

**INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC
IN SOUTH AFRICA: A NEEDS ANALYSIS**

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January 2019

DECLARATION

I hereby declare that the compilation of this dissertation is the result of my own independent work. I have acknowledged persons who assisted me in this endeavour. I declare that there is no familial relationship between the researcher and the study leader with the same surname. I have tried to use the research sources cited in the text in a responsible way and to give credit to the authors and compilers of the references for the information provided, as necessary. I further declare that this work is submitted for the first time at this institution and faculty for the purpose of obtaining a Magister Degree in Health Professions Education and that it has never been submitted at any other institution for the purpose of obtaining a qualification. I also declare that all information provided by study participants will be treated with the necessary confidentiality.



28.01.2019

Mr JJ Jansen van Vuuren

Date

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DEDICATION

I would like to dedicate this dissertation to Márilee, my wife, who has been my consistent inspiration, support, and source of wisdom.

Without her love and sacrifice, this work would never have been possible, and to Ané and Zander, my daughter and son who offered me unconditional love, support, and understanding throughout the course of this dissertation.

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LIST OF ACRONYMS

AEA	Ambulance Emergency Assistant
ALS	Advanced Life Support
ATCs	Ambulance Training Colleges
BAA	Basic Ambulance Assistant
B EMC	Bachelor in Emergency Medical Care
BHS EMC	Bachelor of Health Sciences Emergency Medical Care
BLS	Basic Life Support
B.Tech: EMC	Bachelor of Technology in Emergency Medical Care
CCA	Critical Care Assistant
CDM	Clinical Decision-Making
CHE	Council on Higher Education
COEC	College of Emergency Care
DoH	Department of Health
DoHET	Department of Higher Education and Training
DP	Degree Paramedic
ECP	Emergency Care Practitioner
ECT	Emergency Care Technician
EMC	Emergency Medical Care
EMS	Emergency Medical Services
ETI	Endotracheal Intubation
HE	Higher Education
HEA	Higher Education Academy
HEIs	Higher Education Institutions
HPCSA	Health Professions Council of South Africa
HPCSA: PBEC	Health Professions Council of South Africa: Professional Board for Emergency Care
ILS	Intermediate Life Support
M.Tech: EMC	Magister Technologiae: Emergency Medical Care
ANLS	Advanced Neonatal Life Support
NDip: AET	National Diploma: Ambulance Emergency Technician
NDip: EMC	National Diploma: Emergency Medical Care
NDoH	National Department of Health
NQF	National Qualifications Framework

PALS	Paediatric Advanced Life Support
PhD EMC	Doctor of Philosophy in Emergency Medical Care
SAQA	South African Qualifications Authority
SGB	Standards Generating Body
UFS	University of the Free State
USA	United States of America
WHO	World Health Organization

SELECTED DEFINITIONS AND TERMS

Biostatistics:	Data analysed are derived from the biological sciences and medicine (Van Belle, Fisher, Heagerty & Lumley 2004:2)
Clinical simulation:	"The imitation of human processes and interactions by a model system" (Rosen, McBride & Drake 2009:842)
Emergency care:	"The rescue, evaluation, treatment and care of an ill or injured person in an emergency-care situation and the continuation of treatment and care during the transportation of such person to or between health establishment(s)" (DoH 2003:5)
Emergency Care Practitioner (ECP) Paramedic	An Emergency Care Practitioner (ECP) paramedic refers to the registration with the HPCSA, after successful completion of a B Degree, for the highest clinical practice level currently available in South Africa to a paramedic (cf. figure 1.1)
Emergency medicine:	The International Federation for Emergency Medicine, as cited by the College of Emergency Medicine, UK (2013:online) defined emergency medicine in 1991 as "a field of practice based on the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioural disorders. It further encompasses an understanding of the development of pre-hospital and in-hospital emergency medical systems and the skills necessary for this development"
Emergency medical services (EMS):	According to the National Association of State EMS Directors (NASEMSD) and the National Association of EMS Physicians (NAEMSP) (1993:285,288) it is the "the provision of services to patients with medical emergencies"
Emergency medical services system:	Defined by the National Association of State EMS Directors (NASEMSD) and the National Association of EMS Physicians (NAEMSP) (1993:285,288) as "a comprehensive, coordinated arrangement of resources and functions which are organized to respond in a timely, staged manner to targeted medical emergencies, regardless of their cause or the patient's ability to pay, and to minimize their physical and emotional impact"

Internship	"Internship refers to a supervised, practical experience that relates to a student's field of study, and may be paid or unpaid. The experience provides vital socialization and networking, mentoring and instruction, as well as practical experience in the area of study (2011:online)
Paramedic:	"An emergency care practitioner registered with the HPCSA as a Paramedic" (DoH 2003:7)

ABSTRACT

INTRODUCTION: An in-depth study was done with a view to determine the necessity for an internship for Emergency Care Practitioners in South Africa to enhance their autonomous practice in the profession, as indicated by the participants taking part in this study.

AIM: The aim of this study was to determine the need for an internship for the ECP paramedics in South Africa.

METHODOLOGY: A qualitative research design was used for this study. After ethical approval was obtained (UFS-HSD 2017/0047), semi-structured interviews were conducted with 15 qualified Emergency Care Practitioners who scored most on a matrix developed by the researcher, in order to report on the experiences of individuals and their understanding of the specific topic.

RESULTS: A significant number of participants (67%) indicated that with a mentorship/ internship programme after tertiary studies, the transition to the world of work would be gentler and that their professional confidence would have benefitted.

When prompted during the semi-structured interviews, 50% of the participants were of the opinion that with additional training, medico-legal implications would not be mitigated, 38% of the participants stated that to a large degree the medico legal implications would subside or be eliminated, and 13% that the number of medico legal implications would decrease.

Forty percent (40%) of the participants in the study were of the opinion that simulation training would be beneficial as part of the training during an internship, as 13% of the participants were against simulation training, while 33% of the participants were not very positive towards additional simulation training. Thirteen percent (13%) of the participants did not provide feedback regarding simulation training during an internship.

With regard to the duration of an internship programme, 50% stated that a period longer than six (6) months and less than twelve (12) months would be sufficient, 31% stated that the internship should be more than three (3) months, but not longer than six (6) months. Six percent (6%) of the participants mentioned that the duration of the

internship should be determined by the area in which they would be completing their internship period.

CONCLUSION: The introduction of an education and training programme for internship as part of the pedagogy in emergency medical care training will add a new dimension to teaching and learning of the emergency medical care students.

The development of an internship education and training programme for newly graduate emergency medical care practitioners as medium of instruction, which portrays sound pedagogical principles, will enrich the training of the highest qualified registered pre-hospital practitioners in South Africa. Consequently, an internship programme could have the potential to prepare and produce better-equipped professionals who will render an optimal service to the patients and the community.

INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC IN SOUTH AFRICA: A NEEDS ANALYSIS

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION TO THE STUDY

In this research project, an in-depth study was done with a view to determine the necessity for an internship for Emergency Care Practitioners in South Africa to enhance their autonomous practice in the profession.

Worldwide, emergency care is a vital and significant component of a country's health care system (Arnold 1999:97-103). Emergency Care Practitioners (ECPs) are responsible for emergency medical care in a wide range of settings. These settings include caring for critically ill patients and ECPs often are the first responders at an emergency scene, such as a motor vehicle accident site. From country to country, Emergency Medical Services (EMS) essentially are comparable, but variations occur in terms of EMS practitioners' training. Emergency care and transporting patients to a hospital or other health care facilities in some health care systems form part of another support structure such as the police force or the fire brigade (Pratt, Pepe, Katz & Persse 2007:4).

Platz, Bey and Walter (2003:203-210) elaborate that in the EMS systems mentioned above, only basic life-support interventions within the out-of-hospital environment are being practised and the focus resides within more rapid transportation of the patient to the receiving hospital, as opposed to providing an advanced level of care in the out of-hospital-environment. To the other side of the spectrum, EMS systems employ a number of highly accomplished and clinically experienced personnel such as doctors, nurses, emergency care practitioners and advanced life-support paramedics. The names of the practitioners differ between provinces and countries and will be elaborated on below (cf. Figure 1.1).

Preceding 1980, there were no professional qualifications or a professional board for professional emergency care providers in South Africa and training was disjointed and varied from province to province (Vincent-Lambert 2012:2). In 1985, a number of short courses were introduced. One of the initial training courses for emergency care providers

was the Basic Ambulance Attendant (BAA), which was presented over three weeks. Two other short courses presented at the time were the Ambulance Emergency Assistants (AEA) course, which was offered over eight weeks, and the Critical Care Assistant (CCA) course, offered over four months. For progress to the next level, the junior course had to be completed successfully and a number of clinical hours had to be conducted prior to commencement to the next level of training (HPCSA 1999a; HPCSA 1999b; HPCSA 1999c). The CCA course was the more advanced course of the three short courses. All three courses are still in existence today, although the content and length of training have changed over time.

The above-mentioned courses were offered by the Provincial Ambulance Training Colleges (ATCs), and conducted by medical doctors. The need, however, arose for formal higher education (HE) qualifications, which would be recognised, regulated and registered by the Health Professions Council of South Africa as statutory body (HPCSA 2006:1-3).

Since the mid-nineteen-eighties, universities also offered qualifications for emergency medical care paramedic providers. Initially, these emergency medical care paramedic students were able to complete the BAA, AEA and CCA short courses together with a few foundation subjects to obtain a National Diploma. Later these short courses were discontinued at universities and replaced with a three-year, full-time National Diploma. In 2000, the Bachelor of Technology (BTech), Emergency Medical Care, was introduced as a post-diploma qualification. Changes in the qualification landscape included discontinuing the National Diploma and BTech and replacing both with a four-year bachelor degree qualification. The bachelor degrees currently offered at South African universities include the Bachelor of Emergency Medical Care and the Bachelor of Health Sciences Emergency Medical Care. The Council on Higher Education (CHE) and the Department of Higher Education and Training (DHET) of South Africa recommended to higher education institutions the use of "Health Sciences" as a designator in the naming of the new, four-year qualification, the Bachelor of Health Sciences in Emergency Medical Care (BHS EMC) (PBEC 2010:15).

The emergency care training courses entail that practitioners belong to a certain register for example, BLS, or ILS, or ALS as illustrated in Figure 1.1. This study focused on the internship of the ECP registered students.

In South Africa, all the higher education institutions (HEIs) presenting an undergraduate ECP programme have a work-integrated learning (WIL) component where undergraduate students have to fulfil the minimum requirements for accreditation as stated by legislation. Missing information in the current literature is the said amount of clinical practice required by the average undergraduate student to achieve an acceptable level of competence at all the institutions that offer the programme.

As opposed to other health professions, little support is provided to ECP paramedics practising in the pre-hospital environment. "The newly-qualified paramedic typically works alone, or with less qualified personnel, from the first day of independent practice immediately after qualification" (Stein 2010:84). Williams (2013:512–517) states that "student paramedics are exposed to the harsh reality of paramedic practice early in preregistration education". Due to the active involvement of these students in the emergency management and assessment of patients who have sustained traumatic incidences or life-threatening occurrences, these students are exposed to human suffering, pain, trauma and death. A lack in research identified by Williams (2013:512-512) concerning the emotional aspects of paramedic practice remains unexplored and limited evidence explicitly captures student perspectives in this regard.

In order to ascertain whether there is a need for an internship for the ECP paramedic in South Africa, the researcher conducted semi-structured interviews with participants in the study. Graduates from the degree paramedic programmes presented in South Africa, emergency medicine specialists and consultants with educational responsibilities within the field of emergency medicine were requested to take part in the study. The ECP paramedic might benefit from an internship since advantages of internships in other disciplines include the hope that graduates have gained an advantage in future employment by competing for positions for internship programmes. Graduates completing internship with or without remuneration have an increased opportunity of employment than those who have not done the internship. The benefit to the graduate, besides the potential of a well-presented curriculum vitae, entails networking, establishing relationships with mentors and gaining a "real world" perspective on an occupation. The employers of these graduates also benefit by being able to evaluate how individuals would perform in the "real world" environment (Hering 2010:online).

Alanko (2012:online) confirms that internships allow potential employers to see the graduate in action; foster the development of a sense of workforce expectations; provide

the opportunity to network with professionals in the field; give exposure to the specific cultures and etiquette within the profession, and enable graduates to apply classroom coursework in the field. There are multiple reasons why students should do an internship, and these reasons include that employers increasingly expect to find experience in newly qualified graduates whom they might employ; they concur that the best path for hiring new candidates is through their internship programmes. Better remuneration could be expected on the successful completion of internship programmes. Advantages to these graduates include that they gain valuable insight into their chosen profession, develop a variety of skills and build confidence. Newly qualified graduates also expand their resume and would be allowed to earn financially during their exposure to the workplace environment (Hansen 2017:online).

Role players in this study were the Department of Education, South Africa, National Health South Africa, Health Professions Council of South Africa (HPCSA), Professional Board Emergency Care (PBEC) members, University of Johannesburg (UJ), Durban University of Technology (DUT), Nelson Mandela Metropolitan University (NMMU) and Cape Peninsula University of Technology (CPUT).

It is hoped that the study reported here, will serve as a directive for the development of a curriculum in internship for the emergency care practitioner qualified in South Africa.

1.2 BACKGROUND TO THE STUDY

This study took place in the field of pre-hospital medical care in South Africa. Pre-hospital Emergency Medical Services (EMS) personnel need to be able to care for patients in challenging and sometimes dynamic environments, which in turn could lead to potential hazards to the safety of patients (Blair, Laurie, Janet, Brooks, Bull, Morrison, Burgess, Attack & Shojania 2004:1-2).

Early training of non-medical personnel and fellow soldiers to provide first aid in the field constituted the commencement of pre-hospital care. Vincent-Lambert (2012:23-24) explains that years ago - during times of war - the need was first expressed for people specifically trained to provide immediate care to ill or injured patients in the pre-hospital setting. "Medics" attended to soldiers in the front line as opposed to doctors and surgeons who were valued too highly to be placed in jeopardy directly at the front lines. As time passed, the scope of practice increased and the "medics" were trained better. It was recognised that medics represented a valuable human resource that provided care where

injury was sustained and provided ongoing medical care during transportation and handover at an appropriate care facility where a medical doctor could provide further medical care (Vincent-Lambert 2012:48).

Joseph (2002:75) points out that the universally recognised “golden hour” concept began to emerge from early research into the survival from traumatic events between rapid medical intervention and survival. The “golden hour”, defined as the first 60 minutes post the injury or assault, means that patients who received little to no medical intervention during this period were noted as being less likely to survive than those who did receive care within the said time frame, even though both patient groups ended up in the same receiving facility.

Currently, ECP paramedics will work autonomously after registration with the HPCSA. The researcher is of the view that even though the newly registered emergency care practitioners have undergone extensive training in the field of critically ill and injured patients as per the said curriculums at their respective training institutions the mere fact of the situation of working without any supervision in the real-life environment with real consequences will be at the least daunting.

To benchmark, in Dublin, for instance, during internship advanced paramedic candidates who are registered with the Pre-Hospital Emergency Care Council, operate in duos in rapid response vehicles. These interns are supervised by experienced doctors or advanced paramedic instructors for a period of time. Candidates must complete different phases through the internship and as they progress, the interaction and supervision decline. Skilled clinical assessment and decision-making in all statuses are the message escorting this phase of the internship, as well as an emphasis on alertness of limitations, critical thinking and effective clinical examination skills. Also, a debrief template is used by supervisors to analyse all cases with the candidates, and the candidates thus are stimulated to adopt these tactics in their practice (Bury, Janes & Bourke 2006:426).

Bury *et al.* (2006:428) explain that an internship is aimed at honing and practising clinical skills; it supports the development of clinical decision-making skills; and offers the opportunity to expose the internship students to real-life cases, while they are introduced to the management of practice.

In South Africa (SA), there is currently no internship or community service for the ECP paramedic. In the tertiary education environment, WIL is performed by registered students in the programmes offered in SA. The students thus work in clinical practice to gain experience with ALS practitioners. The majority of ALS practitioners in SA have obtained other ALS qualifications like Critical Care Assistant (CCA), National Diploma in Emergency Medical Care (NDip: EMC). These qualifications also are limited in their scope of practice; thus, the students doing the WIL shifts are limited to the scope of practice of the ALS paramedic they accompany. Below (cf. Figure 1.1) is a schematic representation of the different pre-hospital emergency care qualifications in South Africa.

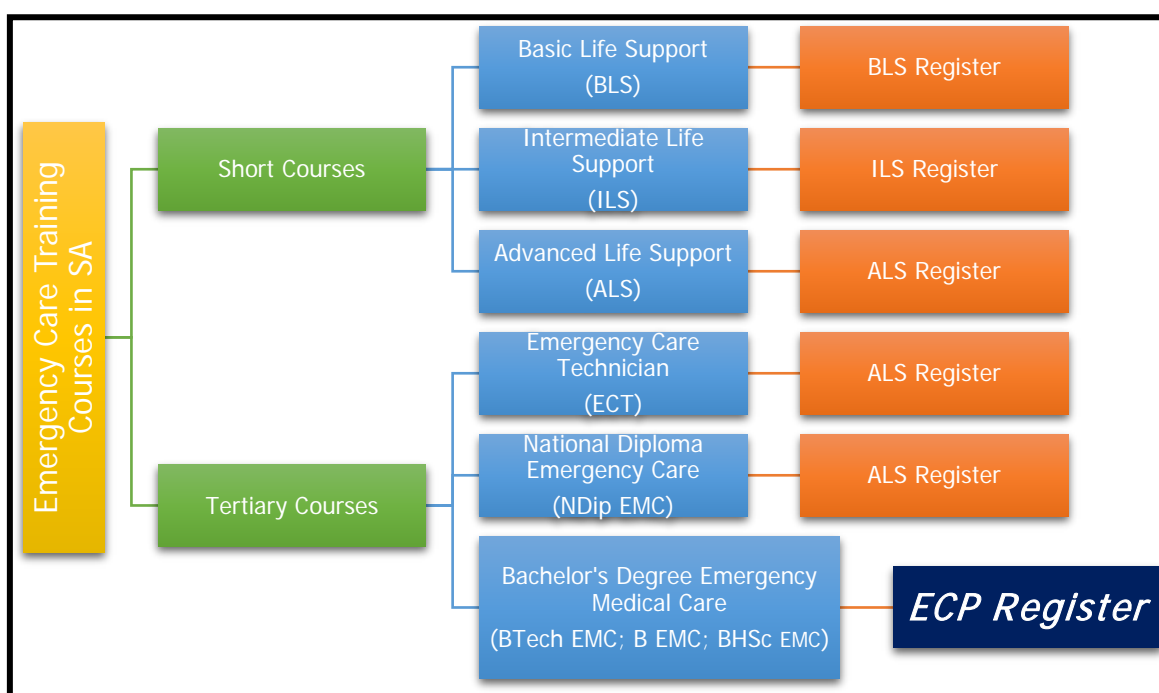


Figure 1.1: Emergency care training courses in South Africa
(Compiled by the researcher, Jansen van Vuuren, 2016)

ALS paramedics also have their own predisposition to what should be done and how it should be done; this also affects what they see as important (Cooper 2005:377). Qualified and experienced ALS paramedics may be hesitant to allow students during WIL to make clinical decisions and perform procedures, particularly on critically ill and injured patients, thus preventing students from demonstrating their true ability in this context (Gordon, Wilkerson, Shaffer & Armstrong 2001:470; Ziv, Wolpe, Small & Glick 2003:785). Due to the current processes and practices the students during WIL are protected from the burden of responsibility that accompanies being a qualified ALS practitioner; these students are not tested in their clinical competence and do not experience the consequences of their clinical decision-making and actions before they qualify (Brennan, Corrigan, Allard, Archer, Barnes, Bleakely, Collet & De Bere 2010:453,456).

