CHAPTER 4

RESEARCH RESULTS AND ANALYSIS

4.1 INTRODUCTION

This chapter reviews the results and analysis of the qualitative data, the compilation of the questionnaire and the results and analysis of the quantitative findings of the study. The findings are also discussed in the light of previous research findings and available literature, where applicable, in order to identify similarities and differences between this study and previous studies and literature. A comprehensive description of the research methodology was given in Chapter 2.

4.2 RESULTS AND ANALYSIS OF THE QUALITATIVE DATA

4.2.1 Introduction

During the conceptual phase of this study, qualitative data was collected. The first step involved personal and telephonic interviews in order to investigate the development of A&E nursing in SA. The data collected during these interviews was included as part of the literature review, and will therefore not be discussed in this chapter.

The third step included the FGI with experts who assisted the researcher to compile a questionnaire. After transcribing the FGI (see Annexure C – A sample of the transcribed FGI) the data was analysed as prescribed in Chapter 2.

In order to define the "emergency care environment" as perceived by A&E nurses and to determine the core competencies that are required of the A&E nurse in order to manage life-threatening situations in the emergency care environment, three questions were asked (see page 37) and the following five topics were discussed with experts during the FGI:

- The ***context*** within which the A&E nurse can practise (see Table 4.1 – Context: major categories and subcategories)
- The components of the ***systematic approach*** when managing life-threatening situations (see Table 4.2 – Systematic approach: major categories and subcategories)
- The ***knowledge*** required by the A&E nurse when managing a life-threatening situation (see Table 4.3 – Knowledge: major categories and subcategories)
- The ***skills*** required by the A&E nurse when managing a life-threatening situation (see Table 4.4 – Skills: major categories and subcategories)
- The ***attitudes and values*** required by the A&E nurse when managing a life-threatening situation (see Table 4.5 – Attitudes and values: major categories and subcategories)

Each topic has been individually presented in a table, showing the main categories and subcategories obtained during the FGI and followed by supportive literature.

4.2.2 Results and analysis

4.2.2.1 Context

To enable the researcher to define the "emergency care environment" within which the A&E nurse practises, the researcher asked the experts what they considered to be the context within which the A&E nurse should practise.

The experts agreed that life-threatening situations do not only pertain to trauma, but include other emergencies, such as medical emergencies. Most of the accident and emergency units in SA are not dedicated trauma units, but treat all accidents and emergencies, and individuals of all age groups. It was decided that all trauma courses should be transformed into A&E nursing programmes in SA. The A&E nursing programme should enable the A&E nurse to practise within the South African context and should therefore include all accidents and emergencies that are managed in accident and emergency

units, treating all individuals of different age groups, as well as the pregnant patient.

This viewpoint was immediately confirmed by group reaction. The question regarding the context within which the A&E nurse should practise, elicited the following statements from the respondents:

- *…That is the most controversial question…*
- *…I don't think it is limited to one environment…*

The controversies that were discussed concerned mainly the pre-hospital environment and correlated with the rationale for this research. The first issue concerned dual registration, already discussed in Chapter 1. Some of the responses were:

- *…that should include the pre-hospital environment…*
- *…dual registration remains an issue…*
- *…I would certainly fight tooth and nail not to have dual registration…*

The second issue that divided the group in two, was whether the A&E nurse was able to practise within a pre-hospital environment mainly related with roadwork. Roadwork refers to a national network patrolled by the emergency medical services in order to provide aid and medical assistance ranging from primary response to definitive care. One group felt that A&E nurses could work on the road and the other group felt that they could not. The discussion did not concern the knowledge, skills, values or attitudes regarding the management of life-threatening situations within this environment, but the safety aspect and extrication of accident victims from motor vehicles were of great concern. The following statements were made:

- *…we would be getting into people's way in terms of car rescues…*
- *…I think we can work on the road…there are areas where we do need more education, like scene safety and rescue…*
- *…I do not want to follow their [referring to paramedics] protocols…*

The context was then divided into four categories, namely the clinical practice (consisting of the pre-hospital and hospital environment), management, education and research. The context within which the A&E nurse practises is

very broad as seen from the perspective of the experts. The subcategories were then listed according to the information retrieved from the FGI (see Table 4.1 – Context: major categories and subcategories).

Table 4.1 – Context: major categories and subcategories

Category	Subcategory
Clinical practice within pre-hospital environment	Primary response (ambulance)
	Inter-hospital transfers of the critically ill patient (ambulance)
	Aviation medicine: primary response (helicopter)
	Aviation medicine: secondary response (helicopter)
	Aviation medicine: secondary response (fixed-wing aircraft)
	Field hospital
	Disaster management
	Sports events
	Primary health care clinics
	Occupational health
Clinical practice within hospital environment	Provincial hospital: accident and emergency unit
	Private hospital/clinic: accident and emergency unit
	Military hospital: accident and emergency unit
	Outpatients department
Management	Consultant
	Managing a crisis centre
	Disaster planning and management
	Event management (e.g. sports events)
	Liaison management
	Managing an ambulance service
	Marketing
	Risk management
	Telephone triage
Education	Lecturing within the EMS (emergency medical service)
	Lecturing A&E nurses
	Educating community regarding health needs
	Injury prevention campaign
Research	Honours degree (research for report)
	Master's degree (research for dissertation)
	Doctoral degree (research for thesis)
	Research projects (other than the three above)
	Project development

