# Chapter 1

## Formulating the problem
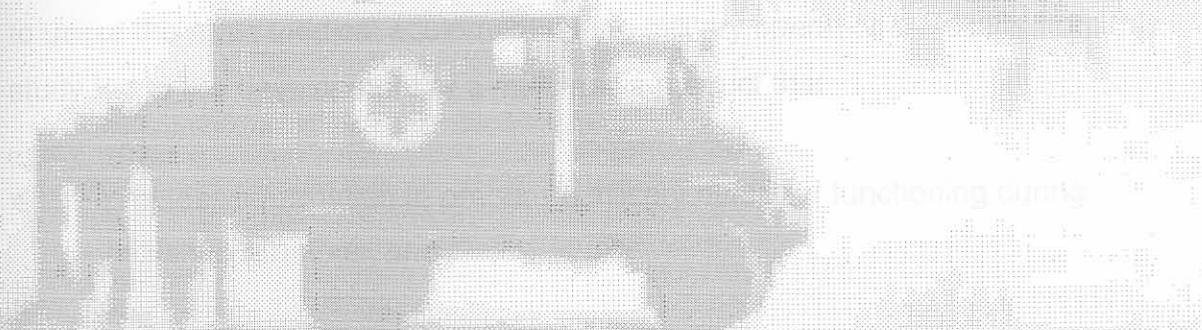
# CHAPTER 1

# *FORMULATING THE PROBLEM*

## 1.1     Introduction

This thesis reports on research to determine the feasibility of the use of multimedia in the simulation of a field hospital and the provision of information which will prepare military nurses for military operations. The main research question is:

> How can multimedia be used to create and develop an attention-getting, realistic environment to simulate the deployment of the field hospital and provide information to prepare military nurses for functioning during military operations?

In order to achieve this, it was necessary to identify the educational and training needs of registered military nurses to be able to function within the field hospital and to utilize the main medical equipment during military operations. Results from this study led to the development of a multimedia product that

- ▪ provides information to prepare a military nurse for functioning during military operations; and

- ▪ creates a realistic and attention-getting environment to simulate the deployment of the field hospital.

This research also generated guidelines for the future development of the program and recommendations for further research.

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### 1.1.1      **Background**

### 1.1.1.1      Expected new roles for the South African National Defence Force (SANDF)

Since the election in 1994, the South African National Defence Force's (SANDF) requirements of its members have changed. According to the White Paper on Defence (1996:29), military personnel should be prepared for regional security co-operation and possible future involvement in international peace operations (peacekeeping/ peacemaking/ peace enforcement). The SANDF may also be called upon by neighbouring countries to play a number of supportive roles. Therefore, within this context, the role of the South African Military Health Service (SAMHS) would be to provide assistance with respect to disaster relief, dealing with large numbers of refugees, the outbreak of diseases and the provision and maintenance of essential services.

### 1.1.1.2      Developed gap in the preparedness for involvement in military operations

Since the end of the Border War in 1989 the functional scope and application of the military multi-professional team have changed and a perception was created that there was no further need to incorporate the special needs of the soldier under war conditions while educating and training military health personnel. Furthermore, no experience had been gained regarding peace support operations and what these might entail. Consequently, a gap developed in the preparedness of health personnel, especially nurses, for involvement in military operations.

The training of nurses at the South African Military Health Service (SAMHS) College for Nursing is based only on the prescribed guidelines of the South African Nursing Council (SANC). **A change in the focus and purpose of nursing within the military context is thus imperative.** The outcome of education, development and training within the SAMHS must increase the adaptability, ingenuity and deploy

ability of nurses to meet the socio-economic, socio-political and military roles in **peacetime** throughout the spectrum of **conflict** (low, medium and high intensity).

1.1.1.3      <u>Masters degree in military nursing</u>

A degree in Military Nursing, through a tertiary institution, was approved by the Defence Staff Council. The aim of this course is to

■     provide the opportunity for professional development and advanced education in specialised fields of nursing practice in relation to military nursing; and

■     prepare military nurses to be involved in the primary and secondary functions of the SANDF, e.g.:

- Involvement in international peace support operations;

- involvement in humanitarian support operations, i.e. disaster relief, assistance to refugees or displaced persons and humanitarian aid;

- functioning in field conditions and anticipating and providing for patients'/clients' needs in those specific conditions; and

- functioning in a field hospital and utilisation of the main medical equipment.