In the clinical milieu, the ethical challenges occur of permitting inexperienced and not-yet-qualified students to practise on patients (Graber, Pierre & Charlton 2003:1331-1332; Murphy, Cremonini, Kane & Dunn 2007:1; Ziv *et al.* 2003:783-784). An increase in the tendency of theft from paramedical personnel and the physical bodily harm caused by the rebellious and unhappy population living in certain locations within the borders of South Africa are reported by the media. This could also affect the opportunities of students to gain experience in the clinical setting. In South Africa, the necessity of internship is uncertain as it has not been investigated.

There is no health professions legislation for the requirement of internship of the ECP paramedic. With this study, the researcher will endeavour to establish the need for the implementation of an internship programme for the ECP paramedic in South Africa.

1.3 PROBLEM STATEMENT

The following concepts are key to the problem statement and formulation of the research questions and therefore are defined contextually for the sake of clarity.

Currently, an understanding exists that newly qualified ECP paramedics find it difficult to practise autonomously directly after qualification. "Experiences during clinical placements led to a reported theory-practice gap, as some practices and equipment used by ECP paramedics in the on-road environment differed from that which was available at university" (Devenish *et al.* 2016:6).

The gap that arises due to the fact that no internship exists for the newly qualified ECP paramedic was described by Moodley (2016:3) as, "This study revealed that the clinical practice learning objectives for paramedic students were not adequately achieved and paramedic graduates felt ill prepared for independent practice. These discrepancies were attributed to the complex issues both in theory and practice".

The researcher made use of electronic searches using Google Scholar, Pub Med, Science Direct and the University of the Free State's library search engines with the following key words and/or combinations thereof: "Emergency Care Practitioners", "Internship", "Education", "Paramedic", "Training", "Academic". The results highlighted a lack of published literature on emergency care training in South Africa.

Based on the findings of these electronic literature searches, it was inferred that no recent scientific evidence existed pertaining to the need for an internship for the ECP paramedic qualified in South Africa.

1.4 RESEARCH QUESTIONS

In endeavours to solve the problem stated above, the following research questions were asked:

- i. Is there a need for an internship for postgraduate ECP paramedic training in South Africa?*
- ii. What are the nature and risk profile (dangers) of the emergency care profession in South Africa?*
- iii. Are there medico-legal implications of not having an internship for the ECP paramedic in South Africa?*
- iv. What are the advantages and disadvantages of having an internship for the ECP paramedic in South Africa?*

The research was carried out and completed to find answers to these four research questions.

1.5 OBJECTIVES OF THE STUDY

In order to find answers to the research questions, the following objectives were pursued:

- i. Determine the necessity for an ECP internship by means of semi-structured interviews and literature.*
- ii. Contextualise and conceptualise the risk profile and the nature of emergency medical care by means of an extensive literature study and a semi-structured interview.*
- iii. Determine the medico-legal implications of not having an internship for the ECP paramedics with semi-structured interviews.*
- iv. Determine the advantages and disadvantages of having an internship for the ECP paramedics by means of semi-structured interviews.*

1.6 AIM OF THE STUDY

The aim of this study was to determine the need for an internship for the ECP paramedics in South Africa.

1.7 THE RATIONALE AND OVERALL GOAL OF THE STUDY

The overall goal of the study was to determine the necessity of an internship for ECP paramedics in South Africa in order to promote the development of competencies needed to enhance patient care. This study also may be the ground bait for further research regarding the internship with a view to developing a standardised, uniform and relevant internship programme for ECP paramedics in South Africa for this high-stake profession.

1.8 DEMARCATION OF THE FIELD AND SCOPE OF THE STUDY

The study was conducted in the fields of Health Professions Education (HPE) and Emergency Medical Care (EMC) at the University of the Free State (UFS) with the focus on determining the necessity to implement an internship programme for the ECP paramedic in South Africa. The study is interdisciplinary as it reached across Health Professions Education and Emergency Medical Care. The knowledge reported here may contribute towards the development of an internship programme for degree paramedics in South Africa.

In a personal context, the researcher in this study is a qualified ECP paramedic, registered with the Health Professions Council of South Africa (HPCSA). Prior to the obtainment of a tertiary qualification, the researcher had the opportunity to function in the profession at a different level from 1992, and officially registered with the HPCSA in 1997 as an operational emergency care orderly. In this capacity, the researcher fulfilled operational duties and functioned at managerial level in the South African National Defence Force (SANDF); the South African Military Health Services (SAMHS) as an Officer in Charge, and training manager for a variety of pre-hospital training courses.

The researcher commenced his tertiary studies and completed the National Diploma in Emergency Medical Care and Rescue (NDip EMC & R), and on successful completion he completed a Bachelor of Technology Emergency Medical Care and Rescue (BTech EMC & R). Functioning on the ECP paramedic level operationally, he co-ordinated and trained in the Emergency Care Technician (ECT) course and was involved as part-time lecturer at a tertiary institution with a main interest in accompanying and taking responsibility of NDip EMC & R second- and third-year students in the WIL environment. The researcher also functioned as a Trauma Co-Ordinator at a Regional Academic Hospital with responsibilities in research, community service, outreach programmes, inter-hospital transfers, mass casualty readiness and training of hospital staff in the Basic Life Support (BLS) for health care provider's environment.

The researcher had the opportunity to operate abroad in a Joint Commissions International (JCI) accredited ambulance service as an operational “Critical Care Paramedic” (CCP) initially and then was promoted to an Officer Clinical Effectiveness, taking responsibility for the pre-hospital clinical practices. Upon return to South Africa, the researcher was employed as a lecturer at a tertiary institution in the NDIP EMC programme. The researcher throughout his career availed himself to the military and private sector for emergency flights. In clinical practice and in the training environment the researcher observed the indisputable need for the improvement of clinical skills, competence and self-confidence among Emergency Medical Care (EMC) practitioners. Such improvement, in turn, will enhance retention of paramedics, which will be to the benefit of the profession and ultimately to the patients. As far as the timeframe is concerned, the study was conducted between 2016 and 2018, with an empirical research phase from April 2017 – July 2017.

1.9 VALUE AND SIGNIFICANCE OF THE STUDY

The findings of the study will contribute meaningfully to the knowledge battery of health professions education, as it has investigated an issue that has not received much attention from researchers in South Africa. The field of education and training of paramedical staff is a barren area, and it is hoped that this study will lead to more interest in the field, as the practitioners play such an important role in this developing country with its lack of sufficient well-trained medical staff.

1.9.1 Value

The value of this research is found in determining whether there is a need for ECPs trained in South Africa, to complete an internship to be competent and confident professionals in their chosen profession to the benefit of themselves as practitioners; retaining them in the profession as operational clinicians and expanding their professional clinical interaction within the operational environment to the ultimate advancement of the patient’s right to the continuum of medical care.

1.9.2 Significance

The study is significant in determining the importance for Emergency Medical Care (EMC) practitioners of practising medical skills in a safe environment and under supervision or mentorship before working independently.

1.10 RESEARCH DESIGN AND OF THE STUDY AND METHODS OF INVESTIGATION

A qualitative research design was used for this study. After ethical approval was obtained from the Human Sciences Research Ethics Committee (HSREC); with the reference HSREC 19/2017 (UFS-HSD 2017/0047), semi-structured interviews were the method of choice for data collection in the study, in order to report on the experiences of individuals and their understanding of the specific topic. Labuschagne (2012:40) stated that “qualitative designs are used for social and educational research activities as they lend themselves more to the collection and analysis of qualitative data and attempt to understand perceptions and views”. Qualitative analysis adapts to meet the demands of the specific context and data. Qualitative research methods can be described as a process of moving from specific observations to general theory.

The methods that were used for the study comprised a literature study and a semi-structured interview conducted after an interview guide was created. The literature study was used to contextualise and conceptualise the problem. It also enabled the researcher to gain sufficient knowledge about the problem statement and the subject of the study.

The phases of the study were as follows:

Phase 1 consisted of a literature study followed by the drafting of a draft interview guide. In Phase 2 the gaps in Phase 1 were identified and recommendations were made, and the interview guide was finalized. Exploratory interviews were conducted after approval had been obtained from the study leaders. Permission was obtained from the study leaders to commence with the semi-structured interviews, which were followed by the data analysis. Phase 3 consisted of formulating the findings and drawing conclusions of the study, while making suggestions regarding the findings concluded the three phases of the study.

A detailed description of the interview population, sampling methods, data collection and analysis, as well as reporting and ethical considerations, is given in Chapter 3.

A schematic overview of the study is given in Figure 1.2.

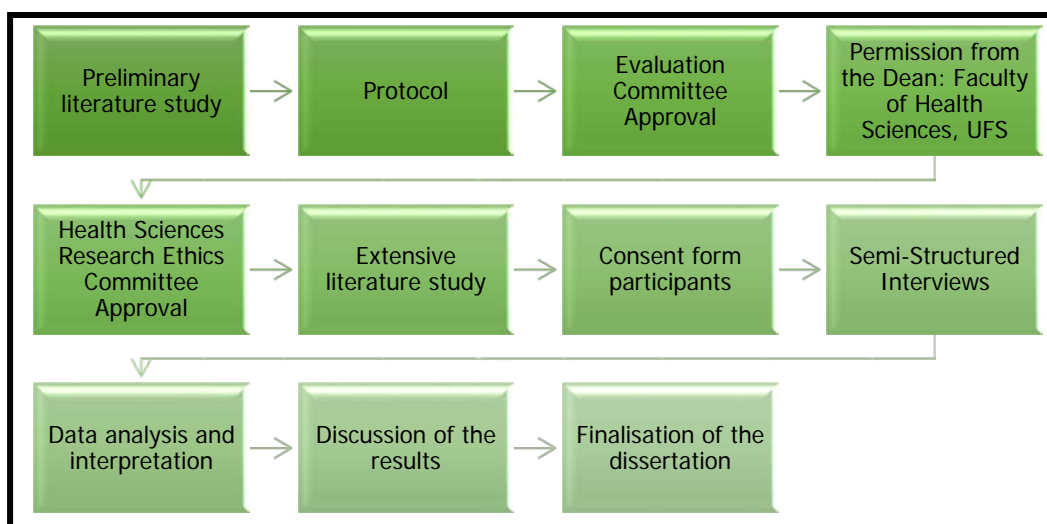


Figure 1.2: A schematic overview of the study
(Compiled by the researcher Jansen van Vuuren 2016)

1.11 IMPLEMENTATION OF FINDINGS

The findings of this study will be brought to the attention of the Department of National Health, Professional Board Emergency Care (PBEC), Department of Higher Education, and Departments of Health Sciences at the institutions offering the BEMC / BHS EMC programmes in SA.

Findings of this research will also be presented through oral or paper/poster presentations at conferences and seminars and will be submitted for publication through articles in applicable journals.

Although this study focused on ECP paramedics in SA, the conclusions and results will be disseminated to paramedical practices internationally. Authorship for publication of any of the results of this study lies solely with the researcher and the research supervisors under the auspices of the University of the Free State (UFS).

1.12 ARRANGEMENT OF THE REPORT

The report on the research, which will provide the reader with more insight into the topic, and the methods through which the aim of the study and the final outcome of the study were achieved is set out as follows:

Chapter 1, *Orientation to the study*, gives the reader a brief overview of the study to acquaint him/her with what is to follow. A brief background to the research problem and

the research question was stated. The rationale, overview, goal, objectives, aims and methods employed to achieve the goal and objectives are discussed briefly. The demarcation of the field and the scope of the study, its value and significance, and the implementation of the findings were also explained.

Chapter 2, *Degree paramedic education and training*, will provide the theoretical perspectives of the study. It will explain the development of emergency medical care into a career and how the field has progressed to what it involves today. Literature from various sources will be discussed. South African and international practices will be analysed, compared and discussed.

Chapter 3, *Research design and methods*, will provide a thorough description of the design of the study as well as an explanation of the data-collection methods, i.e. the semi-structured interview. Questions that will be answered are: what was the purpose of the method, how the technique was implemented, who was included in the exploratory interview population and the size of the sample.

Chapter 4, *Description of and discussion on the findings of the semi-structured interviews*, will present the results of the semi-structured interviews and discuss and explain the interpretations and findings.

Chapter 5, *Findings on the need for an internship for the ECP paramedic in South Africa*, will report the results of the semi-structured interview and discuss and explain interpretations and findings.

Chapter 6, *Conclusion, recommendations and limitations of the study*, will state the conclusions of the dissertation and make recommendations for future study.

1.13 CONCLUSION

This first chapter provided an orientation to the study, background to the problem, problem statement, scope, and overall goal and aim, together with a brief introduction to the research design and research methods. The chapter concluded by providing an outline of the dissertation.

The next chapter, Chapter 2, entitled *Degree paramedic education and training*, will present a study and discussion of various literature sources and documents related to emergency medical care and education.

CHAPTER 2

DEGREE PARAMEDIC EDUCATION AND TRAINING

2.1 INTRODUCTION

In Chapter 1, *Orientation to the study*, the reader was given a brief overview of the study. A succinct background to the research problem with the research question was stated. The aims, objectives, and methods employed to achieve them were briefly discussed. The demarcation of the field and the scope of the study, its value and significance, and the implementation of the findings were also explained.

This chapter provides the theoretical perspectives of the study (cf. Figure 2.1). It deals with the development of emergency medical services into a career and how it has progressed to what it is today. The South African qualification for the ECP (Emergency Care Practitioner) is discussed and reference is made to international training. Figure 2.1 below captures the main elements of this chapter schematically:

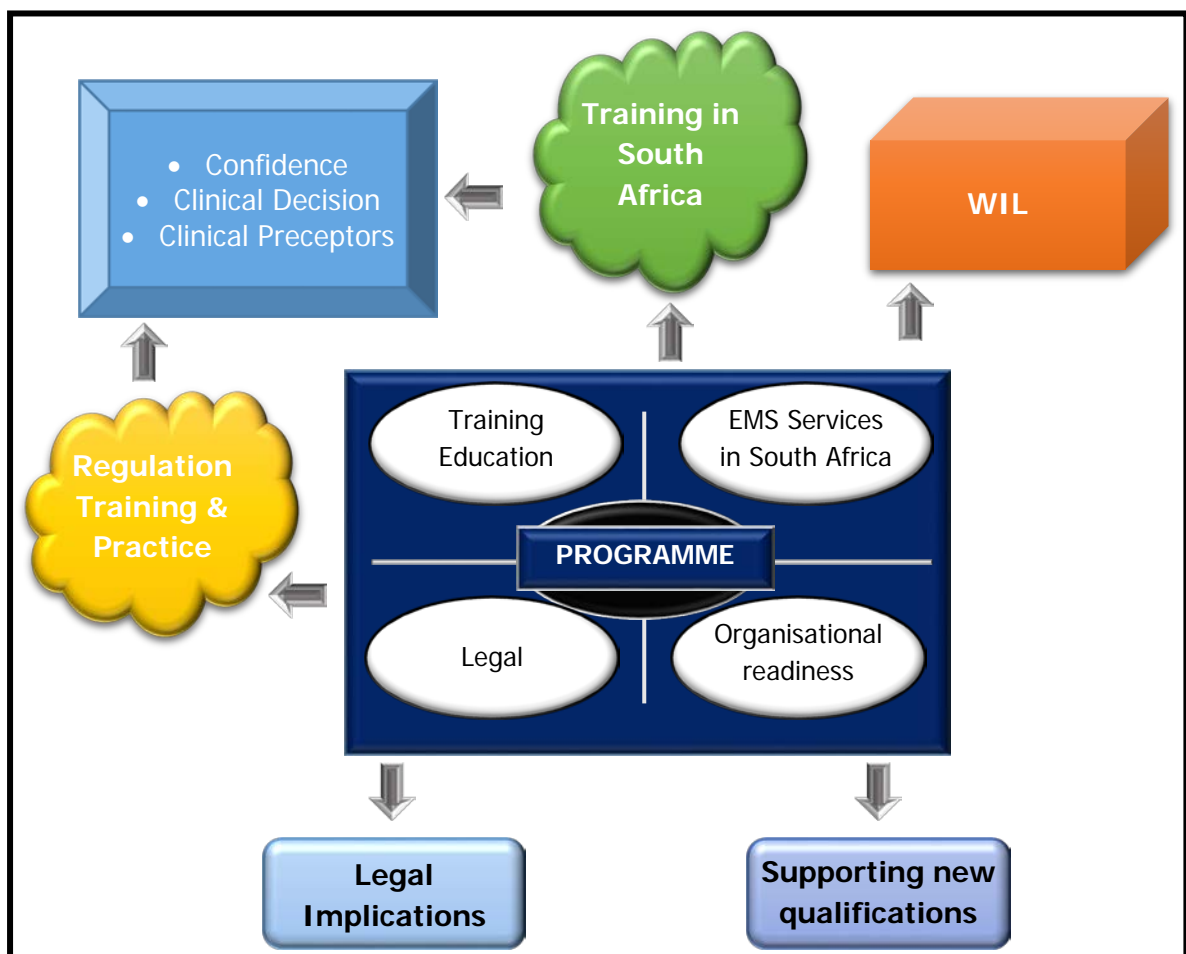


Figure 2.1: A diagrammatic overview of the different aspects discussed in Chapter 2

2.2 EMERGENCY MEDICAL SERVICES IN SOUTH AFRICA

Wankhade and Mackway-Jones (2015:176) stated that “prior to the 1970s”; local authorities (town councils) were mainly responsible for the provision of ambulance services in South Africa (SA). Working shifts on an ambulance was in many cases simply seen as an additional and often undesirable ‘add-on’ duty for the persons primarily employed in a more recognised role of traffic official and/or firefighter. Although to date a link existing between firefighting, rescue work and emergency services, in South Africa support units exist that take responsibility for delivering these services (Christopher 2007:1-12), but in contrast to such a combined model, some provincial authorities in SA took away the responsibility of Emergency Medical Services (EMS) from the local fire fighting and law enforcement units at municipal level. In these provinces EMS now is the responsibility of the provincial Department of Health under the auspices of the National Department of Health (NDOH) (Christopher 2007:9).

