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. It is focused on issues relevant to wherever there is remote health care provision – all ‘corners’ of the globe. The Journal has now acquired 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.

Welcome to the July 2017 edition of the Journal!
The directors of the Institute of Remote Health Care were saddened to hear of the death of Professor Tar-Ching Aw who was a member of the editorial committee of this journal and he had supported and advised the Institute for several years. Professor Aw was qualified in medicine and obtained his PhD in London before training in preventive medicine at the Centres for Disease Control and Prevention in the USA. From a central academic base in Birmingham he became Professor of Occupational Medicine at the University of Kent in Canterbury before moving to the Chair of the Department of Community Medicine at the UAE University in Al-Ain in 2007. He also served for a time there as interim Dean of the Faculty of Medicine and Health Sciences before becoming Chief Advisor in Occupational Medicine to ADNOC. He had just completed a new edition of his classic book on occupational Medicine with Professor David Koh of Brunei. It is due to appear in print this month. Professor Aw was a scientist of much energy and innovative ability who made a great contribution to his discipline and he will be sorely missed.

The Institute has had a chequered and at times explosive history since its establishment in 2007. Its original mission statement – the improvement of healthcare for those who live and work in remote places with hostile environments - is as relevant, or even more so, a decade later than at the time of its origin. The broad aim was an ambitious statement from a standing start and its continued existence and growth reflects the vision and appreciation of its membership in its potential value for those involved in the care of remote communities. Originally very much occupied with the problems of those responsible for the health of the personnel of the oil and gas industry it has now broadened its horizons towards other occupational and community groups in ever widening geographical areas. The essential importance of research is emphasised and discussed in several contributions in this issue but time has shown that this is a complex and difficult area to establish by such a relatively small, independent and self-funding organisation as the Institute which has no central financial support aside from its membership.

Tar-Ching Aw is only one of a group of innovative men of vision who have seen the value and importance of the development of remote medicine in international areas. Such men come from a variety of backgrounds and disciplines and include Dr Colin Jones of BP, Vice-Admiral Sir John Rawlins and Sir Graeme Catto. Tar-Ching Aw is the latest member of this illustrious group and since recent IRHC emphasis reflected by several contributions in this issue has been of the establishment of IRHC research it is suggested that an appropriate memorial to this dedicated scientist would be the establishment of an IRHC Research Fellowship which the Institute could award to one of its members who wishes to pursue research within one of its associated universities leading to the award of a higher degree.

If there is support for this proposal a dedicated fund will be set up by the Institute administration and arrangements made for establishment of the Fellowship.
Much water has passed under the bridge since the heady days of the 1970s when the oil industry arrived in the North Sea and started drilling for oil in one of the most hostile environments on earth. The quiet even tenor of life in the North East corner of Scotland was disrupted and changed for good and there was a feeling of excitement and vibrancy in the town as the inhabitants struggled to cope with the needs of the ‘immigrants’ such that a native Aberdonian became almost an endangered species!

Fifty years later excitement has largely been replaced by despondency as the action moves irrevocably eastwards and Aberdeen – greatly enriched in wealth and facilities, will never return to its origins as a quiet agricultural and fishing town. It now has an international reputation and a new focus on exporting the expertise and business it developed in much the same way as Houston did when the action moved east to Aberdeen.

The new demands for healthcare of the vast offshore personnel really challenged the medical profession of an area which had a proud reputation for medical excellence in both academic and practical terms. The chaotic early days were, however, soon replaced by the emergence of a system of healthcare which not only suited the industry well but became accepted as providing the basic tenets of the system of healthcare which functions equally well for those who live and work in remote locations world-wide.

This was achieved by collaboration between the medical directors of the Industry and the academics of the two universities of the town. The basic scheme of training, to cover the time interval before the remote sick or injured man could be provided with the medical facilities needed for his care or survival was the first priority. This was followed closely by increasingly sophisticated communications and the emergence of a co-ordinated group of doctors capable of providing advice and medical direction at a distance together with an appropriate evacuation facility.

The fifth priority was the establishment of ongoing research and audit in both Aberdeen universities but once again as a collaborative effort between industry and academia. Research is essential if progress is to be made in any new system of medical endeavor and it can only be carried out successfully within a university, with the necessary infrastructure, or in a large company established for the prosecution of research. That is why there was a period of stagnation early in the current century when both Aberdeen universities opted out and sold off their offshore facilities.

Remote healthcare has now emerged as a distinct specialty of medicine and its importance has been recognised in many international areas outside the industry. There is still a long way to go before the practice of remote medicine fulfils the needs of both the industrial and remote civil communities of the world. Progress depends on the establishment of ongoing collaborative research between several nations and co-ordinated by a leading and well recognized university. The core discipline of remote healthcare was established in Aberdeen by collaboration between medical industry and academia and if it is taken forward effectively by further research it will mark one major legacy of the time which
the oil industry spent in Aberdeen and in Scotland.

To take this forward a new research initiative is currently being promoted which will compare the needs of the North Sea with the Middle East and the vast remote areas of Russia alongside the Continents of Asia, Australia and Africa and the USA. The IRHC is a complex organisation, on the one hand representing its members with membership services and on the other taking forward academic and research initiatives. The Directors of the IRHC remain committed to both and are striving to ensure that progress continues to be made on all fronts.