The degree course will comprise various modules, but this research focused on the Nursing in Field Conditions module which entails, amongst other aspects, the deployment of the field hospital and utilisation of the main medical equipment.

**1.1.2      Needs assessment**

The non-availability of realistic scenarios resulted in inadequate training and lack of

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skills. Only a few of the registered nurses who had previously been part of SANDF exercises were familiar with the deployment of the field hospital and the main medical equipment. None of them had, however, received formal training in the mentioned aspects. The following factors contributed to the need for this product:

- Peace operations is a new focal point to South Africa.

- Instructors/lecturers are not readily available and/or there is a lack of experience and practical skills present because of the non-availability of realistic scenarios as well as inadequate training opportunities.

- Registered nurses, from different cultural backgrounds, are stationed at sickbays, military base hospitals and military hospitals scattered throughout the country, some in big cities like Bloemfontein and Pretoria and others in small bases e.g. the Kruger National Park or Pomfret.

- The SAMHS Training Formation, where the practical phases of the modules with a strong military element (e.g. Nursing in Field Conditions, Nursing: Defensive Biological and Chemical Measures) will be presented and/or co-ordinated, is situated in Thaba Tshwane. Nurses have to travel long distances and take time off from work in order to participate in practical exercises.

- To enable the nurses to attend the practical phases, the SAMHS is responsible for the expenses of travelling, housing and providing meals for the students. The students also receive a daily allowance. All these entail high expenditure for the SAMHS.

- The deployment of the field hospital is extremely expensive and time-consuming and every time the equipment is transported to and unloaded at the deployment area, wear and tear occur.

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## 1.2        Research question

The question that arose was:

How can multimedia be used to create and develop an attention-getting, realistic environment to simulate the deployment of the field hospital and provide information to prepare military nurses for functioning during military operations?

### 1.2.1        Research sub-questions

The sub-questions emanating from the above research question are presented in the following table:

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**Table 1.1    Research sub-questions**

| Topic Addressed | Questions |
|---|---|
| Content | * What are the *role* and *functions* of the military nurse during **military operations**?<br><br>* What are the *role* and *functions* of the military nurse to be able to function in a **field hospital** during military operations?<br><br>* What information does the nurse need to be able to function in the field hospital during military operations?<br><br>* What information/content should be made available to the nurse? |
| Presentation of media | * How can text, images, graphics and animation be combined to create and develop an attention-getting, realistic environment to simulate the deployment of the field hospital and provide information to prepare the military nurse for functioning during military operations? |
| Delivery of media | * Which delivery system will be best suited taking into consideration the constraints and restrictions of the SANDF? |
| Project plan | * How can this program be designed and developed? |
| Evaluation | * How well is this program working? |

# 1.3    Value of this research

The value of this research is the following:

■    The educational and training needs of registered nurses were identified to enable them to function within the field hospital during military operations and to utilise the main medical equipment.

■    Results from this study lead to the development of a multimedia product which creates a realistic environment for simulating the deployment of the field hospital and provide information to prepare the military nurse for functioning during military operations.

- Nurses will be able to make use of the program at home in their own time, or will be able to view it on the Intranet.

- Recommendations for further study and development of multimedia products of identified aspects in military education and training were made.

## 1.4    Clarification of concepts

### 1.4.1    Field Hospital

Military hospitals serve as base hospitals during peace time and military operations. A field hospital can be seen as a mobile extension of the military hospital during war and peace operations. The operational capabilities of the field hospital are amongst others

- the triage of patients, and surgical, radiological and laboratory services;

- a capacity to accommodate patients, including the intensive care of patients and dealing with outpatients; and

- the sterilisation of equipment and instruments.

Other services rendered include

- oral health care;

- psychological care;

- social work support;

- pharmaceutical utility; and

■   pastoral support.

These functions and services are supported by patient administration, logistics, and personnel administration functions.

### 1.4.2     Main medical equipment

The field hospital consists of main medical equipment which are fully-equipped containerised units, namely the surgical theatre, pathology laboratory, radiology unit, sterilisation unit and laundry, as well as non-containerised units which are deployed in tents, e.g. the triage area and patient wards.

### 1.4.3     Deployment of the field hospital

The field hospital is deployed in a tactical area which was previously chosen through reconnaissance and an intensive planning process in order to be able to treat patients in the most expedient manner before being evacuated to the nearest military base hospital or military hospital.

