

**Report of the**

**Controller and**

**Auditor-General**

*Tumuaki o te Mana Arotake*

**New Zealand Defence Force:**

**Deployment to East Timor –**

***Performance of the***

***Health Support Services***

**February 2003**

*Readers who are not familiar with all of the defence-related terms used in this report may find the terms explained in the glossary on pages 135-138.*

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## Foreword

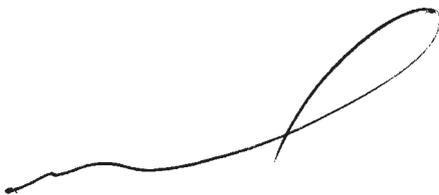
In November 2001 we issued a report on the New Zealand Defence Force's (NZDF) deployment to East Timor, which took place in 1999. That report looked at how the NZDF planned for the East Timor operation, prepared a joint force, and subsequently deployed that force to East Timor.

We said in the November 2001 report (page 4) that we would be reporting on a second examination of the roles performed by two particular elements of the New Zealand force in East Timor – helicopters and medical support. This report contains the results of the final part of our examination. It examines the contribution of the variety of professionals from all three Services (Navy, Army and Air Force) who provided Health Support to the East Timor Deployment.

Our examination considered the medical preparations that were necessary for the deployment, how military personnel were supported while in East Timor, and what procedures and services were necessary in getting them back to New Zealand at the end of a tour of duty.

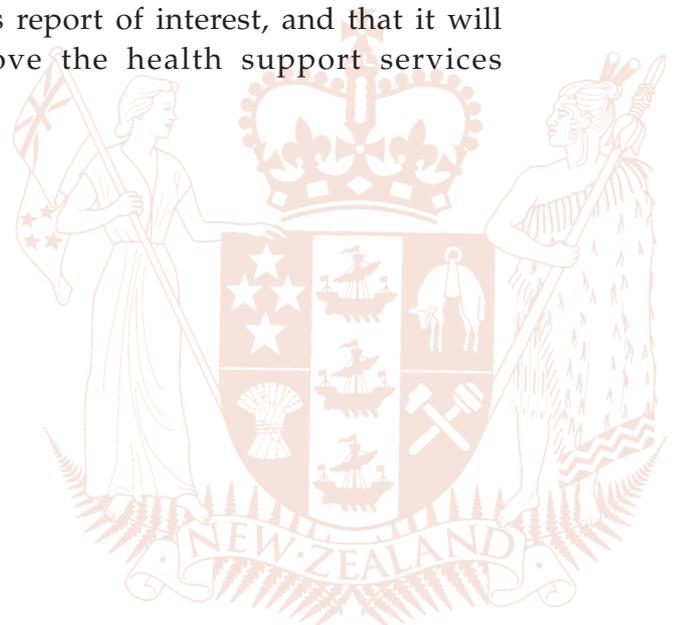
As with our earlier examination, the professionalism and helpfulness of the NZDF personnel in preparing this report have impressed us. I would like to thank in particular the Health Support personnel from Joint Forces Headquarters and Army No. 2 Field Hospital for their willingness and co-operation.

I hope that Parliament will find this report of interest, and that it will give the NZDF a basis to improve the health support services currently provided.



K B Brady  
Controller and Auditor-General

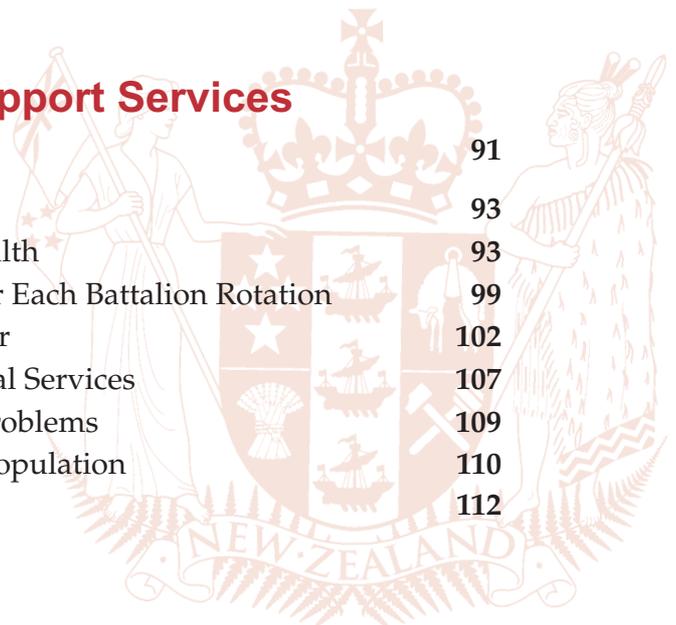
7 February 2003



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# Summary and Recommendations

A capable and well-prepared NZDF requires personnel who are at all times fit, healthy and motivated to carry out a range of assigned military tasks. Keeping personnel in good health and medically ready to deploy at short notice is the task of the NZDF's Health Support Services (HSS). While HSS are a small part of the NZDF, they have a critical role in the preparedness of NZDF personnel.

The morale and commitment of every military member will also be influenced by the confidence they have in the network of services for preventive health care, medical treatment and (where necessary) evacuation. It follows that an effective and efficient medical support system is vitally important for the NZDF to achieve its operational goals.

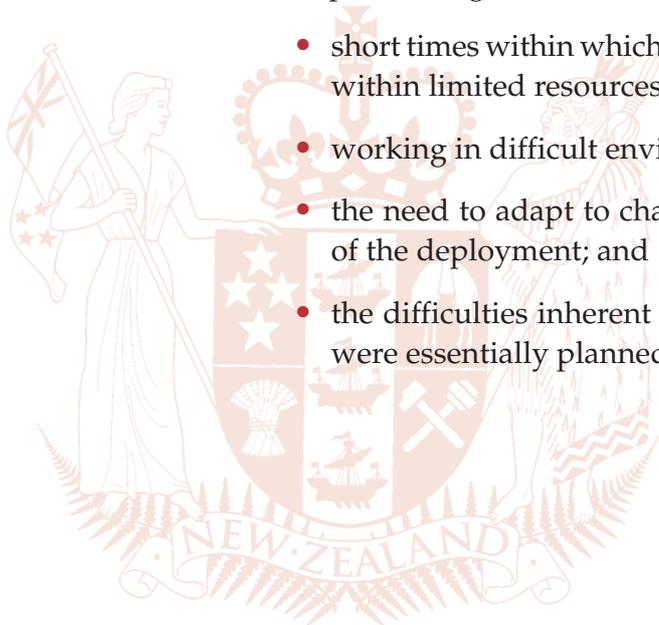
## Overall Findings and Conclusions

The HSS played a crucial role in the East Timor operation by:

- assisting in the preparation of personnel for deployment;
- providing health care and support in theatre; and
- providing post-deployment health care and support when personnel returned to New Zealand.

In performing their various roles, the HSS met four main challenges:

- short times within which to prepare large numbers of deploying personnel within limited resources;
- working in difficult environmental conditions;
- the need to adapt to changing needs and circumstances over the period of the deployment; and
- the difficulties inherent in sustaining operations over a long period that were essentially planned for the short term.





## SUMMARY AND RECOMMENDATIONS

We conclude that the HSS played their crucial role and met these challenges with a high degree of success. However, the pressures created by the scale and duration of the operation highlighted some poor systems and practices that made the job of the HSS more difficult than it needed to be.

Issues for consideration by the NZDF include:

- upgrading the poor medical records system;
- addressing shortages of health care personnel;
- reviewing the supply system for medical items; and
- improving the focus on preventive and environmental health.

Some of these issues were well known to the NZDF before the deployment to East Timor, but little action had been taken to rectify them. The NZDF began to address issues with environmental health in the course of the deployment. The outstanding matters need to be addressed as a matter of priority.

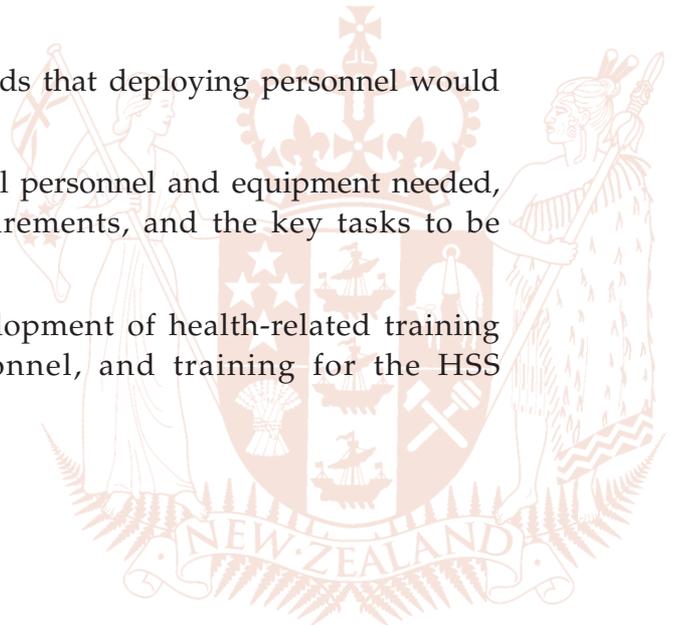
### Pre-deployment Activities

#### Planning

*The HSS undertook effective and timely planning for the deployment to East Timor.*

The HSS produced a Health Services Support Plan that provided effective support for the preparations by:

- taking account of the health hazards that deploying personnel would face;
- identifying the numbers of medical personnel and equipment needed, mission tasks and training requirements, and the key tasks to be completed before deployment; and
- providing the basis for the development of health-related training programmes for military personnel, and training for the HSS themselves.





## SUMMARY AND RECOMMENDATIONS

Health information about East Timor was used in training programmes for all deploying personnel who received comprehensive briefings on environmental health risks and ways to maintain their own health.

### *Training*

*Shortcomings in the training of HSS personnel were noted early on, and were addressed as the deployment continued.*

Pre-deployment training for medical staff – such as hands-on experience in hospitals – gave them a practical grounding in the trauma situations that they might encounter. However, early in the deployment they lacked some necessary basic soldier skills and training in tropical medicine. The NZDF recognised these shortcomings and has gone some way to modifying training programmes accordingly.

**We recommend that –**

- 1 The NZDF reviews HSS personnel training programmes in the light of the East Timor deployment, to ensure that basic soldier skills, specialist medical skills (such as tropical medicine) and skills associated with the provision of humanitarian aid are sufficient to support future deployments.**

### *Medical Fitness*

*Checking medical fitness before deployment was a huge undertaking.*

The NZDF's medical screening system is based on an assessment of risk, and takes account of the operational environment, the expected role and duties of the individual on the mission, and the likely risks to the individual and their unit.

Everyone deploying to East Timor had to have an up-to-date assessment of their medical fitness. Large numbers of medical examinations were required immediately prior to the deployment, which placed a very heavy workload on clinical staff and health administrators.

**We recommend that –**

- 2 The NZDF reviews the frequency of regular medical examinations in cost/benefit terms to assess whether it would be worthwhile increasing the frequency in order to reduce the numbers of examinations required to prepare large numbers of personnel to deploy.**



## SUMMARY AND RECOMMENDATIONS

*The numbers of personnel without the expected standard of protection from vaccination led to a large workload to get all deploying personnel up to the standard.*

Personnel being deployed overseas are often at increased risk from diseases. The NZDF has a standard ongoing level of disease protection from vaccination (known as Protocol A) that all its regular forces are required to have, so that they can be ready to deploy at short notice. The extent to which NZDF personnel actually meet Protocol A is an important component of force preparedness and individual readiness to deploy.

Not all NZDF personnel met Protocol A at the time of preparing for the East Timor deployment. The additional work needed to bring all personnel up to Protocol A at short notice added to the burden of activities to be performed as the NZDF trained and mobilised its force within the required response time.

Compliance with Protocol A continues to vary across units. But the NZDF's current medical information systems cannot identify how many personnel meet the standard at any particular time. This represents an important gap in the NZDF's ability to monitor and report on force preparedness.

**We recommend that –**

**3 The NZDF ensures that all Regular Force personnel meet the Protocol A vaccination standard.**

*Vaccination against Japanese encephalitis virus was a challenge and could have put the timing of the deployment at risk.*

For East Timor, in addition to meeting Protocol A, personnel needed to be vaccinated against Japanese encephalitis virus (JEV). The JEV programme was an important logistical project, because the time required to vaccinate personnel was key to formulating options and time-scales for deployment. While sound intelligence and early contingency planning identified the need for vaccination, there were difficulties with obtaining supplies of the vaccine for the initial deployment. Intensive management of the vaccination programme minimised the adverse impacts on meeting the response time.

**We recommend that –**

**4 The NZDF considers setting up an arrangement with suppliers in order to facilitate ready access to JEV and other vaccine supplies at short notice when required.**



## SUMMARY AND RECOMMENDATIONS

*Shortcomings in the NZDF's medical records system undermined the HSS's ability to help achieve the NZDF's readiness to deploy.*

Medical records need to provide accurate and readily accessible information about the health history and status of all personnel, and information about the medical fitness of the NZDF as a whole and its readiness to deploy. The current arrangements in the NZDF do not achieve these aims – the main system is paper-based, and records have to be updated and analysed manually.

Using such a system made it more difficult for HSS personnel to check the health status and prepare personnel for the East Timor deployment. For example:

- Information on the fitness ratings and medical history was cumbersome to retrieve, and often incomplete.
- Unit commanders were not able to readily establish whether their personnel met the Protocol A vaccination standard.
- Updating medical records prior to deployment, preparing summary records for use in East Timor, and later putting the information back into the main file and replicating the backup files for storage purposes, was an extremely time-consuming process.
- Medical records could not readily be used to compile health data across the NZDF – such as to help predict likely treatment demands of the deploying force. (The NZDF is currently testing an alternative system to collect data for cross-Service analysis, but this places an additional data collection load on HSS staff.)

The NZDF also had no overall information about injury, disease or treatment patterns for the period of the deployment. Such analysis would provide valuable data to inform future training, health service planning and resourcing – particularly for military operations in a similar tropical environment.

A patchwork of electronic records systems or medical databases has evolved – at each Service's or treatment centre's own initiative – operating in parallel to the manual system. The NZDF has considered establishing computerised medical records, which it has noted would bring a number of benefits – including increased patient safety. Proposals have been prepared, but no decisions have been made on funding or implementation.

We recommend that –

- 5 The NZDF puts in place a single electronic medical records system for the whole of the NZDF, that will support both individual patient management and wider planning of operational and non-operational health care provision.

### In-theatre Services

#### *Shortage of Personnel*

*The East Timor operation put into sharp focus known shortages of health care personnel.*

The NZDF has over a number of years been aware of the difficulties of attracting and retaining HSS personnel. For example, there are known difficulties in recruiting and retaining doctors, surgeons, and other medical specialists. There are also reported shortages of medics who provide the backbone for health care in operations like East Timor.

The preparation, deployment, and sustaining of the East Timor force was a challenging test of HSS capability. However, it was difficult to measure and assess the ability of the HSS to meet the challenge because only one operational health support unit (No. 2 Field Hospital) reports its preparedness directly through the NZDF's operational preparedness reporting system (OPRES). All other units report as an integral part of a larger unit. Therefore, the NZDF does not have any clear picture of the HSS capability to deploy staff or to prepare other personnel for deployment at any one time.

We recommend that –

- 6 The NZDF further develops the operational preparedness reporting system to enable it to report on the preparedness status of the HSS.<sup>1</sup>

Personnel shortages became increasingly visible as HSS personnel dealt with the extensive preparations (particularly medical checks and vaccinations as noted above) for the deployment.

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<sup>1</sup> See our earlier report – *New Zealand Defence Force: Deployment to East Timor*, November 2001, ISBN 0-477-02886-1 – available on our web site [www.oag.govt.nz](http://www.oag.govt.nz) – which contained this recommendation for all NZDF units (page 26, paragraph 2.30).



## SUMMARY AND RECOMMENDATIONS

Sustaining the force for successive rotations in East Timor placed further pressures on the HSS. The Forward Surgical Team (FST) was not designed to deploy and operate for an extended period. HSS planning for the deployment envisaged an operation that might last about six months, but in fact the FST was in East Timor for nearly two years from October 1999 to August 2001. As a result, the NZDF had to rely on civilian specialists to help sustain the FST.

**We recommend that –**

- 7 The NZDF reviews Government expectations of the Forward Surgical Team – in terms of response times, length of deployment, and the consequent personnel, equipment and funding implications.**

The HSS had to go to great lengths to identify sufficient civilian personnel willing to be deployed (and employers willing to release them) for short periods to sustain the FST over the operation. The NZDF had no formal agreements – such as between the NZDF and the Ministry of Health or District Health Boards – to facilitate finding personnel. Achieving the full complement of the FST resulted mainly from a huge recruitment effort and good fortune in civilians who willingly offered to serve in East Timor.

**We recommend that –**

- 8 The NZDF explores with the Ministry of Health and District Health Boards how a more reliable arrangement can be established for seconding specialist clinical staff to support a range of extended NZDF operations as required.**

The structure and delivery of HSS have been reviewed a number of times since 1988, and a further major review of the structure and resourcing of HSS is under way. We found little in terms of positive outcomes from these reviews. In our view, the ongoing uncertainty associated with these reviews has affected morale and the ability to recruit and retain staff.

**We recommend that –**

- 9 The NZDF urgently completes the review of the HSS's structure and resourcing, in order to provide a more certain environment in which to recruit and retain HSS personnel.**

### Supply Problems

*There were ongoing problems with the supply of medical items to East Timor.*

Health personnel operating in East Timor needed regular and reliable medical and pharmaceutical supplies. Difficulties with supply included delivery of incorrect items, delivery of the wrong quantities of items, and a growing list of items to be supplied as the deployment progressed.

These difficulties were caused by a number of factors:

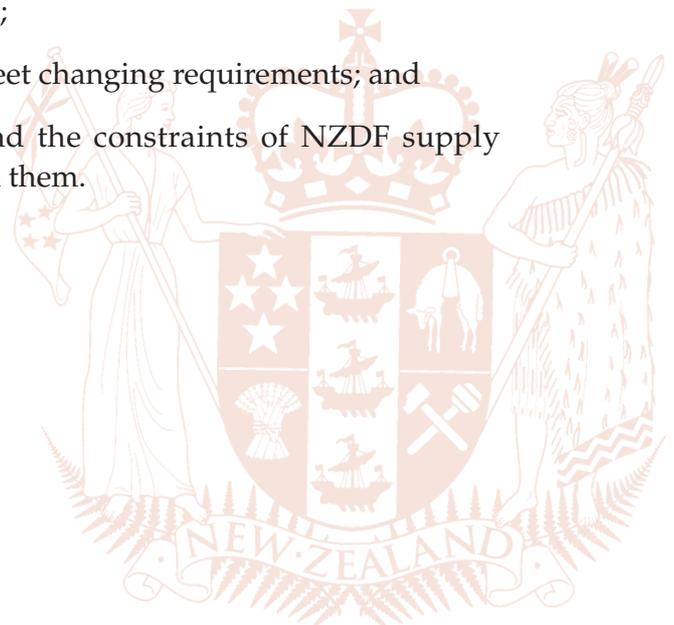
- logistics staff responsible for handling requests had little training or experience in dealing with medical supplies;
- civilian medical personnel were unfamiliar with the NZDF medical supply system;
- requirements expanded as the FST developed a humanitarian aid role; and
- the NZDF was called upon to provide supplies for other nations.

The NZDF recognised and reported on these difficulties early in the deployment, but supply problems persisted. When we visited East Timor in July 2001, the FST was still experiencing difficulties with accurate and timely re-supply.

**We recommend that –**

**10 The NZDF improves the supply of medical items by ensuring that:**

- logistics personnel are suitably skilled and experienced in the management of medical supplies;
- supply processes can adapt to meet changing requirements; and
- civilian medical staff understand the constraints of NZDF supply processes and can operate within them.





## SUMMARY AND RECOMMENDATIONS

### Environmental Health Personnel and Equipment

*A shortage of trained or experienced environmental health personnel and equipment limited their effectiveness, and the NZDF is increasing its environmental health capability as a result.*

Creating and maintaining a safe environment for deployed personnel was a priority for HSS. The East Timor deployment revealed gaps in the NZDF environmental health capability. For example, the shortage of environmental health officers, environmental health technicians, and equipment resulted in:

- repeat deployments for environmental health officers;
- limitations on the quality and quantity of preventive and environmental health activities that could be undertaken;
- limited monitoring of compliance with occupational health and safety standards; and
- additional environmental health responsibilities being allocated to medics.

### Flexibility of Response

*Changes in the focus of the HSS during the deployment illustrated the flexibility to respond to changing circumstances.*

The HSS adjusted its response during the course of the deployment in line with the changing military and political environment. Initially focused on the possibility of battle casualties and trauma, the emphasis was shifted to providing primary care and treating military personnel for a variety of tropical diseases and minor surgical conditions.

In addition:

- Military operations put military personnel in stressful situations. The HSS made more extensive psychological support services available to New Zealand military personnel to help them manage the stresses associated with deployment.
- Early evidence of dental problems for deployed personnel led the NZDF to recognise the need to provide in-theatre dental services. A dental team made regular visits to East Timor to maintain the dental health of NZDF and other personnel.



## SUMMARY AND RECOMMENDATIONS

The NZDF viewed humanitarian aid as important in building and fostering a strong relationship with the local community and winning acceptance of its role. As part of this, the FST treated a large number of Timorese people. This required HSS to allocate resources with careful regard to competing demands of New Zealand personnel and the local population.

Moreover, its work for the local population called for a different and wider mix of skills and training among medical personnel. The experience highlighted some useful lessons for HSS planning for future deployments.

### Post-deployment Activities

#### *Continuing Health Care*

*There has been an effective process for providing post-deployment health care for personnel returning to New Zealand.*

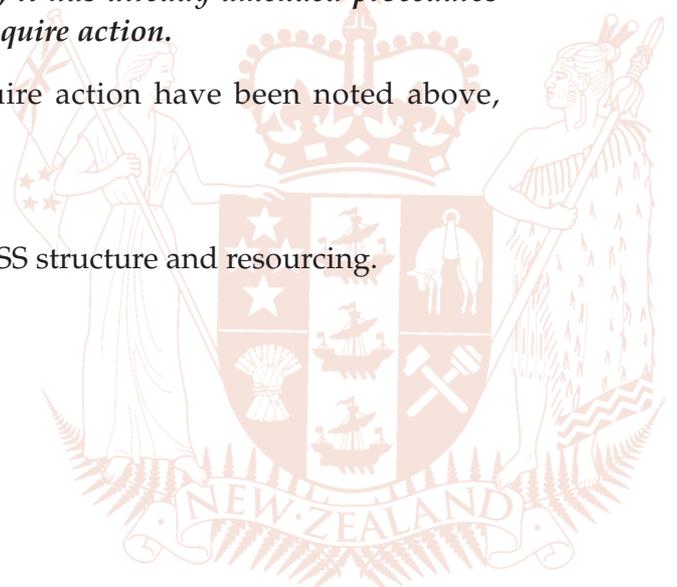
The NZDF has effective arrangements for assessing the health of personnel returning to New Zealand, and for providing any necessary ongoing treatment. Its comprehensive end-of-tour assessments include health checks and psychological de-briefs. The latter, in particular, have helped personnel to make the transition back to everyday life in New Zealand.

#### *Lessons Learned*

*The NZDF has identified lessons for personnel management, training, and logistical support. In some cases, it has already amended procedures and practices, but other lessons still require action.*

The matters that most urgently require action have been noted above, namely:

- medical records; and
- early completion of the review of HSS structure and resourcing.





# Part One

# Background



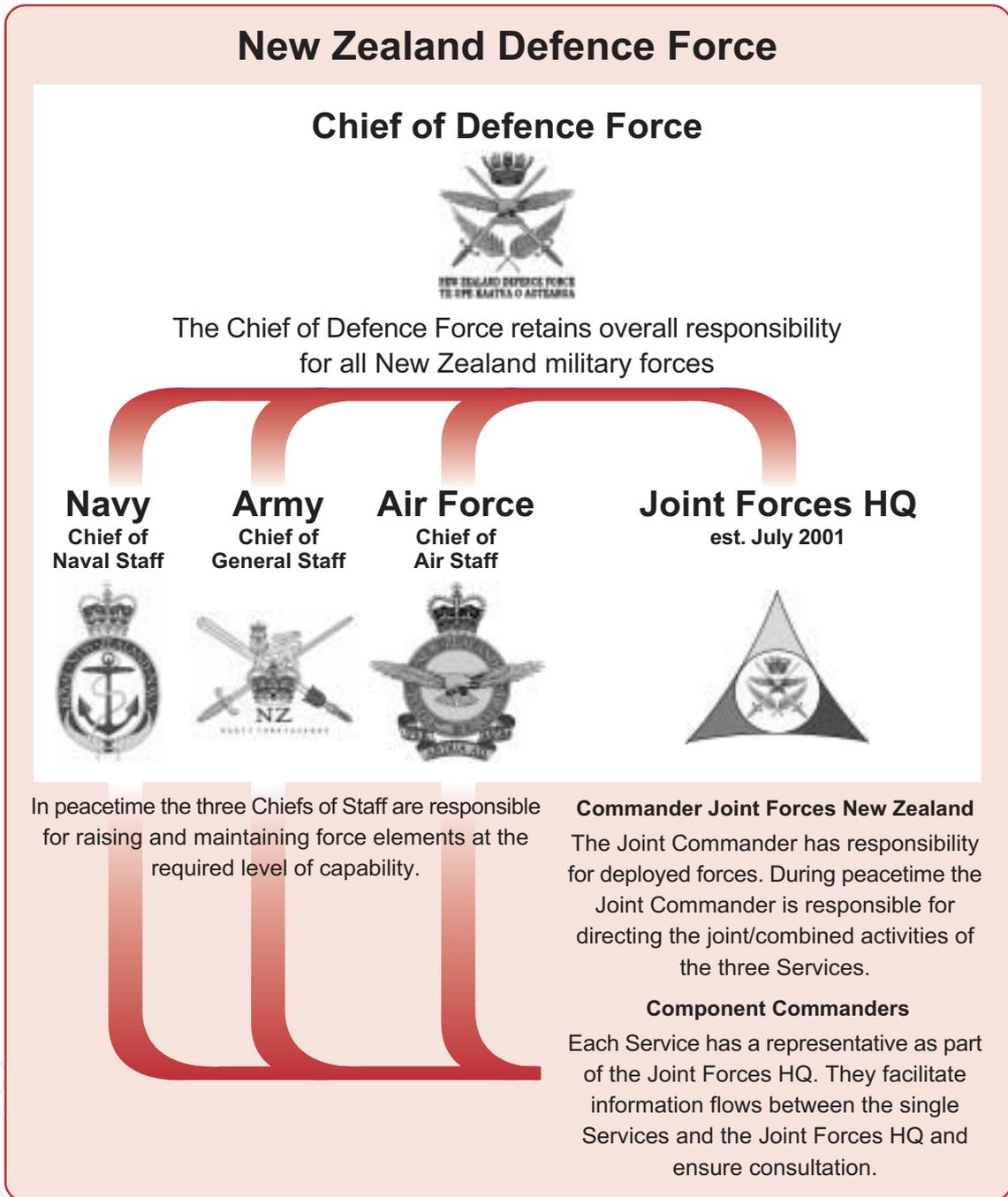


## The East Timor Operation

- 1.1 On 15 September 1999 a resolution of the UN Security Council authorised the establishment of a multinational force – known as INTERFET – to restore peace and security in East Timor with authority to use armed force if required.
- 1.2 INTERFET comprised a coalition of 23 contributing countries with over 11,000 personnel, led by Australia. It was New Zealand’s largest overseas military commitment since the Korean conflict. At its peak, the New Zealand Defence Force (NZDF) committed around 1,100 Navy, Army and Air Force personnel.
- 1.3 In February 2000, INTERFET was replaced by a United Nations peace-keeping operation known as the United Nations Transitional Administration in East Timor (UNTAET). Under its United Nations mandate, UNTAET provides security and maintains law and order in East Timor. As part of this operation, New Zealand was given responsibility for about 1700 square kilometres to the south-west of the country (including a long section of the border between East and West Timor) with the township of Suai as the base (see map on page 26). This area was characterised by poor infrastructure, difficult supply routes, limited communications, and considerable destruction by the retreating militia.
- 1.4 Figure 1 on the next page shows the structure of the NZDF, illustrating the positions of the three Forces and the Joint Forces HQ. In the East Timor deployment, the Joint Forces Commander had responsibility for the deployed forces, including deployed Health Support personnel.



Figure 1  
Structure of the NZDF



- 1.5 The New Zealand Battalion was withdrawn in November 2002. The withdrawal had been factored into the United Nations' downsizing plans, which had confirmed that the United Nations had no requirement for any NZDF combat force elements to remain in East Timor after November 2002.

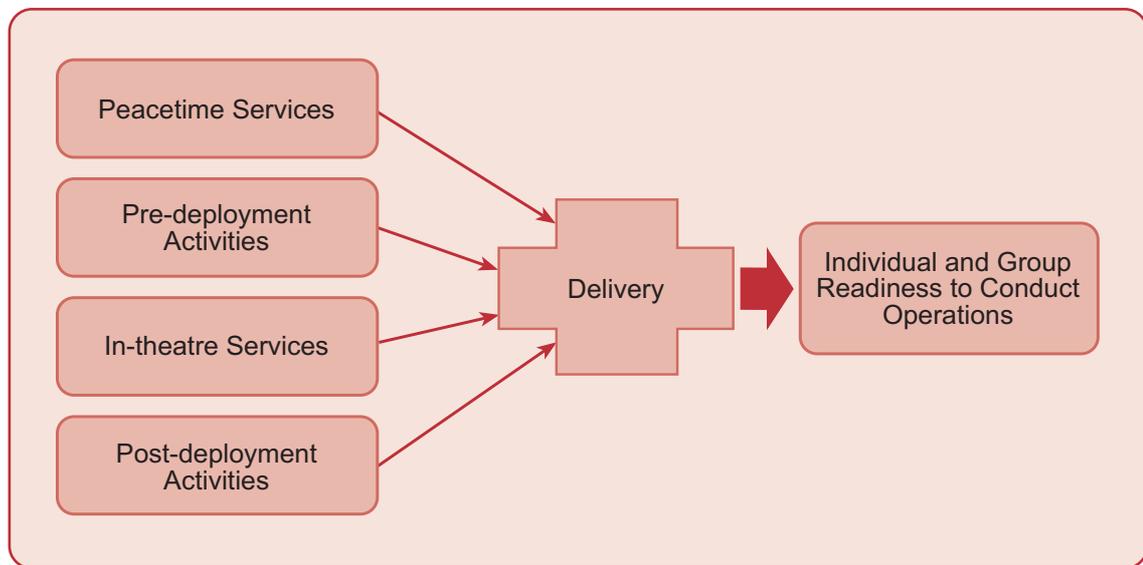
## The Importance of Health Support Services

- 1.6 A capable and well-prepared NZDF requires personnel who are at all times fit, healthy and motivated to carry out a range of assigned military tasks. Keeping personnel in good health and medically ready to deploy at short notice is the task of the NZDF's Health Support Services (HSS). While HSS are a small part of the NZDF, they have a critical role in the preparedness of personnel.
- 1.7 The morale and commitment of every military member will also be influenced by the confidence they have in the network of services for preventive health care, medical treatment and (where necessary) evacuation. It follows that an effective and efficient medical support system is vitally important for the NZDF to achieve its operational goals.

## Focus of Our Examination

- 1.8 In November 2001, we produced a report on our examination of the NZDF deployment to East Timor. The report described and assessed the systems used by the NZDF to plan, prepare and deploy a force as part of the INTERFET operation.
- 1.9 The focus of this report is our examination in greater detail of the role performed by the HSS as part of INTERFET and UNTAET between mid-1999 and late-2001. It describes and assesses four main dimensions of that role (see Figure 2 on the next page):
- maintaining the primary health of Regular Forces personnel;
  - medically preparing personnel for the East Timor deployment;
  - delivering health support services in theatre and sustaining those services; and
  - providing post-deployment health care for returning personnel.