The initial research project will build on the previous work including workshops and a Delphi Study resulting in the Competency and Framework Document published by the IRHC 2017.

This was designed to allow the institutions interested in providing training to design appropriate curricula, while the IRHC continued to discuss the appropriate nature of courses, their accreditation and the awards towards the emergence of a recognized and qualified new specialist.

As pointed out in the last issue the 2017 consensus document is only a beginning if we are considering an international practitioner capable of functioning in a variety of different environments with different diseases, local laws and dangers. This clearly requires the establishment of collaborative, international research. This has been difficult to establish but progress is now being made.

A significant first step was the establishment of a branch of the Institute in Siberia in association with the Centre for Corporate Medicine (CCM) which allows the possibility of establishing collaborative research with the University of Tomsk.

A second step is the developing relationship between the IRHC and the Zayed Centre for Health Sciences in the UAE University in Abu Dhabi and the third is the current interest of certain commercial corporate members of the IRHC. A proposal is now being prepared on the comparative educational requirements to function effectively in the North Sea, Russia and the Middle East. This needs a central university connection for co-ordination and the assurance of academic research rigor together with a recognised, international institution to accredit the courses resulting from the research and the examination of the trainees. Discussions are underway with two such bodies and hopefully further information on the results and progress will be provided in the next issue of the journal.

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The threat and challenge of hostage taking

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Abstract: A hostage incident is a crime which may have many motives. It can have long term and serious effects on the hostage. Steps can be taken to reduce the risk of being taken hostage, and there are ways to minimize the adverse effects of being a hostage.

Keywords: Hostage taking, negotiation, effects, coping

Introduction

(a) Definition
According to Scots Law and English Law “abduction” and “kidnap” respectively represent the crime of detaining another person against their will without legal authority, whatever the reason.

“Hostage taking” is not a legal term: it is a lay term. However, it will be used here because of its familiarity.

(b) Aims
This paper aims to cover:
• motives for hostage taking,
• why we use negotiation to resolve a hostage incident,
• normal and pathological reactions to being a hostage, and
• survival and coping techniques for hostages.

(c) History and features of hostage taking
This is not a new crime, there being reference to it in the Bible and medieval texts (Alexander and Klein, 2009). It has however achieved, over about 40 years, a particular prominence, particularly because of recent terrorist activity. It is a low cost, high yield crime.

Box 1: Who takes hostages?

• criminals interrupted in the commission of crime
• political, ideological and religious extremists
• mentally disturbed
• those under the influence of alcohol/drugs
• prisoners
Most incidents are short-lived but some may go on for years and a number end tragically in the death of or serious injury to the hostage. Whatever the duration of the incident, the hostages are at most risk during the initial capture and during the rescue. Unfortunately, some deaths are caused by the rescuers, as was the case with Linda Norgrove, an aid worker in Afghanistan, whom the USA Special Forces tried to rescue in 2010. Even more catastrophic failures occurred in the abortive attempts to rescue hostages from the Dubrovka Theatre in Russia (2002) and children in the Beslan School, also in Russia (2004) (McMains and Mullins, 2014). The efforts to effect these rescues by the Russian authorities resulted in 130 and 334 hostages respectively, largely due to poor preparation, poor tactics, and poor operational procedures.

Some incidents are opportunistic but others, particularly those involving hostages with a high “market value”, may be carefully planned and carried out by well-organised, professional groups. Targeted groups include VIPs (e.g., wealthy business people, politicians and “celebrities”), Aid workers, NGO personnel, staff employed by international companies and military and police personnel. The days when a Red Cross on your back and vehicle afforded your immunity are gone. There are a number of high risk areas, although they change over time.

- Libya
- North Africa
- Nigeria
- Afghanistan
- Pakistan
- Iraq
- Chechnya
- Columbia

Aircraft highjacks are now uncommon because of enhanced security but maritime incidents have become a serious problem particularly around the Horn of Africa, and Somalia (Haberfeld, von Hassell and Brown, 2013). The capture of a fully loaded oil tanker and its crew represent a lucrative prize.

**Different groups have different motives.**

Motives can be divided into two main categories (although these are not mutually exclusive): “expressive” and “instrumental” (Lipsedge, 2004). The former describes the efforts of those who want to air a grievance or frustration. “Instrumental” motives underlie attempts to gain a certain outcome, e.g., a ransom or release of prisoners. Sometimes demands offer opportunities for negotiation, but some are totally unrealistic. (When I was in Iraq, a common demand was for the Coalition Forces to evacuate within a week!).

Sometimes it is difficult to identify the real motive, and there may be mixed motives. Initially, the motive may appear to be a simple financial one, e.g., a ransom, but ransoms can be used to fund and support different political, religious and ideological causes. Hostages may be “sold on” to certain organizations including terrorist groups which have their own motives.

Recently, there has been an increase in the frequency of hostages being executed as a gruesome way to highlight a cause. Nobody could forget the carefully and dramatically orchestrated beheadings (broadcast on Al Jazeera) by Mohammed Emwazi (aka “Jihadi John”). (Verkaik, 2016). Sometimes body parts have been sent to the families or the authorities.