Supportive literature indicates that A&E nurses have increasingly expanded their roles and that A&E nursing is no longer confined to the emergency unit, but is a developing clinical speciality (Jones 1999: 59). The ENA (1999b: 3) states that A&E nursing occurs in the hospital emergency department, pre-hospital environment, military settings, clinics, health maintenance organisations, ambulatory care centres, in business, educational, industrial and correctional institutions and other health care environments. During the FGI the extensive role of the A&E nurse within the SA context became evident.

The four categories in which nursing can be practised as described by Muller (1998: 1) correspond with categories that emerged for this section (ENA, 2000: xvii-xxxiii). These include clinical practice, education, management and research. No literature was found regarding the context within which the A&E nurse in SA practises and the researcher therefore had to make use of experts to provide this information.

As described in the literature review, little is known on the subject internationally. Although there is considerable debate regarding the role of A&E nurses in the provision of pre-hospital care, it is evident from standard American textbooks – outlining the core curriculum for A&E nurses (ENA 2000: 679-693) – that the transfer and transport of emergency patients are part of their training. The system components included in the core curriculum provided by the ENA correspond with the components of the Emergency Medical Services (EMS) system, namely medical control, a pre-hospital triage decision scheme, inter-hospital triage criteria, policies and procedures for all phases of transfer, transfer agreements, protocols for treatment and transport, and responsibility for decision to transfer. The patient care components include transport physiology, stabilisation and preparation for transport, nursing care during transport, arrival at receiving facilities and inter-hospital transport. Flight nurses and telephone triage are seen as specialised A&E roles by the ENA (ENA 2000: 773-774).

A&E nurses are still fulfilling their tasks during wartime as described by an A&E nurse during the Iraqi war in 2003 (Trauma 2003: 7). There are also A&E nurses working in the military environment within the SA context. It is therefore evident that nurses are involved in disaster management, not only in the pre-hospital environment but also in the hospital. The core curriculum of the ENA (2000: 695) also provides a chapter regarding disaster preparedness and management.

A&E nurses play a role as consultants in various capacities, such as reviewing records for an opinion, being an expert witness in legal cases (Carol 2002: 82) and even as medical adviser for a television hospital drama (Wallis 1999: 26). Other roles enacted within the emergency care environment were described by an A&E nurse during an interview about career development. These roles included ward management, primary health care and disaster management (Pickersgill 1999: 59).

Education on injury prevention is another task of A&E nurses nationally and internationally. In SA there are programmes running such as MAGPI (medics against paediatric injuries) presenting information sessions to children of different age groups on topics such as crossing a road safely and wearing seat belts. Safety programmes presented by A&E nurses internationally include for example the "Eddie Eagle Gun Safe programme" (Howard 2001: 485).

4.2.2.2 Systematic approach

The aim of this section was to identify the components of the systematic approach used during the management of life-threatening situations as perceived by the experts. This would enable the researcher to provide structure to the questionnaire. When asked to identify these components the entire group said:

- *ABCDE! (which is a well-known emergency and trauma abbreviation for airway, breathing, circulation, disability and exposure and environmental control)*

It was therefore evident that the experts all agreed on these components. Safety was added by one respondent to be included before the "ABCDE" and the whole group agreed on "SABCDE". Safety was first regarded as pertaining to oneself and to the patient, but later during the FGI it became evident that the experts included more knowledge and skills as part of this component:

- *…I don't know where it would fit…counselling skills and that's important…*
- *…can I disagree and say shouldn't that actually be part of your general training…that's where you do psycho [psychiatry]…*
- *…It's not covered…*
- *…crisis management should be included as well…*
- *…well certainly debriefing…*
- *…when after a critical incidence…that's something that is lacking in this country…*
- *…to debrief each other…*
- *…I think it's a life-threatening thing [post-traumatic stress]…you can't care for the patient …you just don't worry about the patient…*

It was then decided by the group to include crisis intervention, conflict management, debriefing and counselling skills under safety, based on the principle that if he/she does not have adequate knowledge and skills regarding these topics, the A&E nurse would in the long run not be able to complete the "ABCDE" on account of stressors and burnout when practising within the emergency care environment.