*Figure 2  
Dimensions of NZDF Health Support Services*



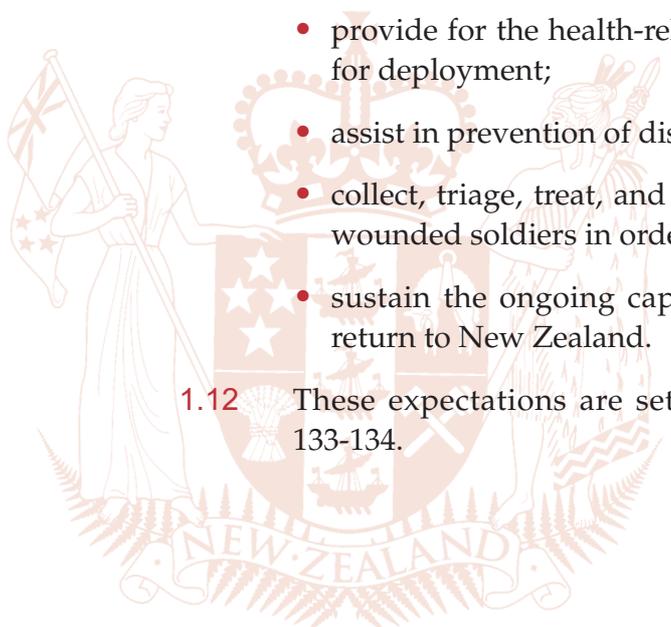
1.10 We also examined the NZDF’s own systems for reviewing HSS practices and processes in the light of the East Timor experience.

### Our Expectations

1.11 We examined the capability of the HSS to perform the various roles expected of them in the context of the East Timor operation to:

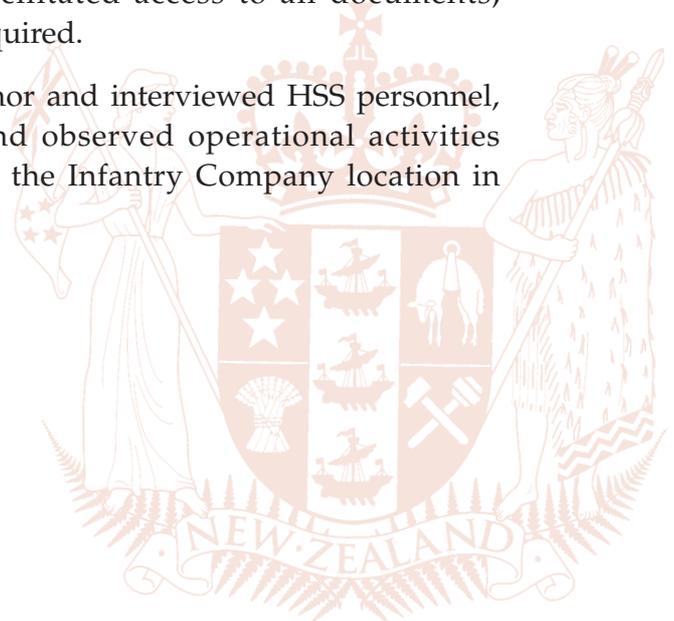
- maintain the capability and readiness of NZDF personnel to deploy;
- provide for the health-related planning, training and other preparations for deployment;
- assist in prevention of disease and non-battle injuries;
- collect, triage, treat, and evacuate or return fit for duty, sick, injured or wounded soldiers in order to maintain combat strength; and
- sustain the ongoing capability and readiness of personnel after their return to New Zealand.

1.12 These expectations are set out in more detail in Appendix 1 on pages 133-134.



## How We Carried Out Our Examination

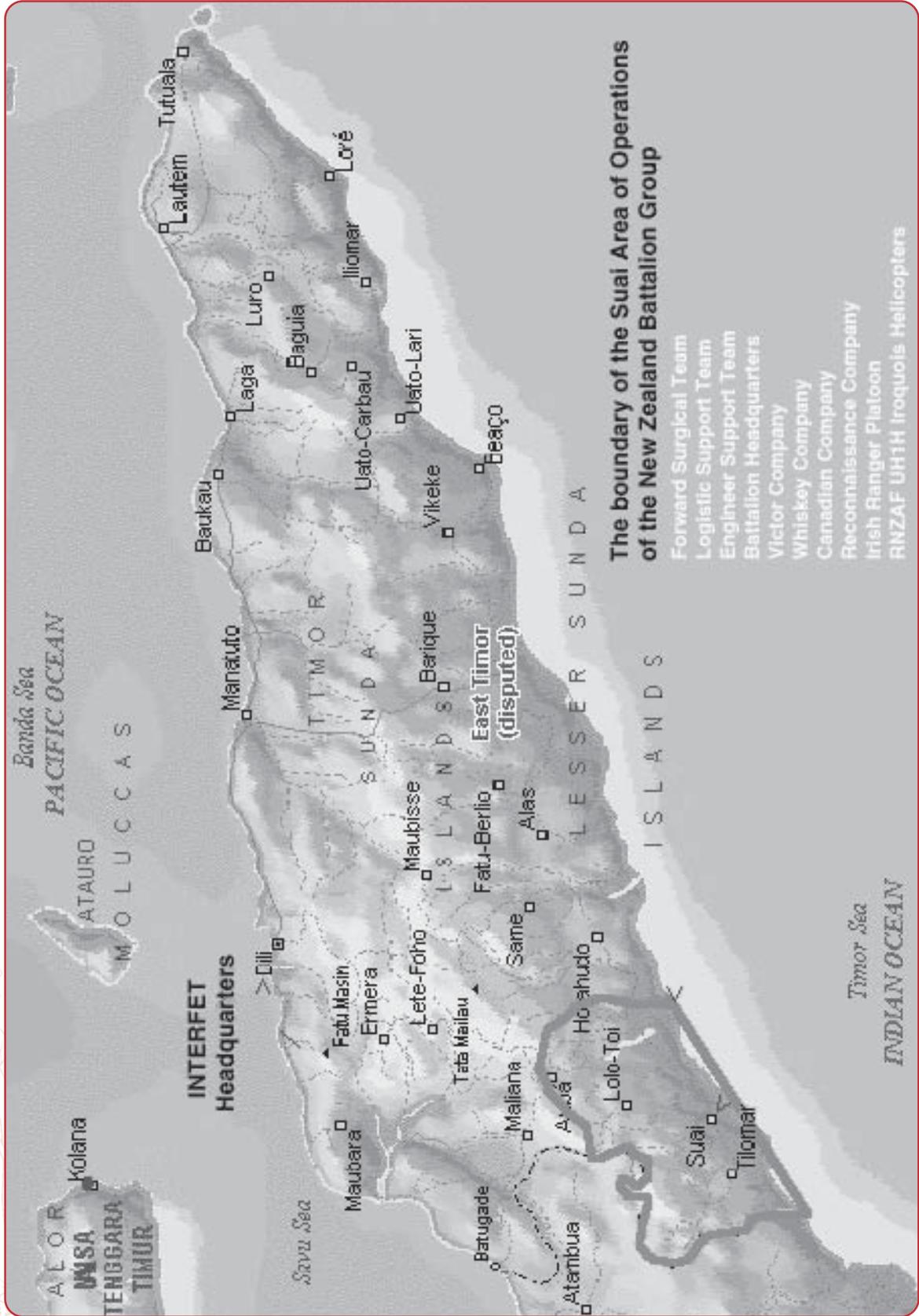
- 1.13 The scale and complexity of the East Timor deployment made it necessary to limit the scope of our examination. We therefore did not assess:
- the provision, efficiency or effectiveness of medical treatment centres in New Zealand; or
  - the potential future role of the Territorial Force in supplementing Regular Force HSS personnel.
- 1.14 We interviewed a very wide range of NZDF personnel about the health-related planning, preparation, deployment and sustainment aspects of the East Timor operation. The personnel were of different ranks and were based at locations including:
- Defence Headquarters;
  - Joint Forces Headquarters;
  - No. 2 Field Hospital and the Medical Treatment Centre at Linton Army Camp;
  - the Medical Treatment Centre at Burnham Army Camp;
  - Medical Treatment Centres at Air Force Base Whenuapai and Air Force Base Ohakea; and
  - Naval Health Service Hospital Devonport.
- 1.15 We sought and analysed relevant documentation from Army, the Navy and the Air Force – including (but not limited to) plans, Defence Force Orders, command directives, correspondence, situation reports and post activity reports. The NZDF facilitated access to all documents, including classified material where required.
- 1.16 In May 2001 we travelled to East Timor and interviewed HSS personnel, gathered documentary evidence, and observed operational activities taking place in Dili and Suai and at the Infantry Company location in Tilomar (see map on page 26).



BACKGROUND



Map of East Timor



Part Two

## How Are Health Support Services Organised?







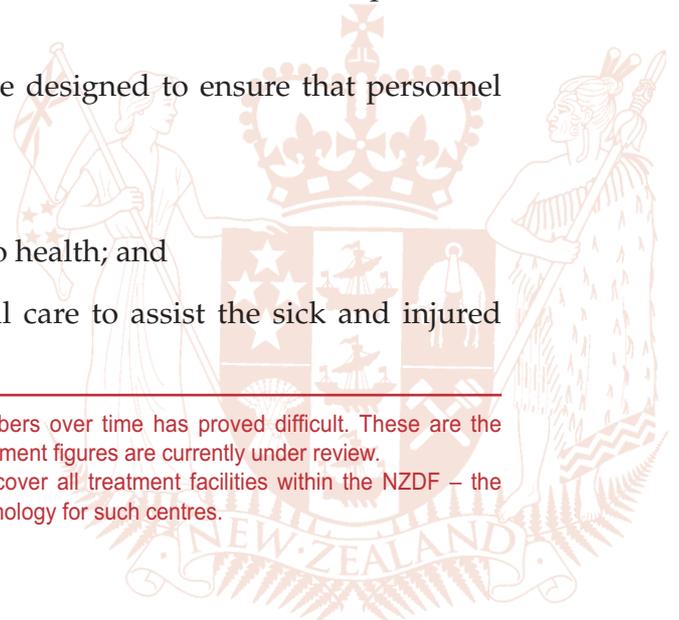
## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

### Introduction

- 2.1 Health care is provided to all serving Regular Force members of the NZDF, as a condition of service. Members of the Territorial and Reserve Forces are eligible for medical treatment while engaged in military service. The NZDF provides health care to its personnel because:
- they need to be medically fit to perform their operational duties if the NZDF is to achieve its outputs; and
  - providing health care in peacetime is a means of helping to develop, preserve and exercise sustainable medical capability (medical personnel and equipment) for the support of military operations.
- 2.2 Health care for serving personnel is provided through the NZDF's Health Support Services (HSS), which is made up of a variety of doctors, nurses, environmental health officers, and other health professionals. (See Figure 3 on the next page.) The 300 Regular Force HSS personnel are responsible for the 8700 uniformed NZDF personnel, and are the basis of support for any military deployment. In addition, about 50 civilian medical staff are employed at medical and dental treatment centres throughout the country.<sup>2</sup>
- 2.3 The HSS are set up to support:
- *operational* deployed force elements – such as the Battalion group in East Timor or ships at sea; and
  - *non-operational* personnel through base medical facilities – such as the Medical Treatment Centres<sup>3</sup> at Linton, Burnham, Devonport and Ohakea.
- 2.4 And the services that HSS provide are designed to ensure that personnel are:
- fit to be deployed;
  - protected from avoidable hazards to health; and
  - provided with appropriate medical care to assist the sick and injured to return to duty.

2 Getting accurate information on personnel numbers over time has proved difficult. These are the figures that NZDF gave us in May 2002. Establishment figures are currently under review.

3 We use the term Medical Treatment Centre to cover all treatment facilities within the NZDF – the Navy and the Air Force use different names/terminology for such centres.



## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

*Figure 3  
HSS Professionals in the NZDF*



### MEDICS

Historically recruited as a trade within the NZDF with no prior medical experience. Medics are trained in-house on a time and rank based career progression and with qualification in the Diploma of Military Medicine. On a deployment the medic is the first person in the chain of treatment classified as a medical person under the Geneva Convention. The function of the medic is to provide initial primary care, enhanced first aid including immobilisation of fractures, IV therapy (drips), and insertion of airways. The medic starts medical documentation and prepares patients and casualties for evacuation.

### MEDICAL OFFICER (DOCTOR)

Generally recruited as qualified practitioners who then proceed to specialise in their Service-specific medical environments. The NZDF has more recently taken steps to recruit undergraduate doctors and to contract them to work within the NZDF after qualifying. Doctors within the NZDF are either General Practitioners (Army) or occupational health specialists (Air Force and Navy). They have separate remuneration and employment conditions that differ from other specialists in the NZDF, such as sabbatical leave for professional development. Most doctors undertake a large proportion of the non-operational routine primary care in medical treatment centres. They are subject to external regulation by their professional bodies.



### NURSING OFFICER

Registered Nurses are recruited to fill a number of different specialist roles. Nursing Officers work in the medical treatment centres. They undertake operational roles within the Regimental Aid Posts. Specialist operating theatre, intensive care, acute surgical and emergency department Nursing Officers work with the FST and are based with 2 Fd Hosp. Registered Nurses are subject to external regulation by the Nursing Council of New Zealand.

### HEALTH INTELLIGENCE OFFICER

Provide Environmental Threat Assessments for areas of potential involvement of NZDF personnel. They help manage and update a medical internet database about the environmental hazards in countries throughout the world.





## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?



### ENVIRONMENT HEALTH OFFICERS

Provide public and occupational health support to the NZDF during peacetime and on operations. This involves advice on threats to human health arising from environmental and workplace sources with an emphasis on measures that prevent disease and injury. Duties include collection of health-related data to profile operational risks for deployments; technical support and advice to the command on disease control, food safety, drinking water treatment and water quality standards, waste disposal; occupational health and safety; pest and vector control and environmental health education and training.

### SURGEON

The Army has two specialist surgeons on contract positions. This means that the surgeons work and train full time in a public hospital but are on 28 days' notice to be deployed should they be required and must meet NZDF training commitments throughout the year.

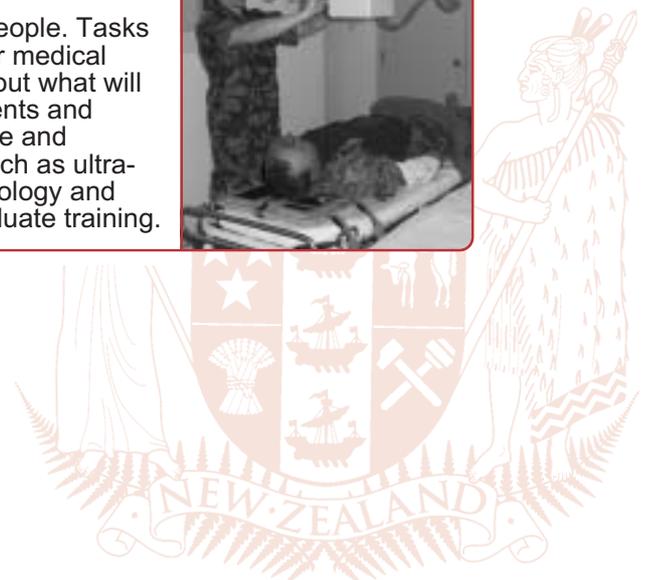


### DENTAL OFFICER

Professionally qualified and registered dentists provide a full range of general dental services to keep NZDF personnel dentally fit. Some dental officers who have obtained postgraduate training and qualifications are able to provide more complex care, e.g. oral surgery, periodontal advice/treatment and restorative advice/treatment. Orthodontic services are seldom provided.

### RADIOGRAPHER

Uses X-ray and other equipment to take images of people. Tasks and duties include work with the radiologist and other medical professionals; provision of information to patients about what will happen during their examination; preparation of patients and equipment for examinations; and producing the image and checking for quality. They may specialise in areas such as ultrasound, nuclear medicine, CT scanning, vascular radiology and magnetic resonance imaging, which require postgraduate training.



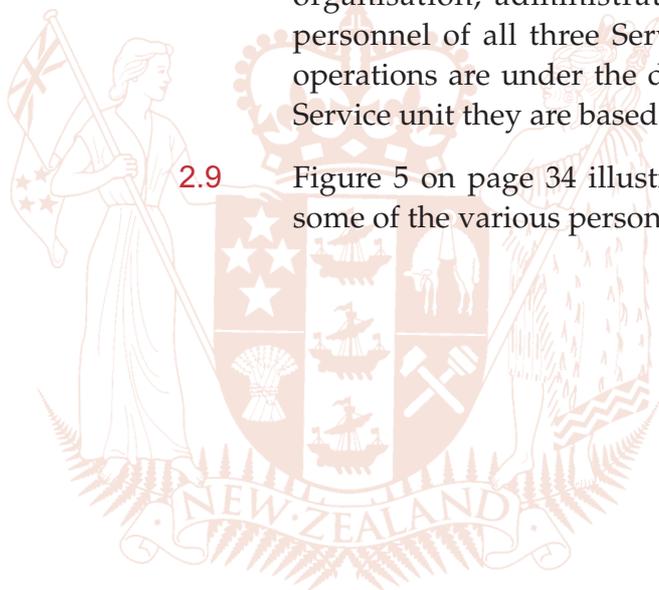


## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

- 2.5 In this part of the report we discuss:
- the structure and composition of the HSS;
  - services for non-operational personnel;
  - services for operational personnel;
  - progress on ongoing reviews of the HSS; and
  - funding of the HSS.

### Structure and Composition

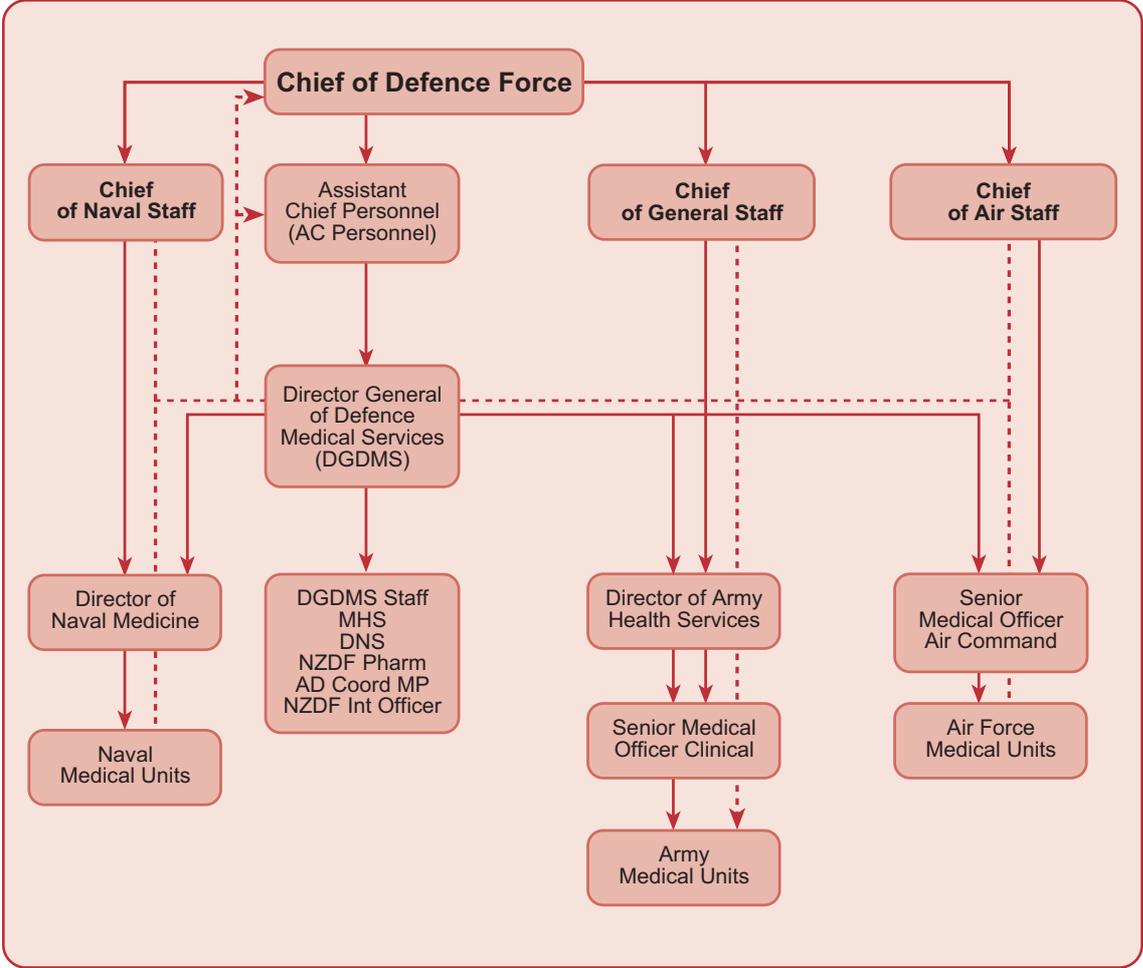
- 2.6 A small group led by a Director General of Defence Medical Services (DGDMS – see Figure 4 on the opposite page) handles HSS policy matters. The DGDMS is the principal health adviser to the Chief of Defence Force on:
- NZDF health policy;
  - the professional control of medical services; and
  - the professional standards of the treatment regimes applicable to operational casualties.
- 2.7 Alongside this centralised advice and policy, Army, the Navy, and the Air Force control their own medical services. Each directs the numbers of health support personnel required and trains and prepares them to support their own operations.
- 2.8 For the purpose of military operations, the Health Operations Section of the Joint Forces Headquarters (see Figure 1 on page 22) is responsible for organisation, administration and support to deployed health support personnel of all three Services. However, individual HSS personnel on operations are under the direct control of the Commanding Officer of the Service unit they are based with.
- 2.9 Figure 5 on page 34 illustrates the HSS in more detail and shows where some of the various personnel were based in May 2002 when not deployed.





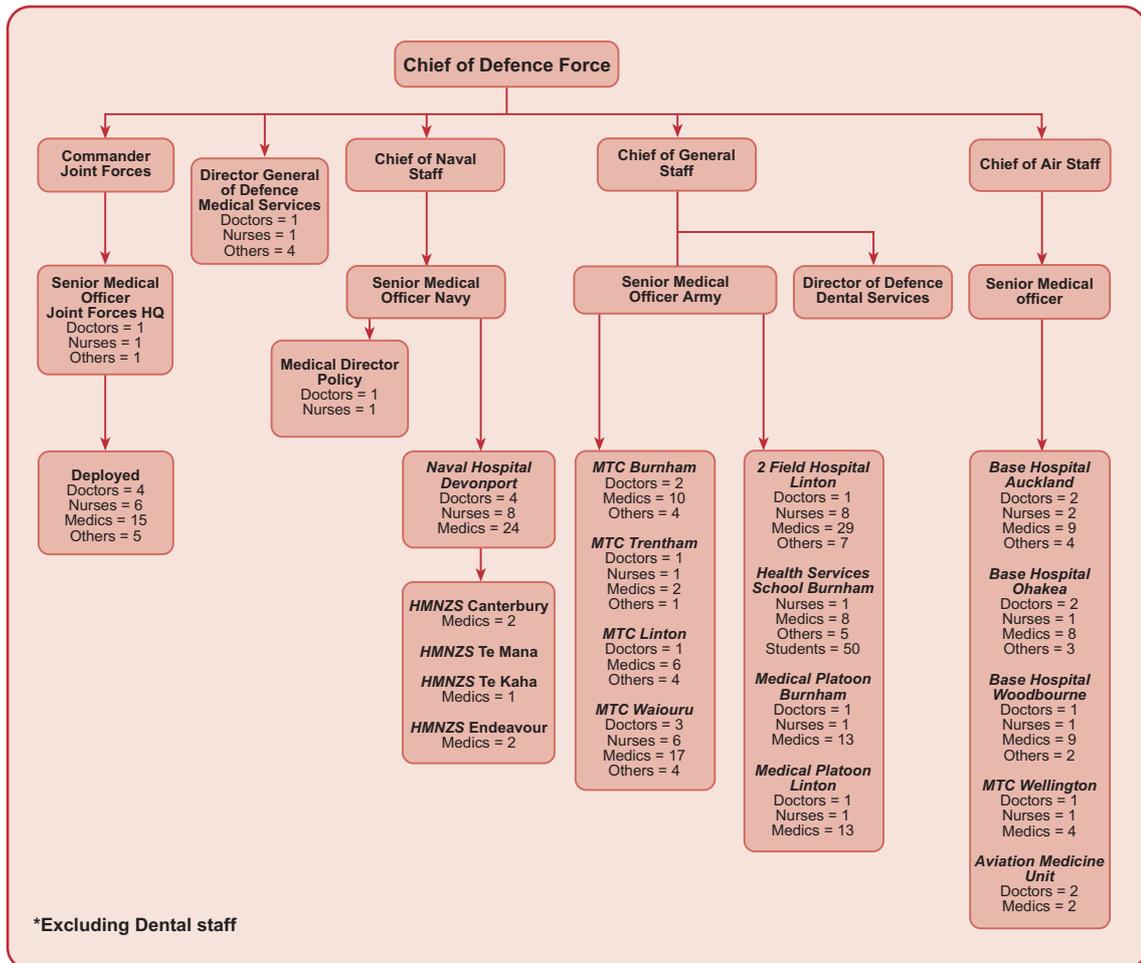
# HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

Figure 4  
HSS Command Structure



## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

*Figure 5  
HSS – Who and Where?  
(May 2002)*



2.10 Precise numbers of HSS staff have proved difficult to determine – we attempted to examine the numbers of such personnel available for deployment leading up to East Timor, but the data was not reliable and establishment figures were outdated. This made it difficult to form a view on whether there were sufficient HSS personnel available to support NZDF operations.

2.11 Using the annual historical data that the NZDF provided, Figure 6 on the opposite page illustrates the changes in Regular Force HSS staff for the three main clinical staff groups (doctors, nurses and medics), compared with changes in NZDF personnel numbers since 1990. It shows that the proportion of HSS personnel has remained steady at about one HSS staff member for every 34-38 members of the Regular Force.

## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

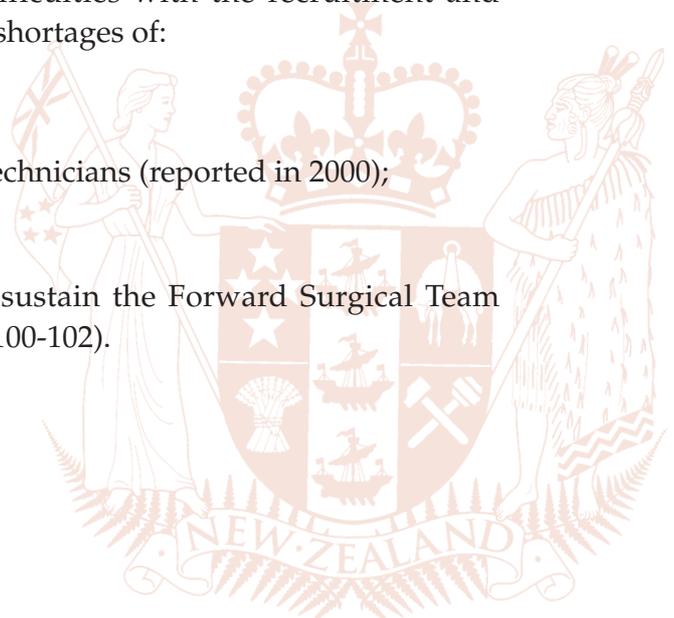
*Figure 6  
Regular Force HSS Personnel 1990-2002*

Year	NZDF Doctors	NZDF Nurses	NZDF Medics*	Total HSS	Total NZDF (RF)
1990	28	26	133	187	11,745
1991	28	24	120	172	11,515
1992	26	22	117	165	10,780
1993	25	24	99	148	10,322
1994	22	24	106	152	10,072
1995	21	26	105	152	9958
1996	20	28	205	253	9611
1997	22	27	202	251	9462
1998	22	30	219	271	9526
1999	19	27	213	259	9328
2000	23	29	223	275	9403
2001	23	27	209	259	9098
2002	21	25	194	240	8680

\* There were no figures available for Army medics from 1990 to 1995 – this distorts the total HSS figures for those years.

2.12 However, there are well-reported difficulties with the recruitment and retention of HSS personnel, including shortages of:

- medics (reported in 1999);
- environmental health officers and technicians (reported in 2000);
- Army doctors; and
- medical specialists to deploy and sustain the Forward Surgical Team (see paragraphs 6.28-6.38 on pages 100-102).



## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

### Non-operational Services

2.13 Primary health care for NZDF personnel makes up the majority of non-operational health services.

2.14 Medics provide first-line primary health care in the course of their normal duties in sick bays on ships or at aid posts in Army units. They are trained to diagnose and treat a wide range of afflictions – ranging from headaches, colds, sprains and strains, through to trauma and resuscitation. Medics also play an important part in helping to maintain the morale of personnel. They are frequently well respected in their unit and usually regarded as a person who can be trusted and confided in.

*The HSS provides primary health care – secondary health care is provided by the public health system.*

2.15 The procedures and guidelines for treatment by medics are set out in the Medical Treatment Protocols. While on deployment, medics may work alone without supervision from a nurse or doctor. While in New Zealand, however, medics will usually work alongside other nurses and doctors at a medical treatment centre (MTC) (see Figure 5 on page 34) which, typically, provides for:

- **sick call/parade** – where personnel will present themselves at a standard time of the day if they are unwell (The general treatment of coughs, colds, bumps, bruises and injuries is very similar to a general practitioner’s daily surgery. More complex conditions are referred to particular specialists in the public health system where appropriate.)
- **medical fitness testing** – attending to the medical examination of personnel to ensure that they retain the required level of fitness for military operations; and
- **safety coverage** – for hazardous training activities like flying, diving, parachuting, demolition and live firing.

2.16 Linton Army Camp MTC has 18 beds and the Naval Health Service Hospital at Devonport has 20 beds, to undertake limited secondary care or to isolate personnel if they have a contagious condition. The Naval Hospital also acts as a training facility for Navy medics and has a specialist hyperbaric chamber unit for the care of divers. All other secondary care is provided by the public health system.

### *Dental Services*

- 2.17 The Defence Dental Services is an NZDF-wide organisation run by the Director of Dental Services based in Wellington. It is designed to provide all the routine dental care that would be provided by a civilian dental practice.
- 2.18 There are nine dental centres throughout the country providing dental services to all NZDF personnel. There are four regular force dentists (Dental Officers), with the remaining centres staffed by civilian dentists and a mix of regular force and civilian oral hygienists and dental assistants.
- 2.19 All Regular Force personnel undergo an annual dental check – receiving treatment work as required – and are assessed and graded as “dentally fit for deployment”.

### **Operational Services**

- 2.20 Military clinical support is required to be on hand to support NZDF deployments. There are five levels of operational health care. Each incorporates the capabilities of the lower levels, expanding on that care (see Figure 7 on page 38). At the operational level, HSS are integrated into the units they support and provide primary health care and emergency secondary health care.
- 2.21 Army is capable of providing an in-theatre “life saving” surgical facility while the Air Force is responsible for aero-medical evacuation. Specialised surgery, advanced care, hospitalisation or rehabilitation capabilities are not provided for operational deployments.
- 2.22 The Navy requirements for health support are maintained in much the same configuration for peacetime training as when deployed on military operations. Sickbays are maintained on all ships other than minor vessels. Medics generally run the sickbays, but doctors can be deployed when the risk of battle casualties or other injuries is considered a possibility.
- 2.23 Unlike Army and the Navy, no standing operational health support exists within the Air Force. Operational resources are drawn from non-operational medical facilities as required. Air Force deployable health support normally comprises a doctor and/or medics accompanying a deployed force where dictated by the operational environment.

## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

*Figure 7*  
*Levels of Health Care<sup>4</sup>*

### Level One

Location and removal from danger of casualties and provision of immediate first aid. Self or “buddy” aid, examination and emergency lifesaving measures such as maintenance of airways, control of bleeding, prevention and control of shock, and prevention of further injury. Treatment at a Company Aid Post, a Regimental Aid Post or some similar facility with trained medical personnel where treatment could include restoration of airway, use of intravenous fluids, antibiotics, and application of splints and bandages.

### Level Two

Collection, sorting, treatment and evacuation of casualties, and provision of resuscitation procedures where appropriate. Provided at a minimal care facility and can include basic laboratory, pharmacy and temporary holding facilities. Surgical support not normally provided. At this level, medical examinations and observations can be conducted in a more deliberate manner. Focus on sustaining care and evacuation, resuscitation and stabilisation.

### Level Three

Initial wound surgery performed and hospitalisation provided for medium- and high-intensity nursing of the wounded, sick and injured. Facilities staffed and equipped to provide resuscitation, initial wound surgery and post-operative treatment. Care may be the initial step towards restoration of functional health, as distinct from procedures that stabilise a condition. Treatment provided with greater preparation and deliberation. Preparation for evacuation of those patients who require care beyond the scope and management of the unit.

### Level Four

Specialised surgery, rehabilitation and hospitalisation are provided within the limits of the holding policy. Normally the highest level of care provided in an area of operations.

### Level Five

The highest level of care, which is not normally provided in theatre. Includes specialised and sophisticated management and care associated with the most advanced range of medical capabilities. Research facilities are provided.

<sup>4</sup> United Nations levels of medical treatment are defined slightly differently – a Level Two UN facility is a Level Three NZ facility.