Unfortunately, it is clear that major terrorist groups are expert at manipulating and using modern IT systems of global communication.
Ransoms and financial gains

Popular crimes in South America are “Tiger Kidnapping” and “Express Kidnapping”. In a Tiger Kidnap the hostage is captured and forced to make a withdrawal from a bank or building society account, or a family member is forced to do this. Express Kidnaps involve a level of financial demand which can be readily met. Thus, these can be abbreviated events.

The UK authorities will not pay out for ransom demands, although they cannot stop families or insurance companies doing so (as was the case with the Chandlers, an elderly husband and wife captured by Somalian pirates whilst sailing in the Indian Ocean, near the Seychelles in 2009).

Sadly, the payment of a ransom does not guarantee the safe release of a hostage, as the person may already be dead. This is why the negotiating authority will regularly seek “Proof of Life”. Most of us, who travel in high risk areas, complete a “Proof of Life” form. It contains some very personal information as well as a number of questions which [ideally] could only be answered by us. The perpetrators would be asked to put a couple of these questions to us. Correct answers would as good as a guarantee that we were alive. These documents must be left with a totally reliable and informed person whose name should be given, e.g., to an authority such as the Foreign and Commonwealth Office.

Why do we negotiate?

Up until about the late 20th Century the usual response of the authorities to a hostage incident was overwhelming force, sometimes described as the Suppression Model (Needham, 1977). A much publicised successful example was the armed intervention by the Special Air Service to end the siege at the Iranian Embassy in London in 1980. It has heavily influenced opinion and expectations such that many cannot understand why it is not the method of first choice in response to a kidnapping.

Armed tactile interventions have not always enjoyed such success, as we saw above. Another failed effort, which represented a landmark in developments regarding the response to such incidents, was the tragedy of the 1972 Munich Olympics (Jonas, 2005). Eleven members of the Israeli wrestling team were taken hostage by the “Black September” group (a faction of the Palestinian Liberation Organisation). During the attempt to rescue them eleven athletes and one police officer and ten terrorists died.

The USA authorities, concerned that their country might not be capable of dealing effectively with such an incident, reviewed options. Following an initial review by the New York Police Department, the FBI developed the Negotiation Model. This was not intended as a substitute for armed intervention, because there will always be a need for that, but as another option to be tried to avoid death and injury to all those involved in such an incident.

Opening up a dialogue with perpetrators has proved to be very successful for various reasons, particularly because it “buys time”. The advantages of this are set out in Box 2.

The covert and time-consuming nature of the negotiation process is however often a source of frustration to the families and friends of hostages. For so long nothing seems to happen, and, even when advances are made, these may not be made public for tactical and/or security reasons. In the UK the police will deploy Family Liaison Officers who can inform and support families as well as collect from families information which might assist negotiations.

Box 2: “Buying time”: key feature of negotiation

- chance for all parties to “cool down”
- chance to clarify perpetrators’ motives and demands
- gather intelligence to facilitate negotiation and a tactical intervention, if required
- time to prepare a rescue plan
- time to prepare an “exit” plan should the perpetrators agree to end the incident.
(We never use the word “surrender” to the perpetrators.)
Negotiating with terrorists

This is a contentious issue. Many governments claim that they will “never negotiate with terrorists”. The reality is that whatever governments claim in public, they do negotiate with terrorist groups, as Prime Minister Thatcher did with the IRA, and the Nigerian authorities did with the terrorist group, Boko Haram, who kidnapped over two hundred schoolgirls. Of course, it is a tough challenge dealing with terrorists who commonly make almost impossible demands; display a disregard for the welfare of the hostages, and have no fear of imprisonment or even death. However, the gains described in Box 2 still prevail.

What is negotiable?

In the UK only certain items are negotiable; others are certainly not as shown below.

<table>
<thead>
<tr>
<th>Negotiable (include)</th>
<th>Non-negotiable (include)</th>
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<tbody>
<tr>
<td>Food</td>
<td>Alcohol/drugs</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>Exchange of hostages</td>
</tr>
<tr>
<td>Money</td>
<td>Weapons</td>
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<tr>
<td>Freedom for hostages</td>
<td>Release of prisoners</td>
</tr>
<tr>
<td>Publicity</td>
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<td>Non-alcoholic drinks</td>
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<td>Third Party Intermediary</td>
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Third Party Intermediaries (TPIs)

Occasionally the police will permit certain individuals to communicate with hostage takers. These include: family members; lawyers; representatives of the media, clinicians, and partners or close friends.

There has to be strong justification for involving a TPI because the tactic can backfire badly. For example, it has been known for a TPI to blurt out (either accidentally or deliberately) information of value to the perpetrators.

Acute reactions to a kidnap

Although individual victims vary, especially if they have been trained in “survival techniques” (see page 12) there are a number of typical reactions.

- shock, denial (some of the audience in the Moscow theatre siege thought that the appearance of the Chechnyan terrorists was part of the military musical they were attending)
- anxiety (panic is not very common)
- “frozen fright” (a complete lack of emotional and physical response)
- disorientation (captors will create this through e.g., the use of hoods and blindfolds)
- anger and aggression (this can be risky)
- helplessness

Subsequent reactions

As the incident progresses, some of these acute reactions will wear off, and be replaced with, for example, withdrawal into oneself, marked dependence on the captors, depression, hopelessness, abandonment (“where are the rescuers?”) and guilt. Some hostages feel guilty because of the suffering or deaths of other hostages (“survivor guilt”) or for not putting up more resistance during the initial kidnap (“performance guilt”).
Psychological reactions after escape or release

For ethical and practical reasons, it is often difficult to follow up former hostages. Much of our knowledge derives, therefore, from biographical and autobiographical accounts of hostages' experiences and reactions. Some helpful ones are provided in Box 3.