The group of experts decided not only to include the "SABCDE" as it was used in the management of severely injured patients involved in accidents, but to include the medical emergencies. The following comments were made regarding this issue:

- *Defibrillation, cardioversion…*
- *…don't forget pacing….*
- *…drugs…go up to "D" then…*
- *…"D" for drugs…(group confirmation)*

Adjuncts, special circumstances, medical history taking, secondary (head-to-toe) assessment and recording were later added to the "SABCDE" as forming part of the systematic approach:

- *…have to have the catheterisation [urine catheter insertion]…*
- *…put that under adjuncts…*
- *…adjuncts…NG [nasogastric tube insertion], urinary catheters [urinary catheter insertion]…those things…*
- *…adjuncts…yes…NG tubes [nasogastic tube insertion]…*
- *…safety…recording and reporting…I think there is safety in that as well…*
- *…documentation…(confirmation by the group)*
- *…secondary survey…there might be something leading to a life-threatening situation…(confirmation by the group)*

Due to the fact that each of the patients seeking emergency care is unique and a wide spectrum of the lifespan of the human being is covered (ENA 1999b) it was decided to include special considerations as a separate component (see Table 4.2 – Systematic approach: major categories and subcategories).

The primary assessment, medical history taking, secondary assessment and recording were regarded as the categories used for defining the knowledge and skills required of the A&E nurse in order to manage life-threatening situations in the emergency care environment.

Table 4.2 – Systematic approach: major categories and subcategories

Category	Subcategory
Assessment and recording	Primary assessment Airway and cervical spine control Breathing and ventilation Circulation with haemorrhage control Disability, differential diagnosis, defibrillation and drugs Exposure and environmental control Adjuncts Special circumstances
	Medical history taking
	Secondary assessment Head-to-toe assessment
	Recording

Supportive literature indicates that a specialised plan of care is a necessity for the management of the critically injured or ill patient and – regardless of the environment – mechanisms to address the patient during a life-threatening situation should exist (McQuillan et al. 2002: 109; Proehl 1999: 2).

Appropriate patient management consists of the rapid assessment and management of life-threatening pathology (McQuillan et al. 2002: 113; Sanders 2000: 483). The "SABCDE" forms part of the primary assessment of the patient and is the basis for all emergency interventions delivered. All these components assessed during the primary survey are of such a critical nature that any major deviation from normal requires immediate intervention (ENA 2000: 1; Mc Quillan et al. 2002: 111). It is based on logical sequential management priorities, and the prevention of irreversible tissue hypoxia and the management of life-threatening respiratory and cardiovascular instability, brain injury and spinal cord injury before definitive diagnosis, is often essential in the management of the critically injured or ill patient (McQuillan et al. 2002: 113). Appropriate knowledge and various skills are required to ensure adequate management of the patient with a life-threatening condition. This, however, will be discussed later.

- "S" stands for safety. A safe and appropriate environment is essential in both the pre-hospital and hospital environment. The hospital environment should be kept warm to reduce the risk of hypothermia (Dolan & Holt 2000: 26). The pre-hospital environment is fraught with hazards, some of which are common to many areas of practice, while others such as chemicals, electricity and moving vehicles are unique (Dolan & Holt 2000: 20). It is potentially dangerous and you should never enter a potentially unsafe scene until you know that it is safe, for the safety of the responder is a priority. A primary goal relevant to all pre-hospital responses is to do no further harm to the victim and to maintain the safety and well-being of all the responders (McQuillan et al. 2002: 97). The personal safety of the rescuers extends beyond the duration of the incident (Sanders 2000: 481).

According to Dolan and Holt (2000: 21) this concept also includes psychological safety. Due to the nature of the work, the A&E nurse who attends to victims involved in serious incidents is exposed to sights that can be psychologically disturbing. It is therefore important to have access to debriefing sessions in order to reduce the risks of long-term psychological effects. The ENA (2000: 704) includes stress management in the core curriculum and provides signs and symptoms of delayed stress reactions. Stress related to critical incidents can adversely affect the A&E nurse and his/her capacity to respond adaptively, and can have a direct effect on the outcome of a patient. It is therefore essential to have stress management programmes in place for the benefit of the A&E nurse and employer (Caine & Ter-Bagdasarian 2003: 59). It would also ensure that the A&E nurse is able to provide the best nursing care available to the patient during a life-threatening situation.

Universal precautions should be taken with all patients. Safety therefore also consists of wearing protective clothing – both in the pre-hospital and hospital environment – to protect the A&E nurse from blood-borne pathogens (Sanders 2000: 483; Dolan & Holt 2000: 26). The use of lead aprons for all staff members should be compulsory when X-rays are taken (Dolan & Holt 2000: 26).

- "A" stands for airway and includes cervical spine control. The aim in both accidents and medical emergencies is to ensure that the patient maintains a patent airway. If this is not the case, the A&E nurse will need to perform other methods to ensure this. It is important to simultaneously maintain cervical spine integrity when managing patients involved in accidents (ENA 2000: 2; Dolan & Holt 2000: 26; Sanders 2000: 484). In a life-threatening situation the airway could be partially or totally obstructed, for example by the tongue, vomitus, blood or airway oedema. This is unacceptable and requires immediate intervention by the A&E nurse – either by securing it manually or with adjunct equipment such as the jaw thrust manoeuvre, oral or nasal airways, suction and endotracheal intubation.