### *Standards of Operational Care*

- 2.24 Defence Force Order 18 (DFO 18)<sup>5</sup> defines the primary role of the HSS as being to develop, preserve and exercise a sustainable medical capability for the support of military operations. DFO 18 requires medical personnel to be adequately trained, and medical professional expertise to be available to treat and rehabilitate both battle and non-battle casualties.
- 2.25 DFO 18 does not specify operational standards or policy. The operational activities of individual HSS units are set out in the *NZ Army Medical Support for Land Operations* document Standard Operating Procedures (SOPs).
- 2.26 The level of medical care provided in East Timor was determined by:
- the NZDF medical protocol document;
  - other New Zealand professional standards for medical practitioners; and
  - the standards set out in the *Medical Support Manual for United Nations Peacekeeping Operations*.
- 2.27 New Zealand HSS and other United Nations medical support are also required to comply with the:
- International Convention for the Treatment of the Sick and Wounded;
  - Geneva Convention and its Protocols; and
  - Laws of War as they pertain to medical units and their personnel.

### *No. 2 Field Hospital*

- 2.28 The primary operational medical unit in the NZDF is Army's No. 2 Field Hospital (2 Fd Hosp) located at Linton Army Camp. 2 Fd Hosp is designed to provide a range medical support for all NZDF operational deployments. This includes:
- a Forward Support Section comprising medics<sup>6</sup> for Company Aid Posts and medics, nurses and doctors for Regimental Aid Posts;

<sup>5</sup> Revised 2000.

<sup>6</sup> Though allocated to 2 Fd Hosp, the majority of medics are not usually physically located there but are on active service with other units.

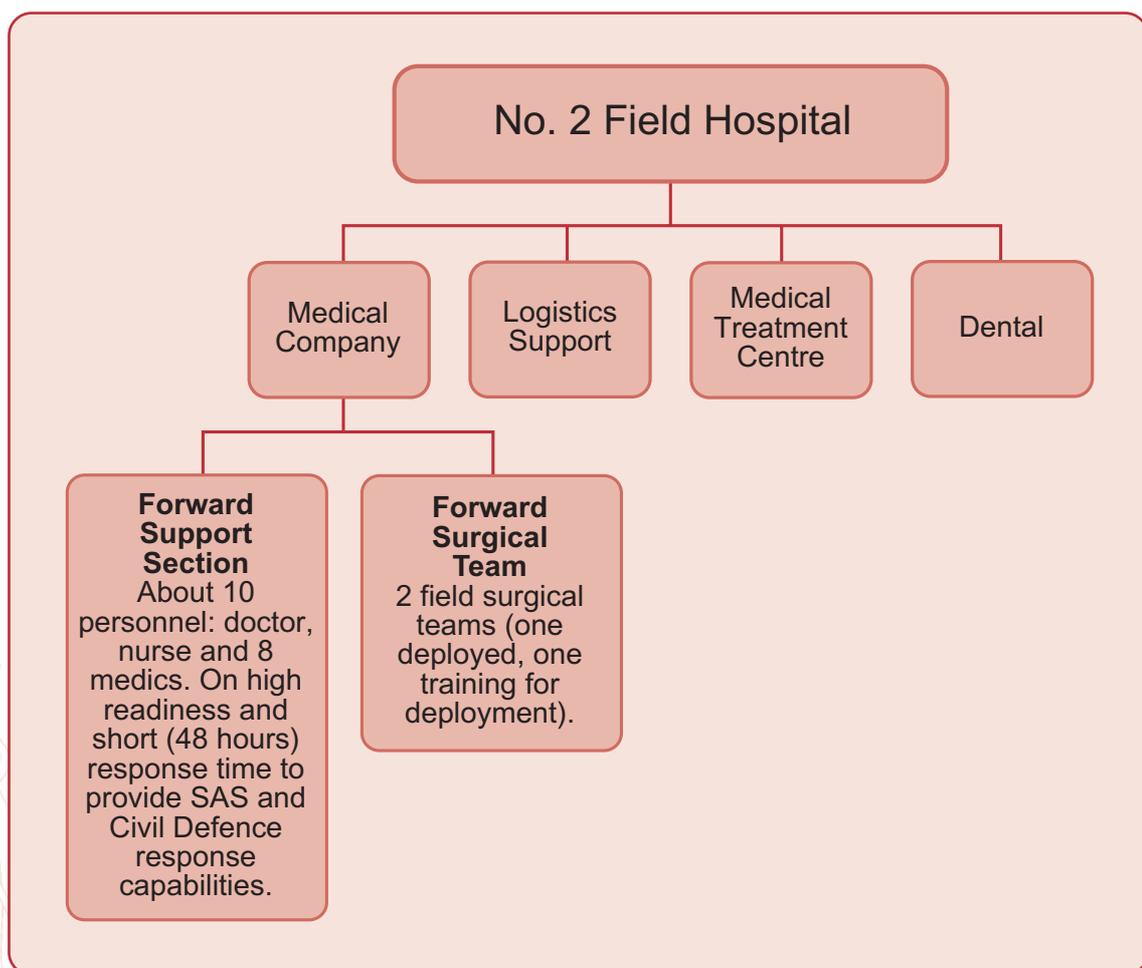
## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

- medics, nurses, doctors and other medical specialists for the Forward Surgical Team on deployment and for another retained in New Zealand for training and exercises; and
- environmental health officers as required.

2.29 In addition, 2 Fd Hosp is responsible for the training and provision of other non-medical personnel, such as command and administration staff, required to run any health support facility.

2.30 The structure of 2 Fd Hosp is shown in Figure 8 below.

*Figure 8*  
*Structure of Army No. 2 Field Hospital Linton*





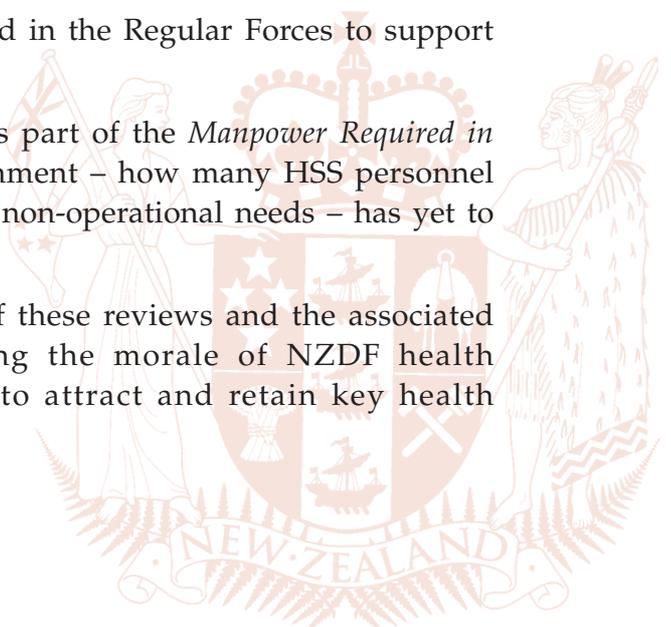
## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

### *Readiness to Deploy*

- 2.31 The NZDF's Operational Preparedness Reporting System (OPRES) measures the preparedness of individual force units at regular intervals.
- 2.32 The only operational health support unit to directly report through OPRES is 2 Fd Hosp. This unit has consistently (since 1996) reported its failure to meet the desired level of capability due to shortages of personnel and equipment.
- 2.33 The operational preparedness of other health support components is not generally visible through OPRES because they report as an integral part of a larger unit. NZDF's Joint Forces Headquarters noted that the OPRES system did not give any clear picture of HSS capability to deploy staff or to prepare other personnel for deployment at any one time.

### Reviews

- 2.34 The structure and delivery of HSS have been subject to a succession of reviews going back to 1988. These reviews have focused upon a number of issues, including:
- the structure for delivery of operational and non-operational HSS for the whole of NZDF;
  - the options for delivery of non-operational health care – including Regular Force personnel or contracting out services to civilian personnel;
  - separation or integration of operational and non-operational health support establishments; and
  - numbers of HSS personnel required in the Regular Forces to support potential operational requirements.
- 2.35 HSS are still under review in 2002 as part of the *Manpower Required in Uniform* review. The revised establishment – how many HSS personnel are required to meet operational and non-operational needs – has yet to be determined.
- 2.36 In our view, the protracted nature of these reviews and the associated uncertainty are adversely affecting the morale of NZDF health professionals and NZDF's ability to attract and retain key health professionals into the HSS.



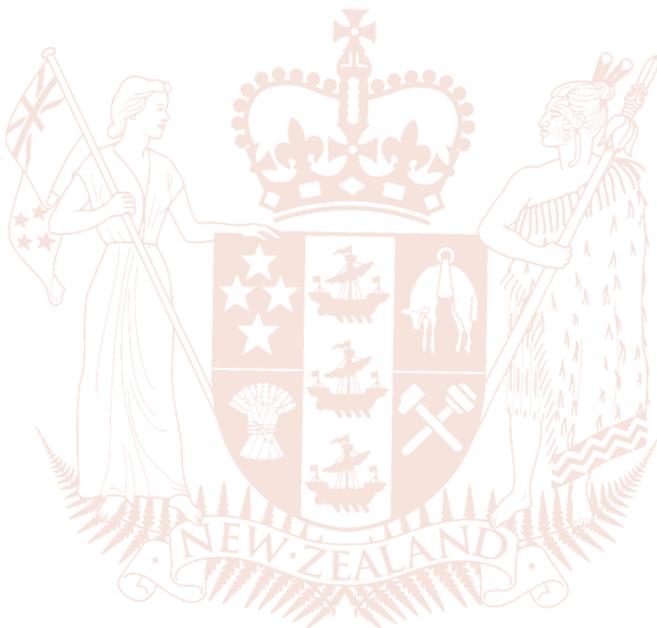
## HOW ARE HEALTH SUPPORT SERVICES ORGANISED?

### Funding

- 2.37 The NZDF estimated in 2001 that total HSS expenditure was about \$26 million each year, representing about 1.8% of the total annual appropriation for NZDF at that time.
- 2.38 Of this sum, \$14.2 million of costs are directly identifiable to HSS. The balance falls into other categories of expenditure.
- 2.39 The only directly identified costs that appear in the NZDF's Annual Reports are those attributed to Output Class: D9.2 Land Combat Service Support Forces. These represent the costs of 2 Fd Hosp, and have amounted to just over \$10 million in each of the last two years.

### Accident Compensation

- 2.40 The NZDF is an Accredited Employer under the ACC Partnership Programme. ACC forms were prepared in theatre at the Regimental Aid Post in East Timor, as appropriate, for any injury and illness, and were returned to New Zealand monthly.



## Part Three

# Arrangements for Keeping Medical Records





### Why Medical Records Are Important

- 3.1 Health professionals need access to comprehensive, accurate health information in the form of individual medical files that record a person's health status. Without such records, patient care – and even patient safety – may be put at risk. The HSS also require collective health information about the current deployment readiness of personnel, and about the diseases, injuries and treatments they need to plan to provide for.

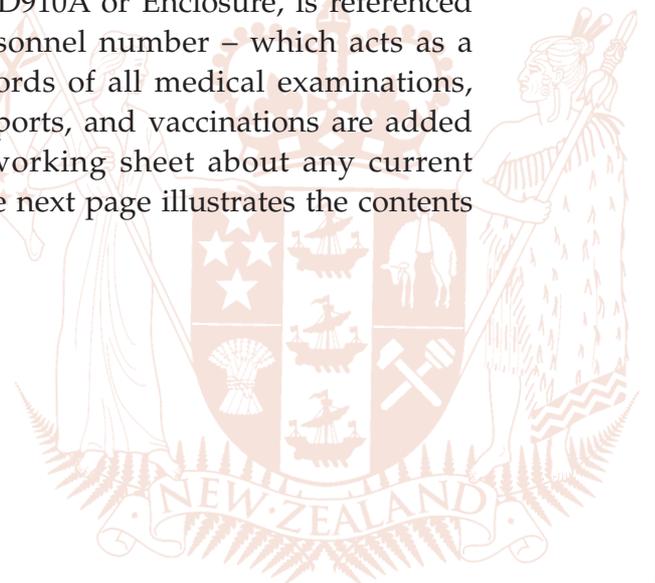
*A medical records system should provide:*

- *accurate information about the health status of each person; and*
- *collective information about the health and deployment readiness of the NZDF.*

- 3.2 Early in our examination, we identified medical records as a key area requiring improvement, because the current poor state of medical records affects a number of dimensions of HSS provision. We have therefore drawn all our findings in relation to medical records into this part of our report in order to give a clear overview of the problem.

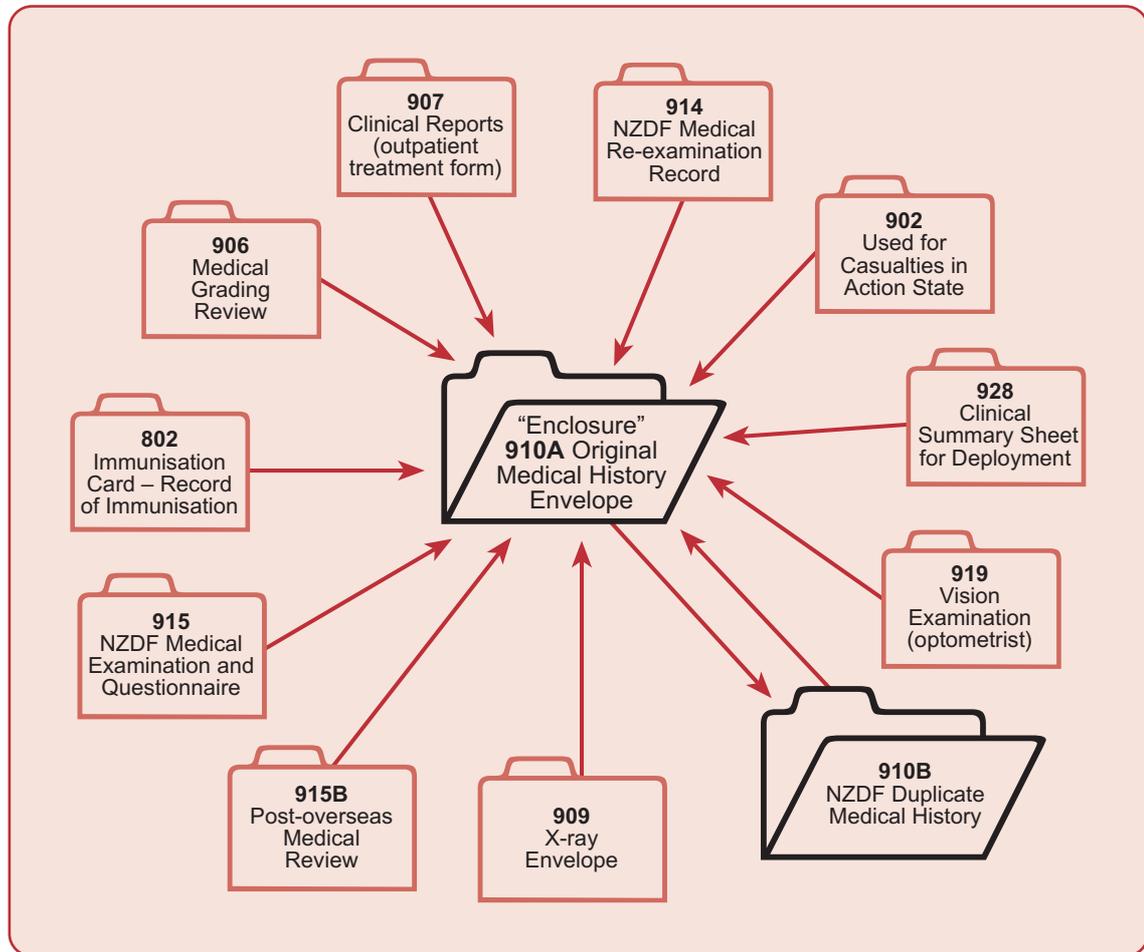
### The Medical File

- 3.3 The NZDF uses a standard paper-based medical file for all personnel.
- 3.4 The medical file is started when someone joins the NZDF, undergoes a comprehensive medical examination, and is given a medical fitness grading. The medical file, called an MD910A or Enclosure, is referenced by the person's name and service personnel number – which acts as a unique identifier. From that point, records of all medical examinations, treatments, laboratory results, X-ray reports, and vaccinations are added to the file. The file also contains a working sheet about any current condition or treatment. (Figure 9 on the next page illustrates the contents of a medical file.)



## ARRANGEMENTS FOR KEEPING MEDICAL RECORDS

*Figure 9*  
*Contents of a Medical File*



3.5 The NZDF also maintains a duplicate file (MD910B) for each person. The Navy maintains its duplicate files on optical disc, while Army and the Air Force hold photocopied files at their respective Service Headquarters. This “B” file must be updated on a regular basis to keep it current.

3.6 All original files (both A and B) of discharged NZDF personnel are stored and never destroyed or disposed of.

3.7 While the NZDF has policies requiring standardised management of medical files, we found variations in the way files were used and managed between different MTCs and between the different Services.



## ARRANGEMENTS FOR KEEPING MEDICAL RECORDS

3.8 Completeness of the information on medical files can be a problem – as illustrated by the finding of a review undertaken by one MTC that, of 35 patients seen in one day, only one medical file was complete. Missing items included:

*Medical files have been found to be incomplete.*

- file notes;
- misplaced (in the wrong file) lab results; and
- recall dates for vaccinations.

3.9 The review identified a risk of medical misdiagnosis or incorrect treatment that could result from incomplete medical records.

### Personnel Medical Information for Deployment

3.10 HSS needed medical information about personnel being deployed to East Timor. These personnel were required to meet four basic health requirements:

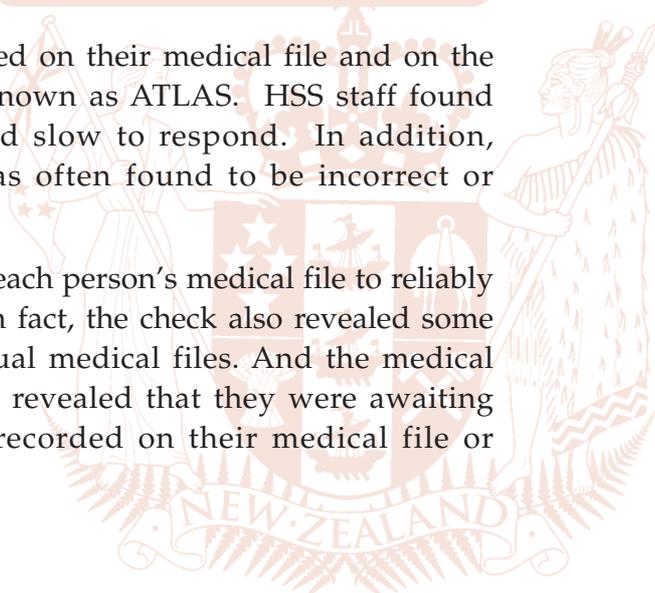
1. pass a medical examination;
2. have their vaccinations up to Protocol A standard, and be vaccinated for Japanese encephalitis virus;
3. be dentally fit; and
4. pass a physical fitness test.

*All NZDF personnel deploying to East Timor were required to:*

- *pass a medical examination;*
- *have their vaccinations up to Protocol A standard, and be vaccinated for Japanese encephalitis virus;*
- *be dentally fit; and*
- *pass a physical fitness test.*

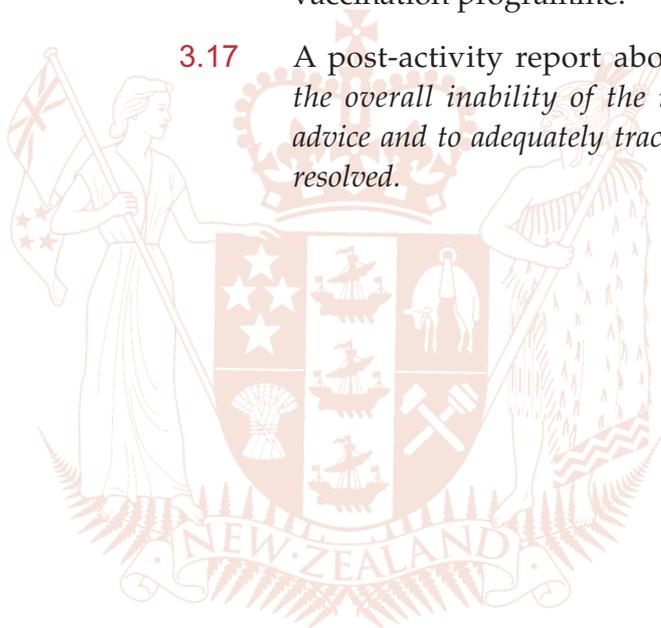
3.11 A person's medical grading is recorded on their medical file and on the NZDF electronic personnel system known as ATLAS. HSS staff found the ATLAS system cumbersome and slow to respond. In addition, information held on the system was often found to be incorrect or incomplete.

3.12 As a result, it was necessary to access each person's medical file to reliably check their current fitness grading. In fact, the check also revealed some poor quality information on individual medical files. And the medical examinations of some key personnel revealed that they were awaiting treatment or carrying injuries not recorded on their medical file or reflected in their medical grade.



## ARRANGEMENTS FOR KEEPING MEDICAL RECORDS

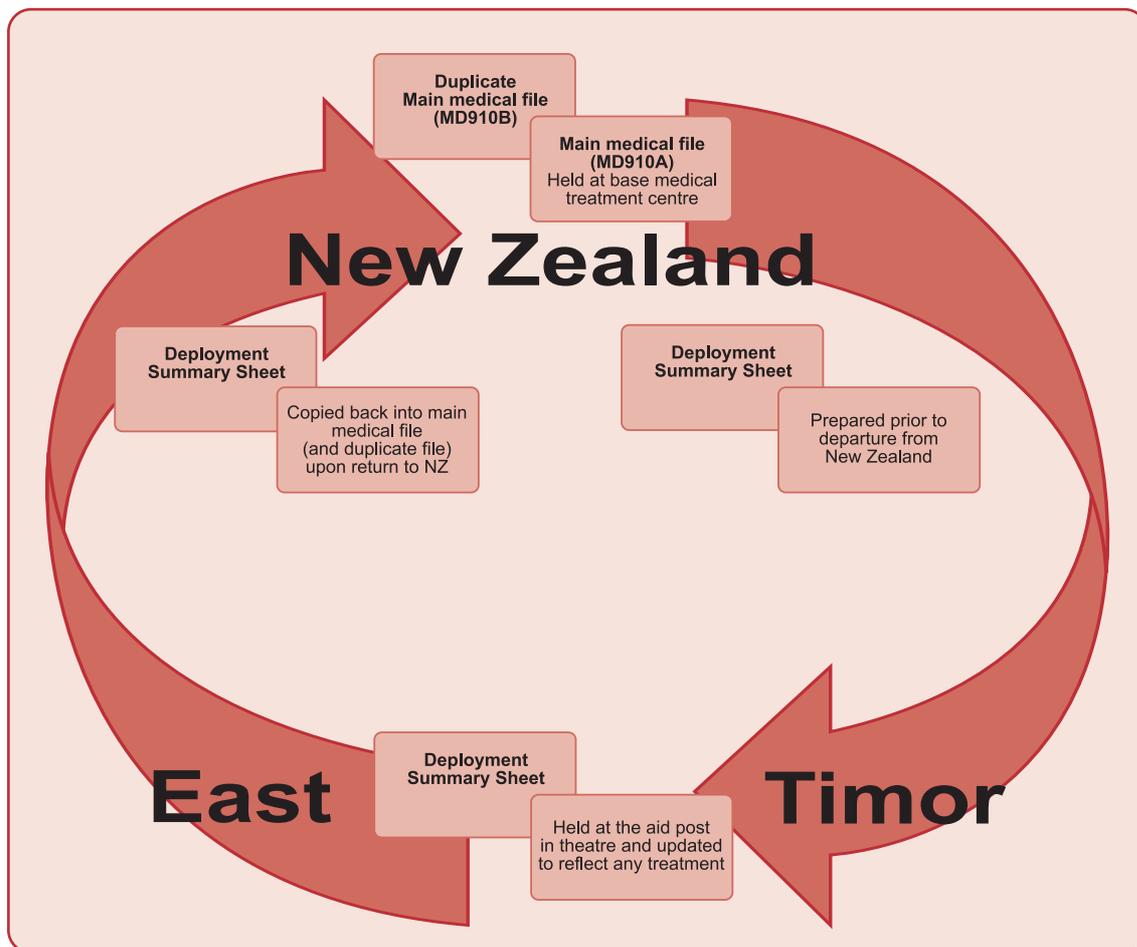
- 3.13 In order to be sure about the health of deploying personnel, HSS staff therefore reviewed all medical files. In addition, a large proportion of personnel were given medical examinations. These tasks created a large workload for HSS staff.
- 3.14 All NZDF deploying personnel must be vaccinated to a standard known as Protocol A (see paragraphs 4.25-4.31 on pages 62-64). For the East Timor deployment, most personnel were also required to be vaccinated against Japanese encephalitis virus (see paragraphs 4.32-4.41 on pages 64-66). Details of the vaccination status of each person is held on their:
- individual medical file;
  - immunisation card; and
  - Clinical Summary Sheet for deployment.
- 3.15 This information is not held on ATLAS. The NZDF has for some time been attempting to upgrade ATLAS to include vaccination status, but the upgrade has not yet been implemented.
- 3.16 In the absence of an NZDF-wide computerised medical records system, some medical treatment centres have developed stand-alone systems in order to keep track of the health and/or vaccination status of personnel under their care. For example, Air Force Base Whenuapai and the Waiouru MTC use general practice management software which includes utilities such as appointments scheduling, screens for recording examination results and referrals, immunisation schedules, prescription forms and prescribing data. And because the Linton Medical Treatment Centre had no comprehensive information about the vaccination status of personnel, staff created a computer database to assist the management of the vaccination programme.
- 3.17 A post-activity report about the INTERFET deployment concluded that *the overall inability of the medical information system to provide consistent advice and to adequately track the medical status of deploying personnel must be resolved.*



## Arrangements for Medical Records During Deployment

- 3.18 When a person is deployed, the full medical file is not sent with them.<sup>7</sup> Instead, a summary medical history (summarising the person's medical history and all other relevant information – such as blood group, hepatitis status, vaccination status, and allergies) is prepared and sent to the senior medical officer in theatre – to the Regimental Aid Post in the case of East Timor. If any diagnosis or treatment is conducted in theatre, this is added to the summary. On return to New Zealand, the summary is returned to the MTC, and the main A file is manually updated as necessary. The same process is repeated for the B file. An illustration of this process is provided in Figure 10 below.

Figure 10  
Arrangements for Medical Records During Deployment



<sup>7</sup> The Navy does send the full medical files on deployment with personnel.

## ARRANGEMENTS FOR KEEPING MEDICAL RECORDS

- 3.19 Administering medical documentation for personnel deployed to East Timor has been a time-consuming process – updating medical files prior to deployment, preparation of a summary sheet to accompany deployed personnel, and updating of information on both the main medical file and the B copy. Administrative staff had to work very long hours on occasions – sometimes through the night – in order to meet deployment timelines.
- 3.20 Opinions were divided about the usefulness of medical summary sheets in theatre. Some nursing and administration personnel felt that producing and returning them was unnecessary and inefficient, because treatment in theatre did not usually require immediate access to the medical records and most summaries were not referred to throughout the deployment. Some other nations deploying with the New Zealand force did not bring medical files. However, Medical Officers (doctors) felt that the summaries could, in some cases, provide information critical to the diagnosis and treatment of a patient, and that they were therefore essential.

*Administering medical documentation was onerous and time-consuming.*

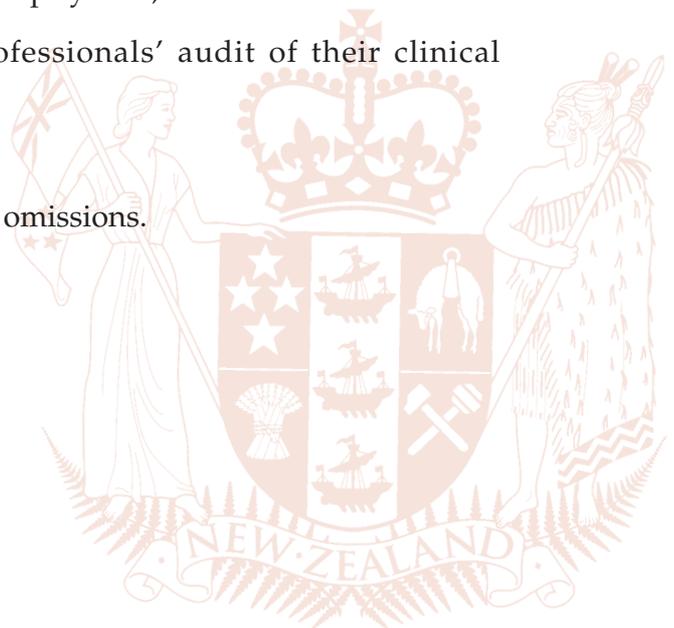
### Analysing Information for Health Surveillance

- 3.21 Health surveillance is defined as the process of data collection, collation and analysis for the purpose of characterising risk groups within the population. It is used to develop prevention and treatments appropriate to the environment. In the context of NZDF, health surveillance is a key component of prevention and the management of illness and injury.
- 3.22 HSS staff in East Timor:
- gathered daily information on conditions and treatment patterns;
  - analysed the information, and identified and investigated trends; and
  - supplied statistics to the United Nations.
- 3.23 However, information was collected in a different form from one Battalion rotation to another, and the statistics gathered for the United Nations did not show treatment patterns for New Zealand personnel. As a result, the NZDF has only limited statistics about illness, injury and treatments for NZDF personnel throughout the deployment. Such information is only available from special studies. The NZDF has recognised this shortcoming.

- 3.24 In 2001, the NZDF adopted a health surveillance system used by American, British, Canadian and Australian armed forces called EPIDATA. The system is currently (June 2002) being tested in two MTCs before being adopted more widely. It involves the manual collection of additional information in parallel to the current medical record system.

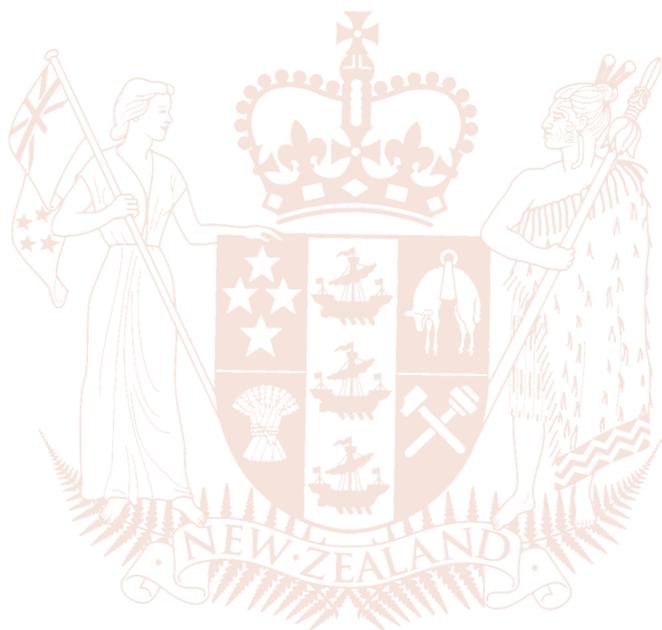
### Developing a Computerised Medical Information System

- 3.25 The NZDF has considered a number of proposals for an NZDF-wide computerised medical records system, but no progress has been made to date towards funding or implementing such a system.
- 3.26 Reports prepared within the NZDF show that a properly implemented and operated computerised system across the NZDF would:
- make accurate individual Service personnel medical files available at medical treatment centres and to appropriate personnel at NZDF headquarters;
  - assist practice management at medical treatment centres with better health surveillance, appointment scheduling and financial management; and
  - provide better data to NZDF overall for capability planning, deployment management and reporting.
- 3.27 An NZDF review in March 2002 of options for the computerisation noted substantial benefits – including:
- an efficient patient recall and follow-up system;
  - improved support for health professionals' audit of their clinical practices;
  - increased patient safety; and
  - reduced liability from mistakes and omissions.



### Conclusions

- 3.28 Medical records need to provide accurate and readily accessible information about the health history and status of all personnel, and information about the medical fitness of the defence force as a whole and its readiness to deploy. The current arrangements in the NZDF do not achieve these aims – the main system is paper-based, and records have to be updated and analysed manually. Using such a system made it more difficult for HSS personnel to check the health status and prepare personnel for the East Timor deployment.
- 3.29 Over time, a patchwork of electronic records systems or medical databases has evolved – at each Service or medical treatment centre’s own initiative – operating in parallel to the manual system. The NZDF has considered establishing computerised medical records, which it has noted would bring a number of benefits – including increased patient safety.