**Box 3: List of helpful texts**

- Brian Keenan (1991) (hostage in Lebanon for four and a half years).
- Terry Waite (hostage in Lebanon for four and a half years).
- Stephanie Slater (and Pat Lancaster) (1995) (Slater was held for 8 days in a wheelie bin with lockable lid.)
- Natascha Kampusch (2010) (abducted as a 10 year old; held for 3096 days in secret cellar).
- Paul and Rachel Chandler (2011) (elderly couple, yachting near the Seychelles, kidnapped by Somalian pirates and held for a year until ransom was paid).
- Peter Shaw (kidnapped in Tbilisi, held in underground prison for 13 months).
- Puk Damsgard (2016) (held by the ISIS for 13 months; forced to watch cellmate die).

Generally, former hostages display remarkable resilience, and some claim to feel psychologically stronger after their experience. However, for some it was a damaging experience. “At risk” factors for long term and adverse reactions include: the extended duration of captivity; severe confinement and restraint; demoralizing living conditions (e.g., no light, excessive cold or heat, no fresh air; cramped conditions, or no exercise); lack of any meaningful social contact, and physical and or sexual abuse, and torture. Busuttil (2008) provides an excellent description particularly of the effects of torture and deprivation.

Box 4 lists a number of common longer-term reactions reported by former hostages.

It should be noted that children and younger persons may not report the same post-traumatic reactions as adults. Their distress may be translated into “bad behaviour” such as tantrums, bed-wetting, truancy, disobedience, and petty crimes (e.g., shop lifting). They may also display excessively dependent and clinging behaviour.

**Psychopathology**

Many former hostages do not develop a mental illness attributable to their captivity. A number do, and these conditions can be enduring, disturbing and incapacitating (Alexander and Klein, 2009).

**Box 4: common reactions on release or escape include the following**

**Cognitive**

- poor memory and concentration
- disorientation and confusion (especially after extended captivity)
- preoccupation with the incident
- Hypervigilance (excessive sense of risk)
- flashbacks of the incident (usually visual but can be any modality)
- nightmares

**Emotional**

- irritability
- anhedonia (a loss of pleasure from things that were previously enjoyable)
- anger (at the way the incident was handled, and at how the hostage has been dealt with after release or escape)
- guilt (“performance guilt”) for not having handled the incident better; “survivor guilt” if other hostages have suffered even worse; have been murdered, or are still in custody)

**Social**

- withdrawal from friends (many families have described it as though the former hostage “… had built a wall round himself”)
The most common psychiatric disorders are, according to the International Classification of Mental and Behavioural Disorder (ICD-10, WHO, 1992).

- phobic and anxiety
- adjustment disorders (including depression)
- somatoform and dissociative disorders
- substance misuse
- post-traumatic stress disorder (PTSD)

PTSD was deliberately listed last to counter the over-emphasis there has often been on this condition. Most trauma victims (including kidnap victims) do not develop PTSD. When it does occur, in about 80% of the time, it occurs along with the co-morbid conditions of depression, anxiety and substance misuse (Klein and Alexander, 2009).

“Enduring personality change after catastrophic experience” (ICD-10: WHO, 1992) is less common than those listed above. It is however perhaps the most disabling. It has been observed in former hostages as well as concentration camp survivors, torture victims, and those exposed to the most severe and/or extended trauma.

The characteristic symptoms are:

- a permanently hostile and mistrustful attitude
- social withdrawal
- feelings of emptiness and hopelessness
- chronic feeling of being “on edge”
- a sense of estrangement

**Physical effects of being a hostage**

It is important to remember that being kidnapped can have a number of physical symptoms both at the earliest phase and even subsequent to escape or release. Nausea, physical weakness and hyperventilation may occur during and immediately after the kidnap. Due to poor diet, lack of sleep, lack of exercise, poor sanitation and other adverse environmental circumstances, hostages may develop dermatological, musculoskeletal, dental and gastro-intestinal problems during captivity. Also, the experience may exacerbate pre-existent health problems such as angina, diabetes and hypertension.

**The “Stockholm Reaction” (or “Syndrome”)**

The so-called “Stockholm Syndrome” was first described by Nils Bergerot, a Swedish psychologist, after an armed raid on a bank in Stockholm. The authorities noted that hostages and their captors seem to have bonded during the siege. After their release the hostages collected finance to fund the robbers' defence. Some would not give evidence against them. The raiders displayed a reciprocally respectful and positive attitude to the bank employees.

It is certainly not a “syndrome” as that term implies a pathological reaction: it is not. It is a normal, understandable and, usually, adoptive reaction (Cantor and Price, 2007). Also, these reactions have been observed among prisoners and others detained for considerable periods. It is an over-used term, as it does not always occur.

It requires certain pre-conditions, which are listed in Box 5.
How to survive as a hostage

In addition to trying to cultivate the Stockholm Reaction, there are a number of tactics which hostages can use to lessen their chance of abuse and death. These include those listed in Box 6.