- "B" stands for breathing and includes ventilation (ENA 2000: 4; Dolan & Holt 2000: 26). A patent airway does not automatically mean that the patient is able to breath properly, and therefore the A&E nurse should watch for adequate chest movement, and depth and symmetry of chest movement (Dolan & Holt 2000: 27; Sanders 2000: 484). It should also include auscultation and percussion of the chest for abnormalities. The A&E nurse will then have to decide whether supplemental oxygen via a face mask or oxygenation and ventilatory support via bag-valve-mask ventilation, followed by endotracheal intubation (or other means to ensure a patent airway) and mechanical ventilation, is necessary (Sanders 2000: 484-485; ENA 2000: 11).

- "C" stands for circulation and includes haemorrhage control. (ENA 2000: 5; Dolan & Holt 2000: 26). It also includes the initiation of cardiopulmonary resuscitation (CPR) if indicated (ENA 2000: 13; McQuillan et al. 2002: 111) and interventions to increase perfusion (ENA 2000: 13).

- "D" stands for disability and includes differential diagnosis, defibrillation and drugs. A simple and rapid assessment of the patient's neurological status should take place during the primary assessment (ENA 2000: 13; Dolan & Holt 2000: 28). One should also look for possible causes of a decreased level of consciousness, such as drugs, alcohol and cerebral oedema. Drugs should be given as indicated (ENA 2000: 13). The sequence of care for ventricular

fibrillation and pulseless ventricular tachycardia includes basic life support, defibrillation, endotracheal intubation and intravenous access (Sanders 2000: 830). Due to the fact that rapid defibrillation is crucial to increase the patient's chance of survival and for each minute that passes there is a 7-10% reduction of success, it was decided to include defibrillation under "D" (Proehl 1999: 3, 272).

- "E" stands for exposure and environmental control (Dolan & Holt 2000: 26). At the end of the primary assessment every item of clothing must be removed without risking further damage to the patient, and the patient must be log-rolled so that the back can be fully examined. Hypothermia increases the risk of mortality and morbidity for the trauma patient and must therefore be prevented and/or reversed.

- Adjuncts include the insertion of an arterial line, a nasogastric tube and urinary catheter. There was no supportive literature regarding this aspect, but within the South African context this term is often used.

When medical history is taken during the management of life-threatening situations, the "AMPLE" approach is used. "AMPLE" is an abbreviation for the following aspects of history taking: allergies, medications currently being taken, past illnesses, last meal and events preceding the injury or illness (Dolan & Holt 2000: 29; McQuillan et al. 2000: 113). Two further aspects included in history taking are the abbreviations "S" and "DEATH". With "S" the history relevant to wearing a safety belt during a motor vehicle accident is noted. The abbreviation "DEATH" stands for diabetes, epilepsy, asthma, tuberculosis and hypertension – the five most important chronic diseases found within the SA context.

Initial history taking is followed by secondary (head-to-toe) assessment – a rapid and systematical evaluation of the injured and critically ill patient to identify all injuries and determine the aetiology of signs and symptoms that seem unclear (Proehl 1999: 4). Although this assessment is not regarded essential to manage life-threatening situations, it might aid the A&E nurse in

recognising a potential life-threatening situation. If for example, the A&E nurse assesses the patient and finds a fracture of the pelvis, this would indicate that he/she should give more attention to "C" (circulation with haemorrhage control).

The researcher listed only *secondary assessment* in the questionnaire to avoid complications that may occur if the A&E nurse gives to much attention to this phase. According to Proehl (1999: 6) these complications include the following:

- Failure to recognise life-threatening situations that develop during the secondary assessment, without intervening appropriately, may result in patient deterioration.
- Failure to maintain spinal alignment and immobilisation during the secondary assessment may result in patient deterioration.
- Intervening for non-critical problems, such as extremity fractures, before correcting life-threatening problems, may result in patient deterioration.

Recording is an essential part of nursing and all nursing actions must be recorded as it is difficult to prove that an action has been implemented if not recorded (Naudé, Meyer & van Niekerk 2000: 264).

The components of the nursing process (assessment, diagnosis, planning/interventions, expected outcomes/evaluation and recording) are integrated in the above-mentioned systematic approach, together with the three characteristics of this process (purpose, organisation and creativity) (Naudé, Meyer & van Niekerk 2000: 26). The purpose in a life-threatening situation is to restore the health of the patient; organisation is achieved through the systematic approach; and creativity is relevant to the planning of individualised care. Critical thinking is essential throughout the process of effective interventions.

4.2.2.3 Knowledge

The experts were asked to give their opinion regarding knowledge required by A&E nurses to manage life-threatening situations. It was decided that the

A&E nurse would need knowledge of the anatomy of the human body, physiology, pharmacology and pathophysiology of the disease processes that lead to life-threatening situations, for example asthma, diabetes and arteriosclerosis. The following comments were made:

- *…haemodynamics [haemodynamic monitoring]…ECG monitoring and interpretation…interpretation of lethal [life-threatening] arrhythmias*
- *…physiology…*
- *…human anatomy also…*
- *…pathophysiology…MI's [myocardial infarction] things like that…*
- *…legal aspects…are you legally operating?…*
- *…pharmacology…that is the nurse's core downfall…including me…*

Concerning the interpersonal intellectual skills the following data was obtained:

- *…group dynamics and team building…A&E nursing is group work…*
- *…those people function [A&E nurses and health care providers] as a group…*
- *…they need management skills…they need to know how to manage themselves in situations….*

It was then decided to first explore the skills used by the A&E nurses and then decide what knowledge they need to perform those skills.