### 1.4.4     Military operations

Military operations may include conventional war operations, peace operations (peacekeeping, peacemaking, peace enforcement) or humanitarian support operations (disaster relief, humanitarian aid, assistance to refugees).

### 1.4.5     Multimedia environment

Through a multimedia environment, various graphic, text and computer technologies are integrated into a single, easily accessible delivery system. CD-ROM technologies can be incorporated into computer-based instructional units and learning environments.

## 1.5    Research methodology

### 1.5.1    Research design

The research design used was evaluation research. Trochim (1999) defines evaluation research as "the systematic acquisition and assessment of information to provide useful feedback about some object" and explains that the term "object" could also refer to a program, technology, need or activity. He also explains that this definition emphasizes *acquiring* and assessing *information* rather than assessing worth or merit.

### 1.5.2    Population and sample

The target population used for this study was registered nurses, male and female, who were Permanent Force members of the SANDF (SAMHS).

The samples for this study were selected as follows:

- A purposive sampling of registered nurses that had been previously deployed in an SANDF operation.

- A convenience sampling of other registered nurses.

### 1.5.3    Data collection technique

The survey was used as the data collecting technique.

### 1.5.4    Data collection methods

The research questions and the data collection methods are summarised in Table 1.2 on page 11.

Data was collected through the process of data and methodological triangulation. According to Burns & Grove (1997:241) data triangulation involves the collection of data from multiple sources for the same study. The intent is to use data from one source to validate data from another source. In methodological triangulation two or three different quantitative instruments might be used e.g. questionnaires, interviews and observation (Burns & Grove, 1997:242).

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## Table 1.2    Research questions and data collection methods

Note :    The following abbreviations are used in the table :

Lit/Doc = Literature review/Documentation

Ques = Questionnaire

Inter = Interview

Insp = Inspection

Focus = Focus group

| Topic addressed and questions | Lit/ Doc | Ques | Inter | Insp | Focus |
|---|---|---|---|---|---|
| **Information/content:**<br>**Phase 1:**<br>What are the role and functions of the military nurse during **military operations**? | ✔ | ✔ | ✔ | ✔ | ✔ |
| **Phase 2:**<br>What are the role and functions of the military nurse to be able to function in a **field hospital** during a military operation? | ✔ | ✔ | ✔ | ✔ | ✔ |
| What information does the nurse need to be able to function in the field hospital during a military operation? | ✔ | ✔ | ✔ | ✔ | ✔ |
| What information/content must be made available to the nurse? | ✔ | | ✔ | | |
| **Presentation:**<br>How can text, images and animation be combined to create an attention-getting, realistic environment to simulate the deployment of the field hospital and provide information to prepare the military nurse for functioning during military operations? | ✔ | | | | |
| **Delivery:**<br>Which delivery system will be best suited? | ✔ | | | | |
| **Project plan:**<br>How can this program be designed and developed? | ✔ | | | | |
| **Evaluation:**<br>How well is this program working? | | ✔ | ✔ | | |

## 1.6    Output

### 1.6.1    Description of the product

■    A multimedia computer program in which text, data, graphics, still images, and animation are combined and integrated for use on CD-ROM and/or the web.

■    The program provides the information that was indicated by the military nurses as important foreknowledge to enable to function in a field hospital during military operations.

■    The "deployment" of the field hospital is animated through "tents" and "containers" that can be moved around by the user to plan the most appropriate deployment of the field hospital.

■    The user is able to control the sequence in which the content of the program is presented by interacting with the computer (non-linear).

■    Hypertext, which allows for any word or phrase in one document to reference another document, allows for easy navigation between and within many documents in the program.

### 1.6.2    Overview of research report

■    Chapter 1: Formulating the problem.

■    Chapter 2: Literature review.

■    Chapter 3: Design, development and implementation.

■    Chapter 4: Evaluation procedure.

■    Chapter 5: Findings.

■    Chapter 6: Conclusions and recommendations.

### 1.6.3    Limitations of this research

A large number of experienced people had left the SANDF recently as a result of the transformation process, and hence it was found that the majority of people questioned or interviewed, had mostly gained their experience during operational military exercises and not through actual military operations.

A limited number of local protocols and doctrine regarding peace operations existed. The proposed policy on South African participation in Peace Missions was still in draft form and could therefore not be quoted. New doctrine, which emanated from the conduct of Exercise Blue Crane during May 1999, was still in the process of being developed, therefore the researcher had to rely on these limited protocols, doctrine and expertise for the development of the multimedia program.