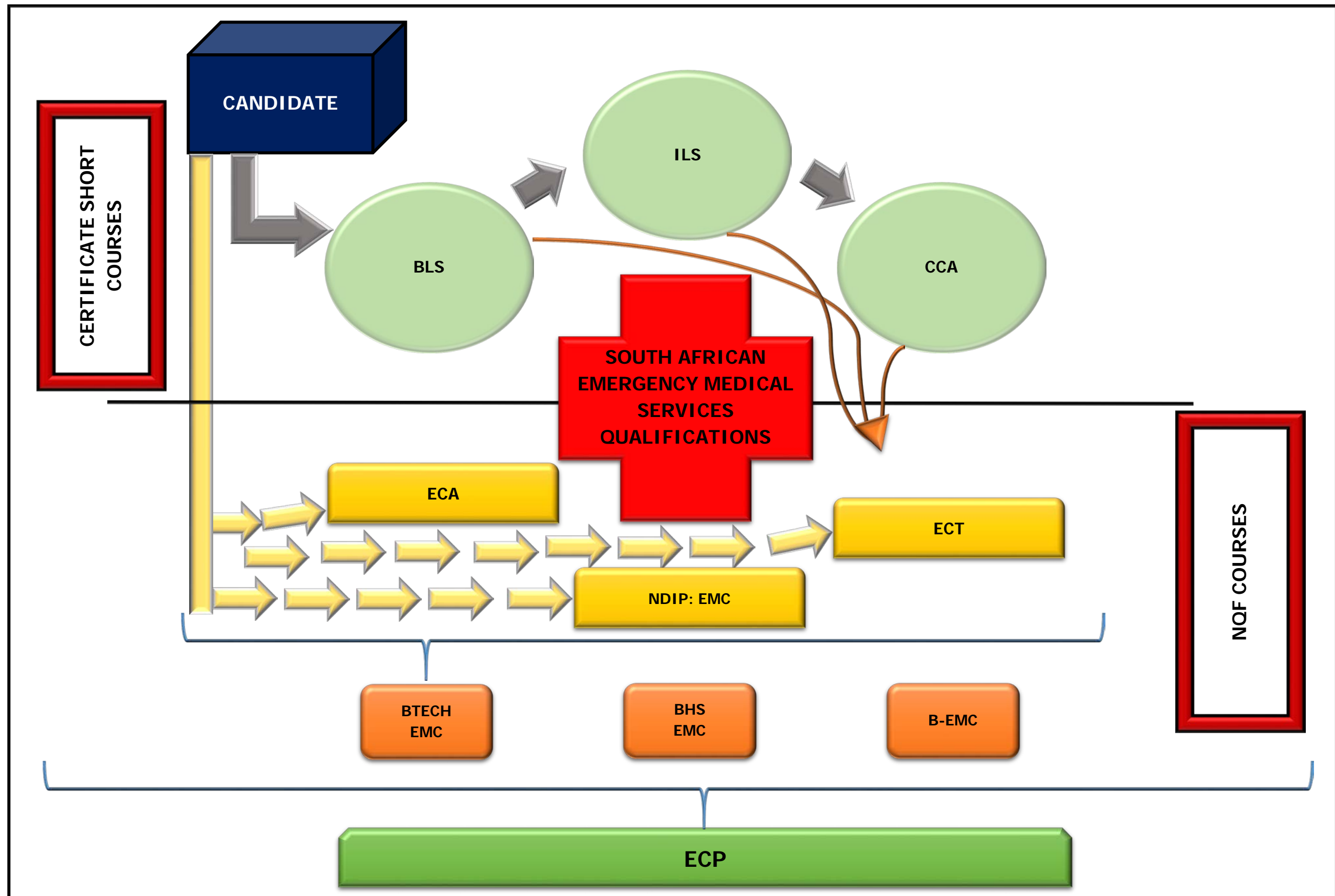
Nikkanen, Pouges and Jacobs (1998:31; 116-120) state that service needs to be provided; regardless of which department or sector takes the responsibility, patients have to be attended to by the personnel working on ambulances dispatched to incidents. Education or training of the personnel employed by the service will determine the scope of practice and in turn the level of care that could be provided to the clients or patients, should the need arise. Some EMS systems render doctor-based services, as seen in France, where medical doctors will respond to emergency scenes or incidents on emergency vehicles. These systems provide an advance level of pre-hospital clinical decision-making and medical intervention by the doctor on the vehicle and not the paramedic *per se*; however, paramedics still play an important role in these systems by acting as assistants to the senior doctor or clinician. The level of service in South Africa is different from the mentioned service in France and the different pre-hospital emergency care qualifications were described in Chapter 1 (cf. Figure 1.1) and the different training courses are displayed in Figure 2.2.

Qualifications in South Africa illustrated in Figure 2.2, comprise the historical qualifications of Basic Life Support (BLS), Intermediate Life Support (ILS) and Advanced Life Support (ALS), which do not feature on the National Qualifications Framework (NQF). The qualifications on the national qualifications framework are Emergency Care Assistant (ECA), Emergency Care Technician (ECT) and Emergency Care Practitioner (ECP).

Figure 2.2 illustrates the different pathways a candidate could take to become a medical emergency worker in South Africa after successful completion of the national senior certificate (matric). A candidate may select the short course pathway entering into the Basic Life Support (BLS) course. On successful completion of the short course and doing 1000 hours practical work, he/she is allowed to challenge the Intermediate Life Support (ILS) entry exam and if successful, be admitted to the ILS course. With an ILS qualification and 1000 hours practical work done, the person may attempt the Critical Care Assistant (CCA) Advanced Life Support programme after successfully completing the entry exam.

Should space be permitted on the programme, the learner may be admitted to the very challenging programme presented over a period of nine to eleven months depending on the institution presenting the programme. With or without any of the above-mentioned programmes the candidates would have been able to apply to the Emergency Care Assistant (ECA), Emergency Care Technician (ECT), National Diploma: Emergency Medical Care (NDip: EMC), Bachelor of Health Sciences: Emergency Medical Care (BHS EMC), or Bachelor Emergency Medical Care programmes (B-EMC).

Should the candidate be in the position of having obtained qualifications in the short courses the possibility exists to apply for recognition of prior learning (RPL). In such a case, each application is scrutinised individually prior to acceptance into the programme. Entrance to the Bachelor of Technology: Emergency Medical Care (BTECH EMC) can only be obtained through the ECT programme, through an articulation programme, and the NDip: EMC qualification (NDIP: EMC) (R. Campbell:personal communication, 2017).



**Figure 2.2: South African Emergency Medical Services Qualifications
(Compiled by researcher, Jansen van Vuuren, 2019)**

2.3 EMERGENCY MEDICAL CARE TRAINING IN SOUTH AFRICA

Currently, ECP paramedics (cf. Figure 1.1), from the first day, will work autonomously after registration with the HPCSA. Again, as opposed to other health professions, little support is provided to paramedics practising in the pre-hospital environment. "The newly qualified paramedic typically works alone, or with less qualified personnel, from the first day of independent practice immediately after qualification" (Stein 2010:84).

2.3.1 Emergency Medical Care Bachelor of Technology / Bachelor of Emergency Medical Care / Bachelor of Health Science programmes in South Africa

The Council on Higher Education (CHE) and the Department of Higher Education and Training (DoHET) of South Africa have recommended to higher education institutions the use of "Health Sciences" as a designator in the naming of the new, four-year qualification, the name of Bachelor of Health Sciences in Emergency Medical Care (BHS EMC) (PBEC 2010:15).

The first students of the above-mentioned qualification, also referred to as the Bachelor of Technology (BTech) graduated from the Durban University of Technology (DUT) in 2003, and the first graduates from the University of the Witwatersrand graduated a year after their counterparts from Kwazulu-Natal, South Africa. Other institutions that also offer the bachelor's degree programme are Cape Peninsula University of Technology (CPUT) and the Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth, South Africa.

The SAQA (South African Qualifications Authority) Act (Act 58 of 1995) provided an opportunity to review the entire system of emergency care education and training in South Africa. Designing a structure which would comply with the requirements posed by the National Department of Health (NDoH) and by the emergency care profession posed a challenge (Wankhade & Mackway-Jones 2015:179). Discussions at the time were about the important issues of academic progression, lifelong learning, career pathing and placement, as well as further professional development. The Professional Board Emergency Care (PBEC) undertook the restructuring and review and they functioned as a Standards Generating Body (SGB). The 3-year National Diploma and a two-year (part-time) or one-year (full-time) Bachelors of Technology Emergency Medical Care programmes were merged and adapted and submitted to SAQA as a single 4-year (480 credit) qualification on

NQF (National Qualifications Framework) Level 8 as a professional Bachelor of Emergency Medical Care (B. EMC) degree (refer Figure 2.3). The PBEC of the HPCSA instructed the Higher Education Institutions (HEIs) offering the emergency medical care programmes to phase out the National Diploma and Bachelor of Technology Emergency Medical Care qualifications and to implement the new four-year Bachelor of Health Sciences Emergency Medical Care Degree (HPCSA 2009:2).

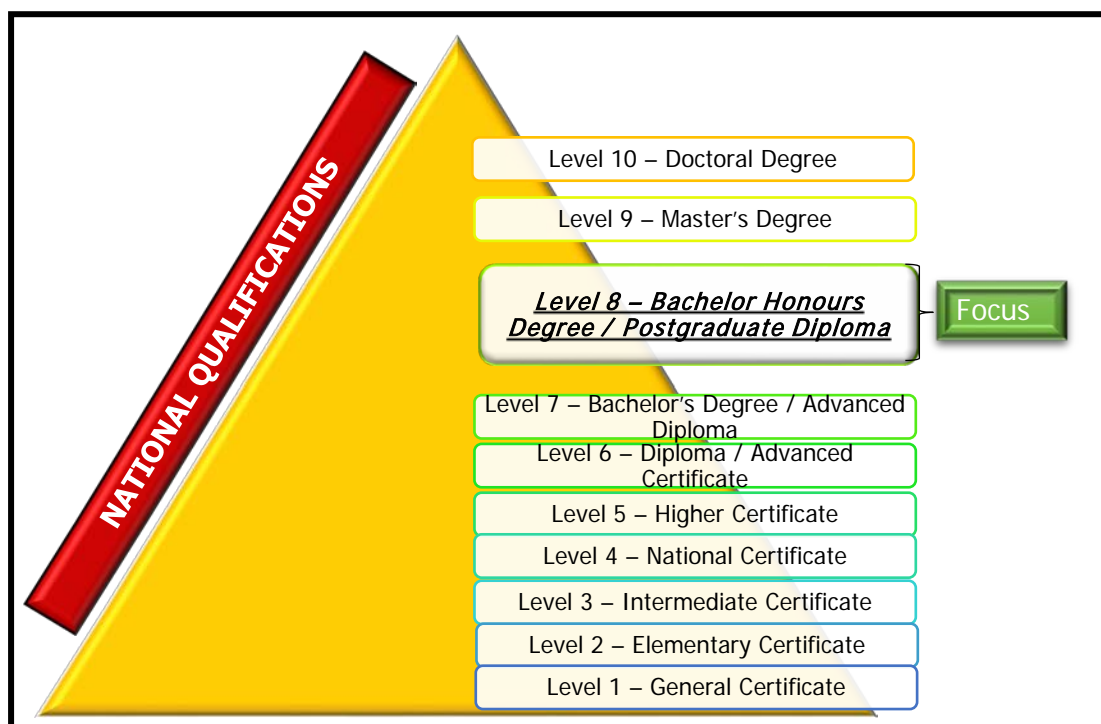


Figure 2.3: National Qualifications Framework (NQF)
(Compiled by the researcher, Jansen van Vuuren 2016 – adapted from: Campbell 2015)

The importance and the role of SAQA now will be summarised in order to inform the reader about the control of the development of qualifications in SA.

2.3.2 South African Qualifications Authority (SAQA)

The South African Qualifications Framework (NQF) is a comprehensive system approved by the Minister of Higher Education and Training for the classification registration, publication and articulation of quality-assured national qualifications and part qualifications. The NQF was established under the SAQA Act, Act 58 of 1995, and continues under the NQF Act, Act 67 of 2008, which came into effect on 1 June 2009 (SAQA 2013:1).

The NQF was designed with the full personal development of each learner in mind and to contribute to the social and economic development of the nation as a whole (SAQA 2013).

It was designed to create a single integrated national framework for learning achievements, to facilitate access and progression in education, training and career paths, enhance the quality of education and training and accelerate the redress of past unfair discrimination in education, training and employment opportunities.

The NQF is a single, integrated system that comprises three co-ordinated qualifications or sub-frameworks for General and Further Education and Training; Higher Education; and Trades and Occupations (SAQA 2013:1). The objectives of the NQF are to:

- “Facilitate the registration of qualifications and part qualifications on the NQF, which have been recommended to SAQA by the Quality Councils, where they meet the criteria set out in this policy
- Ensure that registered qualifications and part qualifications are relevant to the world of work and promote responsible citizenship in a democratic society and advance knowledge and innovation for a prosperous South Africa
- Establish and maintain coherence between the three Sub-frameworks in order to clarify and strengthen articulation between qualifications within each Sub-framework and between the Sub-frameworks
- Promote public understanding of, and trust in, the NQF through the registration of high quality, nationally relevant, and internationally comparable qualifications and part qualifications
- Support the coherence of purpose between education, training and development nationally and create a basis for and promote lifelong learning
- Support the development of a national career development system” (SAQA 2013:5-6).

2.3.3 Policy for the Registration of Qualifications and Part Qualifications on the NQF

Registration of qualifications occurs according to a policy compiled to manage and exercise control over the qualifications in the HE arena in SA. This policy determines that:

- “SAQA will register a qualification or part qualification on the NQF on the recommendation of the Quality Council provided that the criteria for registration on the NQF are fulfilled (cf. 2.3.5).
- Qualifications and part qualifications for registration on the NQF must:

- Include clear specifications of outcomes, using the level descriptors
 - State the minimum requirements to obtain the qualification
 - Identify the relevant Sub-framework on which it is recommended for registration on the NQF.
- Part qualifications registered on the NQF should indicate the registered qualification(s) of which they are part, or will form part.
- Qualifications and part qualifications submitted to SAQA for registration, but which do not meet the registration criteria, will be returned to the relevant Quality Council for amendment.
- The SAQA Board is the final authority that registers qualifications and part qualifications on the NQF.
- Quality Councils will advise SAQA, in writing, of qualifications and part qualifications that will no longer be offered. These qualifications, even though no longer offered, still form part of the NQF.
- All qualifications and part qualifications registered on the NQF will be on the SAQA website.
- Foreign qualifications being offered by providers in South Africa must meet these criteria for registration on the South African NQF" (SAQA 2013:6).

2.3.4 Criteria for the Registration of Qualifications and Part Qualifications on the NQF

General criteria regarding qualifications and part qualifications for registration on the NQF (SAQA 2013:6-7) entail the following:

Qualifications and part qualifications must:

- "Be recommended and submitted to SAQA for registration by a Quality Council;
- Comply with the Criteria for registration;
- Be written in English; and
- Meet the criteria as laid down by the Sub-framework for the qualification/part qualification type."

Criteria of format in which qualifications and part qualifications must be submitted for registration (SAQA 2013:6-7):

- **“Title** -The qualification title must comply with the qualification type description provided for in the relevant Sub-framework of the NQF.
- **Sub-framework** - The Sub-framework on which the qualification is to be registered must be provided.
- **Field and Sub-Field** (this may include, where applicable, the Classification of Educational Subject Matter [CESM] category and/or Organising Framework for Occupations [OFO] code).
- **Level of the Qualification** - The published level descriptors must be used to help determine the level of the qualification.
- **Credits** - The credits must be calculated on the basis of one (1) credit is equal to ten (10) notional hours of learning. The minimum credit allocation for a qualification must comply with the requirements for the qualification type as determined within the relevant Sub-framework of the NQF.
- **Rationale** - A statement explaining the reasoning that led to identifying the need for the qualification and describe how it meets this specific need. Details of research and consultation must be provided. The profile of the typical learner and the specific area where they will operate must be identified and described. The rationale should also indicate the learning pathway where the qualification resides, and the benefits to the learner and society.
- **Purpose** – This should be a description of what is to be achieved in a national and career context and should capture what the qualifying learner will know and be able to do on achievement of the qualification or part qualification. The purpose statement must be linked to the Exit Level Outcomes.
- **Rules of Combination** - There must be coherence between the constituent parts of the qualification.
- **Entry Requirements** - The minimum entry requirements to the qualification must be stated and should be aligned to the approved institutional/provider admissions policies.
- **Exit Level Outcomes and Associated Assessment Criteria** – The exit level outcomes should indicate the qualified learner would be able to do and known as a result of completing the qualification or part qualification. The exit level outcomes are framed against the level descriptors. Criteria indicating the nature and level of assessment must be set derived from the level descriptors.
- **International Comparability** -“A statement on how the qualification compares with or relates to similar qualifications or best practices or standards offered in other

parts of the world must be given. The Quality Councils will apply this in a manner appropriate to their relevant sector and Sub-framework. Qualifications that are internationally comparable could assist in determining the articulation possibilities of the qualification with qualifications in other national and regional qualification frameworks”.

- **Integrated Assessment** – A statement regarding the summative assessment that is undertaken to determine the learners’ competence and successful completion of the course.
- **Recognition of Prior Learning (RPL)** – “Institutional RPL policies must clearly state how RPL will be applied to gain entry to or achieve the qualification”. These policies must be available upon request of SAQA.
- **Articulation** - A statement describing the horizontal, vertical and diagonal articulation possibilities within the relevant Sub-framework and between Sub-frameworks, must be provided, where appropriate”.

2.3.5 The revised Higher Education Qualifications Sub-Framework (HEQSF) (revised January 2013)

As approved by the Minister of Higher Education and Training (Notice 1040 of 2012; Government Gazette No. 36003 of 14 December 2012) in terms of the National Qualifications Act, 2008 (Act No. 67 Of 2008) and as contemplated in the Higher Education Act, 1997 (Act No. 101 of 1997).

“The implementation of the HEQF – since 1 January 2009 all new programmes submitted to the Higher Education Quality Committee (HEQC) for accreditation have had to be compliant with the HEQF – confirmed that despite the robust nature of the design of the HEQF, there remained, as the CHE advised the then Minister of Education in April 2007, ‘unresolved concerns about the number, nature and purposes of the qualification types’ set out in the HEQF” (CHE 2013:4).