## Part Four

# Health and Medical Aspects of Getting Ready for East Timor



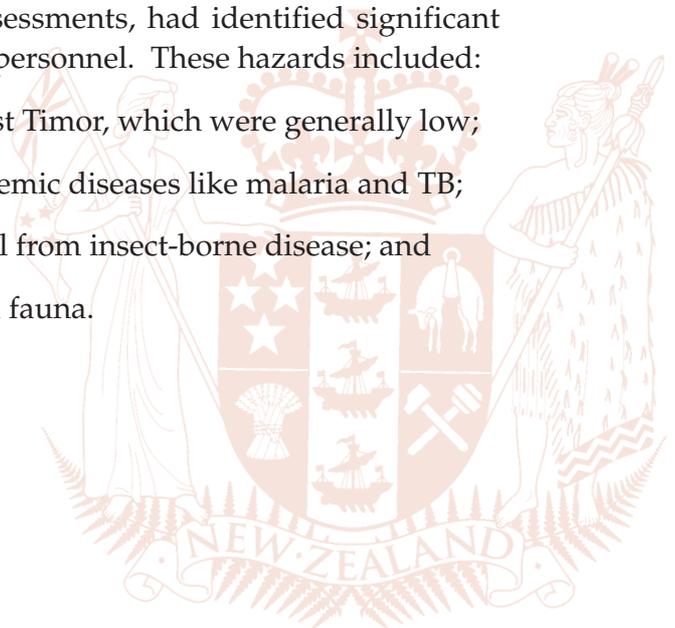


### Introduction

- 4.1 Every military deployment is different. The HSS need to plan carefully to provide effective support to an operation's military objectives. They also need to carry out a range of preparations and training of personnel to ensure that the risks of the operation are managed appropriately.
- 4.2 In this part of the report we discuss health-related training of deploying general military personnel, as well as the specific pre-deployment training of HSS personnel. We comment on how the HSS:
- planned for a possible East Timor operation;
  - prepared general military personnel for deployment;
  - trained HSS personnel for deployment; and
  - trained civilian volunteers.

### Planning for a Possible Deployment

- 4.3 From April 1999, the NZDF had access to directives and a variety of other planning documentation that outlined the purpose of any likely mission, the mission-essential tasks on which training would be based, and the time-lines for such training.
- 4.4 HSS planning began as soon as the possibility of a deployment was raised. At first (April 1999) it was unclear what scale and nature of HSS would be required. However, the NZDF Health Intelligence Officer, whose role is to produce Environmental Threat Assessments, had identified significant potential health hazards to deploying personnel. These hazards included:
- health and hygiene standards in East Timor, which were generally low;
  - a number of highly contagious, endemic diseases like malaria and TB;
  - a high threat to deploying personnel from insect-borne disease; and
  - high risks from hazardous flora and fauna.





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4.5 Information about East Timor was gathered from a variety of sources such as the Internet, health publications and medical detachments of other armed forces. This was refined and added to a “Country Brief” that outlined the:

- location, geography and climate;
- social, cultural, economic and political background; and
- potential health hazards.

4.6 In August 1999, as the possible location, size and type of military operation became more certain, a plan was prepared. It identified the numbers of medical personnel and equipment, mission tasks and pre-deployment training required. It also outlined:

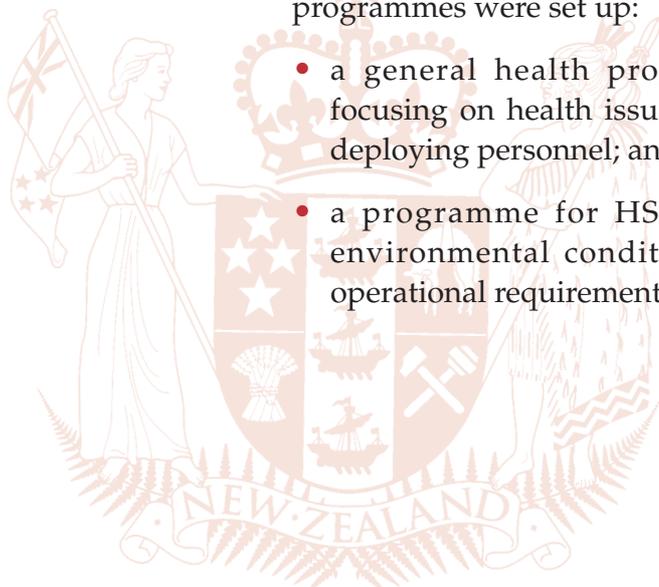
- pre-deployment fitness and vaccination requirements;
- ground and air evacuation procedures;
- a preventive medicine programme to minimise non-battle casualties;
- logistical arrangements; and
- medical procedures required before returning to New Zealand.

4.7 The plan was sent to 2 Fd Hosp to support pre-deployment health preparations. Based on the plan, two pre-deployment training programmes were set up:

- a general health programme focusing on health issues for all deploying personnel; and
- a programme for HSS personnel – taking account of expected environmental conditions in which they would be working and operational requirements.

*The HSS Plan identified personnel and equipment, mission tasks and pre-deployment training necessary for East Timor.*

*No. 2 Field Hospital is the primary NZDF operational medical unit and is located at Linton Army Camp. It is designed to provide medical support for all NZDF operational deployments.*

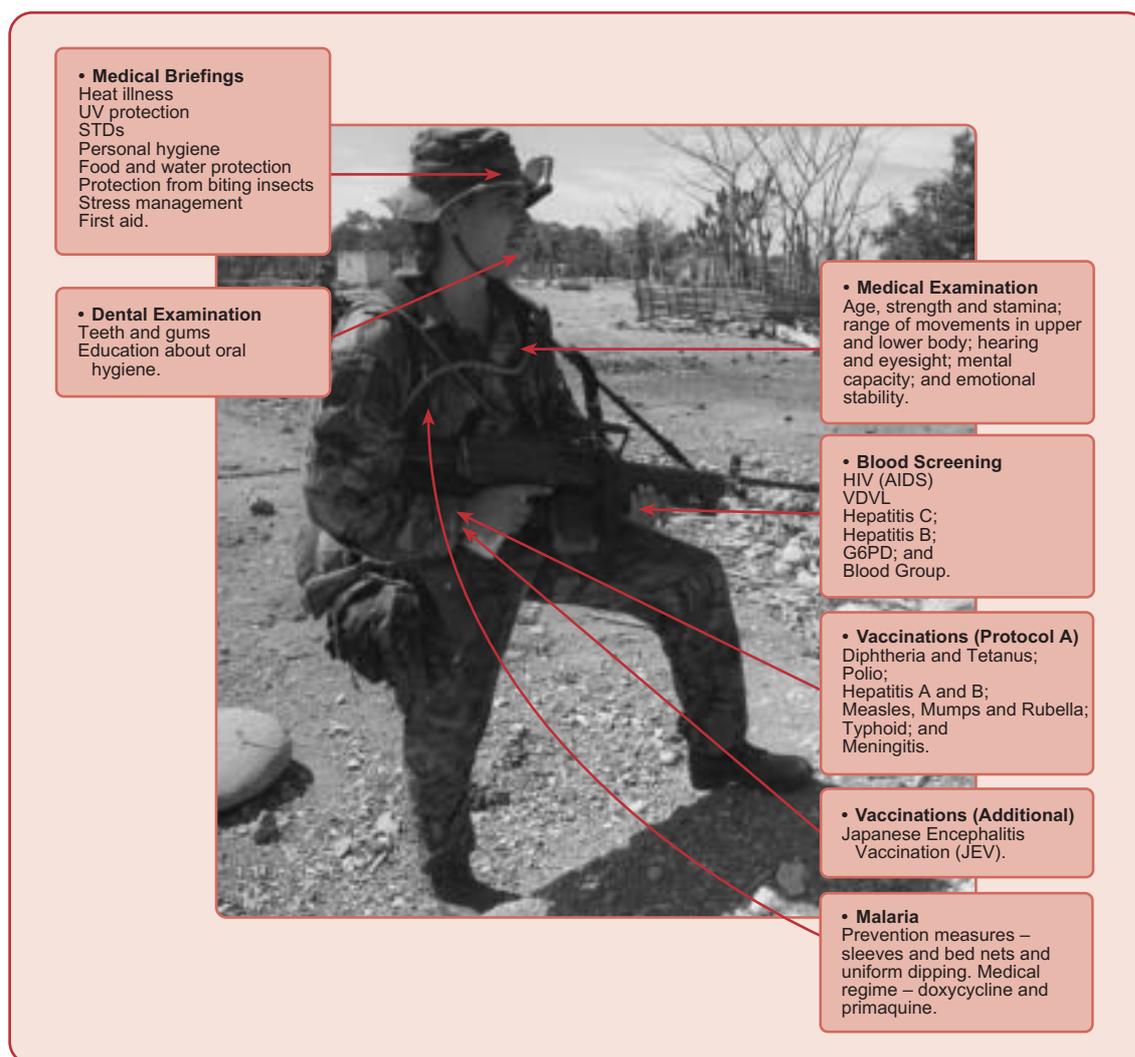


## Preparing General Military Personnel for Deployment

4.8 Figure 11 below illustrates the health-related preparations for deploying personnel – including:

- checking fitness to be deployed (medical and dental);
- protection against diseases, including vaccinations and prevention measures against malaria and dengue fever;
- provision of general health briefings; and
- first aid training.

Figure 11  
Pre-deployment Health Preparations

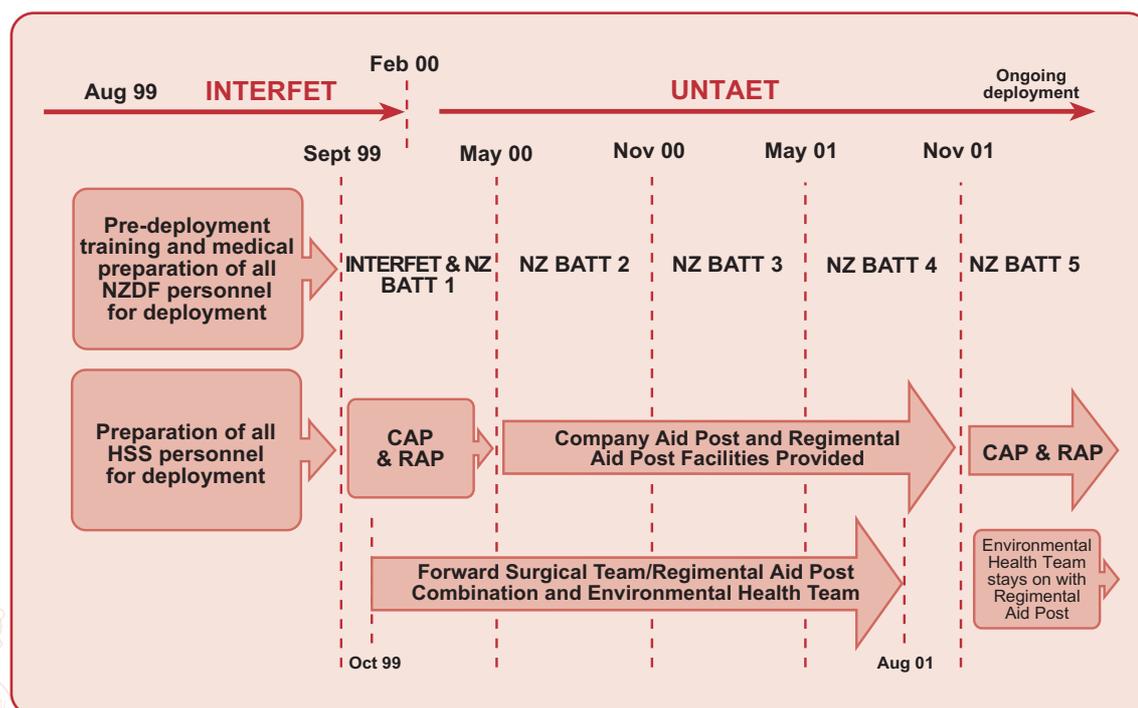


## HEALTH AND MEDICAL ASPECTS OF GETTING READY FOR EAST TIMOR

- 4.9 Most medical preparation was undertaken during the pre-deployment training. For the first INTERFET deployment (known as NZ BATT 1), medical preparation of approximately 700 Army personnel was undertaken at 2 Fd Hosp, Linton Army Camp. Preparation of subsequent Battalion rotations (NZ BATT 2 onwards) has alternated between Burnham and Linton Army Camps. Figure 12 below summarises the time-line of the Battalion rotations in relation to INTERFET and UNTAET, and the main tasks of the HSS.

*The medical requirements for deployment were possibly the largest organisational challenge of the whole operation.*

**Figure 12**  
*Summary Time-line of Batallion Rotations*



- 4.10 Air Force personnel (3Sqn and the crews for the C130 Hercules) were prepared at the Whenuapai Base Medical Flight. Crews for HMNZS *Canterbury* were prepared at the Devonport Naval Health Service Hospital, although some medical vaccinations and examinations continued on board the ship while it was travelling to East Timor.

### *Fitness for Deployment*

- 4.11 As it mobilised, the NZDF needed to know that personnel selected for deployment were medically fit and fully able to carry out their assigned mission task.
- 4.12 Assessing fitness to be deployed involves two components: a medical examination (incorporating a physical fitness test) and a dental examination.

### Checking that Personnel Being Deployed Are Medically Fit

- 4.13 All Regular Force personnel have a periodic<sup>8</sup> medical examination (incorporating a fitness assessment), and their medical grading is reviewed – a process known as a Medical Board or “Med Board”. A Med Board is a comprehensive and systematic medical examination to assess:
- fitness for initial or continued service in the NZDF;
  - fitness for a particular branch, trade or duty;
  - fitness to undergo trial by court-martial and/or sentences of detention or imprisonment;
  - any disability or the extent to which there is a restriction on Service employment; and
  - if appropriate, a recommendation to release an individual on medical grounds.
- 4.14 The NZDF uses an internationally recognised military medical examination that is specifically designed to assess whether an individual is physically and mentally fit for deployment under varying conditions. It assesses:
- strength and stamina (heart and lungs);
  - range of movement in the upper and lower body;

*The medical examination is used to determine whether a person is physically and mentally fit for deployment under varying conditions.*

*It is an occupational assessment that measures whether the person is capable of doing their particular job.*

8 The medical grading of all Regular Force officers of Colonel equivalent rank and above (and some specialist trades) is reassessed every year. The medical grading of all Regular Force members of Lieutenant Colonel equivalent and below is reassessed every five years.



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- hearing and eyesight;
- mental capacity; and
- emotional stability.

**4.15** Med Board assessments must be confirmed by a second qualified doctor whenever the assessment results in a significant change to a person's fitness grading – potentially affecting their employment. The confirmation involves checking the medical file, the clinical assessment notes, and a re-evaluation of the fitness level. Only doctors with substantial armed-forces experience are qualified to act as a “confirming authority”. There are only six doctors in New Zealand qualified to do this work.

**4.16** Figure 13 on the opposite page sets out the standard medical examination process for the INTERFET deployment. It required:

- a file check by the Medical Officer (doctor) for those deploying personnel who had passed a Med Board in the past six months (no medical examination of the individual was required unless the file check alerted the doctor to a possible health issue); or
- a short medical examination for personnel who had not had a Med Board in the past six months; or
- a comprehensive medical examination and detailed questionnaire for those personnel who had not passed a Med Board in the past six months and where the file review identified a possible health issue.

**4.17** The physical fitness component of the medical examination varies in detail between the services. Generally, it involves a series of physical tests to establish the aerobic condition and upper body strength of an individual. The Army fitness test, for example, includes a 2.4km run, sit-ups, and push-ups.

**4.18** For deployment to East Timor, the NZDF set a minimum medical grading that each person needed to obtain (or exceed) in order to be considered “fit to deploy”.

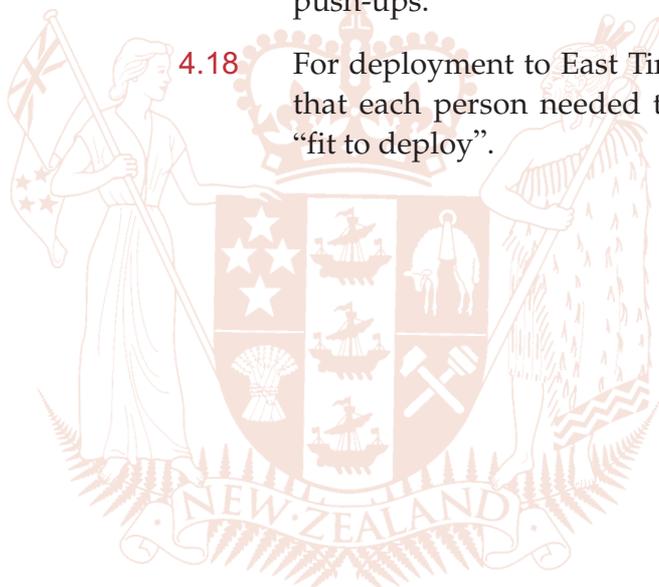
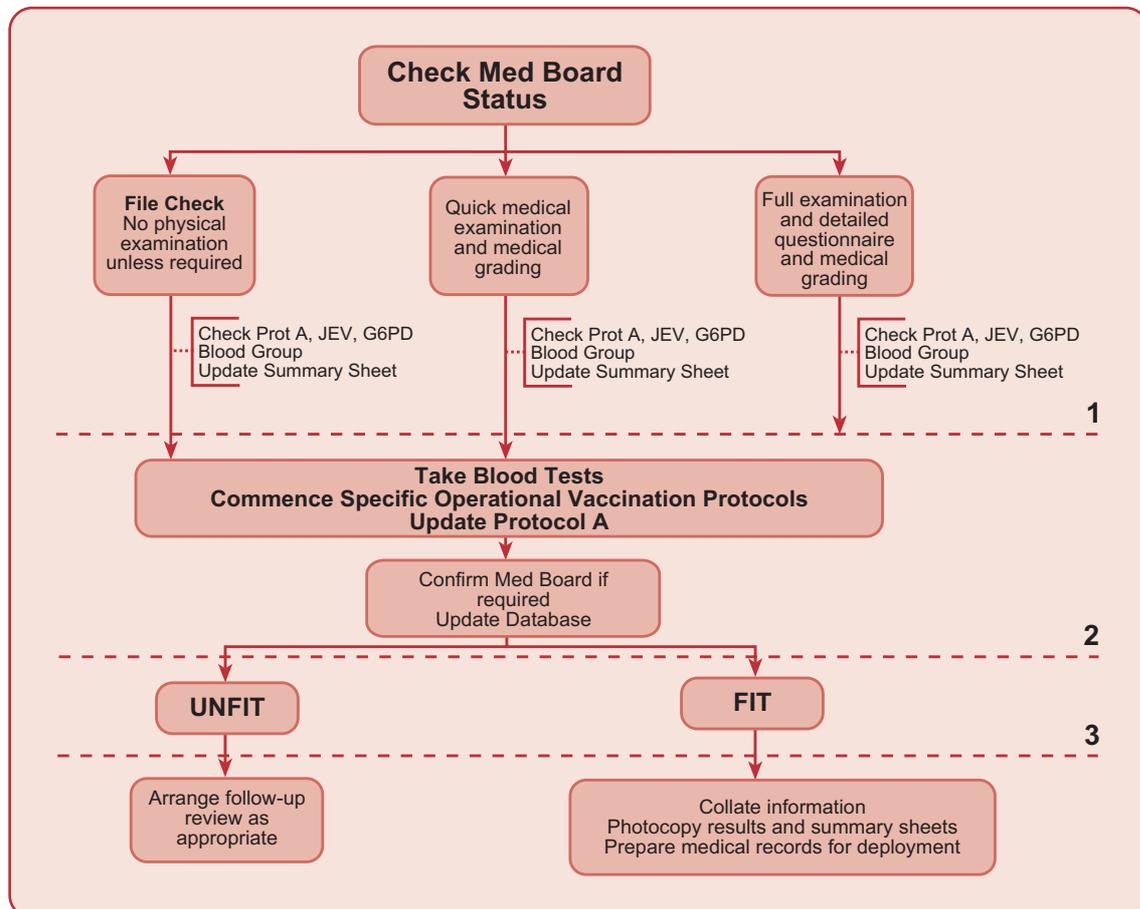


Figure 13  
Pre-deployment Medical Examination Process (INTERFET)



- 4.19 The grading system allows for exceptions in the case of people who do not obtain the minimum medical grading. The doctor who carries out the examination assesses the person and notes the reasons for their failure to reach the minimum grading. The assessment is then considered by the commanding officer, who weighs up factors such as the person's role and duties against the possible risks to them and the unit. On average, two or three people in each rotation have been deployed after undergoing this review or waiver process.
- 4.20 Blood tests for a range of conditions (see Figure 13 above) were a standard part of the pre-deployment medical examination.



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### Checking That Personnel Being Deployed Are Dentally Fit

- 4.21 All NZDF personnel are required to undergo a full dental examination about a month before deployment at a dental clinic in the nearest base location, unless they have had a full dental check-up in the past three months (and were declared dentally fit). The person's dental fitness to be deployed is assessed.
- 4.22 The dentist pays particular attention to any condition (such as the presence of wisdom teeth) that might cause a problem during the deployment, and will carry out preventive work where necessary. A full forensic panoramic X-ray is taken for identification purposes, teeth are cleaned, and the dentist explains how to take care of teeth and gums during the deployment.
- 4.23 All personnel who were deployed to East Timor underwent a full dental examination, and had to be assessed as dentally fit before they were permitted to be deployed.

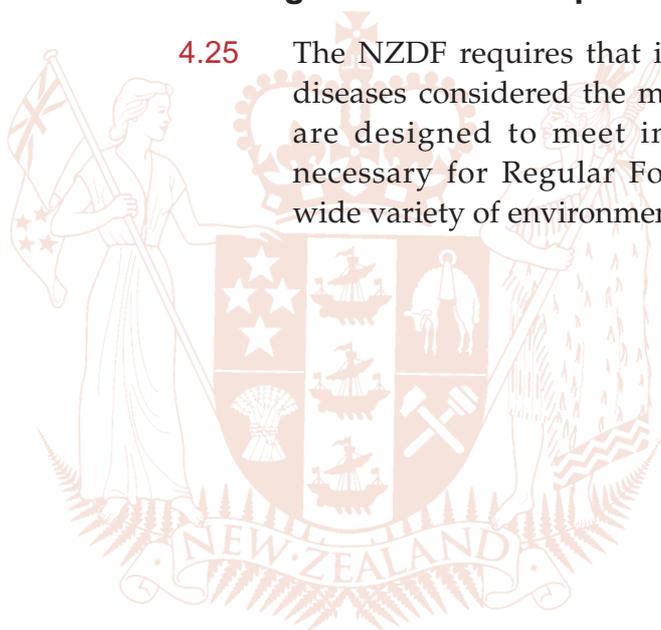
### *Ensuring That Personnel Have Appropriate Protection Against Diseases*

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- 4.24 NZDF operations overseas expose individuals to a greater risk of infection than civilians in New Zealand. It is therefore in the interests of each individual and of the NZDF to protect personnel by vaccination against known diseases.

### Getting Vaccinations Up-to-date

- 4.25 The NZDF requires that its personnel be vaccinated against a range of diseases considered the most likely threat. NZDF vaccination protocols are designed to meet international and operational requirements necessary for Regular Force personnel to be rapidly deployed into a wide variety of environmental settings.





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4.26 All NZDF staff are required to be vaccinated to Protocol A<sup>9</sup> standard at all times. The standard requires current vaccinations against the following diseases:

- diphtheria and tetanus;
- polio;
- hepatitis A and B;
- measles, mumps and rubella;
- typhoid; and
- meningitis.

4.27 All vaccinations are done on the basis of informed consent. Medical Officers (doctors) are responsible to their Commanding Officers to ensure all personnel are made aware of the importance of the protection offered by vaccination. The Unit Commander is responsible for the vaccination status of personnel under their command. Should personnel refuse to be vaccinated, they will be disqualified from deployment.

4.28 The extent to which personnel at any time actually meet the Protocol A standard is an important measure of force preparation and readiness.

4.29 Protocol A was designed to make Commanding Officers responsible for maintaining the vaccinations of their personnel, thereby ensuring that they were ready to be deployed at short notice. As the NZDF prepared for the East Timor deployment, not all NZDF personnel met the Protocol A vaccination standard. A combination of factors contributed to this situation, including:

*Not all NZDF personnel met the Protocol A standard.*

- personnel movements between different units,
- lack of a suitable information system to track vaccination status (see paragraph 3.15 on page 48); and
- the failure of Commanding Officers to give the necessary priority to meeting the standard.

9 Protocol A varies slightly between the three Services to reflect the different circumstances and risks.



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- 4.30 As a result, the NZDF had to administer large numbers of vaccinations before personnel could be confirmed as deployable. This added to the burden of activities to be performed as the NZDF trained and mobilised its force.
- 4.31 Because the NZDF is not able to monitor and regularly report on vaccination status, it does not know how many non-deployed personnel meet Protocol A at any one time. Estimates suggest that compliance with Protocol A varies widely – with some NZDF units as low as 40%, while in other units 90% of personnel meet the standard. As late as August 2001, some personnel were still facing delays in being deployed to East Timor because they lacked all the required vaccinations.

### Vaccinating Against the Japanese Encephalitis Virus

- 4.32 In addition to the Protocol A requirement, planning for the deployment highlighted the need for additional protection for particular diseases found in East Timor.<sup>10</sup> Early health intelligence pointed to the suspected presence of the potentially fatal mosquito-borne Japanese Encephalitis Virus.

#### Japanese Encephalitis Virus

Japanese encephalitis is a mosquito-borne viral encephalitis in Asia. It is potentially fatal. Almost 30% of people who survive a serious infection are left with serious brain damage, including paralysis.

Vaccination against Japanese encephalitis is considered to be 95% effective if the full course of injections is followed. The inoculations require 38 days from the first injection before the person becomes fully deployable. Three injections are required, on the 1<sup>st</sup>, 7<sup>th</sup> and 28<sup>th</sup> days. Personnel may not be deployed immediately following the third injection, but must remain near a hospital for ten days, due to the severe side effects for a small percentage of recipients.

- 4.33 A risk analysis prepared by the Health Intelligence Officer determined that environmental precautions would not be sufficient to guard against the risk of the Japanese encephalitis virus (JEV) and that use of the Japanese encephalitis vaccine would be necessary.

<sup>10</sup> Health intelligence also identified the presence of dengue fever, malaria and rabies.



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- 4.34 In developing a vaccination programme, the NZDF became aware that it did not have enough vaccine for all personnel who were likely to be deployed, and that insufficient stocks were held in New Zealand. The NZDF was aware that the Australian Defence Force had purchased sufficient stocks to vaccinate approximately 11,000 personnel, thereby exhausting immediately available stocks in Australia. The NZDF therefore had to identify international sources of vaccine and organise supply.
- 4.35 The NZDF needed to vaccinate approximately 980 NZDF personnel for the first deployment. The initial priority was to vaccinate Air Force personnel from 3Sqn and members of Victor Company 1RNZIR ready to be deployed with INTERFET in late-September 1999. Sufficient vaccine was obtained from within New Zealand and Australia to complete this task by mid-September 1999, but because the vaccine was in such short supply its administration was placed under the strict control of the senior medical officer in charge.
- 4.36 For the remainder of the New Zealand Battalion Group undergoing pre-deployment training and preparation at Linton, sourcing supplies, organising delivery, identifying priority personnel and administering the three-stage vaccination were significant tasks as the NZDF units mobilised in preparation for deployment. The NZDF identified a European supplier and the vaccine was ordered in early-August 1999. The delivery time was 21 days.
- 4.37 The vaccination process was difficult. There were shortages of the vaccine at critical times. The process effectively dictated the timetables for deployment, and created problems for personnel selection. Moreover, personnel were not permitted to take part in some pre-deployment training activities for a short period after vaccination. This interrupted and constrained pre-deployment training.
- 4.38 Most of the first Battalion Group were vaccinated at Linton together. NZDF health staff are aware that a small number of personnel were deployed to East Timor without full JEV protection. This occurred in a variety of circumstances, including when personnel:
- were directed to be deployed at short notice; and
  - left New Zealand from different locations and were not brought to the attention of HSS staff.

*The JEV vaccination programme was a key determinant of a timely deployment to East Timor.*



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- 4.39 The FST in East Timor held stocks of vaccine to meet the needs of those personnel who arrived without having completed their course of vaccinations.
- 4.40 Navy personnel were required to be vaccinated only if they were going ashore for more than a week. Vaccination was also not required for personnel who were going to be in the risk area for fewer than 30 days in total.
- 4.41 As at September 2002, no NZDF personnel had contracted Japanese encephalitis in East Timor.

### Protecting Against Malaria and Dengue Fever

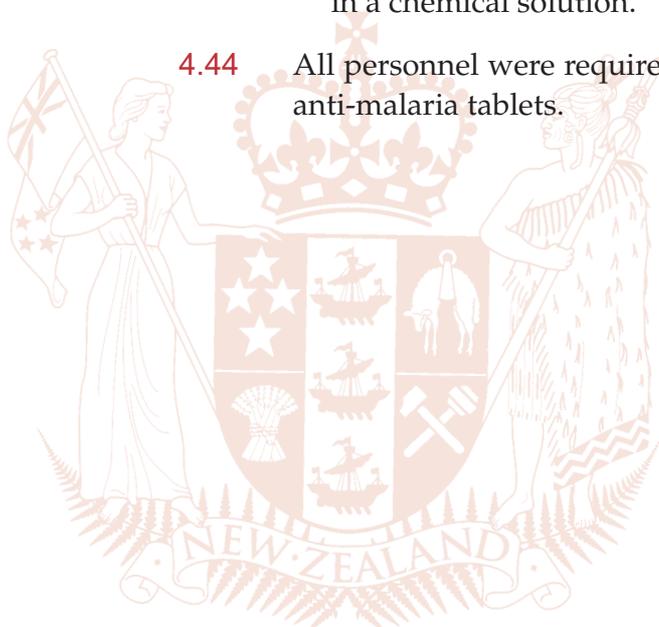
- 4.42 Two types of malaria are common in East Timor, which can be fatal if the parasite reaches the brain. Dengue fever is present in a number of South East Asian and South Pacific countries and can cause serious sickness.

- 4.43 All personnel deploying to East Timor were briefed on precautions they could take themselves to avoid being bitten by mosquitoes (carriers of malaria and dengue) including:

- keeping sleeves rolled down during certain parts of the day; and
- treating uniforms and bed-nets in a chemical solution.

- 4.44 All personnel were required to take anti-malaria tablets.

*Dengue is a flu-like viral disease spread by the bite of infected mosquitoes and occurs in most tropical areas of the world. Dengue haemorrhagic fever is a severe, often fatal, complication of dengue. There is no specific treatment for dengue. Prevention focuses on avoiding mosquito bites in areas where dengue occurs or might occur, and eliminating breeding sites.*



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### Anti-malaria Regime

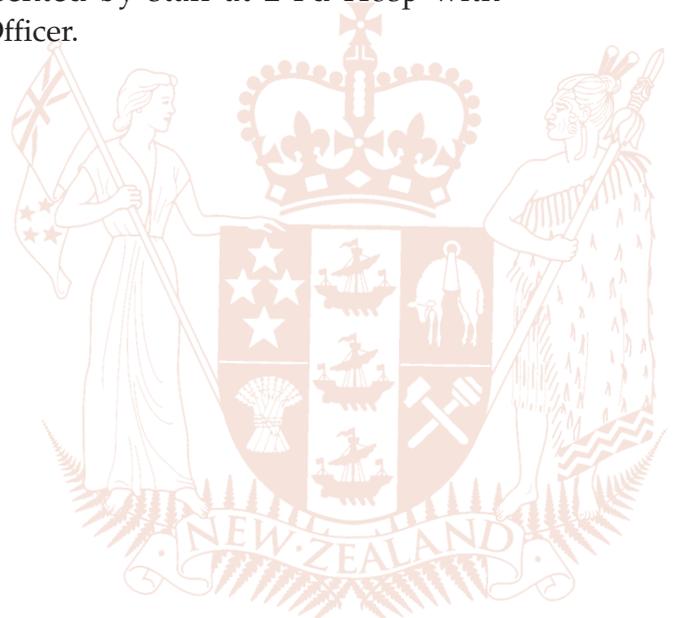
The preventive medicine regime against malaria (chemo-prophylaxis) used by NZDF personnel in East Timor is Doxycycline (100 milligrams per day). This is followed by Primaquine (15 milligrams a day for 14 days) after leaving East Timor.