Should you try to escape?

Any effort to escape must be assessed carefully. You must have a chance of success. If you try but are recaptured, you will suffer through punishment and increased security: you might even be killed.

Should you use physical force to overwhelm your captors?

Again, such an attempt must be thought through, if at all possible. If you are in the hands of terrorists or other serious criminals, you need to remember that they are likely to be “street-wise” and be familiar and comfortable with violence. If they are armed, it is very likely that they know how to use their weapons.
There are a number of questions to consider (time permitting), as presented in Box 7.

**Box 7: Ask yourself these questions**

- are you sure about the number of perpetrators there are? (There is often a “silent, sleeping” one in reserve for emergencies.)
- how confident are you in your physical ability and fitness?
- will you use improvised weapons? (if so, what?)
- are you sure you can fight “dirty” and to the “bitter end” – whatever that might be? (The perpetrators will have no “rules of engagement. Could you stick a steel biro, or similar object, into an eyeball or into the supraclavicular notch? [the soft boneless area just below the “Adam’s Apple”]. Are you confident you could strangle sufficiently strongly until you achieve unconsciousness or death?)
- if there are other hostages with you, can you rely on their support?

*NB: If you are trained in some martial art, use your most incapacitating moves*

If you are not trained, do not make mock moves and utter clichéd grunts and gutteral “Karate like” noises. You do not know in what they might be trained. If they see through your deception, you are in trouble. If they are persuaded that you are trained, you are also in trouble as they may consider you to be an unwelcome source of threat and trouble: they may kill you.

**Are there ways of reducing the risk of being kidnapped?**

There is no absolute protection, but there are steps you can take.

- Seek expert, local advice, including the reports provided by the Foreign and Commonwealth Office
- In the threat area be much more alert and vigilant than normal
- Every now and again check discreetly if you are being followed. (Our view is that if you “feel” you are being followed, you are probably correct.) Do you see the same person around the entrance to your hotel or workplace when you come and go? When I have been away from the hotel or residence, I often ask the hotel Reception if there had been anybody enquiring about me, and who they were. Prospective hostages, especially “high market” value ones are commonly held under surveillance for a spell to check regular routes, habits etc. This enables them to develop a plan of action with likely success and least risk to themselves.
- Demand that your “meet and greet” arrangements, e.g., at the airport, do not include your name, place of origin or destination on a board or card.
- Be cautious about taxis you get into. Use only firms recommended to you by your hosts or a reliable source.
- When out walking alone, do avoid isolated area and darkened alleys etc. even if they do represent short cuts.
- When walking in streets, walk facing the oncoming traffic (to ensure nobody can creep up behind you in their vehicle).
- Learn your route: do not walk about with a map in your hand (“Spot the visitor”!) 
- On your route, identify where there are possible refuges (e.g., police stations, hospitals, Embassies) should you get into difficulties.
- You should inform somebody, e.g., hotel Reception, where you are going and your route. (I also inform my host, and provide an ETA.)
Summary and conclusions

Hostage incidents vary greatly because of the perpetrators’ different motives and the response of the authority. However, they have the potential to cause serious and enduring psychological damage, even though humans display remarkable resilience in the face of adversity.

Armed tactile intervention must be used on occasions, but negotiation is usually the first response. Even if a tactile intervention is ultimately required, the earlier negotiations will have generated valuable intelligence to facilitate it.

Travellers, workers and locals can reduce the risk of being kidnapped by taking simple precautions, largely based on vigilance. Also, there are techniques hostages can use to ameliorate their situation and reduce risks to their personal safety whilst in captivity.

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The place of research in the development of good healthcare.

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It is universally acknowledged, and indeed pretty obvious, that first base in the management of any medical condition is the establishment of a diagnosis. Without a firm diagnosis treatment can be very difficult and confused. So it is also with research where the firm definition of the basic problem to be investigated is vital if confusion is to be avoided and time wasted pursuing false leads.

This was shown to be true in the 1970s when the oil industry arrived in the North Sea and started drilling for oil in one of the most hostile environments on earth. The barely tried experimental technique of saturation diving was needed to fix the huge structures required to the sea bed over four hundred feet below and by an industry not yet experienced in such engineering. The initial human cost was horrendous and was unacceptable particularly since the action was in a very developed area of the world and within sight and comment by the world’s media.

Following a period of medical mayhem with much confusion and to determine a suitable means of health care the problem was addressed by collaboration between the industry and academia when the medical directors of BP approached Aberdeen University. These two agencies approached the problem like any other medical problem by first identifying the basic nature of the problem. This was, of course, the time and distance which separated the sick or injured man from the facilities he may need for his care or even survival. After that vital step it was possible to set about finding a solution by the recognized research process.

Recognising the complexity and the possible eventual extent of the problem they then proceeded to establish a research Institute in the University of Aberdeen. This was the Institute of Environmental and Offshore Medicine and it was also a collaborative project between industry and academia. Critical research was established and soon produced the way forward, (1), by the identification of a scheme of healthcare consisting of five priorities:

1. Universal training in immediate care for the population at risk.
2. Development of sophisticated communications.
3. Establishment of a medical support unit.
4. Appropriate evacuation availability.
5. Research and audit.