The revised Higher Education Qualifications Sub-Framework (HEQSF):

- i. “Recognises three broad qualification progression routes with permeable boundaries, namely, vocational, professional and general routes and provides greater clarity on the articulation possibilities between these qualification routes.

- ii. Introduces two additional qualification types to the existing nine, and includes additional variants of particular qualification types.
- iii. Clarifies the interpretation of some existing qualification types, namely, the Bachelor's degree, as having two potential orientations – professional and general academic.
- iv. Provides for greater flexibility and options with respect to professionally-oriented qualifications.
- v. Facilitates the potential convergence of diploma and degree study routes at the Honours level instead of at the Master's level as was previously the case" (HEQSF 2013:5-6).

2.3.6 Qualification types

There are eleven qualification types in the framework (HEQSF 2013:13). These are mapped onto the six higher levels of the NQF. Some levels have more than one qualification type. The framework comprises the following qualification types:

Undergraduate

- i. Higher Certificate
- ii. Advanced Certificate
- iii. Diploma
- iv. Advanced Diploma
- v. Bachelor's Degree

Postgraduate

- i. Postgraduate Diploma
- ii. Bachelor Honours Degree
 - **Internship for the ECP (Suggested)**
- iii. Master's Degree
- iv. Professional Master's Degree
- v. Doctoral Degree
- vi. Professional Doctorate

Each qualification type is expected to meet the level of competence described by the level descriptor onto which it is pegged.

2.4 OUTCOMES OF THE BACHELOR'S DEGREE: EMERGENCY MEDICAL CARE

The outcomes for the Bachelor's Degree: Emergency Medical Care will now be provided as required to provide the graduate with the necessary competence to qualify for the degree. Two types of outcomes are applicable, namely the critical cross-field outcomes and the exit level outcomes. It is important to consider the outcomes when reflecting on the need for an internship.

2.4.1 Critical Cross-Field Outcomes: Bachelor's Degree: Emergency Medical Care

- i. Identify and solve problems using critical and creative thinking in relation to the assessment and treatment of patients.
- ii. Working effectively with others as a member of the team, group, organisation and community within the context of providing emergency care and supporting other services.
- iii. Organize and manage oneself and one's activities responsibly and effectively in the preparation for emergency care as well as during the provision of emergency care.
- iv. Collect, analyse, organize and critically evaluate information for the assessment and treatment of patients.
- v. Communicate effectively using visual, mathematical and/or language skills in the modes of oral and or written presentation, particularly through reports and the handover of patients to other services.
- vi. Demonstrate cultural and aesthetic sensitivity in dealing with patients, colleagues and communities.
- vii. Demonstrate effective use of science and technology, showing responsibility towards the environment and health of others.
- viii. Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- ix. Demonstrate the need for continuous professional development and life-long learning (HEQSF 2013:13)

2.4.2 Exit level outcomes for the Bachelor Degree: Emergency Medical Care

- i. Demonstrate effective communication and apply the principles of medical ethics, professional behaviour and the legal framework to the context within which emergency

- care practitioners operate while maintaining personal health, wellness and safety (20 credits).
- ii. Practise, supervise and facilitate the provision of emergency medical care to all sectors of the community utilising specialised strategies and technologies (200 credits).
 - iii. Perform medical rescue in a wide range of rescue contexts (120 credits).
 - iv. Demonstrate knowledge and understanding of human and basic sciences underpinning emergency medical care (100 credits).
 - v. Provide in-service education and training in emergency medical care and rescue (8 credits).
 - vi. Demonstrate an understanding of the management, structure and function of the Emergency Medical Service (EMS) systems in South Africa and provide operational and clinical supervision within an emergency medical and rescue service (12 credits).
 - vii. Develop research skills and conduct research in emergency medical care and rescue (20 credits) (SAQA QUAL ID 63129, n.d.).

To qualify for an internship involves Level 8 of the EMC qualification and therefore the Level 8 level descriptor, as published by the Higher Education Qualifications Sub-Framework, is elucidated in Table 2.1 below.

Table 2.1: NQF Level descriptors at Level 8 (HEQSF 2013:30)

NQF LEVEL DESCRIPTORS	NQF LEVEL 8
Scope of knowledge	<ul style="list-style-type: none"> Knowledge of the engagement in an area at the forefront of pre-hospital patient management. An understanding of the theories, research methodologies, methods and techniques relevant to pre-hospital management and an understanding of how to apply this knowledge in a particular context.
<i>A learner is able to demonstrate:</i>	
Knowledge literacy	An ability to interrogate multiple sources of knowledge in an area of specialization, and to evaluate knowledge and processes of knowledge production.
Method and procedure	An understanding of the complexities and uncertainties of selecting, applying or transferring appropriate standard procedures, processes or techniques to unfamiliar problems in the pre-hospital environment.
Problem solving	An ability to use a range of specialised skills to identify, analyse and address complex and/or abstract problems drawing systematically on the body of knowledge and methods appropriate to pre-hospital clinical skills.
Ethics and professional practice	An ability to identify and address ethical issues based on critical reflection on the suitability of different ethical value systems to specific context.
Accessing, processing and managing information	An ability to critically review information gathering, evaluation and management processes in specialised context in order to develop creative responses to problems and issues.

Producing and communicating information	An ability to present and communicate academic, professional or occupational ideas and texts effectively to a range of audiences, offering creative insight, rigorous interpretations and solutions to problems and issues appropriate to the context.
Context and systems	An ability to operate effectively within a system, manage the system based on an understanding of the roles and relationship between elements within a system.
Management of learning	An ability to apply in a self-critical manner learning strategies that effectively address own and others professional and ongoing learning needs.
Accountability	An ability to take full responsibility for own work, decision making and use of resources, and full accountability for the decisions and actions of other where appropriate (SAQA 2013:4-6).

2.5 INTERNATIONAL EMERGENCY MEDICAL CARE PROGRAMMES

The United States of America (USA) qualifications for an Emergency Medical Technician (EMT)-Paramedic were established by the US Department of Transportation National Highway Traffic Safety Administration (SAQA QUAL ID 63129). The EMT Paramedic curriculum represents the highest level of education in EMS pre-hospital training in the USA. The EMP Paramedic certificate programme entails between 1000 – 1200 hours in a one-year paramedic programme, consisting of classroom instruction, clinical field training and skills training. Upon successful completion of the programme the students have to sit for the National Registry EMT-P certification examination.

An Associate of Applied Science Degree, Emergency Management Services (EMS), is presented over a period of two (2) years by several vocational, technical and junior colleges. The mentioned programmes prepare students for certification as a paramedic. They are provided with a background on how to manage and supervise emergency medical first responder units in support of fire departments, ambulance companies and other first responder agencies (SAQA QUAL ID 63129).

A limited number of USA colleges offer a four-year Bachelor in Emergency Medical Services (BSEMS) comprising 128 semester hours of course work and 51 hours of paramedic course work. Many of these students utilise the course as pre-med classes. (SAQA QUAL ID 63129). The US Department of Transportation National Highway Traffic Safety Administration states that the paramedic training should comprise four components of instruction, namely didactic instruction, skills laboratory training, clinical education, and field internship, of which the first three occur concurrently, and the field internship serves as a verification that the student is serving as a competent, entry level practitioner. SAQA declared that in South Africa “the Professional Degree compares favourably with the world's best practice as

represented by the United States qualifications, while leading the way on the African continent for establishing standards for the equivalent of an emergency medical care practitioner" (SAQA QUAL ID 63129, n.d.).

In Ireland, newly graduated advanced paramedic candidates, who are registered with the pre-hospital Emergency Care Council in Dublin, practise in pairs and are supervised by experienced doctors or advanced paramedic instructors for a period of time. Successful completion of different phases decreases the interaction with and supervision of experienced doctors and advanced paramedic instructors (Bury, Janes & Bourke 2007:426). Currently the newly qualified graduates from tertiary institutions in South Africa, upon registration with the Health Professions Council (HPCSA) are licenced to practise independently directly after registration with no official national support mechanism in place.

Hickson, Williams and O'Meara (2015) reported a cross-sectional study conducted by the Monash University in Melbourne, Australia, that identified a gap between theory and practice, and a lack of engagement for the paramedicine bachelor's degree students during clinical placements. The recommendations were that clinical placement standards had to clearly describe expectations. Essential elements of a quality clinical placement are a necessity for students to be prepared, and therefore, a framework of minimum requirements and expectations is required by the paramedic clinical instructors to be able to consistently measure quality in the clinical placements. Clinical placement agreements or agreed national standards are required to be developed between the stakeholders, ambulance services and universities to ensure the curricula are developed with graduate attributes that meet the requirements (O'Meara, Williams & Hickson 2015). In SA, the newly graduated paramedics register with the HPCSA with a form completed by the tertiary institution at which they have studied. With their registration in the role of Emergency Care Practitioner the newly graduates are licenced to work in the full scope of practice without supervision or assistance (R. Campbell personal communication, 2017).

Hou and Rego (2013), O'Meara *et al.* (2015) confirm that clinical placements are a vital feature in paramedic student education since this is the time when the paramedic students are expected to integrate the theory taught in practice and when they can demonstrate their practice skills. These studies do not recommend the optimal timing, duration and minimum requirements of clinical placements. This leaves the impression that each university developed a paramedic student programme to satisfy the need of several

interested parties. From these studies, clarity could not be obtained regarding the relationship between location, duration or timing of the clinical placements of the paramedic students.

Clinical placement is an essential element of a paramedic student's education with expectations implied in the Council of Ambulance Authorities' course accreditation guidelines. The authors indicated that no consistent standards or agreements were in place to ensure the quality of placements in Australian and New Zealand ambulance services (Williams, Devenish, Stephens 2012 & Boyd 2012; Health & Care Professionals Council 2012; Association of Ambulance Chief Executives 2011; O'Meara *et al.* 2015).

2.6 THE NEED FOR ADDITIONAL POST HIGHER EDUCATION TRAINING FOR THE NEWLY GRADUATED ECP

New graduate paramedics are faced with both the change (ending of the student role) and transition (commencement of the professional role) at the same time. As the definition of Bridges and Mitchell (2000) explicate, since change is external as opposed to transition being internal, individuals must experience a psychological reorientation before the change can be effective.

In the field of nursing, this transition experience from graduate to professional seems to have been studied extensively. This knowledge about the transition of nurses and other health care professionals has contributed to better insight in the transition that paramedics might experience.

2.6.1 Work integrated learning

In the tertiary education environment, Work Integrated Learning (WIL) currently is performed by registered learners in the paramedic programmes offered in SA. The majority of ALS practitioners in SA have obtained other ALS qualifications such as Critical Care Assistant (CCA) and the National Diploma: Emergency Medical Care (NDip: EMC). The different registration categories each have their own scope of practice. The WIL ECP students undergo practical training, working side by side with an ALS paramedic as their supervisor within the practical emergency environment. The supervisors' qualifications may vary from the qualification of a CCA to NDip: EMC or ECP. Should the supervisor not be an ECP, the WIL student may not be exposed to the maximum qualification and experience

needed. When the CCA or NDip EMC supervisor has a limited scope of practice, this will directly limit the WIL ECP student to treating only patients according to his/her supervisor's scope of practice.

2.6.2 Work integrated learning in the Emergency Medical Care programmes

Practical experience and training at tertiary institutions in South Africa consist of Work Integrated Learning (WIL) and all the institutions follow the same approach. Learners have to be registered at the professional body of the Health Professions Council of South Africa, namely the Board for Emergency Care. A variety of different specialities have to be visited during their study at university, depending on their year of study and the progress the students have made in the degree programme. Feedback in the form of a portfolio of evidence, which encompasses reports regarding their experiences, skills performed, and quantitative and qualitative data has to be submitted for the signature of the supervisors of the units visited. Emergency care education and training recently has been aligned with the requirements of the South African Qualifications (SAQA) Act and the National Qualifications Framework (NQF) (HPCSA 2005:1-5).

Lazarsfeld-Jensen *et al.* (2014) state: "Role dissonance is an uncomfortable experience for graduate paramedics, and some blame their university education for the problem." Furthermore, they proclaim that the paramedic has the conflict between being identified as the rescuer and performing duties as the caregiver, with vocational pathways into a variety of uniformed professions closing down in preference for the graduate entrants, these young professionals have to negotiate a rapidly changing working environment. Paramedics find this problematic and the problem is compounded by the novelty of their place in the tertiary setting. Stein (2010) stated that "contrary to the typical framework of early practice in other health professions, there is little support for paramedics practising in the pre-hospital environment. Newly-qualified paramedics typically work alone, or with less qualified personnel, from the first day of independent practice immediately after qualification." Therefore, it may be argued that a possible need for additional training (internship) could be required.

2.6.3 Stressors during transition from student to practitioner

The literature reviewed relate that new graduates mainly experience the transitional process from student to professional as the "cradle of abundant fretfulness" in their new working

environment (Casey *et al.*, 2004; Doelling, Levesque & Clifford, 2010; Oermann & Gavin, 2002). These authors' views are echoed by Strauss (2009: 216), stating that tension and disheartenment dominate the feelings of new graduates. Stressful experiences of the new graduates during the transitioning phase from the academic environment to the clinical reality of practice left them with the feeling of being disheartened, overwhelmed and unsupported (Valdez 2008). Commonly occurring stressors in new graduates were identified by Winfield, Melo & Myrick (2009) as fear of making mistakes, encountering unfamiliar situations, procedures and surroundings with associated feelings of a lack of competence and confidence in their work. Major challenges encountered were the translation of theory in practice, together with the acquisition of new skills in the clinical practice environment. During normal business paramedic graduates often have to make quick, independent decisions on emergency treatment which can intensify stress and anxiety (Winfield *et al.* 2009:E8).

The newly graduated paramedics were found, according to Casey *et al.* (2004:307), to be struggling between the need to be independent and relying on the expertise of more senior colleagues. This supports the findings of Duchscher (2001), who identified the immense frustration caused by the conflict between independence and inexperience when interviewing graduates. New graduates are more inclined to becoming overwhelmed due to the high-paced and highly stressful EMS environment, which makes coping in their new roles more challenging. According to Valdez, (2008) new graduates are placed at amplified risk for failure to succeed in clinical practice by various known stressors that accompany entry into the professional environment. Valdez (2008) specifically emphasised the impact of the high-stress and fast-paced atmosphere, and the life-and-death environment on the emergency scene.

These stressors are not limited to the EMS environment, but also are visible amongst new graduates in other health-related fields such as occupational therapy. The perceptions of new graduates had been studied, and the outcome was that workplace stress is an issue requiring professional support (Steenbergen & Mackenzie, 2004). A support strategy is important to facilitate the change from student to professional, and to relieve apprehension experienced by the graduates. Further evidence of the stressful transition is provided by Tazakori, Hashempour, Molavi, and Karimollahi (2008:309), who observed similar stress with junior physicians transitioning into the workforce. They studied 150 new graduate physicians who had been part of the workforce for six months. Findings revealed that most of the junior doctors were of the opinion that they did not possess sufficient knowledge

to treat their patients. The study revealed that graduates experienced an extensive amount of stressful experiences, and believed that they were unable to distinguish problems with patients in order to diagnose the patient. Furthermore, they felt that most people did not trust them.

2.7 CONFIDENCE

Shacklady, Holmes, Mason, Davies, & Dornan (2009) and Winfield *et al* (2009) found that greater confidence in decision-making ability could be observed in more mature graduates. Additionally, the new role caused fewer feelings of being overwhelmed in mature graduates than in their new roles as younger colleagues. Shacklady, Holmes, Mason, Davies, & Dornan (2009) explain the positive impact a few extra years of life experience can provide in terms of medical students' experience during the transition from studies into the workforce. These mature students have higher levels of confidence in their knowledge, leading to more positive feelings about the environment into which they are transitioning. They would likely, be less daunted, confused and overwhelmed. These findings are affirmed by Winfield *et al*. (2009) who explained that new graduates are susceptible to these feelings of inadequacy in their skills and knowledge, until skill master is achieved. A new graduate's ability to cope with pressure in the workplace may be detrimentally affected by mounting frustration that occurs often during this time.

A study performed by Hickson *et al*. (2015) examined students on the paramedicine programs with regard to their perceptions of preparedness for clinical placements in New Zealand and Australia. It was reported that the students more advanced in their studies, were lesser convinced that their studies prepared them adequately for clinical placements. For holistic care, confidence, collaboration, coping skills and self-directed learning, the median scores of fourth year students were reported lower than that of the first-year students. It was also reported that this was similar to other studies where the final year students felt "somewhat prepared" for the workforce, these students did however report that more placements and variety would assist them better to feel more prepared. The authors commented that the above shortcoming could be due to the fact that the students did not have clear expectations about specifically what they need to do during their clinical placements rotations. Furthermore the statement of the researchers concluded that the development of a national clinical placement standard could clarify this.

A factor influencing the perception of preparedness for placements according to Hickson *et al.* (2015) was age. He reported that the older learner had a higher score for self-directed learning than their counterparts of a younger age. This was confirmed with other studies that suggested that life experience, aligns the mature aged paramedic students better for the challenges of becoming work ready.

From the literature it can be gathered that new graduates from most areas of health care, including nursing, occupational therapy, as well as medicine experienced similar feelings during the transitional period into their new roles. These include lacking of confidence in their abilities, suffering from high levels of anxiety and being overwhelmed.

2.8 CLINICAL PRECEPTORS

A very significant but stressful position is the clinical preceptor (Gurchiek, 2011:40). The role of clinical preceptors is to balance taking care of the patient and the student simultaneously. Preceptorship has been the practice of the paramedic and nursing programs over years in order to teach, evaluate and socialize learners into their profession. These preceptorship functions provide the learners with opportunities to practice skills and clinical judgement under the watchful eye of an experienced clinical practitioner. The clinical environment is made safe by the clinical preceptors for both the patient and the learner, however the quality of the clinical experience will largely depend on the quality and the willingness of the specific preceptors to teach in the clinical environment. In South Africa the students are exposed to the above-mentioned during WIL.

Learning experiences of the student paramedics are significantly influenced by clinical instructors according to Hickson *et al.*, and is in correlation with the findings of O'Brien, Moore, Dawson & Hartley (2014) who states that a deeper understanding is required regarding issues during the clinical placement periods for the advancement of the curricula development for the clinical placements of paramedic students. The role of mentors is to push others to their limits, they know how to inspire confidence in others, while continually helping to develop them to their greatest potential (Schrubbe, 2004). Mentors should provide encouragement, answer questions and give constructive feedback to new graduates, consequently providing informal support for an unlimited time (Baxter, 2010). According to Musser (2001) it is part of the role of a mentor to facilitate the newly graduated paramedic's understanding of organisational norms and cultural values, the unwritten rules of the workplace, as they transition into their new role.