- *…no they go together [knowledge and skills]…(group confirmation)*
- *…first we must know the skills…then we can decide on exact knowledge…*
- *…learning…it should be a lifelong thing…*

The experts agreed that the knowledge necessary to manage life-threatening situations depends on the skills the A&E nurse needs to manage these situations (see Table 4.3 – Knowledge: major categories and subcategories).

Table 4.3 – Knowledge: major categories and subcategories

Category	Subcategory
Intellectual skills	-Applied anatomy -Applied physiology -Applied pharmacology -Applied pathophysiology -Applied knowledge regarding laboratory and diagnostic tests used within the emergency care environment
Psychomotor skills	-Psychomotor procedural skills necessary to manage life-threatening situations (procedures/nursing interventions)
Interpersonal skills	-Interaction with patients -Interaction with relevant health professionals

Supportive literature indicates that the foundation of any profession is the development of a core of knowledge that can be applied in practice (Naudé et al. 2000: 14). Formal knowledge must be the key source of knowledge and this knowledge is often implicit in the everyday practice of the A&E nurse (Burns & Bulman 2000: 43). This knowledge must be grounded on the expectancies from within the clinical practice and insight into the clinical practice of the A&E nurse. It is of the utmost importance that the goals of education are in line with those of the clinical practice of the A&E nurse.

There has been a growing acknowledgement that nursing practice is underpinned by a unique body of knowledge which guides the expert clinicians but this frequently goes unrecognised (Lathlean and Vaughan 1994: 3). Practice and education should be intertwined in such a way that the theoretical propositions arise from the practice itself and that the practice is informed by theory. Thus there is a need for both inductive and deductive approaches as mechanisms that will allow the nurse educator to increase understanding of the practice of A&E nurses (Lathlean & Vaughan 1994: 4). The researcher aimed to get the help of experts (inductive method) to provide her with information regarding the knowledge that would be required by A&E nurses to manage life-threatening situations. A national survey was therefore

conducted to facilitate delineation of the core competencies (excluding intellectual skills) that are required. This would be used as a basis for the knowledge needed.

The A&E nurse should use all the intellectual knowledge available on A&E nursing science, as well as supportive subjects to assess the patient, conceptualise the data and plan specific nursing interventions when managing a life-threatening situation. This includes learning acquired during the basic programme of nursing and new knowledge gained during the A&E nursing programme. The effective use of this knowledge – which includes subjects such as anatomy, physiology, sociology, psychology and pharmacology in nursing science – and the application thereof in the assessment, planning of and implementation of specific nursing interventions cannot be overemphasised (Naudé et al. 2000: 7).

The researcher also included knowledge regarding the skills performed during a life-threatening situation in a similar way and under similar sub-headings as used by Proehl (1999) who compiled a book regarding emergency care procedures.

Critical analysis, synthesis and evaluation are key skills for both the professional practice and academic work. *Analysis* involves the separation of a whole into its component parts, *synthesis* refers to the ability to put elements together and form a new whole and *evaluation* involves making judgements based on criteria (Van der Horst & McDonald 2001: 37). The process described above in a life-threatening situation within the emergency care environment will require unique knowledge to understand and solve problems (Burns & Bulman 2000: 40-41). One needs to acknowledge that this is a postgraduate programme and that the A&E nursing student has knowledge acquired from his/her basic training, as well as from the A&E nursing programme.

A&E nurses perform their functions on the three most complex levels of Bloom's taxonomy for the cognitive domain when managing a life-threatening

situation. This requires analysis, synthesis and evaluation of the situation when assessing the patient and planning specific nursing interventions to maintain life (McCown, Driscoll & Roop 1996:362-263). Knowledge forms the basis of Bloom's taxonomy, but it is difficult to specify knowledge required by the A&E nurse in life-threatening situations without exactly knowing what is expected of these nurses in clinical practice on a daily basis. The researcher therefore had to find out first what skills are performed by A&E nurses within the emergency care environment. The knowledge that supports these skills can then be planned. In the end it is the skills performed by the A&E nurse during a life-threatening situation that will save a patient's life – not merely psychomotor skills, but also intellectual and interpersonal skills.

It is therefore evident that the knowledge required by A&E nurses to manage life-threatening situations involves intellectual, psychomotor and interpersonal skills (Naudé et al. 2000: 28).

4.2.2.4 Skills

The experts were asked what skills are required by A&E nurses to manage life-threatening situations. The experts mainly listed the skills they thought necessary and these were then used to compile the questionnaire. Both basic and advanced life-support skills were evaluated during the discussions. The systematic approach described earlier was used to organise these skills (see Table 4.4 – Skills: major categories and subcategories).