These five priorities have survived the test of time and still form the basic tenets of any system of remote healthcare. Further research in association with the very different scientific group of the National Environment Research Council, the British Antarctic Survey, revealed that the system worked equally well in very different populations working in even more remote and hostile conditions, (2).

The research theme was enhanced and enlarged in the Robert Gordon University when the need to develop a new type of medical practitioner was identified to support this rapidly expanding and increasingly complex activity. Once again a start was made by collaboration between industry and
academia. A study was carried out on the reasons for evacuations from offshore structures in both routine and emergency modes in a first attempt to identify what such practitioners have to deal with and thus the skills required for them to be able to provide a competent service. This allowed the University to devise and deliver appropriate training courses. This project was in collaboration between all the major oil operating companies working in the North Sea at that time and RGU. The project was continued as an annual audit for some time and that demonstrated the adequacy of the system and the training and it provided early indicators of changes which may be needed. This research also revealed that the range of conditions occurring over the ten years of the retrospective study had changed and the whole situation was indeed dynamic with time. Thus the training requirements for medics needed change in content and emphasis from time to time. This was partly due to the ageing of the population but also to the development of safety departments and the increasing experience of the industry. Equally, new techniques were appearing which required new skills while older techniques were less frequently used, with consequent medical associations. Thus, saturation diving, the huge early medical problem, was largely being replaced by ROVs, (3).

This type of research is just as important to this day as the industry seeks further energy sources in increasingly more remote and hostile areas and as new hazards emerge such as war and terrorism. Industry will only be able to keep ahead of the game by continuing the research process but once again this will best be achieved if it works in collaboration with a well found and experienced academic institution.

About the turn of the century it was decided to attempt to export the Aberdeen system to the growing international scene and a relationship was developed between Aberdeen University and the UAE University in Abu Dhabi. This was designed to determine the value of the system in support of the populations of the Middle East Oil fields – both onshore and offshore. It also allowed collaborative research to be carried out to determine the value of telemedicine which had been pioneered in the Aberdeen Universities in association with Memorial University Newfoundland in both the practice of remote healthcare but also in support of remote education at basic levels and passing upwards to the level of higher degrees. The value of research supervision of projects carried out at a distance by junior scientists had also been shown in association with the British Antarctic Survey and all this demonstrated the vast importance of sophisticated communications which is now accepted as routine. This collaborative episode between the UAE and Aberdeen Universities finally demonstrated that the scheme developed in Aberdeen was suitable for a variety of international places with related medical problems. It also showed that the telemedical technique was equally useful for remote education both for the remote industry and also for remote education for the community. This could be from very basic first-aid for laymen through to higher degrees and during six years 10 PhD and 15 MScs were taken to satisfactory completion between the UAE University and Aberdeen University with one supervisor in Al-Ain and one in Aberdeen using telemedicine for continuing communication. This allowed the remote student to remain at home in his own environment and study a subject of interest to his own country or company rather than a subject chosen in a different country and of little interest to his own country, company or indeed himself. Post mortem pathology demonstrations were also introduced to the undergraduate medical students at the UAE University since this important part of medical education could not then be provided for cultural reasons. Finally, it was also shown that research carried out in the field by the young scientists of the British Antarctic Survey could be supervised and advise given by a senior scientist at home very effectively. All this opened up great new possibilities for international academic activity and could be said to have initiated the academic aspects of Global medicine,(4,5,6).

Just before the turn of the century the Health and Safety Executive took over the management of offshore healthcare in UK and issued a series of directives or licences. The Aberdeen Universities thus opted out and directed their energies in different areas.
It took some years before the absence of collaborative research was seen to make a difference for although many companies continued to indulge in various research projects they did not share the results since they were in commercial competition. And thus it was that the development of remote healthcare ground to a halt. A number of commercial providers of health services sprang up and many of the operating companies outsourced their training requirements and other healthcare responsibilities to them. Both the educational standards and the service standards provided by these companies was variable and research was virtually absent. The developing cadre of medics were also of varying standards, confused, unregulated and unhappy.

A small group of concerned enthusiasts largely, but not entirely, drawn from the previous university academic units – Aberdeen, RGU and the UAE Universities, thus established the independent Institute of Remote Healthcare in 2007. As before a start was made to identify the problems faced by the medics who were the emerging practitioners of offshore medicine. These had already been researched by one of the members of the RGIT Survival Centre (7) and can be summarised as being:

1. Professional isolation.
2. Lack of a professional status.
3. Variable educational standards and recognisable availability.
4. Lack of professional regulation/registration.

Attempts were made to correct these, by holding seminars and conferences and by the establishment of a website and this journal. By and large the operating companies and the commercial providers welcomed these moves which allowed dissemination of essential information of interest. The quality, expertise and basic competence of the medics was a major subject of discussion and confusion at this time. Once again progress was made by the establishment of collaborative research between industry and academia. On this occasion the new Institute co-ordinated research between Shell and RGU which produced an international consensus on the educational requirements to produce a truly competent remote healthcare practitioner for the international oil and gas industry. This was refined at several workshops and conferences and represents the views of 129 stakeholders drawn from oil operators, Universities and providers of remote medical services, (8).