Establishing a supportive culture with a welcoming environment for new graduates can be significantly influenced by clinical leaders and managers (Van Wyngaereen & Stuart, 2010). In Zinsmeister and Schafer's (2009) study, a supportive environment comes across as the strongest Theme. It is important to consider these previous findings as part of the research for this project, since the busy and chaotic EMS environment is triggering feelings of isolation and being overwhelmed in graduates. According to Dyess and Sherman (2009) direct contact with clinical leaders eased these feelings with new graduates, and they felt less alone. Baxter (2010) as well as Schmidt, Giovanelli and Palazollo (2003) agreed that organizational support and commitment from employers is invaluable to new graduates.

A high probability does exist that recently graduated paramedics will be expected to take on the roles of preceptors in future (Edwards, 2011). The transition from paramedic intern to qualified paramedic, is reported as a challenging experience as newly qualified paramedics are tasked to deal with added complexities during the period they are adjusting to their new roles as paramedics (Devenish, Clark & Flemming, 2016).

2.9 LEGAL IMPLICATIONS: ADVERSE EVENTS PREVENTION

In the United States of America, Givot (2007) explained negligence for the EMS professional and states that if the practitioner understands negligence and how it fits into his/her life, it will help to "keep the monster at bay". Any physical, financial, and sometimes emotional injury affected by the breach of an obligation can constitute negligence. Emergency medical professionals have a duty to act as would a "prudent, reasonable EMS provider with the same level of training, in the same community, and under similar circumstances".

In South Africa an increasing public awareness on of patient's rights coupled with the relentless and premeditated marketing by personal injury lawyers zealous to capitalise on this awareness. South Africans are becoming progressively litigious, with not only the number of claims escalating but also the size of the claims. "Catastrophic claims", such as those for birth defects and brain injuries, have sky rocketed drastically as the cost of caring for patients has risen due to technological advancements which improve life expectancy and quality of life (Gifford, 2016).

Rittenberger *et al.* (2006) stated they have demonstrated that "errors of omission and deviations from protocol occur frequently in patients complaining of chest pain". The regularity and ruthlessness of mistakes that new doctors make reiterate the importance of

adequate preparation of medical students for clinical practice and cannot be overemphasized. Suboptimal preparation relates to medical graduates feeling unprepared. Potentially far reaching positive effects like confidence and competence of recently qualified doctors by awarding shadowing time, and more importantly could have wider implications for safety and quality of patient care (Teagle, George, Gainsborough, Hag & Okorie 2017 & Blencowe, Van Hamel, Bethune & Aspinall 2015).

2.10 CLINICAL DECISION MAKING

Pre-hospital research on clinical decision-making (CDM) is remarkably limited, according to the research introduced by individual researchers (O'Hara, Johnson, Siriwardena, Weyman, Turner, Shaw, Mortimer, Newman, Hirst, Storey, Mason, Quinn & Shewan 2015). Evidence that there is a noteworthy deficiency of CDM in the pre-hospital care environment, a number of research studies advised on the worth of pre-hospital CDM research.

The obligation is on the individual practitioner's ability to make critical decisions in the emergency setting at critical moments to provide the best level of care to their patients (Jensen, Croskerry & Travers, 2009). The environment most similar in nature to the pre-hospital is the emergency department, thus much of what is applied to the pre-hospital environment actually stems from the emergency department environment (Jensen, Croskerry & Travers, 2009).

(Laxmisan, Hakimzada, Sayan, Green, Zhang & Patel, 2007) state that increased potential for paramedics to make errors in the emergency environment because it is burdened with disturbances. The emergency environment is known for its potential for errors to develop in the decision-making practices of practitioners due to the unstable nature of the working environment, fraught with interruptions and various other distractions.

2.11 THE NEED FOR SUPPORT OF THE NEW GRADUATES DURING THE FIRST YEAR

To successfully answer the question posed, namely what supports are necessary to transition new graduates as paramedics in the workforce, it was essential to determine what evidence is provided by literature relating to support programs and the necessity thereof.

In the light of most studies being based primarily on the field of nursing, seemingly no literature is available which is directly related to EMS. Many similarities exist between new graduate nurses and paramedics who enter the workforce, but there are also some differences. Firstly, the major difference in respect to paramedics in Alberta is that they have often functioned within the EMS system as emergency medical technicians, where they had been able to gain some experience in the environment prior to becoming a paramedic. However, the graduate paramedic and graduate nurse exhibited strong similarities, affirming the necessity of support for new graduates during transition.

According to Casey *et al.* (2004) and Tazakori *et al.* (2008), the graduate's first year of employment is the most critical period of the transitioning, and it may take a full year for a graduate to build the necessary confidence for independent performance. Steenbergen and Mackenzie's (2004) performed a study on occupational therapy's new graduates in their first year of employment. From their findings, it was discovered that job dissatisfaction and decrease in confidence levels could result from lack of support. Similarly, the study of Casey *et al.* (2004) which observed the challenges and stressors experienced by 270 graduate nurses, revealed that it may take up to a year after being hired for graduates to build confidence and feel sufficiently skilled and comfortable in their new roles.

The necessity of support programs being implemented for new graduates is emphasised by frequent literature findings relating to retention rates. It is stated that within the first year of employment, between 35% and 60% leave their first place of employment (Baxter, 2010; Casey *et al.*, 2004; Cheeks & Dunn, 2010; Delaney, 2003). Furthermore, as indicated by Bowles and Candela (2005) approximately 57% leave their first employer within two years. In a survey among graduate nurses in 35 American states, Park and Jones (2010) established that roughly 13% had changed jobs during the first year of employment and 37% conveyed the intention of doing so fairly soon.

New graduates leaving their first employer within the first year has substantial financial impact on the health care system. Research has shown that the replacement cost of one graduate with less than a year's experience could reach over \$40 000 (Beecroft, Kunzman & Krozek, 2001). Casey *et al.* (2004) also referred to the costly nurse turnover in acute care hospitals, where replacement expense often exceed \$30,000.

The literature of Musser (2001) and Strauss (2009) supports the perception that retention rates in the first year could be significantly improved by implementation of support for new

graduates. Strauss (2009) refers to a study from Winchester Hospital in Boston, where it was found that the implementation of a support program for new graduates led to an average one-year retention rate of 97% and a two-year average of 95%. This finding was further reinforced by Musser (2001) who described the important role of mentors as part of such a retention strategy for diverse employees.

A new graduate supportive program, focused on patient care management, development of critical thinking skills and enhancement of self-esteem is proposed by Marcum and West (2004). It is suggested that such a program would directly affect the retention of staff. O'Meara, Tourle, Madigan & Lighton (2011) linked the retention of paramedics to factors such as having their needs met on a personal and professional level by offering further educational opportunities and providing them with attractive working environments. In most health care organizations where support programs have been tried, a decrease staff turnover rate could be observed, as well as an improvement in organizational commitment (Beecroft *et al.*, 2001).

From the literature it can be gathered that a true understanding of what the new graduate experiences and ensuring support programs are in place would bring about not only an increase in talent retention, but also job satisfaction, confidence and competence as well as commitment to the organisation (Cheeks & Dunn, 2010; Park Transition Support for Graduate Paramedics 26 & Jones, 2010; Strauss 2009). No literature was found during this review to disprove any of these findings.

Literature review revealed numerous programs for new graduates which are being applied in the nursing profession to provide support during the first year of employment (Baxter, 2010; Strauss, 2009; Winfield *et al.*, 2009). Although no studies are available concerning support programs available to new graduates in the EMS profession paramedics, developing an understanding of such programs available for related health care professionals contributed to identifying required support programs for new graduate paramedics. Furthermore, it facilitated a better comprehension of how to facilitate positive transition of graduate paramedics and integrating them successfully in their new roles. Several supportive programs, such as graduate orientation, supportive environments and mentorship programs are discussed in publications (Baxter, 2010; Doelling *et al.*, 2010; Schrubbe, 2003).

2.12 POINTERS FOR A WELL-DESIGNED PROGRAM

The importance of a well-designed and well-defined orientation program for new graduates have been corroborated by several authors, with emphasis on meeting the graduates learning needs (Baxter, 2010; Casey *et al.*, 2004; Park & Jones, 2010; Ragsdale & Mueller, 2005). Casey *et al.* (2004) noted the significance of a formal orientation program, and emphasized how the presence of strong preceptors would facilitate graduate nurses to the transition into the role of a professional nurse. In addition, Ragsdale and Mueller (2005) elaborated on the critical importance of a well-planned orientation program which concentrates on clinical skill development, technical and critical thinking skills. Park and Jones (2010) deliberated improvement of new graduate retention, referring to several studies in which new graduate orientation programs successfully decreased staff turnover rates and improved retention rates post participation. New graduate orientation programs could potentially boost graduates' confidence and increase their job satisfaction, while improving their levels of job satisfaction (Baxter, 2010). Moreover, effective mentorship programs may be a critical factor in the professional development and growth of new graduate paramedics. Lee and Montiel (2010) proposed that formal mentorship programs are proven to positively impact and improve job satisfaction, and will contribute to building the confidence and competence of graduate paramedics in their new roles. Further, Schrubbe (2004), lists several advantages of mentoring, such as enhanced productivity, increased motivation and efficiency. Figure 2.4 below captures the main elements of a well-designed programme schematically:

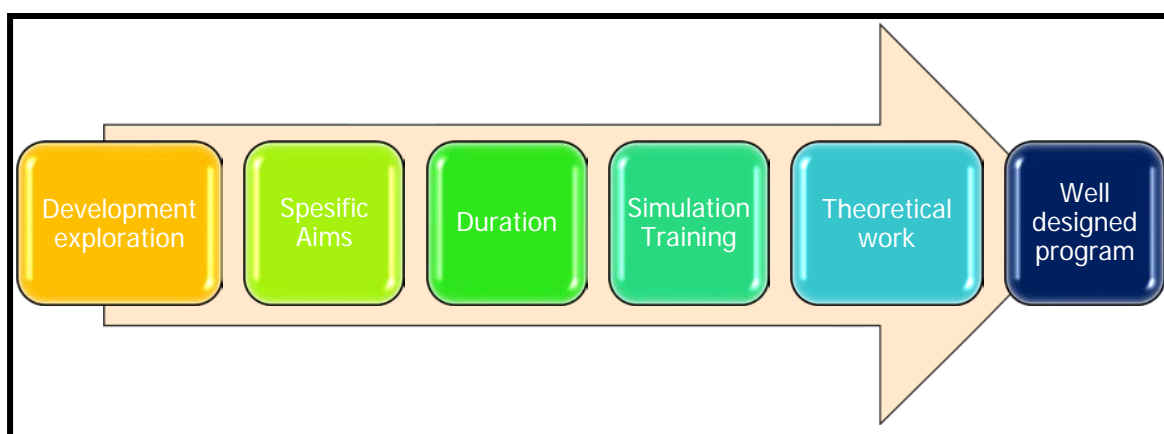


Figure 2.4: A diagrammatic overview of a well-designed program

2.12.1 Development exploration

The Australian Catholic University (ACU) has a Bachelor of Paramedicine program for paramedics with a non-degree qualification to obtain a Bachelor of Paramedicine degree.

The program aims to build on the knowledge obtained from the Diploma programmes. Further development for the students exists after the successful completion of the degree in leadership, communications and clinical education. The program will be described consequently.

Specifically, the course aims to:

- prepare graduates to apply best evidence, sound judgement and strategy to pre-hospital health problems;
- develop skills in communication, personal leadership and performance accountability necessary to be effective leaders in pre-hospital care;
- foster in students the importance of professional excellence and accountability;
- provide graduates with the competencies for entry into a wide range of roles in the field of pre-hospital care;
- foster a commitment to lifelong learning; and
- provide a deeper awareness of evidence-based solutions for disadvantaged communities and individuals.

Duration of the course: 2 years part-time

Study mode definitions

The study modes are explained as follows:

- Attendance – Face-to-face and/or via video conference, at the ACU campus or other locations.
- Multi-mode – Combination of online and attendance (including examinations, practicums and residential).

Course map

Illustrated in the table below is a sample course map for the program to obtain a degree (cf. Table 2.2).

Table 2.2: Sample course map

YEAR – STUDY PERIOD	UNIT 1	UNIT 2
Year 1 – Semester 1	Evidence for practice	Ethics in contemporary practice
Year 1 – Semester 2	Advance pharmacology	Major incident and disaster management
Year 2 – Semester 1	Pre-hospital management of the chronically ill patient	Elective
Year 2 – Semester 2	Inter-professional practice	Advance decision-making

Essential requirements for admission

- An applicant must have completed a professional qualification in paramedicine;
- Employed as a paramedic; and
- Registered as a paramedic with the Australian Health Practitioner Regulation Agency.

2.12.2 Simulation training

The value of clinical simulation towards the training of pre-hospital is extremely wide spread, providing the opportunity to interact with difficult scenarios, where all facets of practice could be explored in a safe non-litigative environment. Simulation according to Gamble (2017) was recognised as one teaching methodology capable of achieving positive outcomes without the potential for harming the patient. Gamble concluded by stating that simulation provided enhanced placement preparedness for nursing students as these students are exposed to learning opportunities not always available during periods of clinical practicum.

Simulation has the ability to target specific learning outcomes and thus can positively influence the learners "capacity to demonstrate a plethora of professional skills, whilst also enhancing their paediatric nursing psychomotor skill dexterity". Gamble (2017) concluded by stating "Multi-source evaluation clearly indicates the value of this simulation for student placement preparation and confidence; importantly and in anticipation of further research, the simulation is also capable of exerting a positive impact on specific professional domains in the first three months of a Graduate Nurse Program".

The Victorian prehospital data suggest that there is a need for simulation training, especially in trauma management, for undergraduate students before their employment in rural Victoria as their exposure to some trauma types will be infrequent (Boyle, Williams, Burgess, 2007). The Department of Community Emergency Health and Paramedic Practice (DCEH&PP) at Monash University, Australia, is one of the major providers of undergraduate

paramedic education. To assist undergraduate students with authentic medical and trauma experiences they utilise two simulation centres.

2.12.3 Theoretical work during clinical placements

A study performed in Australia did investigate the theory-practice gap during paramedic education and the type of cases they were exposed to during their clinical placements. The study concluded that a wide variety and a lack of case frequency was reported, students comprehended that they were reinforcing theoretical learning objectives during clinical placements. It was found that not all the students were exposed to cases that linked to their level of education, they have been able to practice only 50% of the skills learnt at university for the duration of their clinical placements. The mentioned study reiterated the requirement for supplemental skill practises during ambulance clinical placements. A efficient conversion from novice to graduate paramedic alters on skills and theory development during undergraduate programs (Michau *et al.* 2008).

2.13 REGULATION OF TRAINING AND PRACTICE

In South Africa, the degree Bachelor of Health Science in Emergency Care requires the learners to be registered at the Health Professions Council of South Africa (HPCSA) as an Emergency Care Practitioner Student (ECPs) for the duration of their studies at University, with successful completion of degree, learners will be allowed to register as independent practice at the HPCSA as Emergency Care Practitioners (ECP's). When registered at the HPCSA as ECP's, they will work autonomously in emergency services, government or private without an internship or further training required.

Peralta *et al.*, (2008) concluded that experience previously obtained in the field showed no correlation with passing rates, however the correlations improved between examinations periods. Candidates partaking in the second period performing significantly better than those during the first. Boyle *et al.* 2008 states that clinical instructors (CI's) should be better prepared, these are paramedics who work for ambulance services and who have undergone recognized short course training in workplace training. They normally direct and supervise new graduate paramedics during the year mandatory to completion, these CI's may also oversee undergraduate paramedics throughout clinical placements (BMC Medical Education 2008, 8:19). Collaboration between universities and paramedical service providers is the key to address the university student clinical

and field placement. Development of standards, the purpose of placements, the expectations of learners and facilitators need to be addressed (O'Meara *et al.* 2015). Salzman *et al.* (2008:212) states that paramedic students must pass the National Registry Exam (NRE) successfully, which is administered by the National Registry of Emergency Medical Technicians (NREMT), prior to practice. Across the United States of America, programmes are designed in similar educational formats, and students also have to complete a clinical internship.

Stein (2010) testified that "criticism of an internship is a more practical one and relates to EMS resources available in South Africa." "Internships, involving the placement of a newly-qualified paramedic with one of the same qualification in operational practice, would delay the entry of new practitioners into operational practice - an effect that would probably not be considered very positively by both state and private employers." (Stein 2010:102).

2.14 ORGANISATIONAL READINESS FOR CHANGE

Change is the pathway towards progression will be discussed consequently:

2.14.1 The process of change

As explained by Beckhard and Harris (2009), the change process involves three conditions. These are the future state, present state, and transition state. The process was briefly described as moving the organisation from the present to the future by going through a set of activities and conditions. To support this, Burke (2009a) explained that organization change could not transpire without direction and knowledge in terms of present state (who we are) and the desired future state (who we want to be). It is essential to establish the need for change as well as determining the steps of initiating change for the change process to success. Further, Burke (2009a) elaborated on the need for change by describing it as a "prelaunch phase", while the part of the process where successful change is initiated is referred to as the "postlaunch phase".

Choi and Ruona (2011) noted the importance of employees believing in the necessity of change, and that said changes are appropriate, will be supported by management and will benefit them personally. Armenakis *et al.* (2009), reinforced this view and determined that the need for change and the apparent capacity for change of the individuals involved, should be included in the change message. Additionally, the nature of the change should

be communicated clearly, while accurate assessment of the readiness of each source of change is essential (Beckhard & Harris, 2009). As argued by Burke (2009a) people are less likely to embrace the idea of change if they cannot feel or see the need thereof within the organisation.

Alimo-Metcalfe (1996), Burke (2009a), Kouzes and Posner (2007) and Senge (2006) all agreed that a fundamental component of leadership in the change process is the establishment of a vision for change. Alimo-Metcalfe (1996) describes vision as an essential quality that allows one to imagine the future state, which the organisation needs to move towards. Burke (2009a) associated the analysis of the values and vision of the organization as described in the prelaunch phase, with providing a clearly defined direction for the organisation. One of the primary functions of leadership, as noted by Kouzes and Posner (2007), is that of creating a vision that is founded on a sense of purpose. This is a key factor in accomplishment of organizational goals. People can become focused on a mutual purpose by creating a vision that is shared by all (Senge, 2016). Therefore, grasping the necessity of change along with a purpose and a clear direction, may facilitate EMS leaders to implement change with success.

