Deployment to Vanimo, Papua New Guinea

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The events on the north-eastern coast of Papua New Guinea (PNG) following the tsunami in July 1998 have been well documented.[1,2] I would like to contribute some random recollections, information and lessons regarding my deployment to Vanimo in July 1998 with the Australian Defence Force.

Notification to move

The tsunami occurred on the evening of 17 July 1998, but it was not until the following morning that there was wide knowledge that a disaster had occurred. The decision to provide humanitarian assistance was made more than 24 hours after the event. When I was contacted by Royal Australian Air Force Headquarters at Glenbrook on Sunday 19 July, my immediate reaction was that I was keen to deploy, both to provide assistance and for the interest and adventure. However, deployment appeared hopelessly impractical because I had a long theatre list the following day and many patients booked for consultation over the next few days. Consequently, I initially declined the opportunity.

Within hours, I reasoned that neither the lists nor the consultations were truly urgent or essential. There would be no medical disaster if they were postponed for 1 or 2 weeks, only inconvenience to my patients, my staff, my colleagues and myself. Orthopaedic colleagues in Sydney could treat an emergency, which was in stark contrast to northern PNG where there were many patients needing urgent care, but no medical service.

My lesson was that working in your own practice is not so essential that it prevents you from deploying immediately, urgently or electively. I am not essential to the health system in Australia, and medical care in Australia is never going to be severely disadvantaged when I deploy overseas. This is in contrast with developing countries when events cause mass casualties but the medical system is too stretched or cannot cope. Nonetheless, there will always be some damage to my own practice, and this takes time to reverse.

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The lesson for the ADF was that the procedures for selecting and deploying specialists left much to be desired, and there has not been much subsequent improvement. There is a need for a coherent and logical system for the ADF to contact medical specialists for deployment.

Selection of deploying surgeon

The deploying team consisted of a rapidly deployable Army Medical Unit, with surgical support by a general surgeon and an orthopaedic surgeon. One of the medical officers in a position of command also had orthopaedic experience, and the decision was made that he could combine his command duties with surgical/orthopaedic duties. In effect, the deployment proceeded without a trained orthopaedic surgeon and with a command chain compromised by splitting of responsibilities.

There was early recognition that the orthopaedic service was deficient, and I was contacted because of the need to send a fully trained ADF orthopaedic surgeon. Other contacts were made, but these were ad hoc, eg, a surgeon who had passed compulsory retirement age was initially tasked — again illustrating that selection of deploying medical specialists needs to be more structured and better directed.

Another lesson for the ADF is that there is now narrow specialisation of surgeons throughout the surgical field and one surgeon is unable to cover all specialties. The goal must be to provide optimal medical care, and it is becoming increasingly apparent that this means surgical sub-specialities will need to be covered by surgeons trained in that specialty. Certainly it is no longer possible for a general surgeon or partially trained surgeon to cover the spectrum of orthopaedic surgery. I suspect the same is also true for neurosurgery and ophthalmology.

Principles of treatment of patients

There were features common to most presenting patients. All patients had suffered their injuries simultaneously. All had suffered soft tissue injuries contaminated by seawater, coral, sand and plant material, and all had experienced delay in presentation and subsequent treatment. There were varying degrees of delay, and some patients had additional injuries such as open fractures.

Wounds were widely excised and dead tissue and contamination removed. Infection was often already established — and it was a virulent destructive infection extending in the fascial planes under the skin. Apparently small or manageable skin lesions were deceptive. The severity of the skin damage underestimated the severity of the damage and infection in deeper layers. Inadequate skin incision and debridement resulted in extreme risk of severe infection and

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risk to limb and life. The fundamentals of initial wound surgery had to be adhered to diligently. Long incisions and debridement of dead skin was necessary for proper exposure of the underlying infection. Less exposure resulted in progressive infection by particularly aggressive and smelly organisms associated with retained coral contamination.

Later treatment was carried out on the principles of the International Committee of the Red Cross. The initial wounds were dressed and left for 4 days, and then re-examined under anaesthetic. The intention was to carry out a second operation to achieve closure, either with delayed primary closure or skin graft. However, less than adequate debridement required a second debridement procedure and the principle of later closure repeated. There appeared to be no half measures. Either the initial debridement was adequate and delayed closure was straightforward, or initial debridement was inadequate and there was obvious and damaging infection. Fortunately, the former were in the substantial majority.

Large numbers of patients were treated as efficiently as possible. This meant multiple operating tables in a single operating tent. Anaesthesia was administered by an anaesthetist and then maintained by supervised assistants at the various tables. Ketamine was the anaesthetic agent of choice.

Personal protection and work conditions

Surgery was carried out under quite different conditions and standards than is usually regarded acceptable in an Australian hospital. The environment was the typical hot humid conditions of PNG; the cramped operating tent was not air-conditioned and the wounds were already severely contaminated. Initially, we wore T-shirts and sterile gloves without sterile gowns during surgery. There was inevitable mixing and sharing of instruments and sterilising facilities. This drop in standards was unavoidable, but did not appear to affect the overall infection rate.

It was important for ADF health personnel to take particular care of their own health and hygiene needs. There were the usual prophylactic measures against malaria. Also important were maintenance of hydration, regular meals and other food intake, and rest periods when available.

The medical facility was well accepted by the local population, and there did not appear to be any problems with security. We deployed unarmed and without webbing. Such easy security cannot always be assumed.