The skills suggested when "D" was discussed, included controversial actions like prescribing appropriate medication to be used during the management of life-threatening situations. Discussions can be highlighted as follows:

- *…I'm speaking about giving adrenaline when the doctor is not there…am I allowed?…I want to be covered by my council [SANC]…*
- *…the CCA [paramedic] gives adrenaline on the road [pre-hospital environment]…and I'm not allowed to give it without a doctor's prescription…*
- *…you know why it will never be allowed? [A&E nurse to prescribe drugs during life-threatening situations] because you can't control the nurse*

[A&E nurse]…if you look at the number of paramedics on the road [pre-hospital environment]…they're very limited and they all have got some controlling body [HPCSA]…so, yes they do…

- *…but let's say you are on your own…or working in a rural area…*
- *…then you should be given, as you are as a midwife, then you are controlled by a register and you're accountable to someone…and then you can prescribe…*
- *…if you look at the new legislation that came out, they didn't include nurses…there will be rescheduling in the next six months…there will be certain drugs that A&E nurses can give if they have special training…and that authorisation will be done by the council [SANC]…*

The experts also decided to include certain skills which will be needed in special circumstances (see Table 4.4). These skills were described as follows:

- *…sexual assaults and collecting evidence…and forensics…*
- *…delivery skills…those kind of things…life-threatening situations….ask somebody…placenta previa etc…*

Neonatal stress management was later included when a neonatal nursing expert was asked to evaluate the questionnaire as part of the triangulation process. She recommended the inclusion of this skill. An expert midwife was asked to give her opinion regarding the skills that should be included as part of the supportive management for obstetric emergencies. These skills were then included into the questionnaire (see Table 4.4 – Skills: Major categories and subcategories).

As this section is detailed and extensive, literature references are given in the table as indicated.

Table 4.4 – Skills: major categories and subcategories

Guide:

Components of standard nursing practice*

Procedures performed by A&E nurses**

Procedures mainly performed by physicians or nurses in advanced or extended roles within the emergency care environment***

No literature found to indicate that procedures are performed by A&E nurses ****

(A reference is included if relevant literature could be found)

Category	Subcategory
Assessment and recording	Primary assessment (ABCDE)** (ENA 2000: 1; Proehl 1999: 2-3)
	Medical history taking** (ENA 2000: 14-16)
	Secondary (head-to-toe) assessment** (ENA 2000: 16-21; Proehl 1999: 4-5)
	Recording* (Mulder 1999: 101) ** (ENA 2000: 730-731)
Safety within pre-hospital environment	Rescue work****
	Extrication****
	Scene safety****
	Hazmat precautions****
	Prioritisation of patient management****
	Use of extrication devices****
	Crisis intervention****
	Conflict management****
	Debriefing****
	Counselling skills****
Safety within hospital environment	Hazmat precautions** (ENA 2000: 7060-710, 752)
	Prioritisation of patient management** (ENA 2000: 24)
	Use of extrication devices** (Proehl 1999: 375-376)
	Crisis intervention** (ENA 2000: 704-705, 752; Dolan & Holt 2000: 181)
	Conflict management****
	Debriefing** (Dolan & Holt 2000: 181, 185-188)
	Counselling skills** (Dolan & Holt 2000: 189-197)

Table 4.4 – (continued)

Category	Subcategory
Airway and cervical spine control	Foreign body removal: upper airway** (ENA 2000: 8; Proehl 1999:10)
	Oropharyngeal airway insertion** (ENA 2000: 8; Proehl 2000: 13)
	Nasopharyngeal airway** (ENA 2000: 8; Proehl 1999: 14-15)
	Cricoid pressure technique (Sellick's manoeuvre)**(Proehl 1999: 109)
	Airway intubation:
	Laryngeal mask airway*** (Proehl 1999: 17)
	Oesophageal-tracheal combitube airway (Combitube) **(Proehl 1999: 43-44)
	Orotracheal intubation**(ENA 2000: 8) *** (Proehl 1999: 31-32)
	Nasotracheal intubation*** (Proehl 1999: 34)
	Blind endotracheal intubation****
	Retrograde intubation*** (Proehl 1999: 37)
	Percutaneous transtracheal ventilation*** (Proehl 1999: 49-50)
	Needle cricothyroidotomy** (ENA 2000: 9) *** (Proehl 1999: 47)
	Surgical cricothyroidotomy*** (ENA 2000: 10)
	Sugical tracheostomy*** (Proehl 1999: 51)
	Endotracheal suctioning** (Proehl 1999: 99-100)
	Spinal immobilisation** (Proehl 1999: 375-376)
	Immobilisation devices:
	Cervical collars** (ENA 2000: 10; Proehl 1999: 375)
	Head immobilising device (HID/Ferno blocks) ** (ENA 2000: 10 & Proehl 1999: 375)
	Spine board** (ENA 2000: 10; Proehl 1999: 375)
	Scoop stretcher** (Proehl 1999: 375)
	Vacuum splints** (ENA 2000: 688; Proehl 1999: 387)
	Log-rolling** (Proehl 1999: 375)
	Cervical spine X-ray interpretation****
Breathing and ventilation	Initiate appropriate oxygen therapy* (Mulder 1999: 527-559) ** (ENA 2000: 11)
	Nebulisation therapy* (Mulder 1999: 527-559) ** (ENA 2000: 10)
	Bag-valve-mask ventilation** (ENA 2000: 10; Proehl 1999: 109-110)