2.14.2 Resistance to change

Continuous engagement of EMS practitioners, leaders, and stakeholders in the process is imperative if resistance to change is to be limited throughout the process. The importance of engaging multiple perspectives with regards to how change could affect and benefit the organization is emphasized. Atkinson (2005), Dixon (2003) and Hunt (1992) mention that change in organisations may often be resisted. Atkinson (2005) noted the importance of understanding that such resistance is a normal healthy response to change. Often this reaction may be due by lack of understanding, past negative experiences and fear of the unknown. Dixon (2003) proposed embracing resistance as it can be an excellent way to identify possible obstacles that should be addressed. As explained by Hunt (1992) resistance is often caused by ineffective introduction to the change, which could lead to feelings of uncertainty, fear and not having control of the situation.

Choi and Ruona (2011) reasoned that individuals may not be naturally opposed to change, but rather the manner in which change is imposed on them. Waddell and Sohal (1998) argues the contrary and defines resistance as the "enemy of change". According to them, resistance is perceived by change implementers as problematic and hindering the

acceptance of their ideas, sometimes resulting in sabotage of change. Burke, Lake, and Waymire Paine (2009) described how organizations get “locked into its ways” of doing things if they are operating efficiently, and this complicates the response to change or even prevents change when it may be much needed.

Attempts to resist or avoid change should not necessarily be seen as something negative (Pardo de Val & Martínez Fuentes, 2003; Perren & Megginson, 1996). Both research teams argued that it could be beneficial and should even be encouraged. They proposed that those resisting may have a deeper understanding of the organisation than those implementing and driving the change (Pardo de Val & Martínez Fuentes, 2003; Perren & Megginson, 1996). This is further supported by Lamb and Cox (1999) who also noted that progress within organisations may be prohibited by not questioning the norm, thus resistance to change will assist progress to a productive learning stage and is therefore a healthy occurrence.

Waddel and Sohal (1998) explained the crucial role of resisters in playing devil's advocate by highlighting issues and aspects of the change which may not have been properly analysed, which can prompt innovation. Lewin (as cited in Parkin, 2009) alleged that one would need to destabilise equilibrium to discard old methods and make room for new ideas to be adopted successfully. Burke (2009a) reinforced Lewin's theory when he referred to equilibrium as a precursor to death. He further states that a living system is less responsive to change around it when it is in a state of equilibrium.

The distinction between change readiness and resistance is mentioned by Armenakis *et al.* (2009). Framing project change in terms of readiness appears more corresponding with the image of managers who proactively coaches and encourage change, rather than individuals in the workplace who merely reactively monitor the situation for signs of resistance.

It has been shown by research that obstacles to change are often the result of organisational history and the approach or attitude of management, and not necessarily due to individuals (Hoag, Ritschard, & Cooper, 2002; Pardo de Val & Martínez Fuentes, 2003). Oreg (2006) claimed that lack of faith in the leaders of an organisation could be strongly linked to increased anxiety, anger and frustration amongst employees with respect to change. Choi and Ruona (2011) maintained that when leaders underestimate the role of individuals in process of change, it may lead to failure of their efforts. It is important to understand and monitoring resistance to change, while collaborating with all stakeholders in order to reach a positive outcome.

2.14.3 Change readiness and participation

The involvement of new graduates is crucial in this inquiry, as it facilitates a clearer understanding of the extent of support that is required during their transition from student to working professional, and a change initiative could likely result in failure without their participation. Various studies focused specifically on the significance of involvement and contribution to allow successful change. Research additionally confirmed that encouraging involvement in decision-making during the entire change process would help the organisation to achieve a state of readiness for change (Lines (2004), Saka (2003) and Weisbord (2012). The success of change readiness hinges on involvement and the unity of goals (Saka, 2003).

The support of all parties involved in the change is required during initiation of the change readiness process. Lines (2004) suggested a link between participation and successful execution of strategic change. "There is a great need for employees to be involved in the problem solving and decision making from the start" (Weisbord, 2012).

Goleman, Boyatzis, and McKee (2002) elaborated by stating that emotionally intelligent leaders ensured that their teams are fully engaged in the process of change by providing them with as much control as possible and not withholding information from them. Armenakis *et al.* (2009) argued that active participation is fundamentally self-discovered, as people tend to place more trust in information discovered by themselves. Coghlan and Brannick (2010) advised leaders to not be the expert who decides apart from others, but rather follow a collaborative approach by engaging individuals in the process. This was also supported by Burke (2009a) who described the critical importance of identification and implementation of new initiatives, which could renew energy amongst organisational members. This could spark innovative thinking and propel the organisation forward on a continual path of change.

The methodology of finding solutions to problems or issues through collaborative effort of all those who are directly involved in order to reach a positive change outcome is referred to as action research (Coghlan & Brannick, 2010; Goleman *et al.*, 2002; Stringer, 2007). Coghlan and Brannick (2010) elaborated on the discovery of knowledge through utilisation of collaborative relationships between organisations and researchers, and how the addressing of the problem or issue directly can produce new knowledge. Participants develop shared visions of the situation by working collaboratively, which provides a basis

for effective action (Stringer, 2007). Dent and Powley (2002) advised against badly applied action research methods, as it could potentially increase levels of resistance. This may result from overuse of external consultants who enforce their own values on the individuals and may come across as agents for the organisation. However, this document is focused on implementing action research to enhance ownership and reduce the probability of resistance to change.

2.15 CONCLUSION

A number of counties have adapted a Technician-based approach to the education and training of their paramedics. In these systems the training is technically focused on following the set protocols and treatment regimens as opposed to definitive diagnosis and clinical decision making.

While newly qualified paramedics possess the clinical knowledge and application, due to scarce experience and exposure in the environment, they lack confidence in their abilities to do their job. During the early stage of their career, they rely very much on support provided to them by colleagues, peers and preceptors in field.

In Australia, increasingly education of the healthcare professions has entered the HE sector and universities, although there are some courses delivered in privately operated education institutions and in the vocational education sector. The paramedic profession, a mainstream healthcare profession that is not yet included in the national regulatory scheme, is undergoing a transition from a post-employment model to a pre-employment model of education, three-year degree courses delivered at universities. The move into the universities, along with external course accreditation via a professional association, are landmarks of a profession growing in maturity and legitimisation. How to produce work ready graduates for the healthcare professions is a concern for all educators. Fortunately, there is an increasing body of knowledge about work readiness in healthcare professions, including recent research in the field of paramedics. When education of a profession is in a state of transition, such as is occurring in paramedics in Australia and recently in South Africa, there exist great opportunities to utilise the learning from other professions, collaborating with key stakeholders (the education institutions, the professional associations) and build the kind of courses that really will serve the needs of the community (O'Brien, Moore, Dawson & Hartley, 2014).

The benefits of clinical education are well known and there is little doubt that it forms an integral part of undergraduate paramedic education. As a result of the limited time and clinical placement resources available, a strategic plan is required to ensure students receive a range of clinical education opportunities. This will enable students to refine their technical and non- technical skills. Continual and ongoing communication and reflection between students, educators, and clinical placement educators should continue. In the future, further research should explore students' perspectives of their clinical learning environments and experiences so that we can optimise their opportunities for learning (Williams, Brown & Winship, 2012).

CHAPTER 3

RESEARCH DESIGN AND METHODS OF INVESTIGATION

3.1 INTRODUCTION

In this chapter the research design and research methodology are discussed. Methods utilized in this study comprise a literature review and semi-structured interviews. Theoretical perspectives are provided on the research design, and a detailed explanation is given of the semi-structured interviews used as a data collection tool.

Research, as defined by Fouché and Delport (2011:61), provides us with a way of learning and knowing about concepts, concerns, information, material, matter, and individuals and others around us. Research is a methodical course of collecting data or information and analysing this data to gain an understanding of an unambiguous problem or issue. Research has been defined in a number of different ways. A broad definition of research is given by Butler (2017): “diligent and systematic inquiry or investigation into a subject in order to discover facts or principles research”. A topic or issue could be understood by a process of steps used to collect and analyse information obtained, called research (Creswell, 2014).

Research consists of three steps, namely to pose a question, to collect data to answer the question, and to present an answer to the question. The Merriam-Webster Dictionary (2017:Online) defines research in more detail as “a studious inquiry or examination; especially investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws”. In this study, the researcher aimed to gain insight into the experiences gained by paramedics when they registered as Emergency Care Practitioners (ECPs) in South Africa. The researcher collected data from the participants by using semi-structured interviews and analysed the data to be able to comprehend the need for an internship for newly qualified ECPs in South Africa.

3.2 THEORETICAL PERSPECTIVES ON THE RESEARCH DESIGN

The research design refers to the overall approach chosen to integrate the different constituents of the study in a rational way, ensuring that the research problem will be addressed efficiently. Research design addresses the planning of scientific inquiry. Babbie

and Mouton (2001:72-74) state that a research design is a plan or proposal of how the researcher proposes to conduct the research. The research design guides the researcher in planning and executing the study in a way that is most likely to accomplish the proposed goal (Burns & Grove 2005:225). The research design therefore depicts the Theme, population and appropriate method in order to provide a focused perspective on the study at hand (Fouche, Delport & De Vos 2011:142). Scientific design boils down to making observations and interpreting that observation. Before one can observe and analyse, one first has to determine what, why and how it will be observed (Babbie & Mouton 2001:72). There are two main research designs: quantitative and qualitative. In this study, a descriptive, qualitative research design was used to gain a understanding of the experiences of ECP (emergency care practitioner) registered paramedics in South Africa. Qualitative research is appropriate when studying attitudes and behaviours of people, as well as processes in their natural settings (Babbie & Mouton 2001:270).

3.2.1 Qualitative design

The qualitative approach is used to answer questions about the complex nature of phenomena, with the perseverance of unfolding and understanding the phenomena from the participants' point of view. Qualitative researchers often start with general research of a question rather than specific hypotheses, collect an extensive amount of verbal data from a small number of participants, organise those data in some form that gives them coherence, and use verbal descriptions to portray the situation they have studied (Fouché & Delport 2011:64). Babbie and Mouton (2001, in Fouché & Delport 2011:65) state that the qualitative researcher, therefore, is concerned with describing and understanding rather than explaining or predicting human behaviour. Burns and Grove (1997:27) describe a qualitative approach as a "systematic, interactive, subjective approach used to describe life experiences and situations to give them meaning". Holloway and Wheeler (1996, as quoted in Nieuwenhuis 2016b:51) point out that qualitative research typically studies people or systems by interacting with and observing the participants in their natural environment (in situ) and focusing on their meanings and interpretations.

Monette, Sullivan and De Jong (2008, as quoted in Fouché & De Vos 2011:91) draw the distinction that qualitative research involves data in the form of words, pictures, descriptions or narratives, while quantitative research uses numbers, counts and measures of things. In qualitative research, the researcher does not attempt to manipulate the phenomenon of interest. In other words, research is carried out in real-life situations and not in an

experimental (test-retest) situation. Consequently, unobstructive data gathering techniques, like interviews and observations are dominant in the naturalist (interpretive) paradigm (Nieuwenhuis, 2007). Babbie and Mouton (2001:278-279) claim that qualitative designs share specific features as illustrated in Figure 3.1:

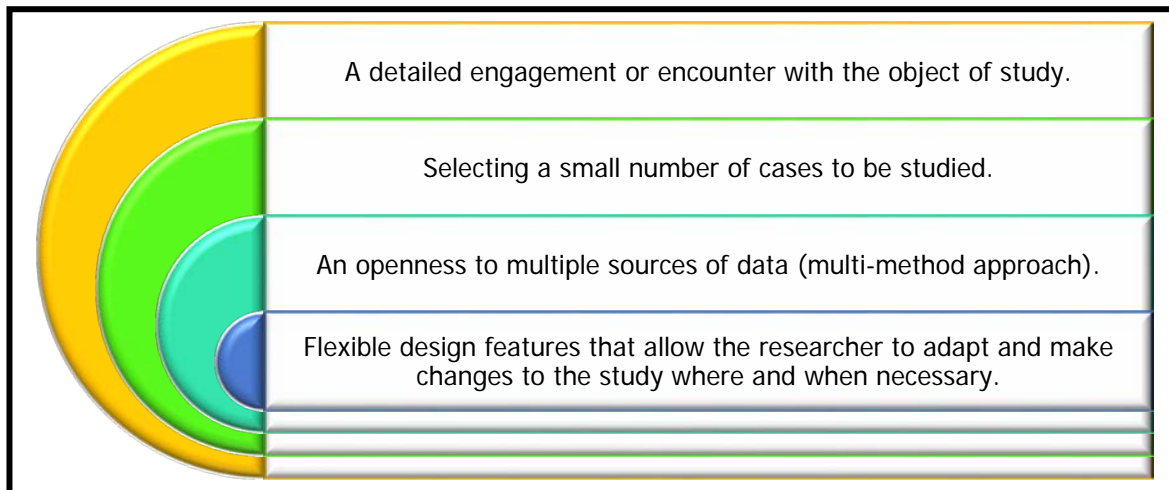


Figure 3.1: Features shared by qualitative designs
(Compiled by the researcher, Jansen van Vuuren, 2017)

Four major qualitative research design types are described by Delport, Fouché and Schurink (2011:303), namely phenomenology, case studies, grounded theory and ethnography (cf. Figure 3.2).

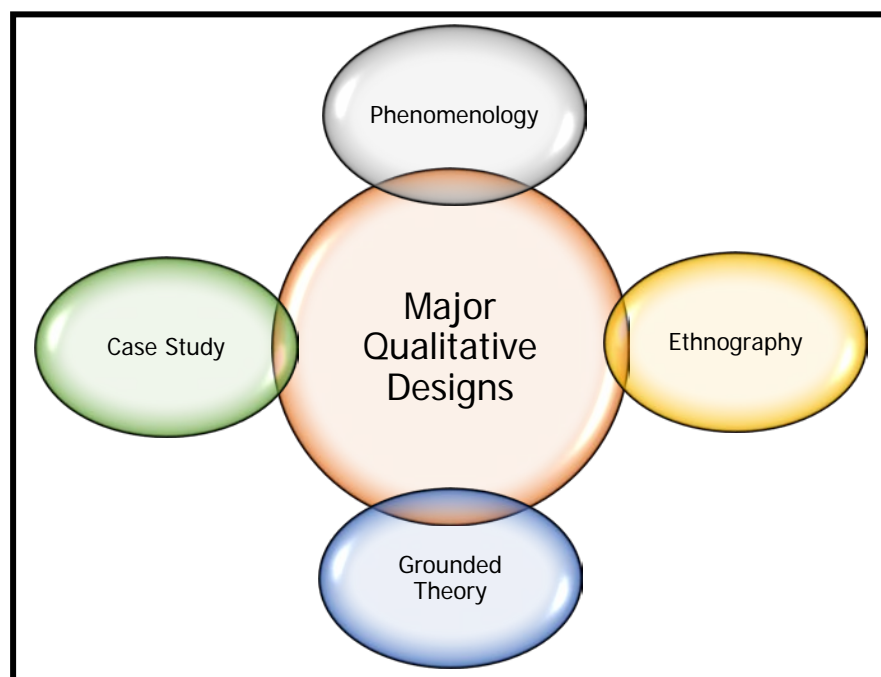


Figure 3.2: Major qualitative designs
(Compiled by the researcher, Jansen van Vuuren, 2017)

The major qualitative designs, namely case studies, phenomenology, ethnography, and grounded theory will be briefly defined. In this study, a phenomenological approach was used. Phenomenological study is a study that attempts to comprehend people's acuties, perspectives and understanding of a particular situation (Delpont, Fouché & Schurink 2011:305). The phenomenological approach was the most appropriate for the aim of the study, which was to investigate and understand the lived experiences of the registered ECP paramedics.

According to Hoey (2014: 1), ethnography is defined as the systematic study of people and cultures. Cultural phenomena are explored where society is observed from a researcher's point of view. Graphical and written representation of the cultures of a group is ensured by ethnography. Ethnography as a method of data collection entails an examination of the behaviour of the participants in a specific social situation and also understanding their interpretation of such behaviour. Grounded theory is an inductive methodology and many researchers are of opinion that grounded theory is a qualitative method; Glazer (2018:online), however, states it is a general method for systematic generation of theory from systematic research. The case study in the social sciences and life sciences environment is a research method involving an up-close, in-depth, and detailed examination of the subject of the study, as well as its related contextual conditions. Baxter (2008:online) states that a qualitative case study methodology provides tools to study complex phenomena within their contexts.

This study attempted to demonstrate a deep and rich understanding of ECP paramedics' experiences and understanding after their initial registration as operational ECP paramedics for the first year post-registration in this category.

3.2.2 Descriptive research

Descriptive research is used to describe characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. Rather, it addresses the "what?" question. Fouché and De Vos (2011:96) maintain that in qualitative studies, description is more detailed to refer to a more intensive examination of phenomena and their deeper meanings, thus leading to a thicker description.

3.3 METHODS AND PROCEDURES

The methods that were used in the study comprised a literature review and semi-structured interviews. In this section, information on sampling, data collection, data analysis, ethical considerations and trustworthiness, and validity and reliability will be discussed.

3.3.1 Literature review

Fink (2004:3) states that “A research literature review is a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners”. To consider a research topic, some background information is necessary. This is obtained mainly by reading whatever was published that appears relevant to the research topic. This process is called the literature review. The literature review expands the knowledge of the researcher and gives the researcher insight into what already has been done in the field of interest, which prevents the researcher from repeating research that has already been done (Bless & Higson-Smith 2000:19-20). Mouton (2001:87) states that a literature overview does not refer to a collection of texts, but to a body of accumulated scholarships from which a researcher gains insights. A researcher should learn from other scholars: how they have theorised and conceptualised on issues; what instrumentation they have used and to what effect. Definitions of the subject, different hypotheses in the field of study, existing data and findings that have been produced by previous research and measuring instruments that have been developed need to be explored. Bless and Higson-Smith (2000:20) provide more specific reasons (cf. Figure 3.3):

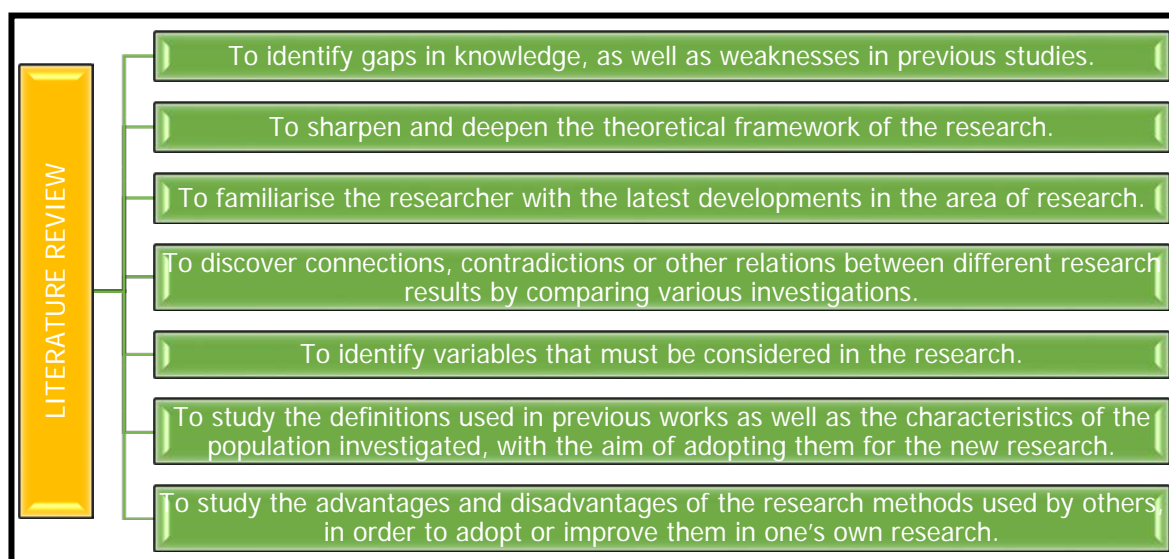


Figure 3.3: Reasons for doing a literature review
(Illustration compiled by the researcher, Jansen van Vuuren, 2017)

The literature review for this study was done to provide information relating to the difficulties, uncertainties and shortcomings experienced by paramedics when they started working operationally. The perspectives on internship with the focus on professions were very important. The profession includes medicine where internship is being employed to assist in the building of confidence and competency in the respective environments to the benefit of the patient in these high-risk occupations.