Informal travel arrangements

The deployment had occurred as a rapid response to an emergency, and there had been no time for the usual checks and controls of administration and travel. Organisation was often on an ad hoc basis. Opportunity flights were the order of the day. I have recollection of a flight to Wewak in an army commuter aircraft to check medical facilities. We decided to remain at Wewak Hospital to assist with some orthopaedic surgical needs in response to a request from the local surgeon. Return to Vanimo was achieved by presenting ourselves to the control tower at Wewak Airport and enquiring about expected flights, and then waiting for the next C130 passing through.

Military discipline must be maintained, but there is also a need for initiative, flexibility and resourcefulness.

Role of the health service

Health care for the victims of the disaster was the main task of this deployment. This was in contrast to other deployments, in which the health service was a support role to the main task. Effectively, health was the apex rather than a support in the pyramid.

Engineering, Environmental Health, Logisticians and General Support Units also assisted the victims of the tsunami, and can claim to have provided more long-term benefit for a greater number of people than the health facility. The health facility provided immediate support and assistance for hundreds, whereas engineering and environmental health support provided long-term assistance for thousands. This side of the deployment was less visible and not as dramatic for the media. Consequently, publicity for the health support was out of proportion to the achievements of the unit in comparison to the less visible units. Ultimately, the less glamorous principles of engineering, public health and utilities are what will get a disaster-ravaged country back onto its feet.

Interaction with civilian organisations

This tsunami in PNG in 1998 was sufficiently large to catch the attention of the world media, and assistance was offered by many countries and non-government organisations (NGOs). Several NGOs arrived in Vanimo.

I have two main observations and conclusions.

Firstly, many NGOs are ill-suited to provide medical support in a true emergency. Most of the NGOs came with insufficient equipment or infrastructure and were dependent on assistance from organisations such as the ADF or the local Catholic Church to ensure their survival before they could provide care. Ultimately, they were at risk of being a drain on resources rather than assistance. Indeed, several NGOs arrived, observed the situation and departed without fulfilling any role.

Secondly, the contrasting standards of the NGOs illustrated how well the ADF is equipped and organised to provide clear-field medical and surgical support. The ADF can move into a vacant site and provide an entire hospital, including shelter, water, food, hygiene, operating theatre, imaging, laboratory and intensive care unit. It can take advantage of local facilities if available, but this is not essential.

Medicolegal aspects

I performed my first operation in Vanimo on an injured local civilian within 30 minutes of my arrival. Most of the patients I treated were victims of the tsunami. However, I also operated on a PNG policeman who had suffered a gunshot wound, and, while in Wewak Hospital, I operated on at least one local civilian to treat a routine orthopaedic condition at the request of the local general surgeon. I did this without registration as a medical practitioner in PNG and uncertain of the status of my medical indemnity insurance. Patients consented with the assistance of an interpreter, and every attempt was made to explain the proposed surgery.

In retrospect, the medicolegal situation needed clarification. There should be no presumptions regarding the sophistication of developing countries. All human beings are intelligent and concerned about their own wellbeing. Legal representation is now available worldwide and it is possible that one day an ADF surgeon, or the ADF itself, will have legal action taken by an aggrieved patient treated on a humanitarian mission.

Limits of training

I had single terms of general surgery, neurosurgery and plastic surgery during my training as an orthopaedic surgeon, but I am registered as an orthopaedic surgeon and I should restrict my work to this area. However, there are pressures to do otherwise while on deployment. I have moved out of my area of expertise when necessary. I believe that this is no longer acceptable and eventually there may be detrimental repercussions to the surgeon and the ADF.

Colonel Jeff Rosenfeld and I have submitted a joint position paper on this matter to the Defence Health Service in our respective positions at that time of Chairs of the General Surgical Consultative Group and Orthopaedic Surgical Consultative Group. I would like to briefly reiterate two of the points in that paper.

The question as to whether no health care or substandard health care is the better option for the citizens of a third world country remains unresolved.

It should not be assumed that surgeons will be mostly treating local civilians and not ADF members or members from other countries' defence forces. Surgeons will treat defence force members outside their usual ambit, and the ADF may be obliged to decide whether the surgeon was suitable for the case if there is an adverse outcome. This will be done by a Board of Inquiry, which will be more legally orientated than medically orientated.

I am now very reluctant to operate outside my field of orthopaedic surgery.

Location of ADF medical facility

The medical facility was positioned adjacent to a hard surfaced airstrip in a town located close to, but not at the site of the disaster.[3] These two factors greatly assisted the success of the health deployment. There was no hindrance to air movements in and out of the area. It was accessible to small aircraft and helicopters, which were moving to and from the disaster area, and larger aircraft such as C130s.

Vanimo was a large town with its entire infrastructure intact, including the local hospital, although it was stretched to the limit treating survivors of the tsunami.

My observation is that a site outside the immediate area of the disaster is probably a better location for a humanitarian assistance health facility than within the damaged area itself.

Role of ADF and its associated health support

In a previous article for *ADF Health*, I expressed the opinion that operations directed to humanitarian assistance, peace-keeping and peace monitoring tend to disguise the true role of the ADF, which is the defence and security of Australia in a warlike situation.[3] Similarly, the medical role in non-warlike operations distorts the tasking and equipping of the DHS. My recent deployment to Iraq, where the casemix was truly combat-related, provided good evidence that the staffing and equipping for humanitarian-type deployments is quite different. A defence force which provides a health service directed towards humanitarian assistance will not have a health service capable of carrying out combat support.

Humanitarian assistance deployments provide good publicity for the ADF and assist in the recruitment of medical specialists. However, care must be taken that the experience on these deployments does not corrupt the proper equipping and tasking of the DHS.

References

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(Received 29 May 2005, accepted 12 Jul 2005) ❑