Remote practitioners for the oil and gas industry are still not properly recognised as a distinct professional branch of the medical profession even although many have become very highly skilled in their distinct branch of medicine - highly trained, largely by their own efforts, and very important as the industry penetrates even more dangerous and hostile areas.

While all this is happening there is an on-going political battle in UK on the problems of the NHS. This is reminiscent of the problem of undertaking medical treatment or research without the establishment of a diagnosis or clear definition of the fundamental problem. This is particularly severe in the remote communities of the Highlands and Islands of Scotland. Equally, it is also a problem for other countries such as Northern Norway, Northern Canada and the vast areas of Siberia and Russia. It is possible that established practitioners for the industry could extend their professional activities to support such remote civilian communities while using the supportive and supervisory system developed in Aberdeen for the oil industry. This all requires further research for the consensus document is only a beginning in the establishment the educational requirements to produce a competent international remote healthcare practitioner for the oil and gas industry, since there are different disease patterns and environments in various parts of the world together with different legal systems and dangers. Further, it is necessary that the research should be carried out on an international collaborative basis so that internationally agreed curricula emerge. Logical progression from this will lead to the examination of the fully trained international practitioners by a credible medical standard setting institution such as a Royal College, followed by their regulation and acceptance into a professional home. Only when that is achieved for the oil and gas industry can attention be directed towards the
extension of their professional activity to the support of civilian communities.

The way forward is for such an institution as a credible Scottish Medical Royal College to establish a remote areas research centre to co-ordinate the required research supported by a series of international stakeholders. Effective research cannot be carried out successfully outside a University with an extensive infrastructure and which will work closely with the college on the nature and quality of the research. Much of the research should, however, be carried out in several appropriate international Universities.

There is thus some way to go for the Institute of Remote Healthcare to achieve the basic objectives set out for it by those who supported its establishment. Professional isolation has been addressed by the establishment of a web-site and this journal and by developing communications by these means and by holding seminars and conferences. Professional recognition is gradually being addressed by promoting research into education and hopefully the list will be complete when a Royal College accredits the research based educational process, conducts examinations and awards certificates. The new fully trained, competent, remote healthcare practitioners can then be admitted into a recognized professional home.

References.


IRHC Russia
IRHC Russia was launched earlier this year and is the first of our International Branches. Professor Andrey B Karpov outlines below the aspirations of the Branch and their planned activities.

The “InOtZdrav”, IRHC branch in Russia: goals and objectives
InOtZdrav Executive Director,
Doctor of Medical Sciences, Professor Andrey B. Karpov

The goal of creation

- Experience consolidation of medical care organization at remote sites (industry, remote settlements)
- Filling the gaps in the reference literature
- Design and compilation of recommendations and standards
- Formation of an independent platform for the exchange of views based on up-to-date IT solutions
- Scientific and research activity

Basic instruments

Online resources:
- Web site
- Social networks
- Forum

Information block:
- Publishing block
- News
- Publications of the association members and external experts
- International news and data

Scientific and expert activity
Training
Advisory support
Organisation of events for the professional community

Current issues

- Uniform standards of rendering medical care at remote and especially remote sites: equipment, medical evacuation processes, medicines, communication, etc.
- Recommendations on preventive measures: expansion of requirements for specific personnel admission, documents on labour hygiene, food safety, prevention of infections and non-infections diseases, prevention of alcohol and drugs abuse
- Recommendations on health promotion
- Integrated system to monitor professional factors at workplace, conduct clinical and epidemiological studies, and develop recommendations on reducing the burden of modifiable risk factors of major
diseases.

- Revision and adaptation of existing norms and regulations in the system of admission to work and regular survey, taking into account changing character of the population labour and the increasing role of artificial intelligence, nanotechnology and the decreasing role of human in industry
- Development and detection of future priority directions in industrial production and identification of emerging risks for providing the emerging needs of healthcare

The main strategic goal of the Institute foundation is the creation of modern competitive organization solving the following basic tasks:

- Analysis and generalization of data on current medical care system at remote sites, medical support of activities at the different types of industrial facilities (hydrocarbons extraction, mining enterprises, etc.).
- System of preventive measures with respect to most significant and occupational diseases, taking into account specific climate and geography, specific production activities, existing risk factors, including the techno genic ones;
- Emergency medical care system for traumas and acute diseases or complications;
- Evacuation system of victims or patients to hospitals (both inside of a country and abroad);
- Development of procedures for health care provision, recommendations and standards based on the analysis of international best practices;
- Formation of permanent and replenished information resource that promotes the increase of professional level of medical personnel, non-medical staff, as well as the awareness of employees about the risk factors of major diseases and methods of their prevention;
- Organization of educational process: seminars, courses, trainings; development of e-learning courses; organization of conferences and webinars.
- Carrying out scientific researches on risk assessment of the most significant diseases developed under industrial (techno genic) factors; participation in international research projects.
- Publication of information and methodical materials:
  - Standards, recommendations, and procedures of medical care provision (for the medical community);
  - Methodical manuals (for the medical community);
  - Information sheets concerning the risk factors of major diseases and existing prevention methods;