The alternative drug used by those personnel who are unable to take Doxycycline is Mefloquine (250 milligrams once a week), followed by the same Primaquine eradication programme.

These programmes are in line with the recommendations from the Australian Army Malaria Institution.

### *Providing Health Briefings to Help Personnel Take Care of Themselves*

- 4.45 Health protection depends heavily upon the actions of individual deployed personnel. Much of the health-related preparation and support would be of little value if personnel were ill-informed, or failed to take responsibility for their own health and for the health and safety of those serving with them.
- 4.46 Health briefings for all deploying personnel, as part of pre-deployment training during late-September and early-October 1999, therefore provided important information and encouragement to enable personnel to take these responsibilities seriously. Figure 14 on the next page sets out the briefings prepared and presented by staff at 2 Fd Hosp with support from the Health Intelligence Officer.



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*Figure 14*  
*Pre-deployment Health Training for All Personnel*

Health Briefings	First Aid Training
<ul style="list-style-type: none"><li>• endemic diseases</li><li>• heat illness (dehydration)</li><li>• UV protection of the skin and eyes</li><li>• sexually transmitted diseases</li><li>• personal hygiene</li><li>• protection from biting insects</li><li>• food and water precautions</li><li>• stress management</li><li>• identifying signs and symptoms of shock</li><li>• applying first aid dressing</li><li>• identification of dehydration</li><li>• application of a simple splint</li></ul>	<ul style="list-style-type: none"><li>• identifying signs and symptoms of shock</li><li>• applying first aid dressing</li><li>• identification of dehydration</li><li>• application of a simple splint</li></ul>

### First Aid Training

**4.47** First aid training enables people to recognise some symptoms of injury and disease and give immediate assistance (known as *buddy aid*) to companions where expert medical assistance is not immediately available. The first aid training for deploying personnel is set out in Figure 14 above.

**4.48** As medical staff might not be present when a soldier is injured in combat or becomes sick when on patrol, Army trains some personnel as “combat lifesavers” to provide more immediate aid. These personnel are trained in paramedical skills and must be capable of administering self aid, immediate first aid to sustain life (including resuscitation), and initial IV (intravenous) therapy. Their training is focused on enabling them to stabilise the patient until they can be seen by clinical staff or evacuated to a medical facility.



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4.49 Around 65 personnel received this higher-level pre-deployment training at 2 Fd Hosp, and were deployed as part of the first Battalion Group. They are predominantly selected from the Engineer and Infantry units that are often located away from immediate medical assistance.

## Training Health Support Services Personnel for Deployment

- 4.50 Preparing HSS personnel for deployment entails:
- refreshing basic soldier skills;
  - upgrading specific health-related competencies; and
  - focusing on specific aspects of the mission and environment in which they are to be deployed.

### Refreshing Basic Soldier Skills

- 4.51 HSS personnel all have military training and are expected to maintain core combat skills. Before deployment, these skills need to be refreshed and reinforced to the required operational standard.
- 4.52 For East Timor, this aspect of preparation involved refresher courses and assessments in core skills as set out in Figure 15 below.

Figure 15  
Pre-deployment Training For HSS Personnel

Basic Soldier Skills	Health-related and Other Skills
<ul style="list-style-type: none"> <li>• firing live weapons</li> <li>• four-wheel driving</li> <li>• navigation and fieldcraft (concealment, target recognition and sentry duties)</li> <li>• swimming and marching</li> <li>• familiarity with helicopters</li> <li>• familiarity with ammunition</li> <li>• using radios</li> </ul>	<ul style="list-style-type: none"> <li>• trauma training and experience</li> <li>• certification of medics</li> <li>• medical emergency exercises (Navy)</li> <li>• country familiarisation courses (e.g. languages)</li> </ul>





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- 4.53 Refresher pre-deployment training in basic soldier skills takes about four weeks, after which pre-deployment training focuses on enhancing health support skills. Personnel who were deployed for short periods of time, such as the Force Extraction and Dental Teams, underwent shorter basic soldier training for a minimum of three days.
- 4.54 Navy medics are trained in basic skills, such as firefighting and sea survival, but do not receive training in general sailor skills.

### *Upgrading Health-related Competencies*

- 4.55 A standing agreement between 2 Fd Hosp and MidCentral District Health Board and Massey University provides for medical personnel (doctors, nurses and medics) to gain exposure to trauma situations by working:
- in Palmerston North hospital's accident and emergency department;
  - with ambulance crews; and
  - at the veterinary school of Massey University.
- 4.56 Medics undergo a pre-deployment competency and certification process to ensure that they are fully prepared for operational medical duties. Territorial Force medics have to meet the same standards but generally take longer because they have to reach the standards for both medical and basic soldier skills.
- 4.57 Training with military ambulances was not possible after the first rotation, because all the vehicles were deployed in East Timor. This training therefore took place as part of the familiarisation and medical hand-over process in East Timor.
- 4.58 Navy medics and doctors were able to conduct medical emergency exercises on HMNZS *Canterbury* while it sailed from New Zealand to Australia. This involved conducting different emergency scenarios and preparing the crew and the equipment for an actual emergency.
- 4.59 Approximately 40 medical and dental personnel from 2 Fd Hosp took part (in May 1999) in a training exercise for the Forward Surgical Team in the Solomon Islands called Exercise Tropic Twilight. This exercise was designed to make people more familiar with setting up and working with the Team's equipment in a tropical environment. It helped them to identify and resolve a number of operational and equipment issues.



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- 4.60 In addition, duties associated with the 1999 Asia Pacific Economic Co-operation (APEC) Forum had helped to increase HSS personnel's level of readiness.

### Exercise Tropic Twilight

Exercise Tropic Twilight was conducted as part of the Mutual Assistance Programme between New Zealand and South Pacific nations. Each year a selected group from the NZDF is deployed to a South Pacific nation to conduct training in a tropical environment. In May 1999 personnel from 2<sup>nd</sup> Engineer Regiment and 2 Fd Hosp were deployed to Makira Island in the Solomon Islands group.

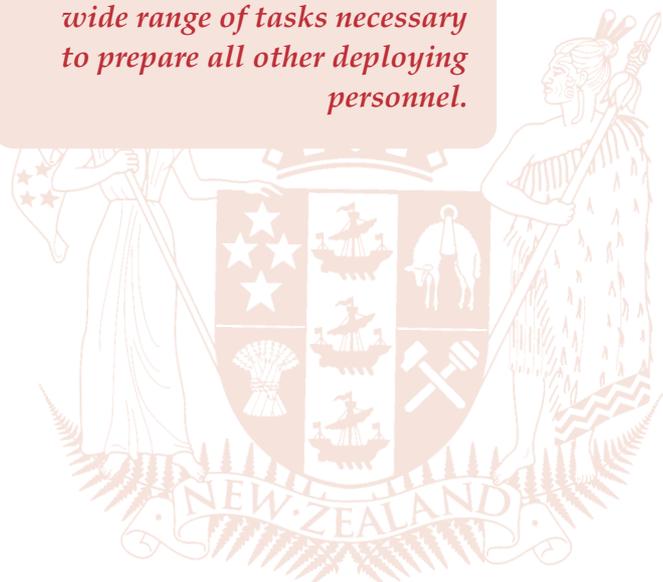
The deployment consisted of approximately 80 engineers, 40 medical and dental personnel, 2 Air Force Iroquois helicopters and an Air Force C130 Hercules transport aircraft, which transported personnel and equipment to and from the Solomon Islands.

Medical personnel on the exercise carried out programmes for:

- minor surgery;
- public health education and medical aid;
- blood-screening for Hepatitis C; and
- education for staff at the local hospital.

- 4.61 At the same time as they were preparing for deployment themselves, HSS personnel at Linton Army Camp were involved in all the activities described in paragraphs 4.8-4.12 (pages 57-59) – providing briefings, conducting health-related training, and carrying out medical examinations and vaccinations.

*HSS needed to undertake a great deal of work both to prepare themselves for deployment and at the same time to conduct the wide range of tasks necessary to prepare all other deploying personnel.*





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### *Preparation for Specific Aspects of the Mission and Environment*

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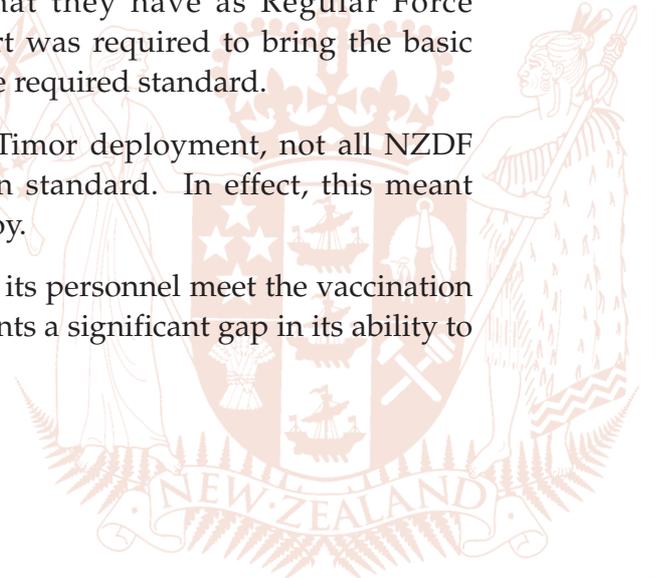
- 4.62 Medics undertook a nine-day course to familiarise themselves with the substantial environmental health issues that they would face – including pest control, water purification and storage, and tropical health hazards.
- 4.63 All Air Force and some Army health personnel attended a course at Auckland Zoo to familiarise themselves with behaviour of wildlife they might encounter, such as spiders, snakes, rats and monkeys. They also learned how to capture snakes, cats and dogs that might carry disease and (therefore) pose a health risk.

### **Training Civilian Volunteers for Deployment**

- 4.64 The NZDF has been able to sustain the FST only through the willing service provided by volunteer civilian nurses, doctors and medical specialists. Pre-deployment preparation for these personnel was much more limited than for Regular Force and Territorial Force personnel, although they had to pass a personal medical examination and have the same vaccinations.
- 4.65 Training of civilian volunteers began with the NZ BATT 2 rotation (see Figure 12 on page 58). Most received a two-day training course consisting of:
- a presentation from a person from a previous rotation about the situation and conditions in East Timor;
  - an outline of preventive (primary) health, and health hazards; and
  - information on the layout of the FST and equipment they would use in East Timor.
- 4.66 As the East Timor operation continued, it became clear that the living and working conditions were more uncomfortable and difficult than the civilian volunteers had anticipated. From NZ BATT 4 onwards, the NZDF therefore decided to increase the amount of pre-deployment training to try and assist the civilians in their transition. Volunteers spent a week at Waiouru Army Camp and a week at Linton Army Camp. Additional training included:
- driver training and four-wheel driving skills;
  - navigation; and
  - a briefing on military command structures.

### Conclusions

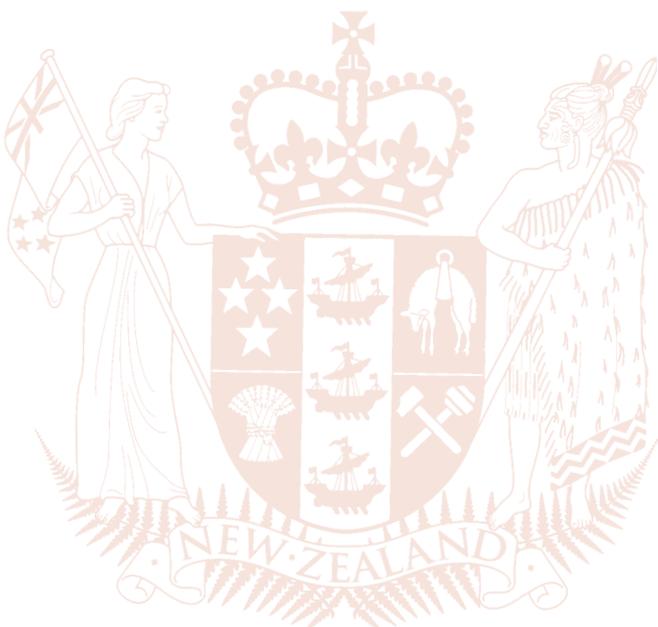
- 4.67 Completing the required medical assessments, vaccinations and summary files for deployment of the first Battalion Group was a substantial task. Approximately 700 personnel were examined, assessed and vaccinated during September and October 1999. These tasks were very time-consuming, complex and critical to the ability of the NZDF to deploy in a timely manner. NZDF's own reports have highlighted the scale of the work involving:
- collecting health intelligence and developing planning documents;
  - training personnel to deal with health threats they might encounter in theatre;
  - preparing personnel for deployment – including conducting medical assessments, administering vaccinations and updating medical files; and
  - raising the basic military and specialist skills of HSS personnel up to the required operational level.
- 4.68 The NZDF assembled information from a range of sources for training programmes and a plan to address the health risks that personnel might face in East Timor.
- 4.69 The NZDF undertakes a comprehensive and internationally recognised approach to the examination of military personnel to establish whether they are fit for duty. The system takes a risk management approach based upon potential threats of the operational environment, the role and duties of the individual, and risks to the individual and their unit.
- 4.70 Pre-deployment training gave health personnel a practical grounding in the potential trauma situations that they might encounter, as well as reinforcing the core combat skills that they have as Regular Force members. However, considerable effort was required to bring the basic military skills of HSS personnel up to the required standard.
- 4.71 At the time of preparing for the East Timor deployment, not all NZDF personnel met the required vaccination standard. In effect, this meant that some were not medically fit to deploy.
- 4.72 The NZDF does not know how many of its personnel meet the vaccination Protocol A at any one time. This represents a significant gap in its ability to report on force preparedness.





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- 4.73 The JEV programme was an important logistical project for the NZDF. The time needed to vaccinate personnel was a key consideration for NZDF planners when options and time-scales for deployment were being formulated. Sound intelligence, early contingency planning and effective co-ordination of the programme ensured that the NZDF was able to largely complete the vaccination programme to meet the deployment response time.
- 4.74 It is probable that NZDF personnel will continue to be deployed within the Pacific and Asian regions. The NZDF did not have contingency plans to obtain vaccine even for a limited number of key personnel. This resulted in the need to find alternative supply sources at short notice – potentially affecting the timing of the military operation. This was a high-risk approach.
- 4.75 It is important that personnel in theatre remain in good health and fit to carry out their day-to-day duties. Deploying personnel received a comprehensive briefing on environmental health risks and on ways to maintain their own wellbeing. They also received medication to prevent them from contracting endemic diseases.
- 4.76 The NZDF has itself identified difficulties encountered by the HSS in performing their role, including:
- substantial shortcomings in the NZDF medical records system;
  - the shortage of medical staff needed to carry out large deployments; and
  - low levels of basic soldier skills among HSS personnel.



## Part Five

# Establishing Health Support Services In East Timor

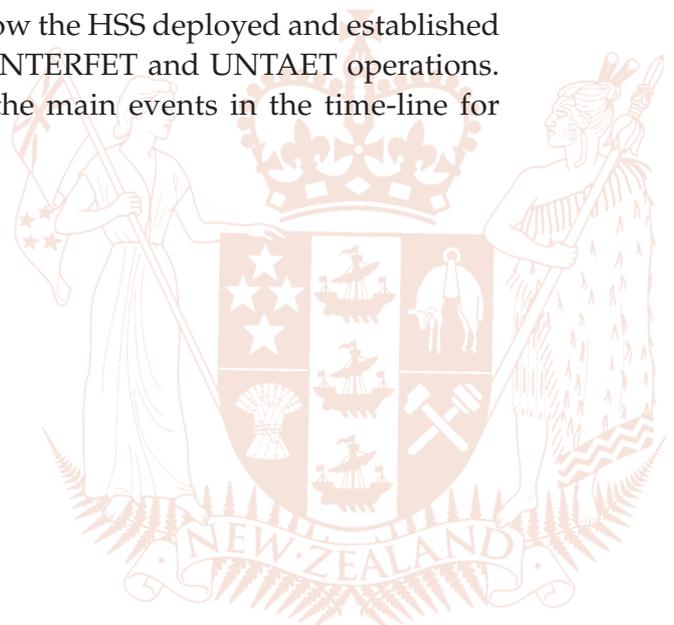




## Introduction

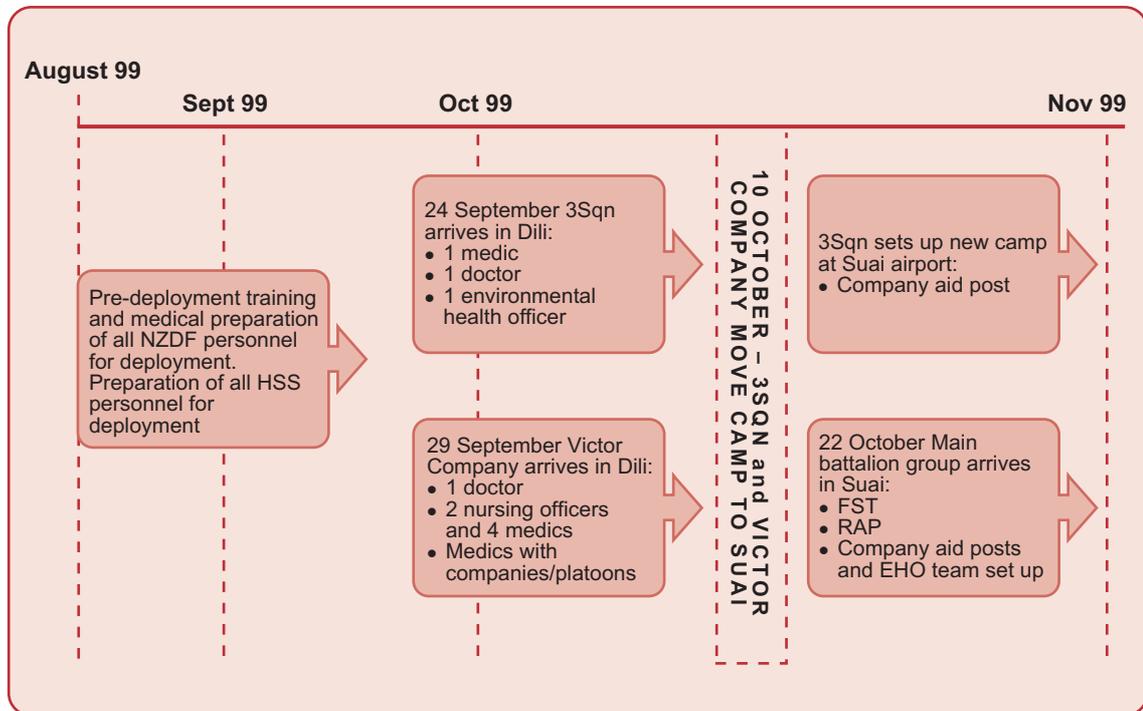
- 5.1 When many people think of in-theatre military medical facilities, their main point of reference is likely to be the kind of facility shown by the American TV series *M\*A\*S\*H* – an established campsite hospital with reasonably high-level surgical facilities.
- 5.2 But the reality is far different in two main ways:
- As well as being prepared for possible combat casualties, the people who arrive early in a deployment often have to start with *nothing* except what they take with them – which may include supplies as basic as clean water and electricity generators. This was certainly the case as New Zealand's forces moved from Dili to Suai. In these circumstances, the *M\*A\*S\*H*-style facility takes a huge effort to establish in the first place and to maintain in the longer term.
  - Immediate health-related needs on arrival are also much more basic – health personnel must work with others (such as engineers) to ensure that safe latrines are dug, to organise effective waste disposal, and to ensure that safe drinking water and food are provided. If these *environmental health* requirements are not quickly attended to, no amount of health care – high-tech or otherwise – will prevent serious sickness that will quickly debilitate the force more surely than any human enemy.
- 5.3 In this part of the report we examine how the HSS deployed and established personnel and systems in support of INTERFET and UNTAET operations. Figure 16 on the next page sets out the main events in the time-line for setting up the HSS in East Timor.

*The medical requirements for deployment were possibly the largest organisational challenge of the whole operation.*



## ESTABLISHING HEALTH SUPPORT SERVICES IN EAST TIMOR

Figure 16  
Time-line for Setting up the HSS in East Timor



### Levels of Health Care

5.4 The HSS Plan for East Timor provided for a system of health care on five levels appropriate to the need and location of the personnel (see Figure 7 on page 38 – Levels 4 and 5 were provided outside of theatre). Should the patient require more complex care, they are moved up to the next level.

On 8 September 1999 Victor Company was officially notified that it would be deployed to East Timor. The INTERFET mission started on 20 September 1999. That day the Company left New Zealand for Darwin and began the process of acclimatisation. Special Air Services troops left Darwin by C130 the same morning to secure the Komoro airport at Dili. When this was successfully achieved, a succession of C130 aircraft landed and unloaded further troops and equipment. The Response Force then moved out to secure the port facilities for use by INTERFET troops.

- 5.5 Actual resources provided were based on the size of the force in theatre and estimates of casualty risks. In the first weeks of the deployment only the first four levels were provided, until the full Battalion was deployed in October 1999 when all five levels were established. In the meantime, the Australian Defence Force had deployed and set up its own FST in Dili to provide relatively advanced trauma care if required.
- 5.6 As described in paragraphs 4.47-4.49 on pages 68-69, all NZDF personnel are trained in basic first aid and are briefed about the health hazards of the country to which they will deploy. When on a military operation, personnel are issued with a trauma kit that contains basic first aid equipment, resuscitation fluids, and morphine auto-inject kits. Many of the items can only be used by a person trained as a combat lifesaver (see paragraph 4.48 on page 68), but each person carries a full kit so that the combat lifesavers do not have to carry supplies for the whole unit.

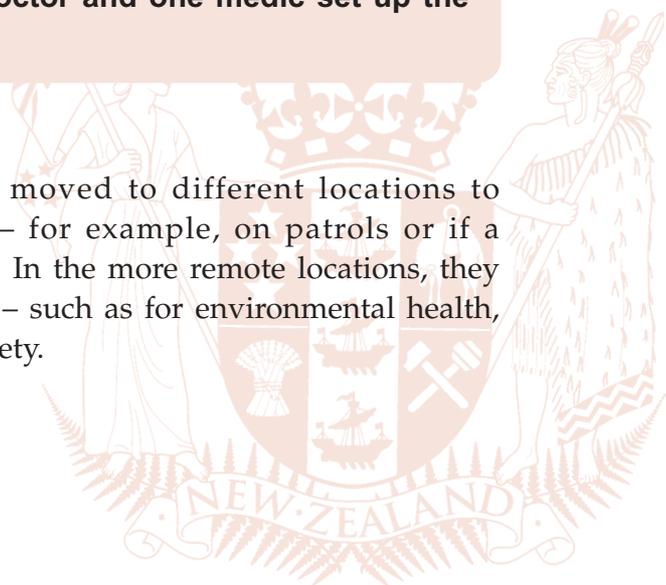
## Setting Up the Company Aid Posts

- 5.7 Each Company has a Company Aid Post (CAP). In East Timor this generally comprised one senior medic and two junior medics. Company medics provide first-line medical attention for about 120 personnel. They are managed as part of the Company and the Company Commander makes decisions on deployment.

### 3Sqn arrives in Dili

**21 members of 3Sqn (Iroquois helicopters) flew into Dili on 24 September. They quickly set about establishing a tented camp next to the runway at Komoro Airport. Initially, three helicopters and 89 personnel were deployed (six helicopters and 115 personnel by mid-October). A doctor and one medic set up the initial Aid Post for 3Sqn.**

- 5.8 In East Timor, medics were often moved to different locations to cover different operational needs – for example, on patrols or if a dangerous situation was anticipated. In the more remote locations, they had additional health responsibilities – such as for environmental health, preventive medicine and advice on safety.



## ESTABLISHING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 5.9 In the early stages of INTERFET, the medical teams had to be ready to treat personnel who might be injured in conflict. They were also engaged in setting up accommodation facilities and dealing with all the associated environmental health issues. Serious environmental health risks in Dili included destroyed infrastructure and contaminated drinking water. Waste and rubbish were being piled up and burnt on the ground.

### The naval component of INTERFET

The Navy had three major roles: presence, sealift, and guarding the sea lines of communications. Its contribution began on 18 September with HMNZS *Te Kaha*, which sailed as part of a multinational naval escort of ships carrying troops and equipment.

It undertook surveillance, aircraft control and escort duties until 24 September when it departed. The replenishment tanker HMNZS *Endeavour* also took part in the deployment, supplying much needed aviation fuel and stores to INTERFET participants

HMNZS *Canterbury* was recalled from training exercise off the Australian coast to Auckland, re-supplied and deployed. It carried out routine patrols, protecting the area of sea and airspace off Dili harbour and escorting supply ships to Suai. When possible, *Canterbury* landed shore parties to assist with reconstruction work and humanitarian aid.

- 5.10 The Air Force's Environmental Health Officer was part of the initial deployment and provided expertise on fresh water supply and quality, waste disposal, camp location, pest control and hygiene.

## Setting Up the Regimental Aid Post

- 5.11 On 22 October 1999 the bulk of the Royal New Zealand Infantry Regiment arrived and set up the Battalion Group at the site of an abandoned hospital in Suai. This became the forward operating base and the Battalion Headquarters.

### Victor Company arrives in Dili

120 personnel – the main body of Victor Company – arrived in Dili on 29 September 1999. They established their base and started patrolling their allocated sector. Their assigned mission was to maintain internal security, support operations, and provide humanitarian assistance. They provided protection to key assets, including a rice storehouse, an electricity plant and a water plant.

... continued on page 81

**A doctor, two nurses and four medics were deployed to set up a Regimental Aid Post. In addition, four platoons each had their own medic. These personnel also collectively supported patrols of the British Gurkhas.**

**5.12** The Regimental Aid Post (RAP) was also set up in Suai, adjacent to the Battalion Headquarters. It was combined with the FST after it arrived, to avoid duplication of effort. This arrangement continued until the FST returned to New Zealand in August 2001. At this time, the RAP relocated within the forward operating base to provide ongoing primary health care and a resuscitation capability to the Battalion Group. This was a more traditional RAP formation, except that an additional doctor and nurse were added to the team and the environmental health team was relocated with the RAP.

*The Regimental Aid Post was responsible for meeting the medical needs of the Battalion Group.*

**What they found in Dili**  
**It was chaotic. There was filth and rubbish all over the place and fires burning. And the smell was unbelievable. Faeces all over the place. I'd never seen anything like it.<sup>11</sup>**

**5.13** The RAP health services personnel in East Timor consisted of:

- a medical officer (doctor);
- a nursing officer;
- a senior medic; and
- four other medics.

**Suai is the capital of the Cova Lima district, one of the poorest regions in East Timor, which includes a wide section of the border with Indonesia. Suai was a ghost town – it had been completely destroyed. Every piece of corrugated iron had been removed and every building was badly damaged, most of them badly burned.<sup>12</sup>**

<sup>11</sup> *Operation East Timor: The New Zealand Defence Force in East Timor 1999-2001*, by John Crawford & Glyn Harper, Reed Publishing (NZ) Ltd, Auckland, 2001, page 60, ISBN 0-790-00823-8.

<sup>12</sup> *Ibid*, page 92.

## ESTABLISHING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 5.14 The RAP was responsible for the management, supervision and allocation of medics to all locations. The doctor was responsible for the training of all the medics, at the RAP and elsewhere in East Timor.

**On 10 October, Victor Company moved from Dili to Suai in order to secure the area and the airfield. At the same time, two infantry sections secured the Suai beach area, allowing armoured personnel carriers, trucks and other supplies to be landed. This was in anticipation of the arrival of the main Battalion Group from Darwin and 3Sqn from Dili to set up operations in the Suai region.**

- 5.15 The RAP was designed as a Medical Treatment Centre to meet the needs of about 700 personnel – all New Zealand personnel and all other Peacekeeping Forces' military personnel in the area of operations. It was open from 8am to 6pm each day to provide treatment, but provided medical services at all times for emergencies. Its mode of operation was akin to a combined general practice and accident and emergency department.

**The Battalion Group included the traditional rifle companies and support company that make up a New Zealand Infantry Battalion.**

**The Group also included:**

- engineers;
- armoured personnel carriers;
- a Combat Services Support Company; and
- the Forward Surgical Team.

**The Battalion Group's objective was to provide security in the area of operations.**

- 5.16 The RAP generally treated between 90 and 130 personnel a week for minor conditions not requiring referral to the FST. It also carried out a range of administrative and other functions for all deployed personnel – including:

- maintaining medical records;
- keeping vaccinations up to date;
- doing blood tests;
- carrying out Med Boards; and
- providing medical advice to the Battalion Group Commander.

In Suai, environmental health was again an immediate priority, and some of the tasks that had been undertaken in Dili needed to be repeated.

3Sqn established camp in a muddy maize field next to the runway. Conditions were very bad with deep sticky mud, and scorpions were a particular hazard, biting a number of people. The detachment built its own septic tank and got flushing toilets set up. For personnel who had just spent a month establishing and improving the camp in Dili, it was something of a trial to go through the whole process again.<sup>13</sup>

## Setting Up the Forward Surgical Team

- 5.17 Between 650 and 700 NZDF personnel were deployed as part of the Battalion Group at any one time during the first four rotations. Units from other countries have also formed part of the Battalion Group – including soldiers from Canada, Ireland, Nepal, Fiji and Singapore.
- 5.18 The Battalion's FST was contracted by the UN to provide a medical facility for approximately 1550 New Zealand and other nations' military personnel. United Nations Police and Military Observers were also included, but the agreement did not cover any humanitarian aid work with the local population or caring for the international aid workers with various non-government organisations.
- 5.19 The staff who formed the FST were deployed by Air Force Hercules C130 aircraft on 20 October 1999 to Darwin for acclimatisation.
- 5.20 The FST is a lightweight transportable surgical facility designed to be deployed quickly to support military operations or disaster relief. All the necessary equipment and personnel (approximately 30) can fit into one Hercules C130 aircraft. The FST is deployed with sufficient stores to operate independently for 48 hours. It can be assembled and ready for operation within 12 hours of landing.
- 5.21 Some staff and the FST equipment were deployed by air to Suai, and the remainder of the staff arrived by sea on the Australian ship HMAS *Tobruk* on 29 October.

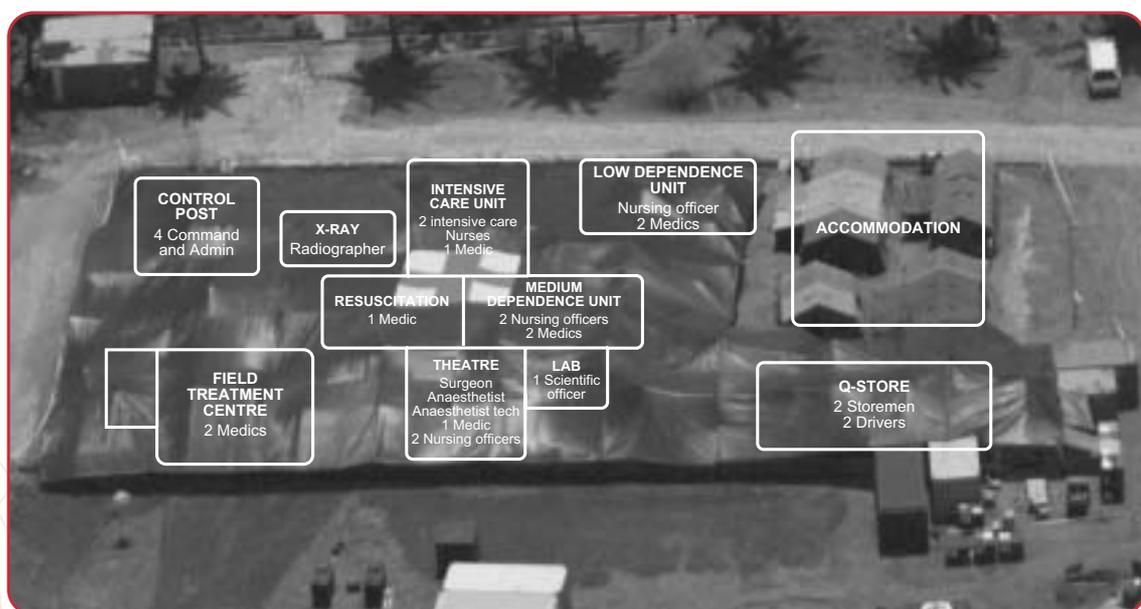
*The FST is a readily deployable surgical facility that operates close to the area of combat.*

<sup>13</sup> Ibid, pages 95 and 96.