Table 4.4 – (continued)

Category	Subcategory
	Anaesthesia bag ventilation (Boyles machine)** (Proehl 1999: 112)
	Confirmation of proper advanced airway placement ** (ENA 2000: 8; Proehl 1999: 23)
	Oxygenation and ventilation monitoring:
	Peripheral saturation monitoring** (ENA 2000: 5; Proehl 1999: 67)
	Arterial blood gas monitoring** (ENA 2000: 579)
	Exhaled or end-tidal CO_2 monitoring (capnograph) ** (ENA 2000: 9; Proehl 1999: 72)
	Peak expiratory flow monitoring (e.g. asthma patients) **(ENA 2000: 560; Proehl 1999: 70)
	Non-invasive mechanical ventilation** (Proehl 1999: 86-87)
	Mechanical ventilation** (ENA 2000: 11; Proehl 199: 120-121)
	Drawing an arterial blood gas (ABG) sample ** (ENA 2000: 76; Proehl 1999: 60-61)
	Interpretation of arterial blood gas (ABG) ** (ENA 2000: 554)
	Manipulation of treatment according to arterial blood gas (ABG) ** (ENA 2000: 554) ** (Dolan & Holt 2000: 122, 373, 380)
	Occlusive dressing for open pneumothorax (tape only three sides) ** (ENA 2000: 385)
	Emergency needle decompression of tension pneumothorax** (ENA 2000: 385) ***(Proehl 1999: 131)
	Emergency placement of an underwater drain for the treatment of a tension pneumothorax*** (Proehl 1999: 134)
	Emergency placement of an underwater drain for the treatment of a pneumothorax and/or haemothorax*** (Proehl 1999: 134)
	Chest drainage system management** (Proehl 1999: 135-137)
	Chest X-ray interpretation****
Circulation with haemorrhage control	Haemodynamic monitoring of the critically ill patient** (ENA 2000: 13)
	Analyse 12-lead ECG: myocardial infarction** (ENA 2000: 68)
	Analyse ECG strips: lethal rhythms** (ENA 2000: 77-111)
	Analyse ECG strips: non-lethal rhythms** (ENA 2000: 77-111)
	Control external bleeding** (ENA 2000: 12)

Table 4.4 – (continued)

Category	Subcategory
	Suturing of skin lacerations** (ENA 2000: 666)
	Administration of resuscitation fluids** (ENA 2000: 12)
	MAST suit application** (ENA 2000: 12 Proehl 1999: 170-173)
	Intravenous access:
	Peripheral line access * (Mulder 1997: 371) ** (ENA 2000: 13; Proehl 1999: 204-205)
	Internal jugular venous access*** (Proehl 1999: 215-216)
	External jugular venous access*** (Proehl 1999: 209)
	Femoral venous access*** (Proehl 1999: 218-219)
	Intraosseous access **(Proehl 1999: 225-226)
	Central line access*** (Proehl 1999: 211-212)
	Peripheral vein cutdown*** (Proehl 1999: 222-223)
	Umbilical venous access****
	Umbilical arterial access****
	Emergency pericardiocentesis for treatment of a pericardial tamponade *** (Proehl 1999: 177-179)
	Effective performance of CPR (ventilation and compression) * (Mulder 1999: 637-662) ** (ENA 2000: 13)
	Splinting of limbs** (ENA 2000: 688)
	Splinting of pelvis** (ENA 2000: 386)
	Limb X-ray interpretation****
	Pelvic X-ray interpretation****
Disability, differential diagnosis, defibrillation and drugs	Monitoring patient's level of consciousness:
	AVPU scale** (ENA 2000: 13)
	Glasgow coma scale** (ENA 2000: 13)
	Neonatal stress response** (ENA 2000: 448)
	Blood glucose monitoring** (Dolan & Holt 2000: 388)
	Differential diagnosis for cardiac arrest (correctable causes)** (ENA 2000: 106)
	Defibrillation* (Mulder 1999: 662-679) ** (ENA 2000: 105)
	Cardioversion** (ENA 2000: 13; Proehl 1999: 276-277)
	External pacing** (ENA 2000: 99; Proehl 1999: 281-282)
	Vagal manoeuvres** (ENA 2000: 89)
	Prescribing appropriate medication to facilitate:
	Sedation** (ENA 2000: 89)

Table 4.4 – (continued)