The aim of a literature study was to conceptualise a research problem and locate it in a body of theory. It also served to put the researcher's efforts into perspective, situating the topic in a larger knowledge pool, and creating a foundation based on existing, related knowledge (De Vos, Strydom, Fouché & Delport 2011:134-135).

3.3.2 Semi-structured interviews

Interviewing is the most effective method to use for collecting data or information in a qualitative study. Interviewing the participant involves not only a description of the experience, but also reflection on the description. Kvale (in Sewell 2001 in Greeff 2011:342) defines qualitative interviews as "attempts to understand the world from the participant's point of view, to unfold the meaning of people's experiences, and to uncover their lived world prior to scientific explanations".

Qualitative studies normally make use of unstructured or semi-structured, one-on-one interviews. In this study, the researcher used semi-structured interviews to collect data and information regarding the stated problem. A benefit of semi-structured interviews is that the participants are encouraged to talk freely in depth and detail. It also allows them the freedom to express their views in their own terms. Semi-structured interviews provide reliable, comparable qualitative data (Cohen, 2006).

Dicco-Bloom and Crabtree (2006); Jarbandhan and Schutte (2006) and May (1991) in Greeff (2011:348) define semi-structured interviews as interviews organised around areas of particular interest while still allowing considerable flexibility in scope and depth. Field and Morse (1995) in Greeff (2011:348) refer to open-ended or guided interviews. With semi-structured interviews, the researcher will have a set of predetermined questions on an interview schedule, but the interview will be guided, rather than dictated by the schedule. A questionnaire written to guide interviews is called an interview schedule or guide. An interview guide is prepared in advance and it ensures that the interview stays focused, but

still allows participants to talk freely. In general, researchers use semi-structured interviews in order to gain a detailed picture of a participant's beliefs about, or perspectives on a particular topic.

In this study, semi-structured interviews were conducted to obtain information from registered ECP paramedics regarding their experiences as newly qualified practitioners in South Africa. The aim of the semi-structured interviews was to gather information regarding participants' perceived needs and experiences (cf. Appendix D).

Semi-structured interviews were conducted with participants who achieved the top percentage on the matrix which was developed by the researcher (cf. Table 3.1). The semi-structured interviews were conducted in English. The understanding that gained as a result of a semi-structured interview (qualitative interview) is not the same as the understanding ensuing from a face-to-face questionnaire. A semi-structured interview is more like a conversation, and the researcher can ask questions whenever he/she feels it is appropriate to ask them. The preference was to use open-ended questions to prompt respondents to think, express values and provide answers in their own words. The interviews were recorded so that they could be transcribed and analysed afterwards (Cohen 2006:[online](#)).

In terms of the Evaluation Toolbox (2010:[online](#)), advantages of a semi-structured interview include that it "provides valuable information from the context of a participant's experiences", and that the "use of pre-determined questions provides uniformity". Disadvantages of the semi-structured interview process are that it might be time-consuming to collect and analyse data and that some level of training or practice is required in order to prevent the interviewer from suggesting answers. According to the Qualitative Research Guidelines Project of the Robert Wood Johnson Foundation (RWJF) (Cohen 2006:[online](#)), the benefits are:

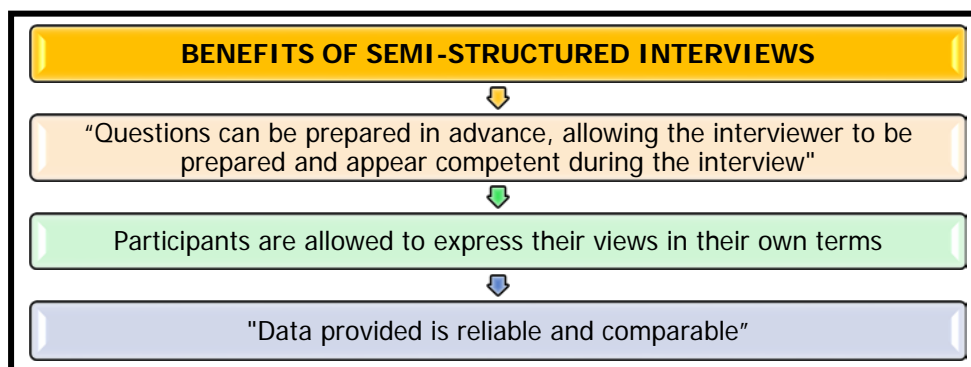


Figure 3.4: Benefits of semi-structured interviews
(Compiled by the researcher, Jansen van Vuuren, 2017)

3.4 POPULATION SAMPLING

Deciding who will (or will not) participate in a study, is part of the scientific process of research, and therefore should be done according to prescribed guidelines. The process of selecting participants is called sampling. Matters to consider during sampling are the target population, the study population, the size of the sample, and the sampling method.

3.4.1 The target population

The individual units of a population are called elements. An element may be a person, event, behaviour or any other single unit of a study. When elements are persons, they are referred to as subjects. Burns and Grove (1997:293) explicate that the population, sometimes referred to as the target population, is the entire set of individuals or elements who meet the sampling criteria. Kazerooni (2001:993) states that the target population is the whole group of individuals to whom the researcher is interested in applying his/her conclusions. In this study, the target population comprised participants who achieved the top percentage on the matrix, which was developed by the researcher.

Semi-structured interviews were conducted with respondents who graduated as ECP paramedics from the University of Johannesburg, Durban University of Technology and Cape Peninsula University of Technology. The other institution in South African presenting the degree qualification in Emergency Medical Care, the Nelson Mandela Metropolitan University (NMMU) in Port Elisabeth was not included for the purposes of this study as its first graduates only qualified in December 2017.

3.4.2 The survey population

The survey population consisted of participants who achieved the highest percentages on the matrix, which was developed by the researcher (cf. Table 3.1).

Table 3.1: Matrix for selection of participants
(Compiled by the researcher, Jansen van Vuuren, 2017)

AGE	SCORE	QUALIFICATION (Years)	SCORE	LECTURER @ LEVEL	SCORE	ECT	SCORE	ALS	SCORE	BTech, B-EMC, BHS	SCORE	REG HPCSA	SCORE
<= 24	1	ECP < 4	0	None	0	1 - 12 months	0	1 - 12 months	2	1 - 12 months	3	Yes	1
< 25 - 30	2	ECP >4 - < 5	1	Other	1	12 - 35 months	1	12 - 35 months	3	12 - 35 months	4	No	- 10
< 30 - 34	3	ECP = > 5 - < 7	2	CCA	2	36 - 47 months	2	36 - 47 months	4	36 - 47 months	5		
<= 35 - 39	4	ECP = > 8 - < 10	3	NDip	3	48 - 59 months	1	48 - 59 months	3	48 - 59 months	6		
<= 35 - 39	5	ECP = >11 - <13	4	BTech, BEMC, BHS	4	60 - 72 months	0	60 - 72 months	2	60 - 72 months	7		
<= 40 - 44	4	ECP > 13	5							> 72 months	8		
<= 45 - 49	3												
<= 50 - 54	2												
<= 55 - 59	1												

3.4.3 Sample size

There are no rules for sample size in qualitative inquiry (Strydom & Delport 2011:391). Sample size depends on what we want to know, what will be useful, what will have credibility, and what can be done with the available time and resources. The numbers of participants in a qualitative study is satisfactory when saturation of information is accomplished in the study area. Saturation of data occurs when additional sampling provides no new information, only reproduction of previously collected data.

A convenience sample of 15 participants was used for this study. The researcher selected participants who complied with the inclusion criteria and then proceeded to gain permission from each of these selected participants before proceeding with the study. The number was depended on how soon saturation of data was reached. All the participants were well-informed about their rights as a participant and that their privacy and identity would be guarded. Each participant was asked to give verbal and written consent and had to *meet* all the criteria, as specified below in 3.4.4.

3.4.3 Description of sample

In this study, the sample consisted of participants who scored the highest on the matrix (cf. Table 3.1). This included male and female participants of all race groups. The researcher required a holistic view from the participants in order to understand the background and environment the participants have been exposed to. In this study the emphasis was on the experiences gained in the operational and specific tertiary education programmes.

Inclusion criteria for the participants in the study were related to:

- The age of the participant.
- Years qualified on the ECP paramedic register.
- Being a lecturer at a specific pre-hospital care level.
- Performed duties as an operational ECT, ALS prior to registration as an ECP paramedic.
- Holding current and valid registration at the Health Professions Council of South Africa as an ECP paramedic.

The age of the participants was required to provide the reader with an age range of the participants in the study, the number of years qualified as an ECP was to be indicative of the experience of the participants, whereas the other operational duties would give an indication their general knowledge obtained previously in the pre-hospital environment.

Illustrated in Figure 3.5 is the age and gender (in green) of the participants, which took part in the study. The magenta represents the female ECPs.

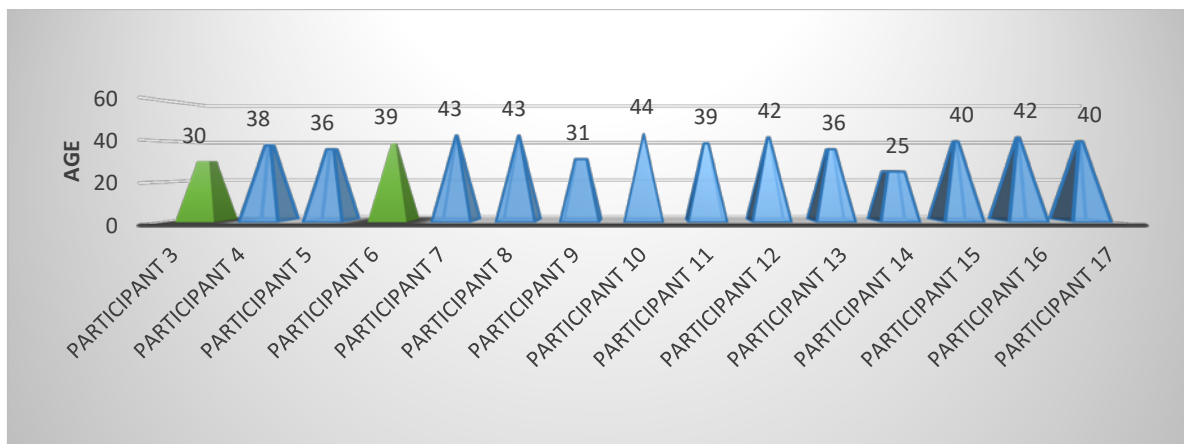


Figure 3.5: Age and gender of the participants

The average age of the participants was 37,8 years. The inclusion criteria for years qualified on the ECP paramedic register (cf. Figure 3.6) was scored by sorting the years post qualification as follows:

- Less than 4 years,
- more than 4 less than 5 years,
- more than 5 less than 7 years,
- more than 8 less than 10 years,
- more than 11 less than 13 years, and
- more than 13 years qualified.

Points awarded from least (0) to the maximum (5) for 13 years and more. The combined years qualified as ECPs calculated to 114 years post qualification.

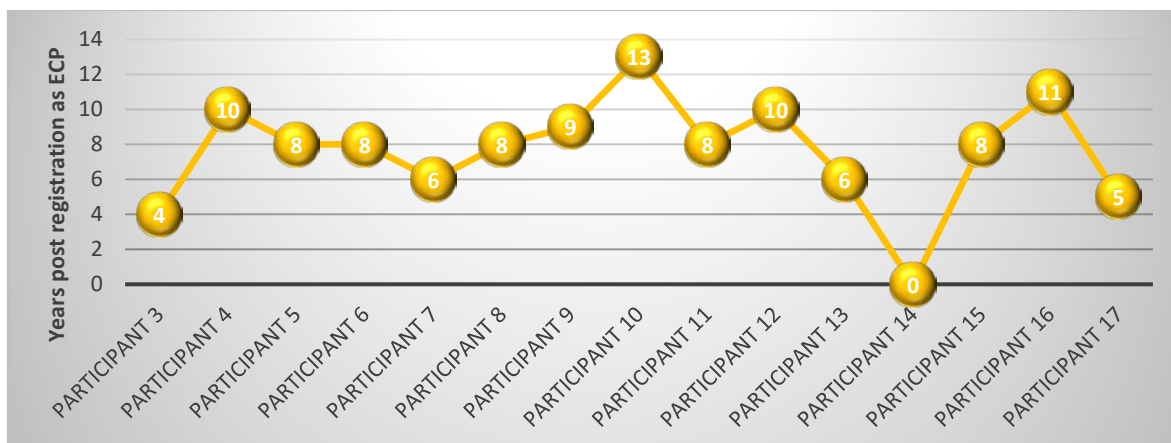


Figure 3.6: Participants qualified in years as ECPs

In Figure 3.7 the number of years is indicated that participants were qualified from their first registration as Advanced Life Support (ALS) practitioners and not specifically on the ECP register. The experience they had gained on the ALS level would enable the participants to provide more meaningful and profound information during the interviews. The combined operational experience of the participants (average age 37,8) added up to 179 years' experience.

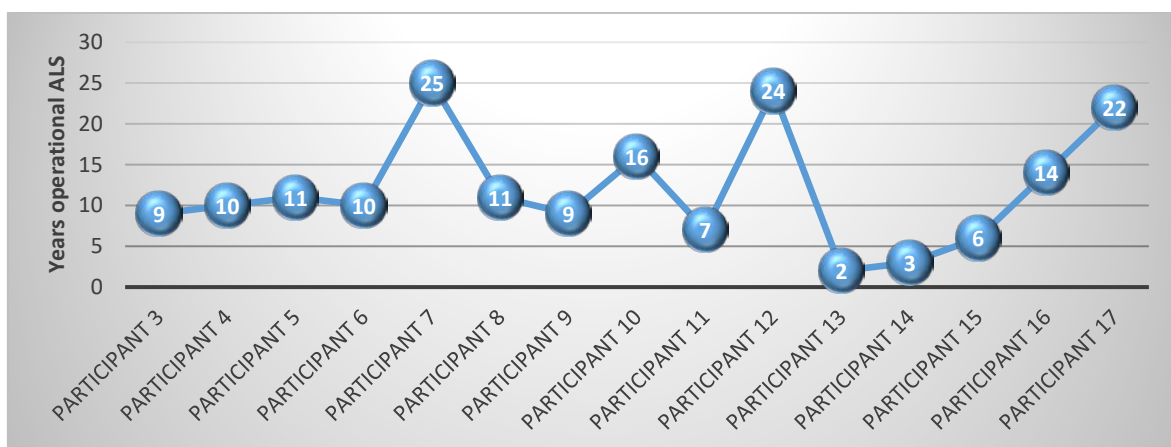


Figure 3.7: Total ALS Experience of the ECP registered participants

The lecturing experience of participants was calculated at a specific pre-hospital care level (cf. Table 3.1) by considering the following pre-hospital qualifications and experience as follows:

- No lecturing experience;
- Other courses/programmes;
- Critical Care Assistant;
- National Diploma; and
- BTech, BEMC, BHS.

Illustrated in Figure 3.8 are the participants with lecturing experience - 36% (21% on NDip EMC & 15% on ECP level) of the participants had lecturing experience in the tertiary environment and combined with the Critical Care Assistant (CCA), 51% of the participants had lecturing experience at an advanced life support level or above.

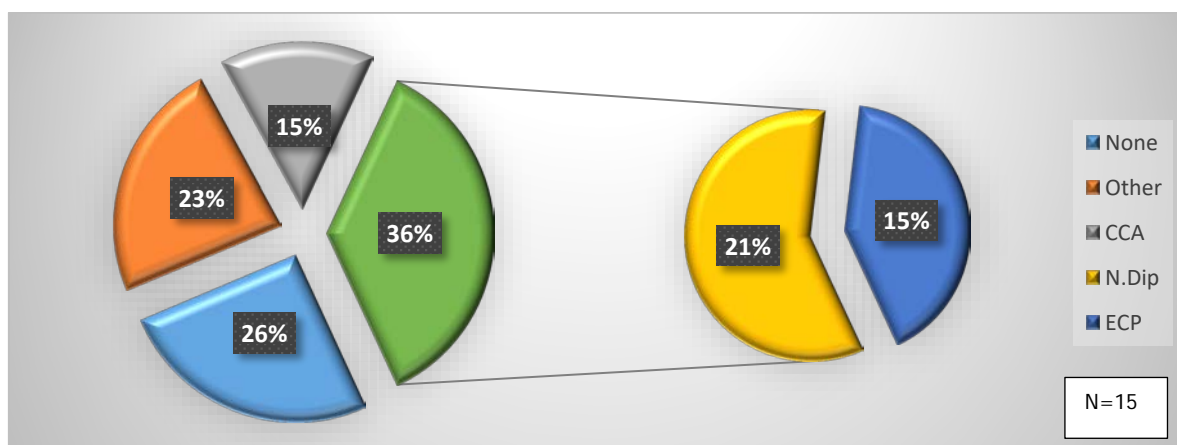


Figure 3.8: Lecturing level of participants

The only exclusion criterion for the study was individuals not registered as an ECP paramedic at the Health Professions Council of South Africa.

3.4.4 The pilot study (Exploratory interview)

According to Grinnell and Unrau (2008) in Strydom (2011b:237), pretesting a measuring instrument entails carrying out all the aspects of the total data-collection process on a small scale. Barker (2003) as quoted in Strydom (2011b:237) defines a pilot study as a procedure of testing and validating an instrument by administering it to a small group of participants from the intended test population. Bless, Higson-Smith and Kagee (2006) in Strydom (2011b:237) provide what is perhaps the most encompassing definition of the pilot study: "A small study conducted prior to a larger piece of research to determine whether the methodology, sampling, instruments and analysis are adequate and appropriate".