## ESTABLISHING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 5.22** The FST provided a platform for stabilisation of serious casualties, emergency surgical care and preparation for evacuation for surgery at offshore medical centres in Darwin or New Zealand. While the operating theatre is basic, it can accommodate a range of surgical procedures depending upon the expertise of the surgeon – including limited chest surgery, neurosurgery, obstetrics and gynaecological surgery, and initial abdominal surgery and orthopaedic surgery.
- 5.23** The FST (see Figure 17 below) comprised:
- a medical operating theatre;
  - a resuscitation facility;
  - intensive care;
  - X-ray and laboratory services; and
  - medium- and low-dependency in-patient care.

*Figure 17  
FST Ground Layout and Staff*



- 5.24** The FST was also set up to deal with serious tropical conditions (such as malaria and dengue fever), or people suffering from venomous bites or rabies.

- 5.25 Figure 17 illustrates how the FST has a double-cover tent construction. The inner shells make up the individual units and wards, with a large (800m<sup>2</sup>) outer shade cloth, which covers the whole area and drops the overall temperature underneath by about 5-10 degrees. The operating theatre, X-ray, laboratory and high-dependency unit areas of the FST are air-conditioned.
- 5.26 The FST has about 30 personnel. Its components include:
- an emergency room;
  - operating theatre;
  - high-, medium- and low-dependency wards;
  - medical personnel accommodation areas;
  - X-ray and laboratory areas;
  - logistics stores; and
  - administration areas.

### Settling In

- 5.27 The RAP and the FST were located in an old church hospital in Suai known as the White House. The Environmental Health Team was based with them – the work of the Environmental Health Team is discussed in more detail later in paragraphs 6.3-6.22 on pages 93-98. These combined HSS units provided:
- full preventive and primary health care;
  - secondary health care; and
  - a system of land or air emergency evacuation.
- 5.28 In addition to this central facility, medics on patrol or located at a remote CAP provided immediate health care. Seriously injured or sick personnel would be moved to where a doctor, nurses and other staff could provide a higher level of care or, if necessary, ensure that the patient was fit enough to be evacuated to Australia or New Zealand.
- 5.29 As NZ BATT 1 became established, HSS personnel in the various locations settled into a routine of providing the necessary primary health care and support services required by a large number of personnel living and working in theatre. Figure 18 on the next page illustrates how these services were structured at the time of our visit to Suai during the fourth rotation (NZ BATT 4). Figure 19 on the next page shows the structure of the various facilities.

ESTABLISHING HEALTH SUPPORT SERVICES IN EAST TIMOR

Figure 18  
Location of Health Support Services in the Field

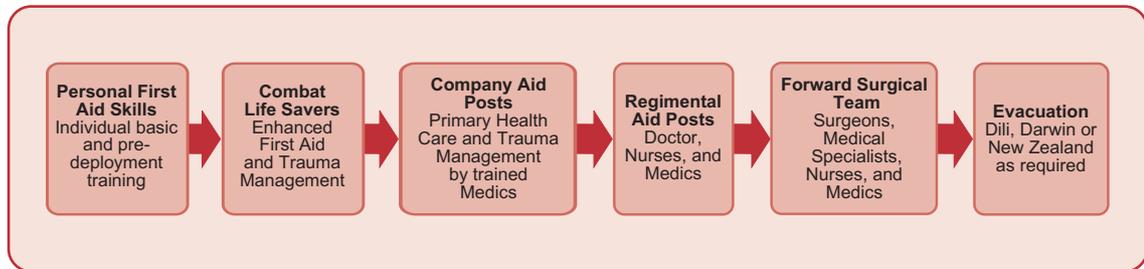
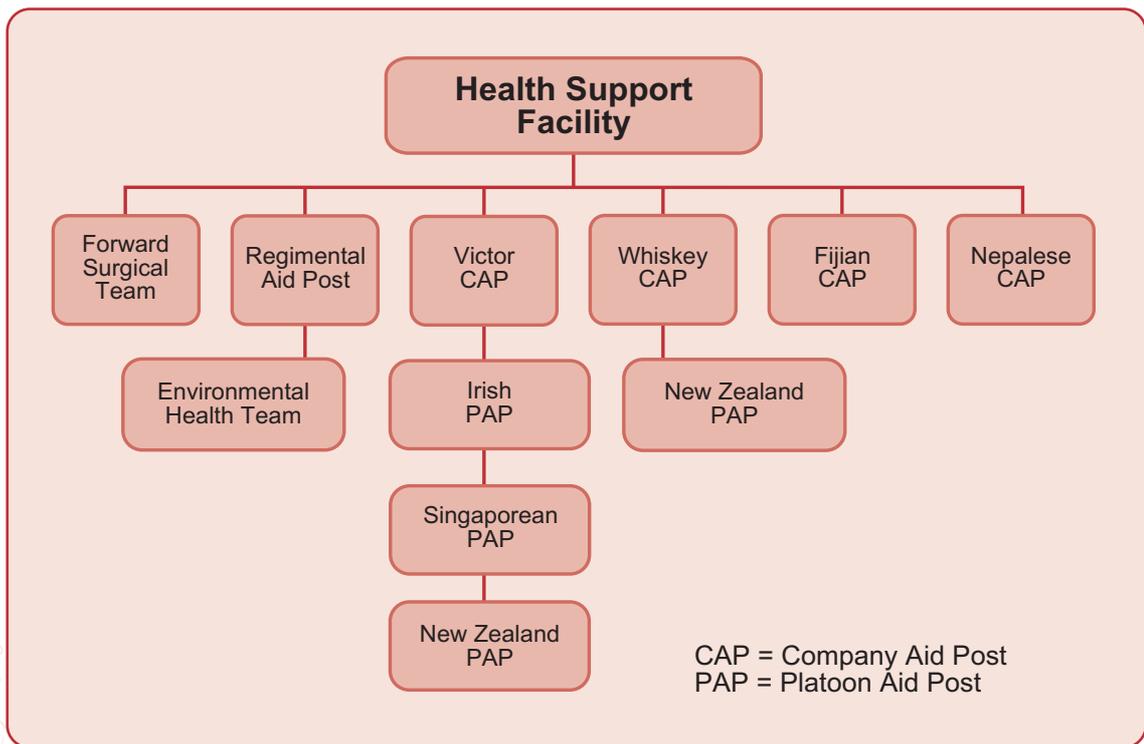


Figure 19  
HSS Structure-NZ BATT 4



**Medical Evacuation**

5.30 Wounded personnel may need to be evacuated quickly to facilities that can provide appropriate medical treatment. This might be within the immediate area of operations or the person might need to be stabilised and evacuated to Australia or New Zealand.

- 5.31 Two armoured personnel carriers fitted as ambulances and two truck ambulances were located at the Battalion Headquarters. Most locations within the area of operations were within one hour's travel by road of the nearest CAP. Should the injury be serious, the medical staff could call 3Sqn for aero-medical evacuation.

### *Aero-medical Evacuation*

- 5.32 There are three types of aero-medical evacuation (AME): forward, tactical, and strategic.
- 5.33 Forward AME involves movement of the patient to an in-theatre medical facility. Prompt evacuation to appropriate medical facilities can greatly increase chances of survival and recovery. AME from any location in the Western Sector to the FST took up to 30 minutes by helicopter, depending on the availability of a landing zone, and the aim was to deliver the patient within an hour of injury. 3Sqn was responsible for providing trained AME medics for this purpose. Frequent use of its helicopters for AME flights and the sustained nature of the deployment to East Timor highlighted a shortage of AME trained medics within the Air Force.<sup>14</sup>
- 5.34 Tactical AME involves stabilising the patient so that he or she can be transferred from one in-theatre medical support facility to another in-theatre medical facility offering a higher level of care. For the purposes of the East Timor operation, medical facilities in Darwin, Australia were also considered to be in theatre.
- 5.35 Strategic AME involves transferring the patient to New Zealand or a hospital in Australia (other than Darwin). Occasionally, the need to provide a qualified medical professional to accompany a patient resulted in a shortage of medical staff in Suai.

*East Timor has highlighted a shortage of AME trained medics in the Air Force.*

<sup>14</sup> There are also some AME-trained medics within Army and the Navy.

## Treatment of Military Personnel

5.36 Despite the pre-deployment information and training, 64 cases of malaria were treated among personnel in NZ BATT 1. HSS personnel considered this was too high. As a result, all personnel who reported to an aid post with a temperature were given a blood test for malaria as a precaution, and additional in-theatre education was provided. Cases of malaria and dengue decreased over successive rotations – for example, only two cases of malaria were reported from NZ BATT 3.

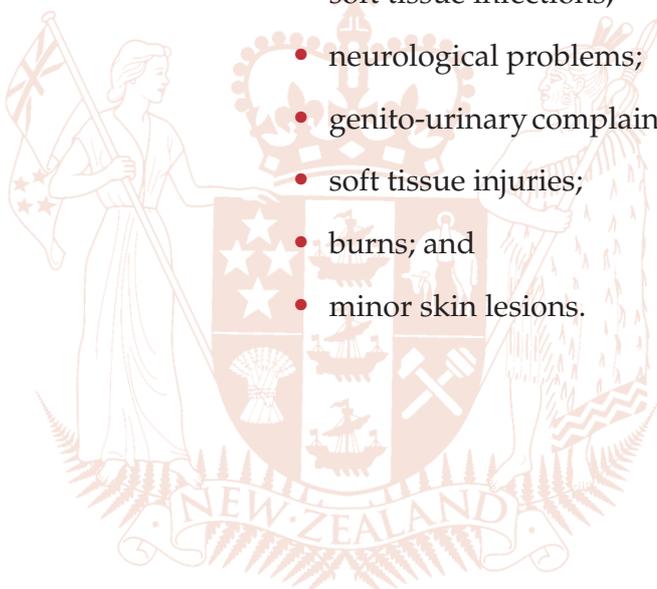
*Malaria, heat exhaustion and skin diseases were a problem for the first personnel deployed because they were unfamiliar with the climate and the working conditions.*

5.37 Tropical diseases, heat exhaustion and skin conditions from living in the hot and humid climate were common in the early stages of the deployment but, like malaria, their incidence decreased as personnel became more experienced with working in the tropical climate. United Nations statistics show that New Zealand's non-battle casualties were low overall compared to the military contingents from other nations.

5.38 As well as the usual range of coughs, colds, flu, headaches, bumps, bruises, burns and sports injuries, HSS personnel treated a range of illness and injury including:

- malaria;
- viraemia (including dengue);
- gastro-enteritis;
- soft tissue infections;
- neurological problems;
- genito-urinary complaints;
- soft tissue injuries;
- burns; and
- minor skin lesions.

*The Forward Surgical Team treated military personnel for a range of minor surgical and tropical conditions*

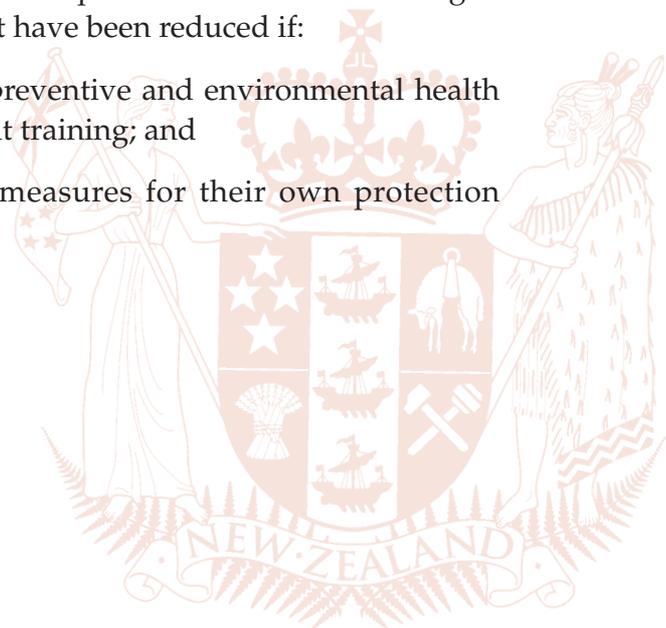


### *Treatment of Naval Personnel*

- 5.39 The Navy medical team was responsible for:
- distribution of anti-malaria drugs to the 240 crew on HMNZS *Canterbury*;
  - a regular sick parade at 8am each day for the crew, when personnel could present with any health problems they had;
  - a 24-hour emergency service; and
  - conducting regular briefings to the crew about potential occupational hazards like dehydration and health risks if they went ashore.
- 5.40 Heat-related illnesses were exacerbated by the breakdown of the air-conditioning on the ship for long periods of time. Most patients needed attention to general complaints like colds, bumps and bruises, and some minor burns. There were also numbers of personnel presenting with skin problems, due to working in hot sweaty conditions for long periods.

### Conclusions

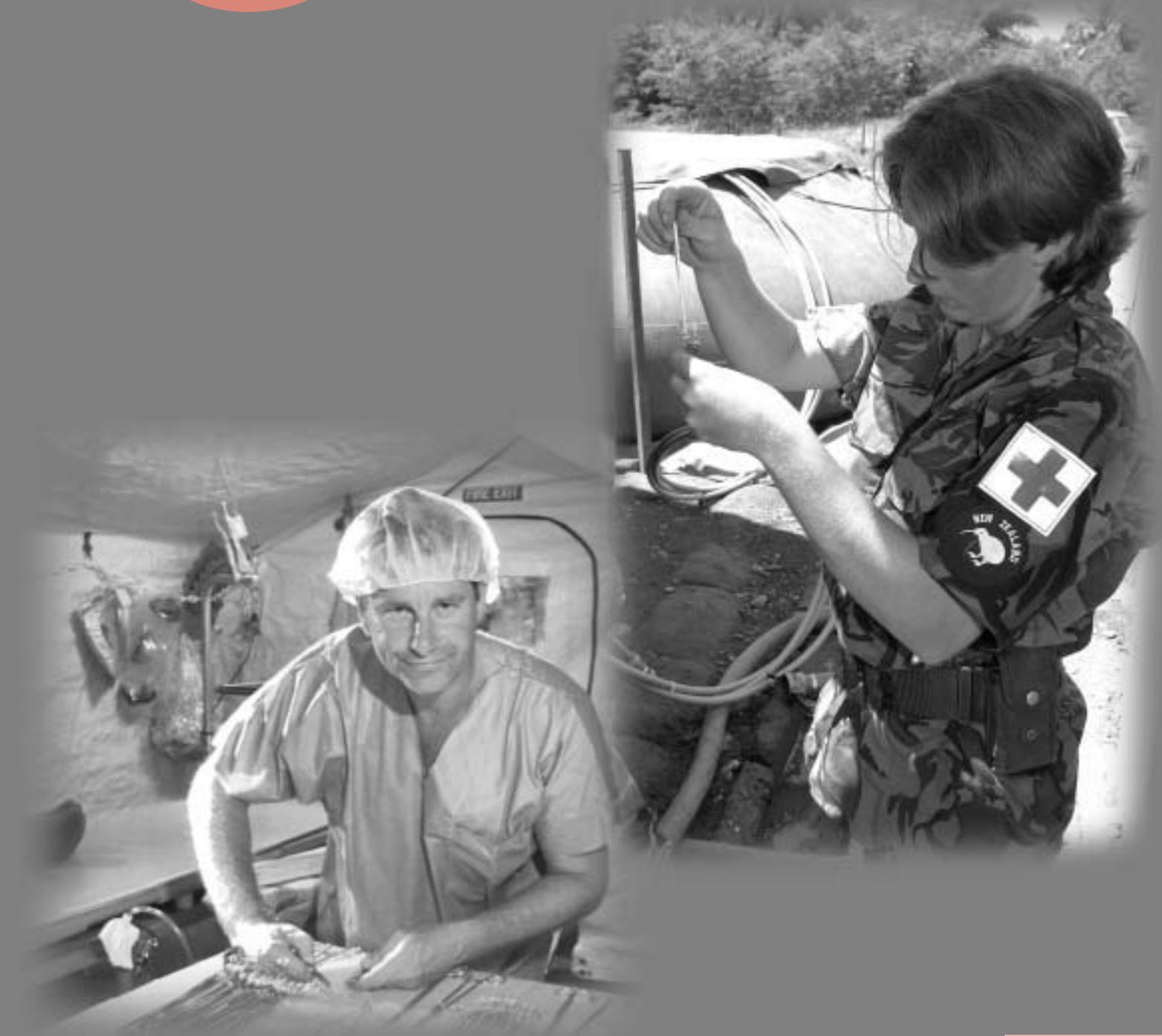
- 5.41 A framework of health services was successfully deployed to East Timor and played a crucial role in support of the operation. As the scale of the operation increased, appropriate HSS were integrated into the operation to provide a suitable range of care – from primary care through to life-saving surgery and evacuation where necessary.
- 5.42 The East Timor deployment revealed gaps in preventive health capability that had untoward effects. Despite the efforts of the HSS, 64 personnel from NZ BATT 1 contracted malaria. HSS personnel have acknowledged that the number of malaria cases might have been reduced if:
- more attention had been given to preventive and environmental health matters in basic and pre-deployment training; and
  - personnel had followed prudent measures for their own protection when in East Timor.





Part Six

# Maintaining Health Support Services in East Timor





## Introduction

- 6.1 In this part we focus on areas of operations that we found were particularly important to the effective maintenance of the HSS in East Timor. We cover:
- maintaining good environmental health;
  - providing sufficient HSS personnel for each Battalion rotation; and
  - getting medical supplies to East Timor.
- 6.2 Some of the requirements for the HSS changed as the military operation continued. We examine three key changing requirements that we identified and how the HSS met them. They comprise:
- psychological services;
  - dental care; and
  - treating the local Timorese civilian population.

## Maintaining Good Environmental Health

- 6.3 In military situations of many types, disease and non-battle injuries have historically exceeded the number of battle casualties. Non-battle casualties<sup>15</sup> have a direct impact on the ability of a military force to carry out its mission. Systems and capabilities to minimise their impact are therefore a crucial component of HSS.
- 6.4 East Timor represented a hostile environment for New Zealand military personnel. The presence of disease, and the hot and humid climate in which personnel had to work, demanded a mix of preventive health care measures – including:
- provision of safe food and water supplies, and safe waste disposal;
  - education of personnel about precautions against mosquito bites, heat exhaustion, and other tropical conditions; and
  - vigorous and effective pest control.

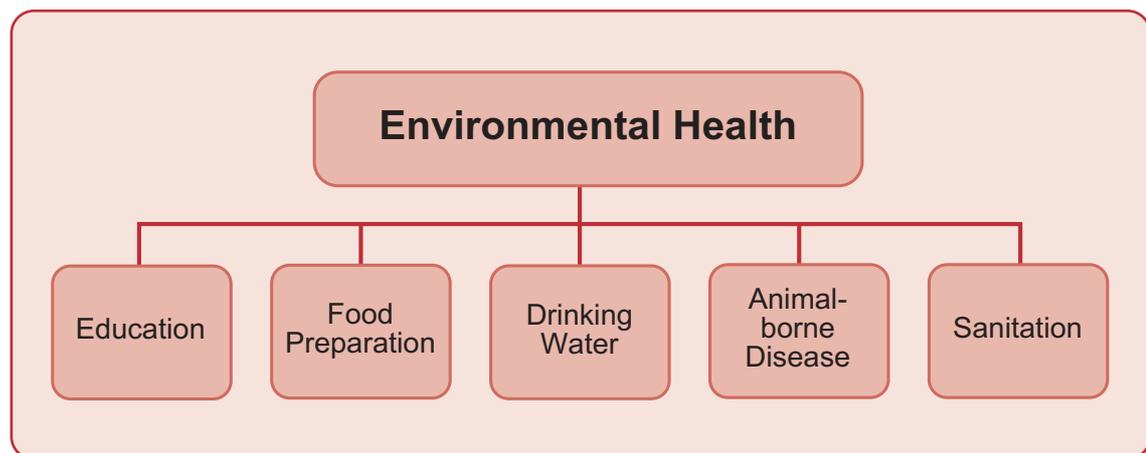
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<sup>15</sup> Typically, the ratio can be 3 to 1 or as high as 4 to 1.

## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 6.5 As explained in paragraph 5.9 on page 80, much of the local infrastructure (such as fresh water supplies or sanitation systems) had been destroyed, and a great deal of effort was required just to establish basic preventive measures.
- 6.6 This work, and the maintenance of effective measures to limit the risks of illness and disease, was the responsibility of the Environmental Health Team. Figure 20 below illustrates the Team's main responsibilities and typical activities.

*Figure 20*  
*Responsibilities and Activities of the*  
*Environmental Health Team*



### Water Supplies

- 6.7 All personnel in East Timor used bottled drinking water tested by the UN health personnel in Dili.
- 6.8 NZDF Environmental Health Officers monitored water used for cooking, cleaning and showers – including checks of the chlorine level and tests for water quality once a week. They also checked the camp water lines and water tanks on a regular basis.
- 6.9 Company groups obtained some fresh water from rain water supplies. These were monitored less frequently because of their remote locations.

### *Food Supplies and Preparation*

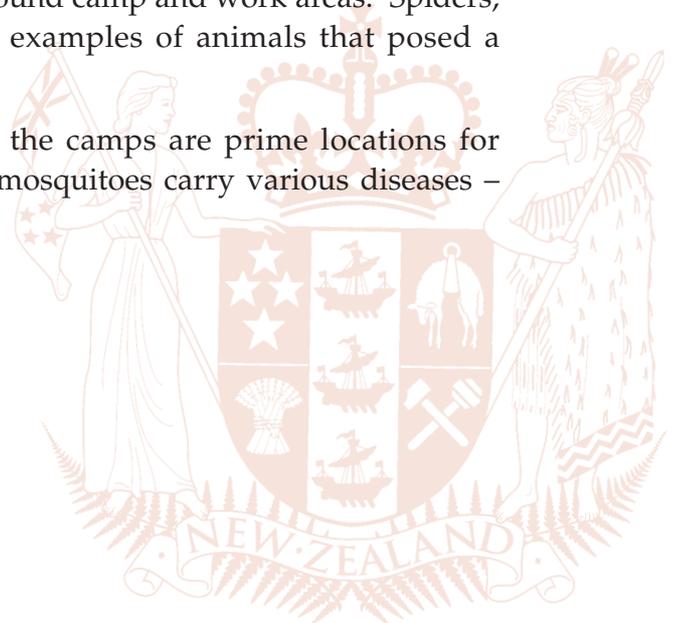
- 6.10 The supply, storage, preparation and distribution of food was inspected regularly to ensure that the food was safe to eat. Environmental Health Officers conducted regular checks on cooking and food handling practices. Cooks are trained to maintain food hygiene, and undertook much of the food hygiene work.

### *Disposal of Waste*

- 6.11 Engineers designed and established systems and methods of disposal for:
- solid waste;
  - sullage water (from washing and showers, etc.);
  - human waste;
  - medical waste; and
  - toxic waste.
- 6.12 Environmental Health Officers were then responsible for inspecting and monitoring the systems and methods to ensure that they were operating properly.

### *Animal Disease Carrier and Vermin Control*

- 6.13 Extensive animal disease carrier and vermin eradication programmes were necessary to minimise disease around camp and work areas. Spiders, snakes, ants, dogs and monkeys are examples of animals that posed a threat.
- 6.14 Jungle, bush and farm areas around the camps are prime locations for mosquitoes to breed. In East Timor, mosquitoes carry various diseases – including malaria and dengue fever.



## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 6.15 The Environmental Health Officers did not have the time or equipment to capture, monitor and carry out analysis on mosquitoes which might have allowed them to better identify and target the mosquito population and increase the effectiveness of prevention and eradication. Control of mosquitoes therefore used a “knock down” approach involving:
- identifying potential breeding sites and eliminating them;
  - killing mosquitoes by thermal “fogging” throughout the camp with a mixture of Peregine (a pesticide) and diesel or vegetable oil (see Figure 21 below); and
  - spraying pesticide around the periphery of the Battalion location.

*Figure 21  
The “Foggy” at Work*



- 6.16 Maintaining serviceable equipment sometimes presented a major difficulty. For example, the fogging equipment frequently broke down and needed replacing. When we visited East Timor, the Environmental Health Officers we met<sup>16</sup> were working with some equipment borrowed from the Australians. Getting regular supplies of the required pesticides and other chemicals was also a problem.

<sup>16</sup> July 2001, NZ BATT 4.

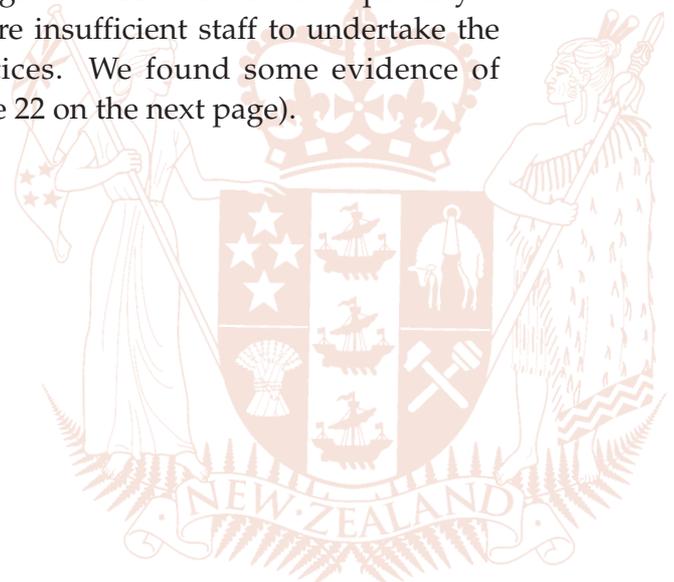
### *Educational Programmes*

- 6.17 Environmental Health Officers we spoke to believed that many Commanding Officers were unaware of the importance of basic preventive health practices, such as keeping areas tidy so as to avoid attracting ants or vermin. In their view, this was reflected in the behaviour of military personnel.
- 6.18 They also pointed to areas where more emphasis on preventive health and environmental health issues during basic and pre-deployment training could have helped prevent problems during deployment. For example, they considered that some of the reported cases of malaria might have been avoided had personnel been more aware of the consequences of failing to take the necessary precautions for their own health protection.

*A greater emphasis on preventive health, by Commanders and in pre-deployment training, could have reduced risks and impacts such as the number of cases of malaria.*

### *Occupational Safety and Health*

- 6.19 Where people do not follow Occupational Safety and Health (OSH) standards they expose themselves to unnecessary risk of illness or injury.
- 6.20 The NZDF required that OSH standards should be met in East Timor as if personnel were working in New Zealand. Responsibility for OSH lay with individual Commanding Officers, but compliance was monitored by the Environmental Health Officers. However, these staff had no relevant training or experience and gave OSH activities low priority – partly also because they felt there were insufficient staff to undertake the work and promote good OSH practices. We found some evidence of some unsafe work practices (see Figure 22 on the next page).

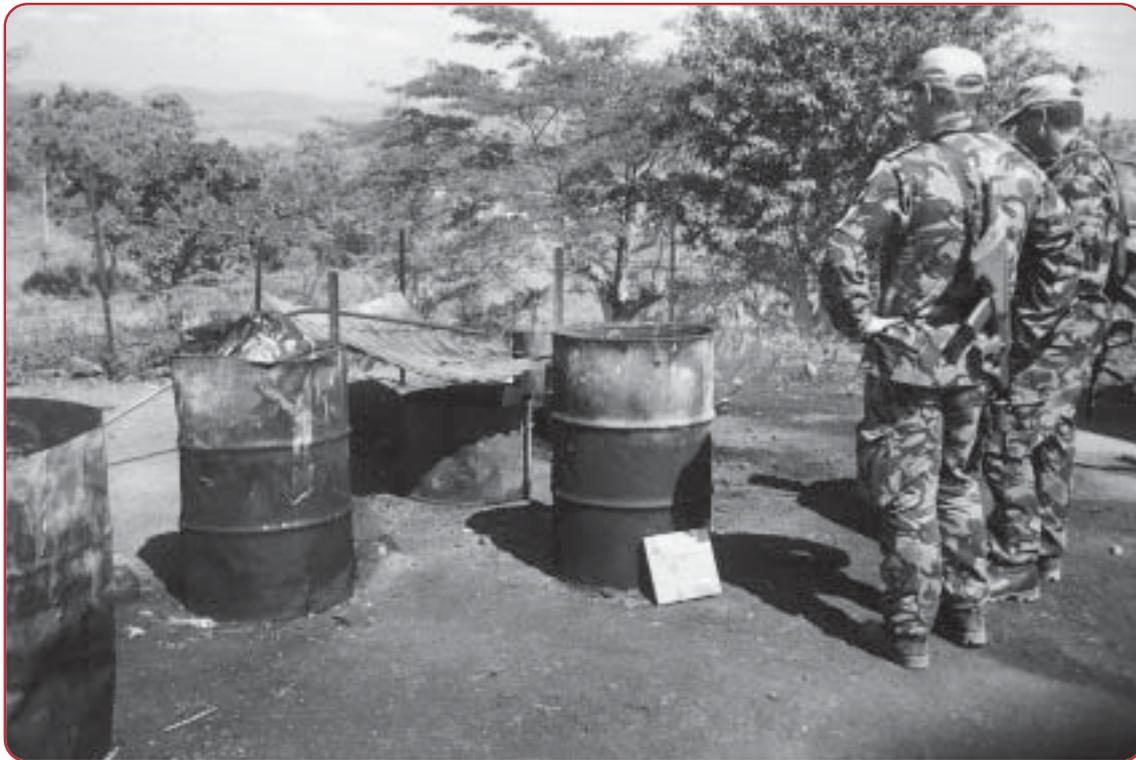


*Figure 22  
Work Being Done Without Protective Footwear*



- 6.21 Some mistakes were made by the first personnel setting up camp in the Suai area of operations. These largely reflected the early military focus of the operation and the need to put facilities in place quickly.
- 6.22 However, at the Tilomar Company location when we visited in July 2001, we noted that human solid waste was still being disposed of by mixing with fuel and burning in 44-gallon drums (see Figure 23 on the opposite page). Burns caused by this method of disposal were a result of unnecessary environmental health risks that should have been resolved earlier.

Figure 23  
Waste Disposal at Tilomar



## Providing Sufficient HSS Personnel for Each Battalion Rotation

- 6.23 Providing sufficient personnel for the successive rotations was particularly problematic in two areas of HSS – environmental health and the FST.

### Environmental Health

- 6.24 There are three Army and one Air Force full-time Environmental Health Officers. Territorial Force Environmental Health Officers and some medics who have been transferred to work as environmental health technicians provided the manpower to support the deployment.



## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

6.25 Initially, only one Environmental Health Officer was deployed with the Battalion Group and it was realised that subsequent rotations would require more resources. For subsequent rotations, the team comprised one Environmental Health Officer and an Environmental Health technician.

*It is really ludicrous deploying a force of this size to a tropical environment with no existing services with only one EHO and no staff.<sup>17</sup>*

6.26 The two-member team also sometimes proved too small to carry out all the required tasks. For example:

- only a basic mosquito control programme could be managed (see paragraph 6.15 on page 96);
- one person had to cover all duties in some periods of leave and sickness;
- the team could visit the remote Company locations only infrequently; and
- health education and health and safety were accorded low priority.

6.27 Medics, who have a basic training in preventive medicine, helped out where possible with environmental health activities at the remote Company locations and while the Environmental Health Team members were on leave.

### Forward Surgical Team

6.28 Due to the geographical location of the New Zealand area of operations, access to the Level Three surgical facility in Dili was uncertain during bad weather. As a result, it was necessary to maintain the New Zealand surgical facility in the Suai area for New Zealand and allied personnel until the United Nations could find a suitable replacement.

6.29 The FST was originally designed to be deployed and operational for only two weeks – not for any extended period. HSS planning for the deployment envisaged an operation that might last about six months. But the FST was in East Timor for nearly two years from October 1999 to August 2001.

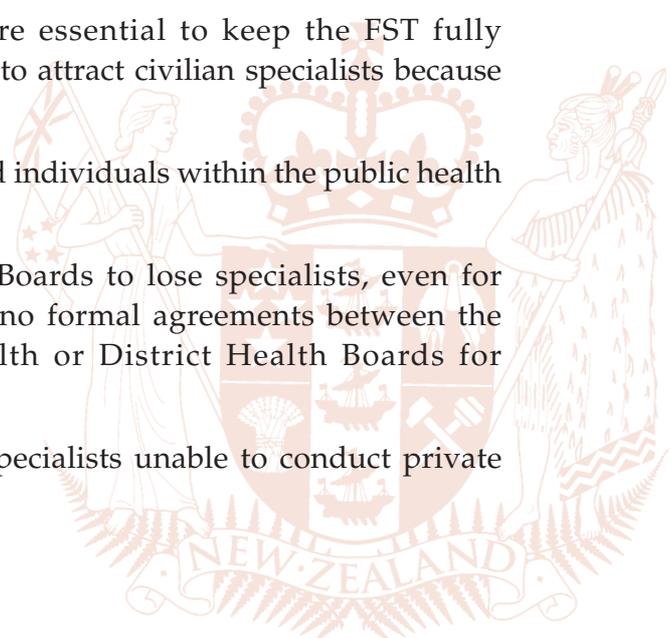
*The FST – designed to be deployed for two weeks – was deployed for nearly two years.*

<sup>17</sup> End of Tour Report: Mike Hunter, Surgeon, November 1999, NZ BATT 1.



## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 6.30 Planning for the initial deployment identified that it would be difficult to provide enough medical personnel to sustain the FST. Known personnel shortages before October 1999 included a surgeon, anaesthetist and theatre nurse.
- 6.31 Army is responsible for maintaining the capability and deployability of the FST. However, it cannot keep medical specialists like surgeons, anaesthetists or radiographers fully occupied and up-to-date with professional training during non-operational periods. Army therefore has contract positions for specialists whereby the specialist works and trains full-time in public hospitals. The NZDF pays 60% of their salary to the District Health Board employer, and in return the specialist is on 28 days' notice of deployment and must meet the required NZDF training commitments throughout the year.
- 6.32 Before the NZDF deployment to East Timor, it had two surgeons and one anaesthetist on contract. One of the surgeons and the anaesthetist resigned after being given notice of deployment with NZ BATT 1.
- 6.33 The shortage of specialists was initially overcome by dividing those clinical staff with experience of running the FST into two groups and deploying them separately over the first two rotations. Other HSS personnel were drawn from across the NZDF to fill the gaps. The extended deployment of the FST was made possible through the use of:
- medical personnel from throughout the NZDF;
  - Territorial Force health support personnel; and
  - civilians with the necessary training and experience who were willing to volunteer for deployment.
- 6.34 Though the civilian volunteers were essential to keep the FST fully operational, it was difficult for Army to attract civilian specialists because of:
- the shortage of appropriately skilled individuals within the public health service;
  - the reluctance of District Health Boards to lose specialists, even for short periods of time – there are no formal agreements between the NZDF and the Ministry of Health or District Health Boards for situations of this nature; and
  - the potential financial losses for specialists unable to conduct private practice while deployed.





## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 6.35 Civilian volunteers also included medical scientists, technicians, radiographers and nurses. At times on the later (NZ BATT 3 and NZ BATT 4) rotations, more than half of the FST personnel were civilian volunteers.
- 6.36 To attract suitable and sufficient civilian personnel, the NZDF undertook intensive public recruitment and personnel management programmes. This work stretched the already busy HSS. Had the NZDF not been able to attract civilian volunteers, it would not have been possible to sustain the deployment of the FST.
- 6.37 Many civilian volunteers were able to be deployed for only a short period (2-6 weeks), creating a “revolving door” of medical personnel through the FST. This made it difficult to build the kind of stable team relationships that are important in high-pressure environments like an operating theatre.
- 6.38 Heavy reliance on civilian volunteers also inevitably reduced overall military capability, because civilians cannot carry out the full range of duties for which Regular Force personnel are trained.

*Without civilian volunteers, it would not have been possible to sustain the FST deployment.*

### Getting Medical Supplies to East Timor

- 6.39 The deployed HSS require regular and reliable medical and pharmaceutical supplies in order to achieve their objectives. Development of appropriate packages of supplies as part of the planning for deployment and maintaining appropriate supplies is therefore essential. Military medical supplies belong to a special category – separate from general equipment supplies – called “Class 8” and are assigned a priority delivery status.
- 6.40 Until 1990, medical supplies were the responsibility of the HSS. However, in 1990 the NZDF logistics system was rationalised and medical supplies were incorporated into overall logistical operations. All NZDF supplies are now managed within a computerised purchasing system known as SAP, but medical supplies still have priority delivery status.

*Medical supplies had priority delivery status.*

### *Planning for Medical Supplies*

- 6.41 The HSS Plan envisaged that medical facilities would be deployed with 14 days of medical supplies and would maintain permanent stocks sufficient for seven days. Early planning focused on the need for equipment and medicines necessary to deal with potential trauma cases associated with combat injuries.
- 6.42 The FST initially deployed with sufficient medical supplies to support 48 hours of surgery and post-operative care over seven days. A second similar package of medical supplies was sent to keep the FST in operation until the full logistics supply chain had been established.
- 6.43 When the military operation changed from INTERFET to UNTAET in February 2000, the United Nations required increased Class 8 supplies to be held in theatre. In addition, the humanitarian aid work of the FST meant that they were dealing with different patient types (e.g. old people and children), and a wider range of injuries and illnesses.
- 6.44 This aid work required the supply of additional medical products outside standard military requirements. The need to treat babies, for example, led to a requirement for smaller tubes, different drugs and nappies, and other products that a military operation does not require. The 2 Fd Hosp pharmacist estimated that the range of items needing to be supplied grew from approximately 600 to more than 1400 over the full term of the deployment of the FST. (See also paragraph 6.75 on page 112.)

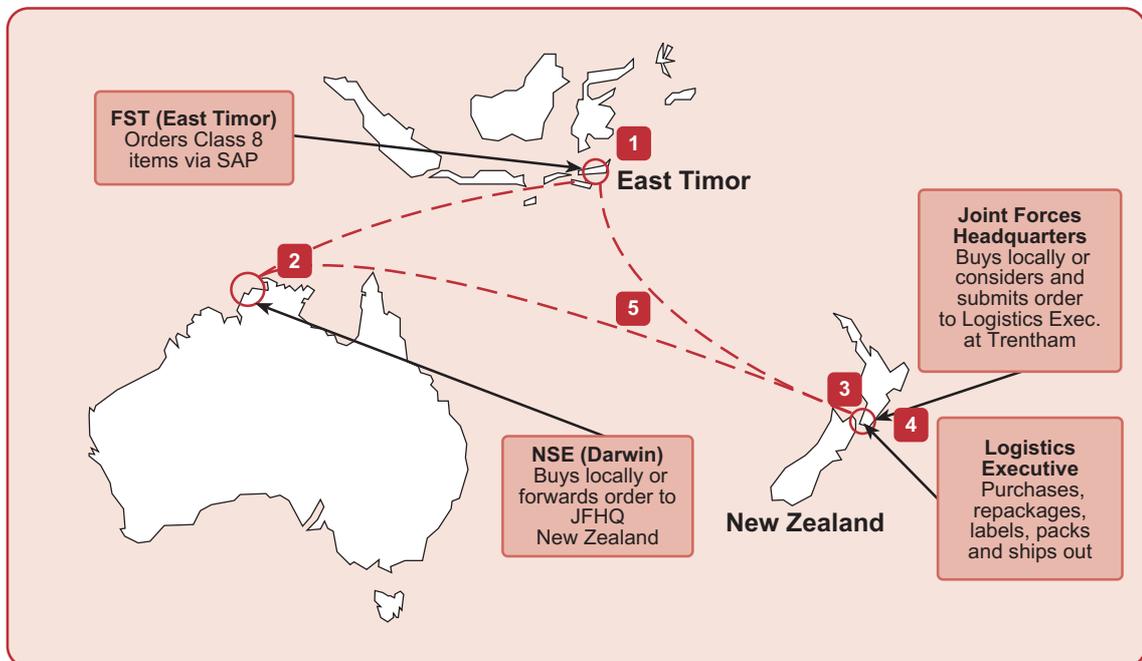
### *The Medical Supply Chain*

- 6.45 The system for ordering and delivery of Class 8 items to East Timor was set up as follows (see Figure 24 on the next page):
1. The FST order was placed on the National Support Element (NSE) in Darwin.
  2. NSE Darwin either purchased the goods locally or put an order through to Joint Forces Headquarters (JFHQ) in Trentham. Where possible, the NSE would find a local supplier (in Darwin) of common pharmaceutical or other supplies like Panadol or bandages so that the order could be filled quickly.
  3. JFHQ would place the order with the Logistics Executive (which is also based in Trentham).

## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

4. The Logistics Executive would purchase, repackage, and label goods as necessary. They were packed and sent for delivery to East Timor.
5. Supplies were delivered either as part of regular re-supply flights from Auckland via Darwin or direct to Suai. Special refrigerated holding facilities were set up at the NSE in Darwin so that blood products could be stored and handled appropriately.

*Figure 24*  
*The Medical Supply Chain*



6.46 The expectation of the supply chain was that Class 8 supplies would take a maximum of four weeks to be delivered.

## *Difficulties with Medical Supplies*

6.47 Difficulties with the supply of Class 8 items were experienced throughout the deployment to East Timor. Army investigated and reported on the problems. The main problems identified were:

*There were ongoing problems with the supply of Class 8 items to East Timor.*

- **Initial shortages of Class 8 items:** This occurred because the HSS was obliged, unexpectedly, to provide medical supplies to Canadian, Fijian and Irish personnel within the New Zealand area of operations.
- **Difficulties with accuracy of supply:** Difficulties occurred with accuracy of orders, accuracy and quantity of items delivered, and the timeliness of delivery. In seeking to purchase medical supplies locally, NSE staff in Darwin frequently had to interpret and identify the required product from its SAP definition. In addition, the FST was working without any SAP computer terminal until the end of NZ BATT 2 (November 2000), which made ordering the correct products more difficult.
- **Lack of specialist Class 8 logistical experience:** The problems with accurate supply were compounded because staff dealing with orders were general logistics staff with little or no training or experience in dealing with Class 8 supplies. They often found it difficult to identify the correct product with confidence. To help overcome this, a senior logistics officer with training and experience of Class 8 supplies was deployed from the NZ BATT 4 rotation onwards.
- **Expanding requirement for different Class 8 items:** As the nature of the deployment changed, the list of Class 8 items grew to include a variety of non-standard items (see paragraph 6.44 on page 103).
- **Familiarity with NZDF systems:** Most of the civilian medical personnel deployed to sustain the FST were unfamiliar with the standard supplies used by the NZDF, and tended to require particular brands of supply or types of equipment outside the normal range of Class 8 supplies. This further expanded the numbers of items being ordered and added to the delays experienced.

*The lack of Class 8 training and experience for logistics staff was a cause of many of the supply difficulties.*

- **Timeliness of supply:** While supplies were expected to take up to four weeks, they generally arrived in 6-8 weeks. This caused considerable frustration for HSS personnel. Supplies of Class 8 were so limited at times that even simple but heavily used items (like foot powder and Panadol) ran out.

6.48 While the medical supply difficulties were well known to the NZDF, they persisted. When we visited East Timor in July 2001 (NZ BATT 4), the FST was still experiencing difficulties with accurate and timely supply of Class 8 items.

### *Supplying Blood*

6.49 The New Zealand Blood Service supplies blood for NZDF personnel. It is provided in the form of a standard unit load of 25 units (425 ml) of blood<sup>18</sup>, blood-testing reagents for cross type matching, and various other pathological lab haematology tests.

6.50 Fresh blood has a shelf-life of 42 days from time of original donation. The blood is treated with a stabiliser that reduces potassium formation, making it safe to use for that period.

6.51 The supply contract requires the Army to transport and store the blood in accordance with the Australian and New Zealand Standard.<sup>19</sup> Otherwise, it cannot be safely used. The normal blood chain to East Timor required one standard unit load of blood to be supplied every 28 days. This was subject to flight scheduling, which meant that the blood supplies arrived between 25 and 32 days apart. Blood was sent to Suai by direct Hercules flight from New Zealand. It was transported in a special refrigerator that included the necessary alarm and monitoring systems to comply with the Standard.

6.52 At the FST facility, the blood was stored for 28 days from arrival. After the 28 days, it was released for use in humanitarian aid cases, prior to being destroyed if not used within the 42-day period from time of donation.

<sup>18</sup> Comprising approximately 18 units of O+ type blood, with other blood types making up the balance.

<sup>19</sup> Within a temperature range of not less than 4°C and not more than 6°C at all times.



## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 6.53 A total of 29 loads were supplied to the FST throughout its deployment. Only one load was damaged in transit – through equipment failure. One partial load was damaged in theatre – again due to equipment failure.

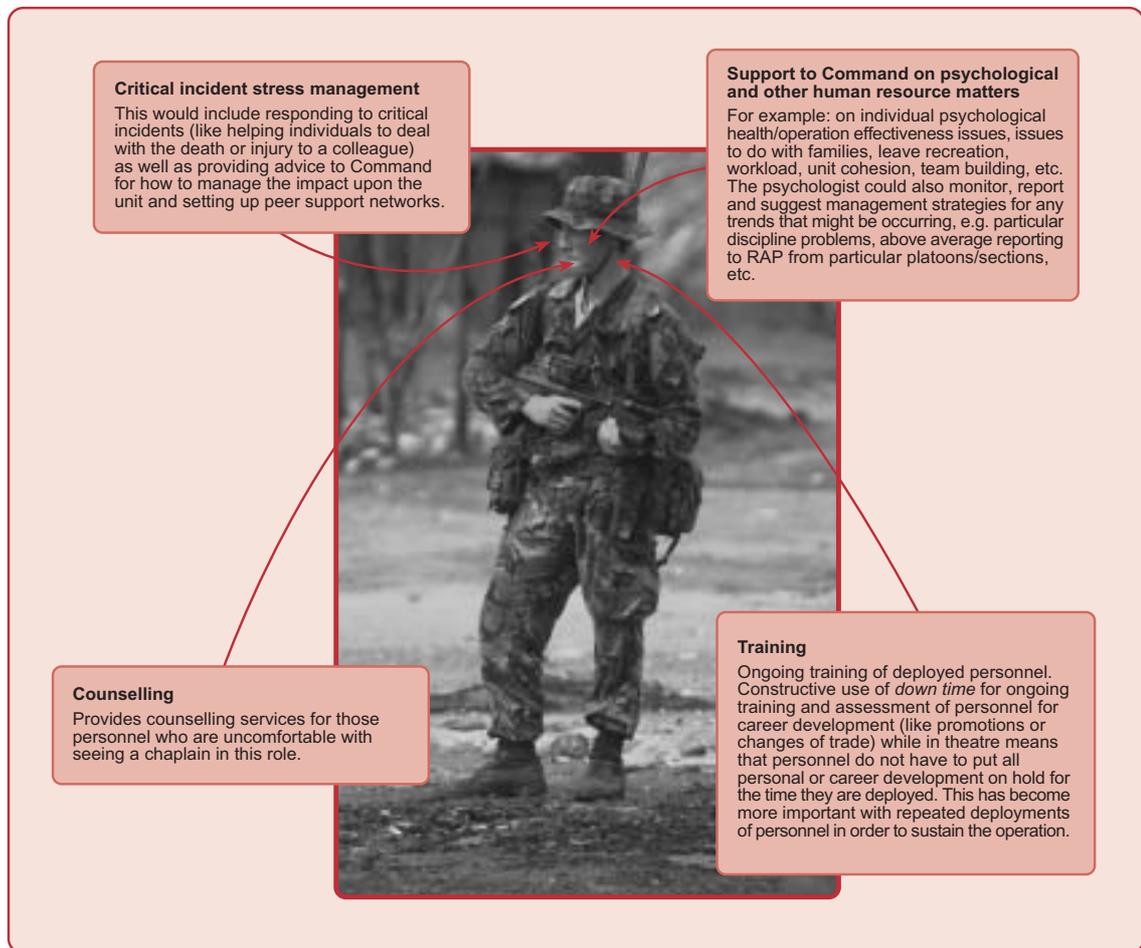
### Recognising the Need for Psychological Services

- 6.54 Operations like East Timor put NZDF personnel in stressful situations that have known adverse effects on military capability. The stress may take various forms:
- operational stress arising from danger and experience with death or injury;
  - environmental stress caused by factors such as heat and noise; and
  - emotional stress brought about by isolation, boredom, and separation from normal family life.
- 6.55 Personnel placed in stressful situations may need appropriate support to help them cope with the effects of the stress – both during deployment and on their return in New Zealand.
- 6.56 The NZDF's psychologists are industrial (not clinical) psychologists. During the initial INTERFET operation, Army psychologists were only deployed to East Timor to deal with critical incidents. However, during the rotation of NZ BATT 2 (June 2000), it became clear that a full-time psychologist was required as part of the operation to provide a full range of support activities (see examples in Figure 25 on the next page). From August 2000, there was one full-time Army psychologist position in East Timor to work throughout the New Zealand area of operations and in Dili.



## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

Figure 25  
Psychological Support Activities



6.57 The most common problems that the deployed psychologist dealt with were:

- **Adapting to the environment** – especially those on a first deployment who found it difficult being away from the security of home, family and friends.
- **Welfare issues** – arising from problems with relationships or the health of family members at home that deployed personnel felt powerless to deal with from such a distance.

## Dealing With High Levels of Dental Problems

- 6.58 Dental services were also not part of the original deployed HSS. Such services were meant to be supplied by other nations as part of the United Nations combined force.
- 6.59 Dental examinations and treatment of some 295 personnel returning from the first deployment (NZ BATT 1) showed that there was inadequate dental provision for deployed personnel, resulting in problems such as:
- pain and discomfort – sometimes resulting in absence from duty;
  - absences due to successive visits to Dili for the same dental problem; and
  - higher eventual costs of dental treatment where personnel deferred seeking treatment for often serious and painful dental problems until they returned to New Zealand, because of a lack of confidence in the UN in-theatre dental services.
- 6.60 Dental problems that arose during the deployment were attributed to:
- stress;
  - change of climate;
  - change in diet; and
  - poor oral hygiene in the field.
- 6.61 The NZDF assessed that, without a change in provision, the dental problems identified would be likely to continue for subsequent rotations, and could even increase due to the higher number of Territorial Force personnel to be deployed.<sup>20</sup> It therefore decided to provide its own in-theatre dental support. From June 2000 (NZ BATT 2), a dentist and a dental hygienist<sup>21</sup> were deployed to Suai for a two-week period during the third and fifth months of each Battalion rotation.

*All deployed personnel had been examined and passed as dentally fit for deployment. Poor dental health became evident during the first deployment, which resulted in a loss of force strength*

20 Territorial Force personnel generally have a lower standard of dental health as they receive less frequent and programmed dental care than Regular Force personnel.

21 Trained within Dental Services from selected Regular Force dental assistants to provide (under guidance of dental officers) hygiene (gum) treatment comprising scaling and cleaning of teeth and oral hygiene instruction.



## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

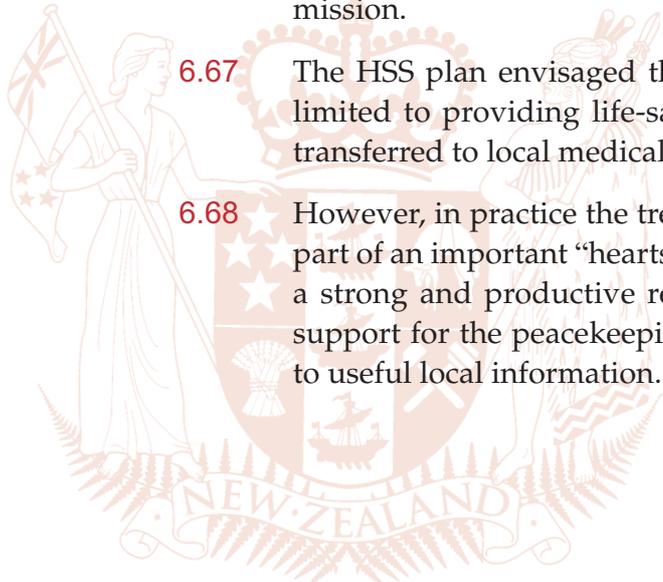
- 6.62 All dental equipment and most stores were flown in and stored at the FST. The dental team and its equipment were sufficiently mobile to be able to operate from the FST and from the Company locations if required.
- 6.63 An appointments system was set up, and all personnel were given the opportunity to be seen by the dental team during their visits. Between 120 and 180 patients were seen during each visit. Routine checks allowed problems that patients might not have been aware of to be identified, such as broken fillings and gingival gum problems.
- 6.64 Most patients needed treatment for oral hygiene and periodontal problems. As a result, the dental hygienist was often busier than the dental officer. However, there were also a number of urgent cases, mostly involving problems with wisdom teeth.

### *Treatment of Other Nations' Personnel*

- 6.65 UN soldiers and civilian police from other nations in the Western Sector were offered any spare appointments. Personnel from other nations sought treatment from the New Zealand dental team because of the services they provided.

### Treating the Local Timorese Civilian Population

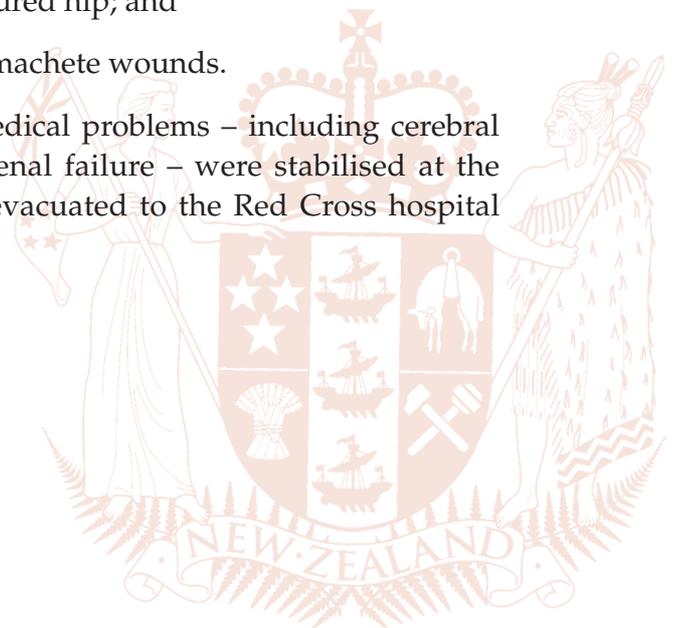
- 6.66 While the primary role of the HSS was to look after the interests of New Zealand and other United Nations military personnel, facilities such as the FST came under pressure to provide humanitarian assistance to the local population. Military Commanders had to consider how best to provide such assistance without affecting their ability to achieve their military mission.
- 6.67 The HSS plan envisaged that treatment of the local population would be limited to providing life-saving first aid only. Casualties would then be transferred to local medical facilities.
- 6.68 However, in practice the treatment of the local population was viewed as a part of an important “hearts and minds” campaign that would help develop a strong and productive relationship with the local community and win support for the peacekeeping role. The contacts could also provide access to useful local information.





## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

- 6.69 The main responsibility for treating the local population in Suai rested with the non-governmental organisation Médecins du Monde (MdM), which was staffed by French and Belgian medical staff who ran a clinic in the Suai township. However, the clinic had no capability to perform surgery; nor did it have diagnostic or X-ray facilities. As a consequence, the FST was the only surgical hospital facility for a local population of about 55,000 people.
- 6.70 As the political and military situation in East Timor stabilised, the FST agreed to accept patients referred by MdM and referrals from the non-government health agencies in the region. Such referrals had to be of seriously ill patients requiring intensive care, surgical care, or diagnostic services that were not otherwise available. In some situations (such as a road accident) an NZDF ambulance would be dispatched to collect patients, or they might arrive by helicopter from a remote location.
- 6.71 Such patients (referred to as humanitarian aid cases) represented about one in four admissions. For example, there were 93 such admissions out of 362 during the FST's first six months in Suai. Of these, 19 were gynaecological cases and 12 required surgery.
- 6.72 Surgical procedures provided for local people varied depending upon the specialisation of the surgeon present at the time, but included:
- caesarean sections;
  - treating blood poisoning from wounds;
  - minor orthopaedic procedures;
  - treating a head injury from a road accident;
  - treating an elderly man with a fractured hip; and
  - cleaning and treating gunshot and machete wounds.
- 6.73 A number of young children with medical problems – including cerebral malaria, brain abscesses, heart and renal failure – were stabilised at the facility's high-dependency unit and evacuated to the Red Cross hospital in Dili.





## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

6.74 The East Timor deployment showed that these kinds of humanitarian aid requirements create demands for different skills, training and other resources.

*The humanitarian aid role of the FST had an unforeseen impact on medical resources.*

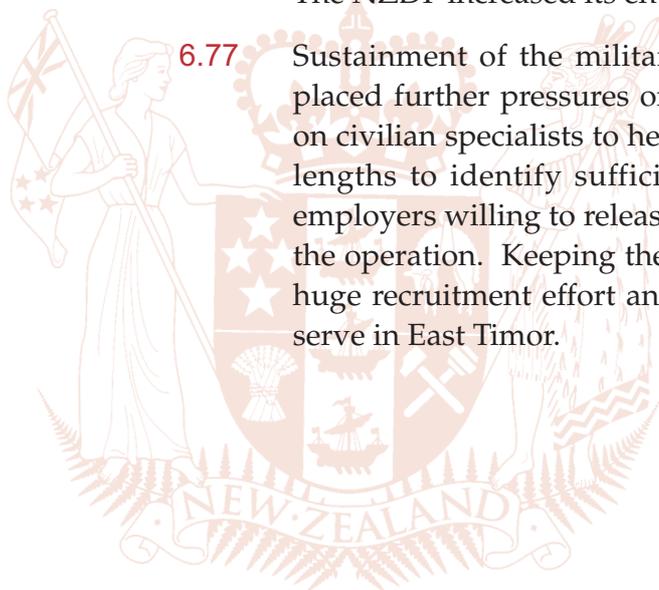
Civilian patients can sometimes place a strain on the FST's resources, requiring the Commanding Officer to decide whether to continue using scarce resources to treat local patients, or to conserve them in case they were needed for the treatment of NZDF or other military personnel. Blood supplies, for example, were limited, and 15 of the 25 units of blood in storage were always kept in reserve for United Nations personnel. The FST followed a policy of transferring humanitarian aid cases back to MDM after a maximum of five days.

6.75 Humanitarian aid cases also generated the requirement for the FST to requisition and hold a much greater range and quantity of medical supplies than would be required to meet the demands of treating military personnel. This was particularly the case for the paediatric and gynaecological care provided. Humanitarian aid places demands on supply of controlled drugs, nappies, paediatric food, clothing and food for patients and families.

### Conclusions

6.76 Creating and maintaining a safe environment for deployed personnel was a priority for the HSS. The East Timor deployment revealed gaps in the NZDF environmental health capability. A shortage of trained or experienced environmental health personnel and equipment limited their effectiveness, and a lack of specific public health expertise was apparent. The NZDF increased its environmental health capability as a result.

6.77 Sustainment of the military force for successive rotations in East Timor placed further pressures on the HSS. For example, the NZDF had to rely on civilian specialists to help make up the FST. The HSS had to go to great lengths to identify sufficient civilian personnel willing to deploy (and employers willing to release them) for short periods to sustain the FST over the operation. Keeping the FST at full complement resulted mainly from a huge recruitment effort and good fortune in civilians willingly offering to serve in East Timor.





## MAINTAINING HEALTH SUPPORT SERVICES IN EAST TIMOR

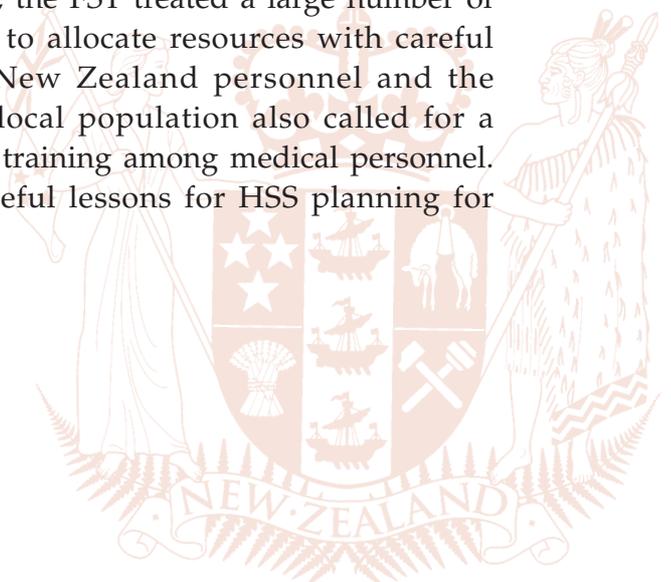
6.78 Difficulties that occurred with medical supplies were caused by a number of factors:

- logistics staff responsible for handling requests had little training or experience in dealing with medical supplies;
- civilian medical personnel were unfamiliar with the NZDF medical supply system;
- requirements expanded as the FST took on a humanitarian aid role; and
- the NZDF was called upon to provide supplies for other nations.

6.79 There were other challenges and changes over the course of the deployment that illustrated the flexibility of the HSS to respond quickly and effectively to changing circumstances. Initially, the focus was on the possibility of battle casualties and trauma, but the emphasis had to be shifted to providing primary care and treating military personnel for a variety of tropical diseases and minor surgical conditions. In addition:

- Military operations put military personnel in stressful situations. The HSS adjusted provision to make more extensive psychological support services available to military personnel to help them manage the stresses associated with deployment.
- Early evidence of dental problems for deployed personnel led the NZDF to recognise the need to provide in-theatre dental services. A dental team made regular visits to East Timor to maintain the dental health of NZDF and other personnel.

6.80 The NZDF viewed humanitarian aid as important in building and fostering a strong relationship with the local community and winning acceptance of its role. As part of this, the FST treated a large number of Timorese civilians. This required it to allocate resources with careful regard to competing demands of New Zealand personnel and the local population. Its work for the local population also called for a different and wider mix of skills and training among medical personnel. The experience highlighted some useful lessons for HSS planning for future deployments.





## Part Seven

# Looking After Returning Personnel







## LOOKING AFTER RETURNING PERSONNEL

### Introduction

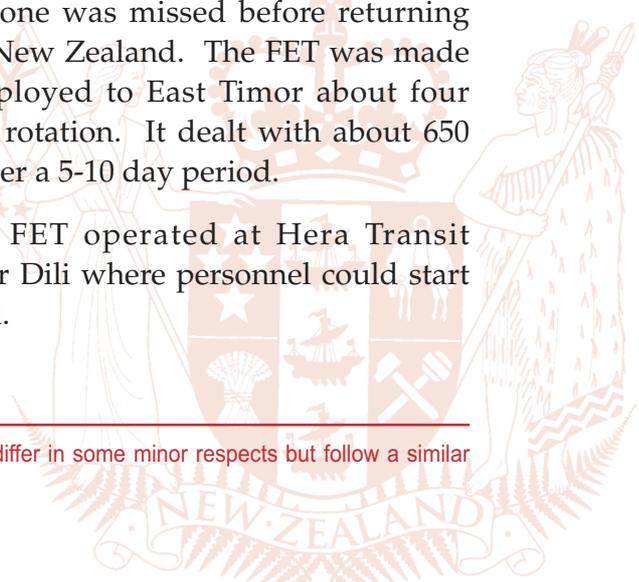
- 7.1 It is important that the NZDF oversees the physical and psychological welfare of its personnel returning from deployment. In this part, we examine how it went about:
- assessing and mitigating the impact of deployment duties on personnel;
  - minimising the risk of personnel bringing disease back home; and
  - maintaining the health of personnel on their return.
- 7.2 The HSS plan outlined the need for returning personnel to undergo a range of health assessments and precautions – including:<sup>22</sup>
- Med Boards;
  - blood tests;
  - eradication treatment for malaria and worms;
  - psychological de-briefs; and
  - dental care.

### The Force Extraction Programme

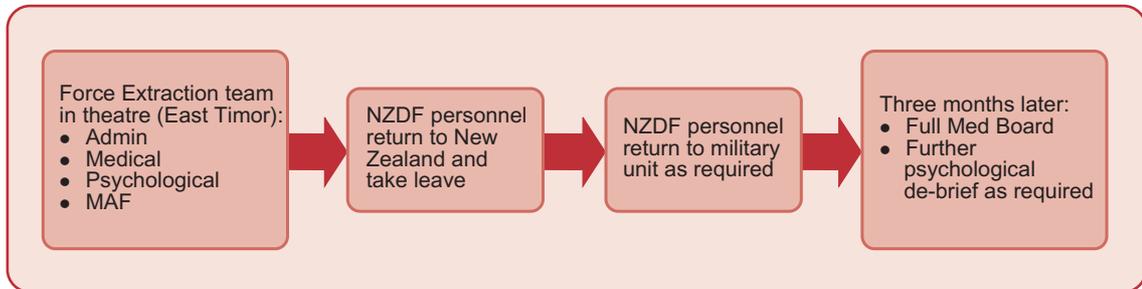
- 7.3 These comprehensive procedures are known as the Force Extraction Programme (see Figure 26 on the next page). A Force Extraction Team (FET) was responsible for checking and processing all returning personnel before they left East Timor, so that no-one was missed before returning and dispersing to different locations in New Zealand. The FET was made up of about 35 personnel and was deployed to East Timor about four weeks before the end of each Battalion rotation. It dealt with about 650 military personnel leaving East Timor over a 5-10 day period.
- 7.4 Since NZ BATT 2 (May 2000), each FET operated at Hera Transit Camp, an attractive coastal location near Dili where personnel could start to relax before returning to New Zealand.