Category	Subcategory
	Analgesia*** (ENA 2000: 63)
	Skeletal muscle relaxation****
	Treatment of cardiac arrest* (Mulder 1999: 637-660) ** (ENA 2000: 105)
	Correction of hypoxia* (Mulder 1999: 527) ** (ENA 2000: 605)
	Increased cardiac output with the use of positive inotropes*** (ENA 2000: 608-609)
	Correction of metabolic acidosis** (ENA 2000: 605)
	Thrombolysis in acute myocardial infarction ** (Proehl 1999: 570-571) ** (ENA 2000: 70)
	Treatment of acute pulmonary oedema *** (ENA 2000: 76-77)
Exposure and environmental control	Measures to reverse hypothermia ** (ENA 2000: 182-183; Proehl 1999: 488-489)
	Measures to reverse hyperthermia** (ENA 2000: 178-179; Proehl 1999: 491)
Adjuncts	Arterial line insertion** (Proehl 1999: 296-298)
	Nasogastric tube insertion* (Mulder 1997: 447) ** (ENA 2000: 688)
	Urine catheter insertion* (Mulder 1999: 343) ** (ENA 2000: 605)
Special circumstances	Supportive management for obstetric emergencies:
	Normal delivery** (ENA 2000: 446; Proehl 1999: 366-368)
	Breech presentation****
	Prolapsed cord****
	Shoulder presentation****
	Multiple pregnancy****
	Placenta abruptio** (ENA 2000: 439)
	Placenta previa** (ENA 2000: 439)
	Premature labour****
	Supporting the rape victim** (Dolan & Holt 2000: 417-419)
	Collecting forensic evidence from the rape victim** (Dolan & Holt 2000: 417-419)
	Neonatal stress management** (ENA 2000: 448)
	Selecting an appropriate transport mode for the critically ill or injured patient ** (ENA 2000: 679-693)

After compiling a list of the skills that were perceived by the experts as skills required by A&E nurses to manage life-threatening situations, the researcher carried out a thorough, *supportive literature* review, including prescribed books, procedure manuals and the ENA core curriculum used in A&E nurse education programmes. The purpose with the review was to establish whether each of the skills was regarded as indicated at the beginning of the above table, namely:

- Components of standard nursing practice*
- Procedures performed by A&E nurses**
- Procedures mainly performed by physicians or nurses in advanced or extended roles within the emergency care environment***
- No literature found to indicate that procedures are performed by A&E nurses****

Each skill was individually assessed and the relevant status of the skill, as well as the relevant literature, appropriately indicated (see Table 4.4).

4.2.2.5 Attitudes and values

The experts were asked what attitudes and values were required by A&E nurses to manage life-threatening situations (see Table 4.5 – Attitudes and values: major themes and subthemes). The following quotes are examples of what was discussed during the FGI:

- *…treat everybody the same…being accommodating…knowing that they might be different from you…*
- *…should have respect for other people and for their values…*
- *…attitudes and values…that's a personal thing…*
- *…it's still up to the individual…*
- *…accountable…yes, you must be accountable…and realise that…*
- *…you must keep your skills up to date…that's up to them…*

Table 4.5 – Attitudes and values: major categories and subcategories

Category	Subcategory
Attitudes and values the practising A&E nurse should have	have self-respect
	respect others
	respect the possessions of others
	respect the values of others
	respect the views of others
	respect the religious beliefs of others
	be aware of the need for a clinical specialist to have applicable knowledge, skills, and attitudes and values
	accept accountability for his/her decisions
	accept accountability for his/her activities
	acknowledge his/her own limitations
	acknowledge the importance of knowledge
	acknowledge the importance of skills
	acknowledge the importance of attitudes
	acknowledge the importance of values

Supportive literature indicates that attitudes and values form part of outcomes-based education (Van der Horst & McDonald 2001: 24). An attitude is a personal feeling or belief that influences the A&E nurse to act in a certain way when managing a life-threatening situation, and therefore affects the choice he/she makes. It is often instilled at a young age and in many cases learnt at home (McCown et al. 1996: 361; Van der Horst & McDonald 2001: 35). Values on the other hand are the worth, desirability, or utility of a thing, on the qualities on which these depend (*The Concise Oxford Dictionary* 1995:1459). What must be identified are the attitudes necessary for effective practice in specific settings, in this case the emergency care environment (Hinchliff 1999: 94).

Attitudes and values are learnt through socialisation (learning about social roles), and because we are all different these are highly individual (DeYoung 1990; Van der Horst & McDonald 2001: 46). Although socialisation is a continuous process throughout the lifespan of the A&E nurse, in this context

the researcher refers to socialisation of the A&E nurse within the emergency care environment. Professional socialisation is a complex process during which the A&E nurse acquires the skills, content and sense of occupational identity characteristic of the profession. Fundamental to this process is the internalisation of the profession's attitudes and values (Hickey, Quimette & Venegoni 2000: 46-47).

By asking the experts what they considered to be the attitudes and values of A&E nurses, the researcher attempted to identify these attitudes and values within the emergency environment in which A&E nurses practise.

After identifying the categories and subcategories of each of the five topics, a questionnaire was compiled (see Annexure D – Questionnaire) which was then distributed nationally to A&E nursing lecturers as well as trained and student A&E nurses.

The following section includes the quantitative data, results and analysis obtained from the questionnaire.