**Planned activities in the following directions:**

**Analysis of existing data on the organization of medical care system at remote sites in the Russian Federation:**

- Formation of a list of enterprises located remotely (depending on the industry);
- Assessment of employee's quantity of the enterprises and analysis of their age-sex composition;
- Analysis of basic production (techno genic) factors adversely affecting the health of employees;
- Formation of a set of tests and methods that allow to estimate professional impact on the human body quantitatively or qualitatively (measurement of concentration of harmful chemical substances (HCS), assessment of aerosols' characteristics in the air of working area, measurement
of the content of radionuclides, heavy metals, HCS in the employees’ bodies, evaluation of physical factors (noise, vibration, high, low temperatures, electromagnetic and ionizing irradiation));

• Formation of a basic list of equipment for the assessment (first of all, quantitative) of hygiene situation at the facilities and measurement of industrial chemical agents in the employees’ bodies of, as well as external impact of physical factors;

• Formation of the “industrial-sanitary audit“ algorithm for enterprises depending on the industry;

• Analysis of existing medical care provision system at remote sites (emergency, planned);

• Analysis of existing system of victims evacuation in case of urgent diseases, complications of chronic diseases, occupational traumas (for single cases or in case of emergency with a large number of victims);

• Analysis of the spectrum and prevalence of behavioral factors.

**Development of standards and recommendations for medical care provision at remote sites:**

• Assessment of the most significant diseases for specific groups taking into account age-sex composition and existing risk factors (climate, geography, and technogenic ones);

• Evaluation of the medical groups configuration at remote sites (medical staff, nurses, paramedics, qualification requirements, specialization of doctors) depending on the production site type;

• Formation of basic equipment list for a medical facility;

• Determination of basic medicines (list of drugs), description of storage conditions, and strong drugs utilization procedure;

• Determination of communication means (basic minimum and extended complex for special environments);

• procedures for medical care provision, standards and recommendations for the assessment of initial health status and its monitoring depending on specificity of production facilities;

• Medical care algorithm in case of urgent diseases, occupational accidents both for single cases and for cases with a large number of victims (including the characteristics of evacuation means);

• Requirements to medical documents, system of collection and storage of the information concerning medical care at remote sites.

Our initial plan is to create a website: develop its structure, design and fill in the reference information, at the same time, we plan to assess the potential Russian market and analyze the specifics of remote sites. Respectively, after that analysis of contingents working at remote sites, and assessment of most significant medical issues and main risk factors will be conducted.

A group of experts will be gathered with relevant technical (industrial sanitary and hygienic) and medical background and the next step will be the analysis of existing educational programs for medical and paramedical staff working at remote sites aimed at development of new educational courses taking into account the experience of international research community in this sphere.

We hope that we will achieve success with the support our colleagues and our Institute will take a worthy place among organizations engaged with health issues in hard-to-reach areas of our planet
Alan Kennedy Bolam  
Chief Executive IRHC  
Email akb@irhc.co.uk

Since the publication of the last IRHC Journal the three Directors have alongside the IRHC Advisory Council taken forward many initiatives.

Professor Nelson Norman has continued in his discussions to establish an International Research Centre and has harnessed support from members of Industry and Academia. All three Directors value and support this initiative and we will keep you advised as to progress through Newsletters and emails.

The Careers Board continues to flourish and we hope this will continue to develop to provide an opportunity for Job Seekers and Employers to come together in a specialist area. If you have not already done so visit the IRHC website for more information.

We have redesigned and refreshed the IRHC Website and made it more mobile friendly and we hope both informative and a place to share information via our new social media link where you can connect with other members and share experiences, thoughts and information.

We have spent some time looking at E-Learning systems and how this can interface with CPD and we are in discussion with several Training Providers to offer discounted training courses to IRHC Members.

We have been contacted many times this year by members who are looking for Medical Indemnity Insurance and we have entered in to an arrangement with INSYNC Insurance to offer a FREE Medical Insurance Review to all IRHC Associate or Corporate Members and 10% discount on all standard quotes.

We are very excited to be working with IRHC Russia and we are in discussion with colleagues across the globe to replicate the IRHC Russia Model. We recognise that our members come from a wide range of backgrounds and cultures and to properly reflect this we are revising our membership structure and pricing to reflect those who are living in low income countries but still looking for the support of the IRHC.

We are looking at the criteria for membership of the IRHC and have enlisted the help of members to support this work. If you have any thoughts please do not hesitate to contact us at membership@irhc.co.uk. And visit the IRHC website www.irhc.co.uk

Alan Kennedy Bolam  
CEO IRHC  
July 2017
This section is available for book reviews, equipment reviews and links to other organisations that could provide help to the readership. Contributions are invited for the next edition of the Journal.

**Letters**

We would like to invite you to email the editor to offer feedback on the IRHC Journal or to respond to articles and all contributions will be considered for publication in the next Journal. If disagreeing with views put forward in an article we would like to see some evidence base and references.

The IRHC Journal is for members and your views are important, the editorial team will be more than happy to assist you preparing material for publication.


Contact the **editor@irhc.co.uk**

**Footnote**

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

All communication should be addressed to the **editor@irhc.co.uk**

The editor’s decision is final in all aspects of publication. If quoting articles from the Journal we respectfully request that the Journal’s role is acknowledged.

**Editorial Board**

Professor Nelson Norman, President IRHC, Aberdeen

Kathy Kennedy Bolam, IRHC Director, France

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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.

‘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.

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!
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