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<sup>22</sup> The Navy's post-deployment medical requirements differ in some minor respects but follow a similar pattern to the Air Force and Army.



*Figure 26*  
*Force Extraction Programme*



7.5 Figure 27 below illustrates the work of the FET for NZ BATT 4 (November 2001). In this instance, the FET comprised 23 personnel deployed from New Zealand, with the balance from medical professionals already in theatre.

*Figure 27*  
*Force Extraction Team – NZ BATT 4*

The team was made up of:

- 6 Command and administration personnel
- 5 Logistics personnel
- 1 Doctor
- 1 Nursing Officer
- 2 Medics
- 9 Drivers
- 6 Psychologists
- 4 Ministry of Agriculture and Forestry (MAF) personnel.

FET members underwent a brief (3-day) pre-deployment training programme consisting of weapons re-familiarisation, an understanding of rules of engagement, and health and security briefs.

The programme of activities covered:

- psychological de-briefs;
- medical clearances, blood tests and issuing post-deployment medication;
- weapon and ammunition returns;
- confirmatory checks on administrative requirements, leave, and pay;
- cleaning of clothing and equipment; and
- MAF inspections and clearance.\*

\*All equipment and personal effects were cleaned prior to inspection and clearance by Ministry of Agriculture and Forestry staff before returning to New Zealand, as part of New Zealand's Biosecurity protection programme.



## LOOKING AFTER RETURNING PERSONNEL

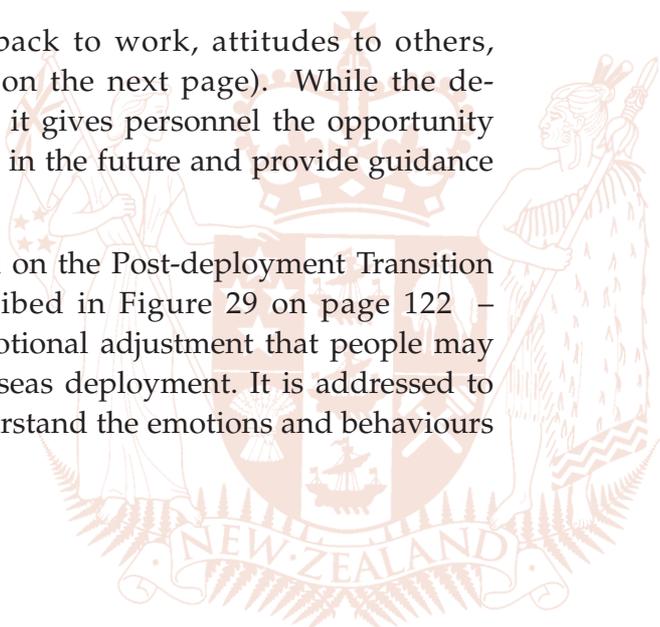
### *Medical Checks*

- 7.6 All personnel were required to have a medical check and receive treatment to eradicate malaria and worms before leaving East Timor. The medical check involved:
- blood tests for a number of diseases – including hepatitis B and C, HIV, and other sexually transmitted diseases; and
  - a medical check or Med Board (the more comprehensive medical examination) conducted where the person had been ill or injured while deployed.
- 7.7 Three months after their return to New Zealand, personnel are required to undergo a comprehensive medical examination including an examination of eyes and ears, and blood and urine tests. The follow-up blood tests are necessary in order to identify diseases that may have been contracted but do not appear in test results until after a period of time – usually after the person has returned to New Zealand.

### *Psychological De-briefing*

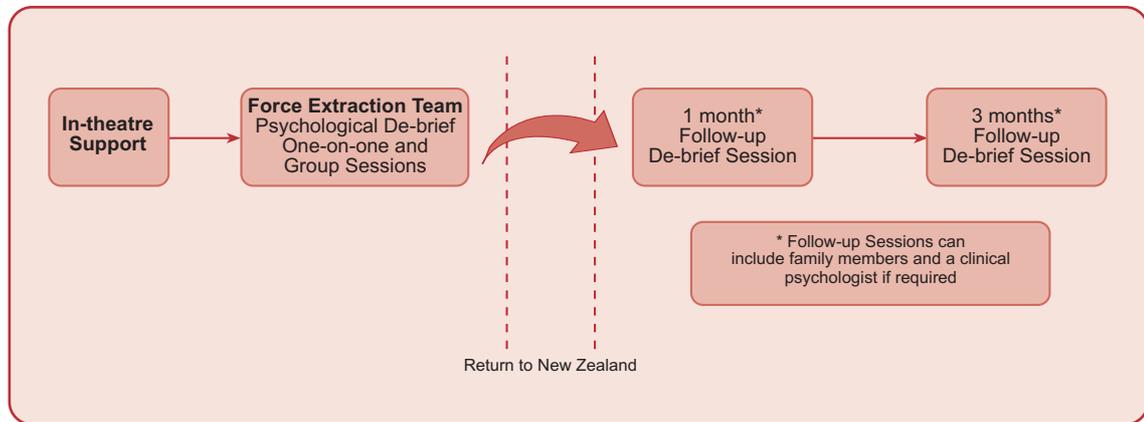
- 7.8 Army field psychologists are responsible for carrying out one-on-one de-briefings that are mandatory for all personnel. In addition, unit or team de-briefings give personnel the chance to discuss shared experiences.
- 7.9 The psychological de-briefing process enables personnel to discuss returning to their own country, re-integrating with families, going back to work, attitudes to others, and support systems (see Figure 28 on the next page). While the de-briefing is not counselling or therapy, it gives personnel the opportunity to identify problems that may develop in the future and provide guidance on where to seek help.
- 7.10 The psychological de-briefing is based on the Post-deployment Transition Model. The Model – which is described in Figure 29 on page 122 – attempts to explain aspects of the emotional adjustment that people may experience on returning from an overseas deployment. It is addressed to individuals in order to help them understand the emotions and behaviours that they might experience.

*Psychological de-briefs are an important element of the force extraction process.*



## LOOKING AFTER RETURNING PERSONNEL

*Figure 28*  
*Psychological De-briefing Process*



7.11 The Army Psychology Services produce a range of pamphlets for personnel in different family circumstances (single or married) that are distributed as part of the FET process. The pamphlets discuss the range of issues that personnel might confront on return to New Zealand.

7.12 The de-briefing process aims to:

- mitigate the impact of a stressful experience in order to limit the harm to the individual concerned;
- accelerate normal recovery processes in those people who have normal reactions to abnormal events;
- help personnel to address any immediate symptoms of stress and make it less likely that they will occur in the future; and
- identify personnel in need of additional professional assistance.

7.13 The NZDF believes that de-briefing sessions provide a number of positive benefits, including:

- reducing incidents of more serious adverse stress reactions (e.g. alcohol consumption, communications problems, work performance problems, marital and family problems);



## LOOKING AFTER RETURNING PERSONNEL

- giving the individual confidence, self-esteem and a means to recognise symptoms of any future reactions and to seek help more quickly; and
- helping the individual to return to their job, family and everyday life in general.

7.14 While the Air Force conducts similar psychological de-briefing for its personnel, the Navy does not conduct post-deployment psychological de-briefing.

7.15 The period after the return home can be stressful. Accordingly, follow-up de-briefings after one month and three months are part of the programme. Follow-up may involve family members and a civilian clinical psychologist if this is considered necessary.

### Dental Care

7.16 Returning personnel report for their regular scheduled twelve-month dental check up in New Zealand rather than undergo a separate examination prior to returning from deployment.

## Conclusions

7.17 The NZDF has effective arrangements for assessing the health of personnel returning to New Zealand, and for providing any necessary ongoing treatment. Force Extraction Teams have carried out comprehensive end-of-tour assessments that include health checks and psychological de-briefs for Army and Air Force personnel.



## LOOKING AFTER RETURNING PERSONNEL

*Figure 29*  
*Post-deployment Transition Model*

**Stage One:** This starts before your return home, with the growing excitement associated with the expectation of returning home to family friends and loved ones. For some, the work focus tends to wane and thoughts increasingly turn towards preparing to return. You may be feeling that you are running out of time and there is a rush to see and do as many things as possible.

**Stage Two:** The honeymoon period experienced on returning to New Zealand. You find yourself back in a familiar and relaxing environment, enjoying the comforts of New Zealand, family and friends. You start to unwind, but a degree of excitement is still present as you catch up with people and events missed while you were away and fill people in on what you have been doing on your deployment.

**Stage Three:** The novelty of being home starts to wear off. While it is good to be home, you may also have feelings of disappointment or anticlimax, or a degree of restlessness. You may feel quite unsettled and uncertain about where you fit in. These feelings can occur as a result of the contrast between the highly stimulating environment you have experienced during your employment and your present situation, which may seem boring by comparison. The feelings associated with this stage can create a state of dissatisfaction and confusion as you try to sort out your current situation. Issues may include what you want from life and whether your present lifestyle or military job can provide those things in the future. Some people find that they lack motivation at work. This concerns them, as this lack of motivation is uncharacteristic for them. It is important not to make major career decisions too early.

**Stage Four:** Making decisions about what you want from life and how you might attain it. In the extreme case, it may be that you decide to leave the Army. Even the decision to stay can be a source of major relief. Once the decision is made, you can start looking forward and planning for the future.

**Stage Five:** Looking forward and planning. It could be career goals, family events, relationship issues, study, or travel. Once you start this planning and have some direction, you will begin to focus on the future and start to leave behind the memories of your deployment experience.

**Stage Six:** Given time, most people will reintegrate into the lifestyle that they left behind before they went on deployment. This does not mean that things will be the same as before. It is normal for deployment experiences to have an impact upon people's values and frame of reference of the world.



## Part Eight

# Lessons Learned for Next Time







## LESSONS LEARNED FOR NEXT TIME

### Introduction

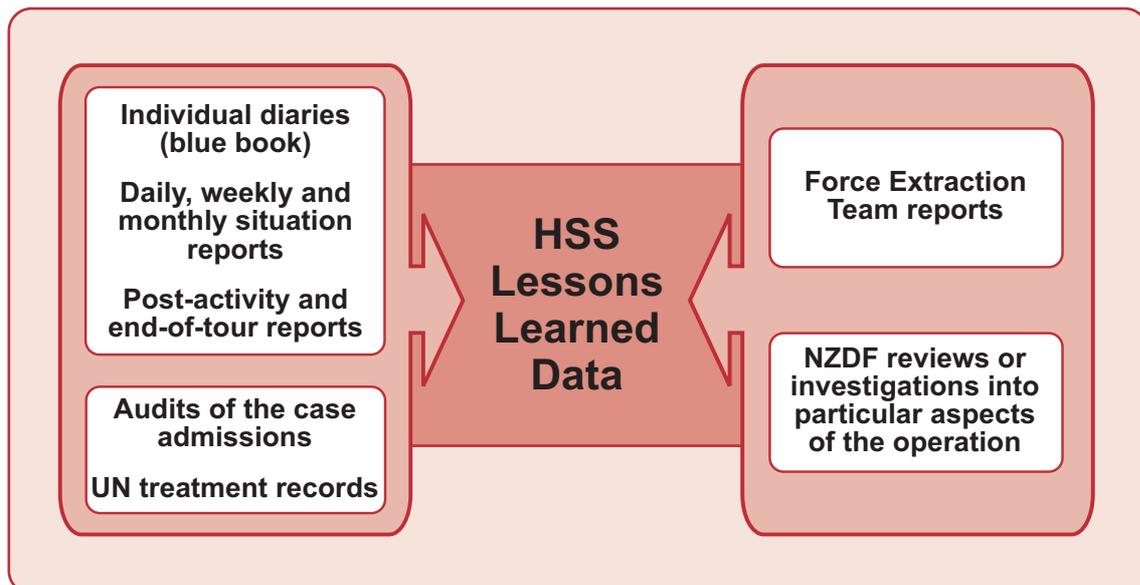
- 8.1 Lessons learned refers to the process of using experience for improvement. A formal lessons learned system is one that ensures all individual knowledge and organisational experience is gathered and analysed for future use. Lessons learned systems are used by military organisations around the world to ensure that problems (such as gaps in training or defective equipment) are not encountered repeatedly.
- 8.2 In this part we review how the HSS collect and analyse information to learn lessons for organisational and operational improvement.

### Collection of Lessons Learned Data

- 8.3 We found a variety of systems used by HSS to compile a record of what had happened on deployment (see Figure 30 below).

*HSS lessons learned data is available from a wide variety of sources.*

*Figure 30  
HSS Sources of Lessons Learned Data*





## LESSONS LEARNED FOR NEXT TIME

- 8.4 All deployed personnel were given a lessons learned booklet (known as the Blue Book) for them to note issues they encountered in the course of the operation. At the end of the deployment, Commanding Officers were responsible for the collation and summary of individual records and adding their own comments from a command perspective. Commanding Officers were also required to complete a standard questionnaire providing additional information.

### Operational Lessons Learned

#### *Planning and Pre-deployment*

- 8.5 HSS lessons learned started to emerge as early as December 1999, when a review of the planning and pre-deployment aspects of INTERFET was conducted. The review noted a number of HSS issues, including that:
- management of the medical requirements for deployment was possibly the largest single organisational challenge of the whole deployment;
  - the current medical record system had serious shortcomings (see Part Three on pages 45-52);
  - the JEV programme was difficult (see paragraphs 4.32-4.41 on pages 64-66); and
  - basic soldier skills (such as weapons handling, patrolling and fitness) were low among the health personnel.
- 8.6 A report by the Senior Medical Officer in charge of the first pre-deployment programme also highlighted the failure of routine Med Boards to give an accurate picture of medical fitness to deploy.<sup>26</sup> As a consequence, all personnel nominated for deployment needed to undergo some kind of medical review, thus adding to the demands on HSS personnel.
- 8.7 2 Fd Hosp and Linton Medical Treatment Centre had too few personnel to ready themselves for deployment in addition to preparing and training the Battalion group. As a result, it was necessary to bring in HSS personnel from other parts of the NZDF.

<sup>26</sup> Closer examinations revealed that some key personnel were awaiting treatment or carrying injuries not recorded on their medical file or reflected in their medical grade.

### *In-theatre HSS*

- 8.8 The HSS have prepared reports reviewing a range of operational aspects of the deployment that have highlighted a number of ways in which future operations might be improved. They fall into broadly three groups – personnel, training, and medical supplies.

#### **Personnel**

- 8.9 Much of the planning and design of the HSS contribution was based on the expectation that the deployment would last between two and six months. The personnel requirements of a much longer deployment – allowing for leave, sickness, coverage of Company and Platoon positions and successive rotations – are much higher than for a limited deployment. To meet these greater requirements, a sustainment strategy involving Regular Forces, Territorial Forces and civilian volunteers is necessary.
- 8.10 The extended deployment gave rise to personnel issues (see paragraphs 6.23-6.38 on pages 99-102) – including shortages in the numbers of:
- clinical specialists (surgeons, anaesthetists);
  - medics; and
  - environmental health officers and technicians.
- 8.11 The NZDF has also recognised that an extended deployment like East Timor requires a wider range of HSS in theatre, including psychological support and dental care (see paragraphs 6.54-6.65 on pages 107-110).

#### **Training**

- 8.12 Health personnel sent to East Timor in 1999 were trained to deal with battle casualties and trauma. However, as the situation in East Timor stabilised and circumstances changed, they needed a wider skills base to deal with a greater variety of medical conditions and patient types (paragraphs 6.66-6.75 on pages 110-112). They required more training and experience in tropical medicine, obstetrics, paediatrics and gynaecology. More language training was also useful.
- 8.13 As a result, the HSS developed a broader pre-deployment training programme to provide for familiarity with a wider range of patient care – such as paediatric life support skills for some medics.



## LESSONS LEARNED FOR NEXT TIME

- 8.14 The NZDF also recognised that a stronger emphasis on preventive health measures and environmental health capability was required to reduce the risk of people getting sick from avoidable conditions. This is a particularly important aspect of a sustained deployment of large numbers of personnel.
- 8.15 Combat element commanders were not always fully aware of the implications of the Geneva Convention for HSS personnel. Mandatory training on this issue has been recommended.
- 8.16 The deployment also highlighted the shortage of Air Force medics trained in aero-medical evacuation.

### Supplying Class 8 Medical Items

- 8.17 As described in paragraphs 6.47-6.48 on pages 105-106, operational difficulties were encountered in the supply of Class 8 medical items. A number of reviews have highlighted, among other things, the need for more Class 8 trained and experienced logistics staff, and the need to plan for a wider range of medical supplies for a sustained deployment.

### Strategic Lessons Learned

- 8.18 No comprehensive analysis and reporting of the HSS role in East Timor has been undertaken. Rather, the NZDF has studied individual lessons learned, and has considered future deployment options and incremental changes to current capability.
- 8.19 Further analysis of the lessons learned for the FST has covered:
- options to make the FST more self-sufficient on operations (for example, a bigger mobile generator would enable the unit to operate in isolation); and
  - options for greater flexibility in the range of HSS for different types and sizes of military force.
- 8.20 Both of these reviews are in line with the NZDF concept of Army 2005, which places a strong emphasis on mobility of all force elements.
- 8.21 The NZDF may also need to review whether some health assets (such as the FST) may need to be kept at readiness to be deployed on as short as 48 hours notice rather than the current 28 days notice. This would allow them to be deployed within short response times appropriate for particular operations, such as disaster relief in the Pacific region.



## LESSONS LEARNED FOR NEXT TIME

### Conclusions

- 8.22 The NZDF is able to draw on a wide range of sources for lessons learned, and the HSS prepared a number of reports that review aspects of the East Timor deployment.
- 8.23 They identified lessons for personnel, training and logistical support, and in some cases have amended procedures and practices. Many of the key shortcomings that we identified had also been highlighted in NZDF lessons learned documents. However, in some cases (e.g. medical records), action to rectify the identified deficiency has not yet been taken.





# Appendices



## Appendix 1

# Our Expectations

### Monitoring and Reporting Readiness

We expected that the HSS would know the state of preparedness of personnel and equipment, and the tasks, costs and timeframes for addressing known deficiencies in capability, including:

- the level of health, fitness and immunisation of personnel most likely to be deployed; and
- the status of HSS personnel and equipment and what work was required to deploy them.

### Contingency Planning

We expected that the NZDF would have:

- established systems and capability to collect, analyse, and interpret health information to inform the formation and deployment of the HSS;
- used intelligence to begin early planning for a possible East Timor operation; and
- used critical path planning to identify those areas of capability which were likely to dictate its ability to respond in a timely and effective way.

### Planning the Operation

As each deployment will be different and dictate the nature and extent of requirements, we expected that:

- planning for deployment would draw on early consultation and information and would be flexible to accommodate a changing situation.

### Pre-deployment Training

We expected HSS pre-deployment training to:

- draw on intelligence about the environment and terrain (so that training would focus on the conditions in which military personnel would be operating, and medical training would focus on the types of health hazards that they expected to encounter);
- focus training on those tasks required for the mission;

... continued on page 134.



### Pre-deployment Training ... continued from previous page.

- build on existing skills, and include joint training with other force elements where appropriate operation activities were planned (e.g. air evacuations, or working with infantry on patrol);
- make best use of available military and civilian health facilities in order to enhance access to practical clinical training; and
- train Regular Force and Territorial Force personnel to the required standards.

### Health Support Operations

We expected that the NZDF would provide appropriate HSS in an operational environment in order to effectively:

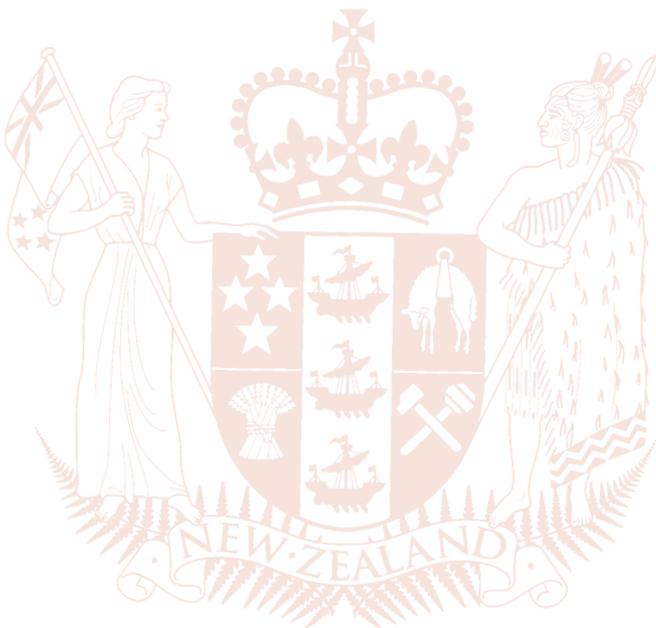
- prevent disease and non-battle injuries; and
- collect, triage, treat, and evacuate or return to duty sick, injured or wounded soldiers.

### Learning Lessons

We expected the HSS, as part of the NZDF deployment to East Timor, to review their:

- state of readiness;
- preparations and deployment; and
- operations in theatre;

and to make the necessary improvements to their planning and capability to deal with future operations.



## Appendix 2

# Glossary of Terms

**Aero-medical evacuation (AME):** Transporting a patient by air to the nearest appropriate medical facility.

**Asia Pacific Economic Co-operation (APEC):** The Asia-Pacific Economic Co-operation meetings are the primary regional vehicle for promoting open trade and practical economic co-operation. New Zealand hosted the APEC meeting in Auckland at the beginning of September 1999. Many members of the NZDF were actively involved in the security arrangements for the meeting.

**Battalion:** A unit of infantry composed of several Companies. In the case of the NZDF, usually two infantry Companies, a surveillance and reconnaissance Company, and engineer, logistics and medical elements. The New Zealand Army Battalion in East Timor consisted of up to 830 personnel.

**Capability:** The ability to achieve a specified military objective. The major components of military capability are force structure and preparedness. Force structure comprises the personnel and equipment assembled in force elements for military tasks.

**Company:** A subdivision of a Battalion, composed of several platoons (each consisting of between 30 and 40 personnel).

**Contingency:** An emergency involving military forces caused by natural disasters, terrorists, subversives, or by required military operations. Due to the uncertainty of the situation, contingencies require plans, rapid response, and special procedures to ensure the safety and readiness of personnel, installations, and equipment.

**Deployment:** The relocation of forces and material to desired operational areas. Deployment encompasses all activities from origin through to destination.

**Dental Hygienists:** Trained within Defence Dental Services from selected Regular Force dental assistants to provide (under guidance of dental officers) hygiene (gum) treatment comprising scaling and cleaning of teeth and oral hygiene instruction. This important but time-consuming treatment greatly reduces incidence of gum problems which make up a significant proportion of dental casualties and allows the dental officers to concentrate on other treatment.

**Force Element:** A unit that directly contributes to the delivery of an NZDF output, e.g. a frigate or an infantry Company.

## GLOSSARY OF TERMS

**Gastro-enteritis:** Inflammation of the stomach and intestines, typically resulting from bacterial toxins or viral infection and causing vomiting and diarrhoea.

**Genito-urinary:** Branch of medicine of or relating to the genital and urinary organs.

**Gynaecology:** Branch of medicine concerned with the functions and diseases specific to women and girls, especially those affecting the reproductive system.

**Health Surveillance Systems:** The organised purposeful collection and processing of all civil and military medical, environmental and biotechnological information (health intelligence), which is immediately or potentially significant to military planning and operations

**In Theatre:** The area of military operations into which forces have been deployed.

**INTERFET:** The name given to the multi-national force established on 15 September 1999 by a UN Security Council resolution to restore peace and security in East Timor. This was later replaced by the UNTAET peacekeeping operation in early 2000.

**Medical Facilities:** A generic term that we have used to describe a variety of locations in which military personnel might seek medical attention. These range from permanent static Medical Treatment Centres (a term used by Army) in New Zealand through to the different sized operational locations like Company Aid Posts and the Forward Surgical Team.

**Neurosurgery:** Surgery performed on the nervous system.

**Occupational Safety and Health (OSH):** The Health and Safety in Employment Act 1992 promotes occupational health and safety in the workplace. It is focused on the prevention of harm arising out of work activities in the state and private sectors, including the NZDF. Responsibility is placed on the employer, who has a general duty to provide a safe and healthy work environment. Employers must follow a process of identification, elimination and isolation of potential hazards. If a hazard cannot be eliminated or isolated, the effects of the hazard must be minimised.

**Obstetrics:** Branch of medicine concerned with childbirth and the processes associated with it.

**Orthopaedics:** Branch of medicine concerned with the correction of deformities of bones or muscle.

**Operational Preparedness Reporting System (OPRES):** The mechanism that the NZDF uses to assess and report the operational preparedness of force elements. The system takes into account factors such as manpower levels, trained state

of personnel, equipment availability, and equipment condition. When these factors are put in the context of deployability, combat viability, readiness and sustainability, a full picture of preparedness is obtained.

**Paediatric:** Branch of medicine concerned with children and their diseases.

**Periodontal:** Branch of dentistry concerned with the structures surrounding and supporting the teeth.

**Pharmaceutical:** Medicinal drugs, their preparation, use or sale.

**Pharmacist:** A person qualified to prepare and dispense medicinal drugs, and to advise patients and medical staff on the appropriate use of medicines. Tasks and duties include dispensing medicines; checking that medicines are given in the correct dosage and combinations; counselling patients on how, when and why to take their medication; ensuring that the patient is able to take the medication safely; and providing drug information to doctors, hospital staff and patients.

**Preparedness:** Preparedness is a measure of the ability of force elements to be employed on military tasks. Force elements must be held at a level of capability from which they can be raised to an operational status within a specified time, then deployed for the conduct of a particular type of military task, and be sustained for a specified period while engaged in that task. The state of preparedness for a particular military task is specified in terms of readiness, combat viability, deployability, and sustainability.

**Primary Health Care:** Essential health care based upon practical, scientifically sound, culturally appropriate and socially acceptable methods – it is the first level of contact with the health system.

**Psychology:** The scientific study of the human mind and its functions, especially those affecting behaviour in a given context – the mental factors governing a situation or activity. NZDF psychologists provide professional opinion in the field of organisational psychology in support of the goals and objectives of effective personnel management and development.

**Purchase Agreement:** The Purchase Agreement establishes the level of capability and preparedness at which the Government expects the Chief of Defence Force to hold the different components of the NZDF.

**Readiness:** The current proficiency and effectiveness of a force element or force to conduct a range of activities. Force element readiness comprises personnel, trained state, equipment held, and equipment condition.

**Regular Force:** Men and women who have made the Army their full-time, professional career.

## GLOSSARY OF TERMS

**Response Time:** The time available to prepare a force for deployment to a particular area of operations after committal by the Government. The response time should give the force time to assemble and concentrate its personnel, stores and equipment; undergo additional individual and collective training; and carry out specific planning for operations.

**Sustainability:** The ability to support a force at operating tempo through the duration of an operation. Sustainability includes the availability of replacement personnel, equipment maintenance, and the ability to keep force elements supplied with the necessary stocks.

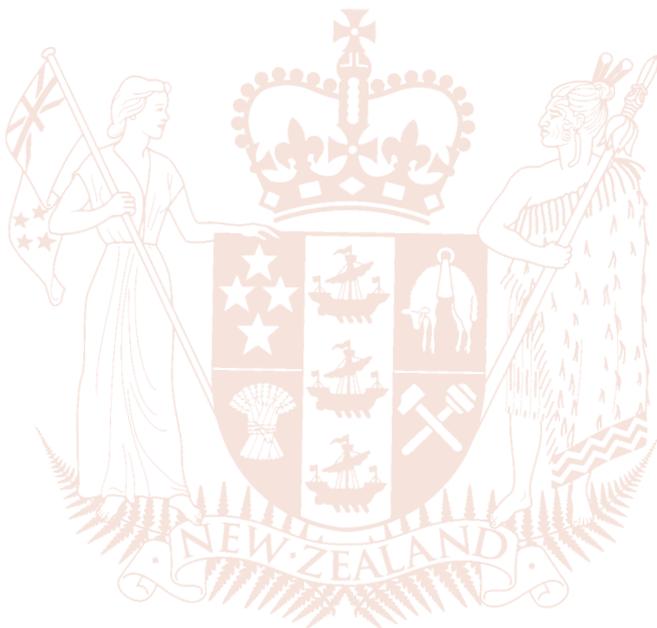
**Territorial Force:** Territorial Force personnel are part-time members of Army who train for a minimum of 20 days per year. The Territorial Force exists to maintain sufficient trained personnel to sustain and supplement the deployment of Regular Force Units when required. There are six regionally based Territorial Regiments.

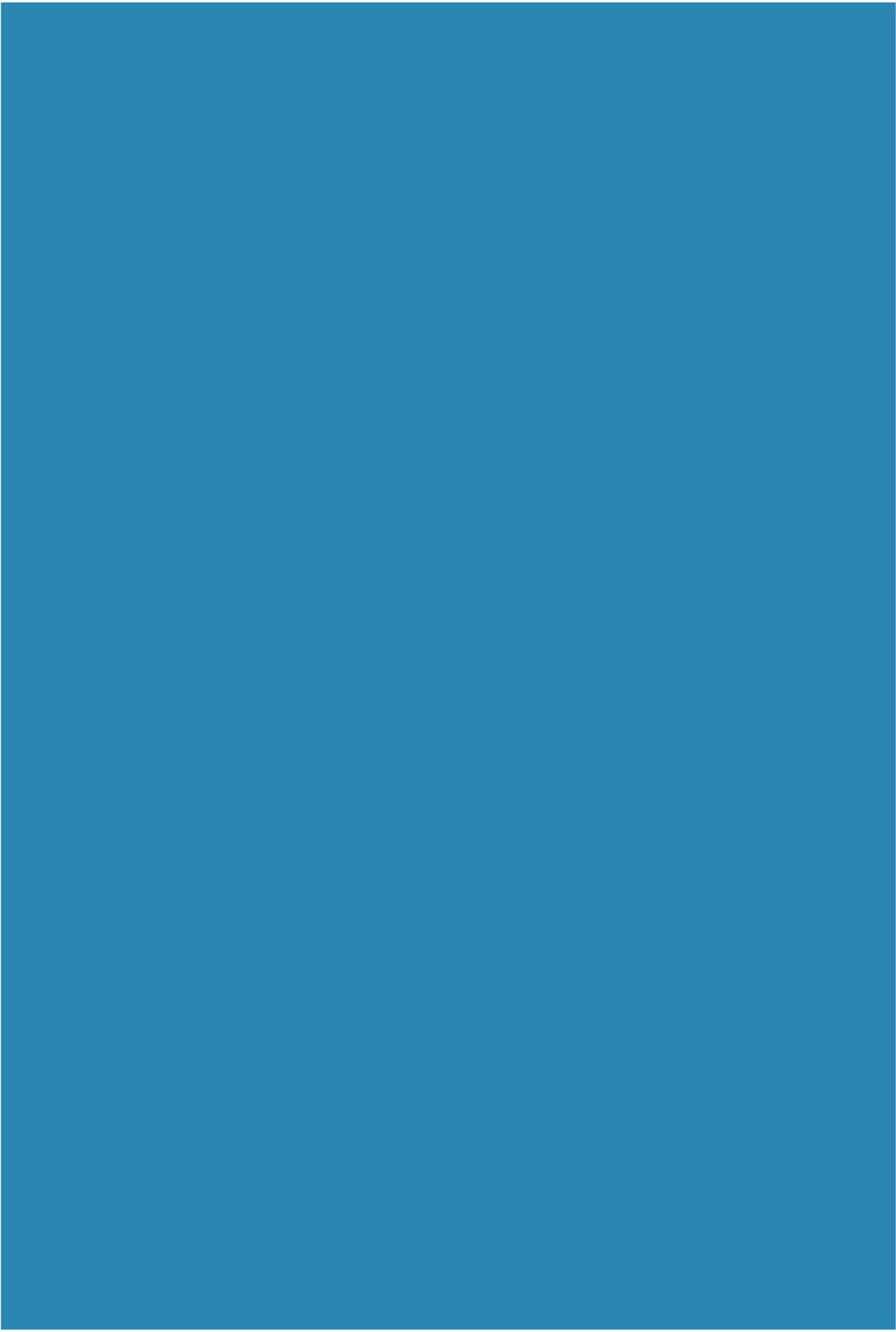
**Trauma:** Physical injury.

**Triage:** The evaluation and classification of casualties for the purpose of evacuation and treatment.

**Vaccination:** Treatment with a vaccine to produce immunity against a disease. A vaccine is an antigenic preparation used to stimulate the production of antibodies and provide immunity against a disease. Inoculation is simply another term for vaccination.

**Viraemia:** The presence of viruses in the blood.







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**Controller and Auditor-General**  
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