/careers/medic-job-opportunities  

Alcumus/SYPOL  
http://www.alcumusgroup.com/compliance/

And another thing!!!

Right so what started as a little advice to a friend has grown into a monster, heavily influenced by cynical grumpy middle aged bloke’s experiences offshore. It is not all green fields and fluffy clouds nor is it a black hawk down casualty situation with incoming rounds, but it will be somewhere in between, the pay is good, the benefits can be excellent and the time off is good too, so over to you, lofty!

Simon Harvey  
mithras1963@hotmail.com  

(Submitted August 2013)
'Remotely Useful'

This section is available for book reviews, equipment reviews and links to other organisations that could provide some useful help to the readership. Content is a mixture of commissioned material and unsolicited contributions, the Editor having reviewed appropriateness for inclusion.

If you wish to make comments, why not email info@irhc.co.uk or post a blog on the IRHC website www.irhc.org.uk or visit the IRHC Facebook page http://www.facebook.com/pages/Institute-of-Remote-Health-Care/256189257738913?sk=wall

Letters

The letters section is available to readers to feedback on elements of the Journal or to respond to articles. Responses to articles would be expected to be evidence based and list appropriate references if disagreeing. ‘Me too’ publications are discouraged!

Footnote

The Journal of the Institute of Remote Health Care is a service to all levels of membership. Its aim is to encourage equity in the development of the speciality.

All communication should be to the Editor, Dr Malcolm J Valentine, via email
editor@irhc.co.uk

The Editors decision is final in all aspects of publication. If quoting articles from the Journal, we respectfully ask that the Journal's role is acknowledged.

Editorial Board:

Dr Malcolm J Valentine (Editor)
Professor J N Norman, Aberdeen
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Notes for Contributors:

Leading Article

Leading Articles will either be commissioned to deal with a specific topic or a personal view on an issue of importance to remote health care. Commissioned articles would be preferably referenced. Personal views should be properly referenced in Vancouver style. A leading article should be in the range of 1000 – 2000 words.

Original Articles

Original Articles should be in the range of 1500 – 3000 words in length. They should be referenced in Vancouver style. For instance, a journal article:

A paper should represent original work preferably an item of research that contains an accepted method of evaluation. It may be possible to include a non-research paper if it was sufficiently critically self-aware.

Developments in Remote Health Care

This section is available for non-researched contributions that nevertheless would have merit in being printed. Practical innovations in remote health care can be included here. Successes – and failures – can be covered. Case reports are particularly valuable and should be anonymised and written in the third party style. Reference to available knowledge on the issue being addressed would be helpful. The Editor will review these contributions and seek clarification where necessary before publication. Articles here should be no more than 1500 words.

'Remotely Important'

This section is a sort of ‘soap box’ section that can include hints, tips, ideas, requests for people to respond to an idea or concept or a commentary on a current issue affecting Remote Health Care. Brief articles of up to 500 words can be included here (occasionally longer at the Editor’s discretion); they need to be honest and non-offensive, but not referenced.

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