In this study the researcher did conduct a literature study and drafted an interview guide from the information obtained during the literature study. Upon completion of the draft interview guide, it was discussed with ALS paramedics in the form of an exploratory information group session. This exploratory information group session complied with the required confidentiality and consent requirements for participants. The findings of the pilot study conducted on the exploratory information group were not included in the analysis of

the final semi-structured interviews. The threefold purpose of the exploratory interview was to:

- ensure that the participants understood the questions,
- ascertain whether the researcher had to add more questions; and
- to determine the time it took to complete the semi-structured interview.

The exploratory interviews were conducted and the researcher became comfortable with the said interview and experienced a feeling of achievement. During the exploratory interviews the sequence of the questions was amended.

3.4.5 Data gathering

Participants were requested by invitation letter to take part in the study (cf. Appendix C). Written informed consent (cf. Appendix E) was obtained from each participant. These participants received an information document via e-mail and signed, scanned and returned the e-mail with the attached signed consent form to the researcher prior to the commencement of the semi-structured interviews. Individual semi-structured interviews were conducted with each participant.

The results of the semi-structured interviews were analysed to determine the needs for the development of an internship for the newly qualified ECP paramedics in South Africa prior to autonomous, independent operational practice in the emergency medical environment.

The interviewer engaged with the respondents in a formal interview via Skype. The interviewer developed and used an interview guide. Although the guide was used, the researcher was able to follow topical ramifications in the conversation that strayed from the guide when it was considered appropriate (Evaluation Toolbox 2010:online).

The semi-structured interview schedule, containing questions and an elucidation of the process, was sent to prospective participants, and the interviews were arranged for times and on dates that best suited the participants. Participants were reminded one week before the interviews and contacted telephonically on the day of the interviews. The semi-structured Skype interviews were audio-recorded using two digital recorders. The recordings were used to serve as reference tool and for the transcriptions. The researcher

also took field notes during the semi-structured interviews. The interviews were conducted by an expert researcher trained to conduct semi-structured Skype interviews. The same semi-structured interview guide was used for all the interviews.

The questions that were used in the interview guide had been formulated based on the data/knowledge obtained from the literature review and theory building. The semi-structured interview guide that was used in this study embraced the following:

- i. The necessity for an ECP internship.
- ii. The risk profile and the nature of emergency medical care.
- iii. Medico-legal implications of not having an internship for ECP paramedics.
- iv. Advantages and disadvantages of having an internship for ECP paramedics.

3.4.6 Data analysis

Data analysis is the process of bringing order, structure and meaning to the mass of collected data. "Broadly conceived this is the activity of making sense of, interpreting and theorising data" (Schurink, Fouché & De Vos 2011:397). Curtis and Curtis (2011:43) define data analysis as a process where the researcher identifies patterns and Themes in the data rather than deciding prior to data collection or analysis, what the precise variables or data categories will be. Schurink *et al.* (2011:397) state that qualitative analysis transforms data into findings.

Qualitative analysis is the "non-numerical examination and interpretation of observations for the purpose of discovering underlying meanings and patterns of relationships" (Schurink *et al.* 2011:399).

Schurink *et al.* (2011:402) recommend that a researcher should keep the following guidelines in mind when analysing qualitative data:

- "Reconsider your initial research question(s).
- Continue to use the research diary where all decisions and courses of action, as well as analytical thoughts and critical reflections about the research were routinely written down right from the beginning of the research up to the end.
- Transcribe the text in sufficient detail.

- Read and re-read the text, play and replay the audio recordings or re-examine the non-textual data in order to become thoroughly familiar with it.
- Critically evaluate the meaning of the words used by the subject(s) or the visual material presented.
- First and foremost, the researcher should be attentive to words and phrases in the participants' own vocabularies that capture the meaning of what they do or say.
- Identify the different topics or Themes and code those encountered by means of a line-by-line analysis of each interview transcription.
- Use the constant comparative method to develop a comprehensive coding scheme.
- As the researchers identify different Themes, they should look for underlying similarities between them.
- In conclusion, the secret to data analysis is to analyse the data according to the regularity and variability of the preliminary findings throughout the research process".

The analysis of the qualitative data in this study was done by the researcher according to the above-mentioned guidelines. The data analysis is described in Chapter 4. Transcriptions of the semi-structured interviews were made by the researcher. The interviews were checked by an independent person who was not involved in the study.

The Themes and categories of the semi-structured interviews were checked and verified by the study leaders. The results of the semi-structured interviews were used to create an understanding of the need for the development of an internship for the newly registered ECP paramedics in South Africa. The data collected from the semi-structured interviews provided the researcher with in-depth insight of how the participants experienced their initial operational practices. The researcher used the data of the semi-structured interviews in conjunction with the information gained from the literature review to compile the interview guidelines.

3.5 ENSURING THE TRUSTWORTHINESS, VALIDITY AND RELIABILITY OF THE STUDY

Esteves and Pastor (2004:78) state that in qualitative research, the requirements of validity and reliability are under enthusiastic discussion. There are interpretations that these traditional measures of reliability are not applicable at all in qualitative research because of the nature of the methods and epistemological assumptions of the research, which promote the uniqueness of the research. On the other hand, there are also demands for using the

same criteria for qualitative and quantitative research when evaluating the trustworthiness of the research. Between these poles are many different variations for justifying the results of the research. However, the issue of trustworthiness cannot be avoided - whatever the epistemological approach of the research (Esteves & Pastor 2004:78). The quality of the study was ensured by means of the following: trustworthiness, validity and reliability. These aspects will be discussed in the following sections.

3.5.1 Trustworthiness

The term “trustworthiness” is explained by referring to the “believability” of a researcher’s findings (Maykut & Morehouse 1994:64). De Vos, Strydom, Fouche and Delport (2002:277-278) quote Guba, who identified trustworthiness as having four aspects, namely credibility, transferability, dependability and conformability (cf. Figure 3.10).

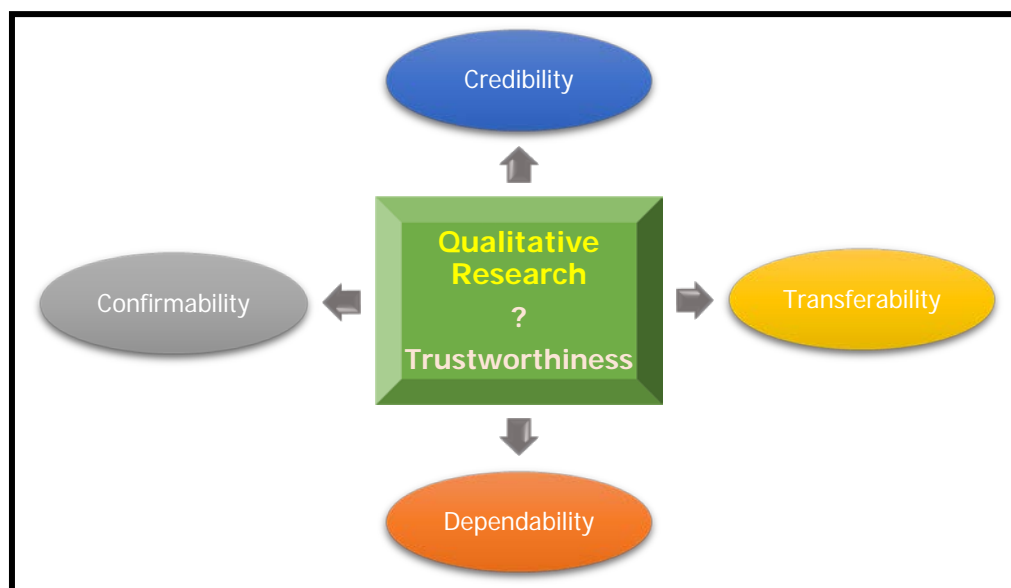


Figure 3.9: Trustworthiness for this study
(Compiled by the researcher, Jansen van Vuuren, 2016)

“A qualitative study cannot be called transferable without it being credible and it cannot be considered credible unless it is dependable” (Labuschagne 2012:52).

In this study the researcher evaluated the transcripts of the interviews, and the persons interviewed also had the opportunity to read the typed transcripts to ensure that nothing was added to or left out from what they wanted to share with the interviewer. The recordings and the transcripts also were available to be listened to and read by independent interested parties.

A co-coder was used to code the data independently, thereafter the researcher and co-coder checked their analyses together and came to consensus before the data were finalised for write-up and further interpretations.

The overall aim of grounded theory is to seek patterns in data. The patterns then are arranged in relationship to each other and that becomes the theory grounded in the data (Fouche, 274).

3.5.1.1 *Credibility*

Credibility concerns the accuracy and appropriateness of the research findings (Denscombe 2010:222-223). The Skype interviews were recorded with two digital audio recorders and to ensure that the data were captured adequately, the transcription was done as soon as possible to ensure the quality and credibility of the data (Shenton 2004:64).

Delport and Fouche (2007:353) states that credibility in the qualitative research domain refers to confidence in the truth of the findings. In this study, credibility was ensured by consultation with experts on the relevance of the interview guide questions, by pre-testing the interview guide, by prolonged engagement with the interviewees and consultation with expert researchers and coder. Credibility was ensured by triangulation. Triangulation refers to an approach to data collection according to which data are deliberately sought from a wide range of different, independent sources and by different means (Mays & Pope 1995:110). In this study data were collected by means of the literature review and semi-structured interviews.

The researcher obtained his first pre-hospital qualification in 1992 as an operational emergency care practitioner and this reflects the researcher's prolonged engagement in the profession and the phenomenon under study.

3.5.1.2 *Transferability*

Transferability is concerned with whether or not and to what extent the research findings can be transferred to another context (Denscombe 2010:300-301). "Findings of a qualitative study are specific to a small number of participants and individuals, it is impossible to demonstrate that the findings and conclusions are acceptable to other situations and populations" (Shenton 2004:69).

Transferability was enhanced during the study by giving a comprehensive description of the entire process. A rich description of the research methodology and a background of the study participants in the research context is provided. Transferability was addressed by making adequate, meticulous transcriptions of the data by detailed reporting on the outcomes of the analysis. Rich data means that the data should be detailed. Data from the semi-structured interviews were transcribed and checked for accuracy by comparing the transcriptions to the audio recordings. Copies were sent to the participants in the semi-structured interviews to read and confirm the authenticity of the transcriptions, and these were adapted where necessary.

Transferability of this study may be possible because it lies with the reader and in the particular context of the setting; therefore, transferability would be possible in a similar context and situation. This implies that transferability relies on an analytical process rather than a statistical process.

3.5.1.3 *Dependability*

Dependability in qualitative research can be addressed by adopting an auditing approach. Alteration is expected and therefore tracking of these alterations is ensured by the researcher (Mertens 2005:423).

Dependability has to do with the fact that the research instrument will produce the same results if a different researcher were to use it in the same context (Denscombe 2010:299-300). Although difficult in qualitative research, explaining the methods and analysis in as much detail as possible enhances the dependability of the study. The researcher made sure to have a detailed record of the research process and gave as much detailed feedback as possible on each step during the research process (cf. Denscombe 2010:299-300).

3.5.1.4 *Confirmability*

Confirmability is also known as objectivity of the researcher and is needed to ensure findings that are not influenced by the researcher conducting the research (Denscombe 2010:301). In this study the interviewer facilitated the interviews, but did not lead the participants to a specific answer. Data will be stored in a lockable cabinet and in the researcher's Dropbox account for a five-year period to allow confirmation if an enquiry should arise.

For the purposes of this study, the clinical experience of degree-qualified paramedics, as well as their experience and perceptions in the operational environment, is a valuable source of knowledge for establishing the need for the development of an internship, should this research study provide evidence that an internship for the ECP paramedic is required.

Confirmability was ensured by ultimately concluding that the researcher acted in good faith and did not allow personal values or theoretic inclinations to sway the way in which the study was conducted or the findings. The semi-structured interview guide was sent via e-mail to the participants, so that the questions were known to them before the interview. This ensured a non-threatening situation and the participants could then form opinions without being influenced by the interviewer.

3.5.2 Validity

The validity of research results has been defined in a number of ways. Babbie (2004:143) defines validity as the extent to which an instrument or procedure satisfies the purpose for which it was constructed; that is, it determines that which it was designed to determine. Leedy and Ormrod (2001:31) define validity as the extent to which the instrument measures what it is supposed to measure.

The validity of the findings of this research was established through the broad collaboration by which the research instruments were designed; that is, the semi-structured interviews which allowed an in-depth exploration of the subject as well.

3.5.2 Reliability

Babbie and Mouton (2001:119) claim that reliability is a substantiation of whether a particular technique, applied repeatedly to the same object, would yield the same result each time. Reliability in this study was enhanced by the consistent method used in the interviewing procedure, by using the same interview guide and by the fact that all the interviews were conducted by the same interviewer.

For further assurance of the reliability of the gathered data, the researcher made use of audio recordings of the interviews, and the transcription of the interviews was done by the same independent person. The recorded semi-structured interviews were transcribed and the transcriptions read by the researcher to obtain a general overview of what was said during each interview.

3.5.3 Ethical considerations

“Research should be based on mutual trust, acceptance, cooperation, promises and well-accepted conventions and expectations among all parties involved in a research project” (Strydom 2012:113). Every researcher has a responsibility to protect the participants in an investigation. Whether a researcher is an educator, aviator, or paramedic, the primary responsibilities to participants are clear: obtain consent, protect from harm, and ensure privacy.

3.5.3.1 *Approval*

Permission to perform the research project was obtained from the Health Sciences Research Ethics Committee of the University of the Free State on 14 February 2017 with the allocated HSREC no 19/2017 (UFS-HSD2017/0047). The allocated Health Sciences Research Ethics Committee number was used on all documents pertaining to the study. Permission from the Faculty Management Committee of Health Sciences at the University of the Free State was obtained. The Vice-Rector, Academic Planning, UFS, was informed about the study. As no patients were involved in this study and ECP practitioners were interviewed after hours, approval from the provincial executive was not necessary.

3.5.3.2 *Consent*

Informed consent was acquired from all participants involved in the semi-structured interviews (cf. Appendix C). Participants were provided with a brief overview of the study and its purpose and an explanation of what was required of them, including details regarding the semi-structured interview process. Participation was entirely voluntary and without remuneration. Confidentiality was guaranteed in writing and included in the informed consent form. Information obtained from participants was available only to the researcher and his supervisors; this was also communicated to the participants. Contact details of the researcher were provided on the form.

According to the Belmont Report 1979:9-12, participants in research must be informed of the following:

- That research will be conducted;
- of the procedure they will be experiencing;

- of the risk and benefits reasonably to be expected;
- of the purpose of the research;
- of the anticipated uses of the information;
- that they are welcome to ask questions;
- that they are allowed to refuse to answer questions; and
- that they might withdraw from the research without any consequences.

Participants approached for the study were asked to give written consent prior to scheduling the interviews. Before the commencement of the interviews, the participants had to provide verbal consent to proceed with the interview. Again, the participants were made aware that they participated out of free choice and that they were allowed to withdraw, and in such a case no reprisal would be instituted against them.

3.5.3.3 *Right to privacy*

The privacy of individuals participating in the research was protected. Each participant was assigned a number by which participants was referred to during the interview process to ensure the confidentiality of the participants' responses. No names or personal identifiers appeared on any transcription or data sheet that was sent for statistical analysis. All information was managed in a strictly professional and confidential manner.

3.5.3.4 *Confidentiality*

Confidentiality was assured fully as no-one working with the data could identify participants from the data. Participants could withdraw from the study at any time without penalty after having started the interview. On completion of the separate interviews, the recordings were transcribed, thereafter the transcripts were locked in a cabinet in the researcher's office. The only people who were allowed access to the data were those on the research team. The data will be stored for five years; after which it will be permanently removed from the computer in the presence of an IT consultant. Furthermore, all the transcripts and other hardcopies of the data were shredded and recordings were deleted from the recorders.

3.5.3.5 *Minimising of potential misinterpretation of results*

In this study the researcher made a serious attempt to ensure that all processes were undertaken in a way that conformed to high ethical standards (cross-referencing and scientific referencing).

3.6 CONCLUSION

Chapter 3 provided an overview of the research methodology employed in the study, namely the qualitative research design that was used to gain in-depth insight into the need for the development of an internship programme for the ECP paramedics in South Africa.

In the next chapter, Chapter 4, entitled *Results of semi-structured interviews: analysis and discussion*, the results of the semi-structured interviews as data collection method will be reported and discussed.

CHAPTER 4

RESULTS OF SEMI-STRUCTURED INTERVIEWS: ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

The purpose of this chapter is to present the results of the semi-structured interviews conducted for this study. Fifteen (15) semi-structured interviews were conducted in order to obtain information from graduate Emergency Care Practitioners (ECPs) regarding the need for an internship. As described in Chapter 3 (cf. 3.4.6.) the main aim of the data analysis and interpretation is to sort the data into Themes, define categories and sub-categories, identify the patterns in the categories, and show the connection with the interview questions.

Data for this study were collected by means of Skype and telephonic sessions. The main aim was to gather information and input from different graduated ECPs to obtain data from persons with different perspectives on the topic.

4.2 DATA ANALYSIS OF THE SEMI-STRUCTURED INTERVIEWS

The process of data collection is described in Chapter 3 (cf. 3.3) and can be summarised as follows:

- Appointments were made with the participants on a date which suited their programmes.
- Consent was confirmed and if the consent document was not received by the researcher at the time of the interview, the researcher requested the document to be mailed prior to the commencement of the interview.
- The semi-structured interviews were audio recorded (2 x audio record devices used) for reference and for transcriptions that followed.
- The researcher made notes during the interviews, for future reference.
- All the interviews were conducted by the researcher.
- The same semi-structured interview guide (questionnaire) was used for all the interviews (cf. Appendix D).
- The transcription was done by the researcher and typing assistance was sourced for some of the interviews not transcribed by the researcher himself.

- The completed transcriptions of the semi-structured interviews were verified by the researcher prior to providing the material to the research supervisors for comment and verification. The audio recordings and transcriptions were verified by the supervisors.

The qualitative data were analysed by the researcher as described in Chapter 3 (3.4.6). The researcher organised the data thematically and made detailed transcriptions from the data obtained from the participants and applicable data from the interviews were quoted to a draft “Themes & Category” table.

The analysis of the semi-structured interviews was carried out by the researcher. The process of data analysis included the following steps: categorise into Themes, define the categories and subcategories and establish the relationship with the interview questions. The process is summarized in Figure 4.1. The data analysis was monitored by the research supervisors. This process contributed to the trustworthiness of the research.

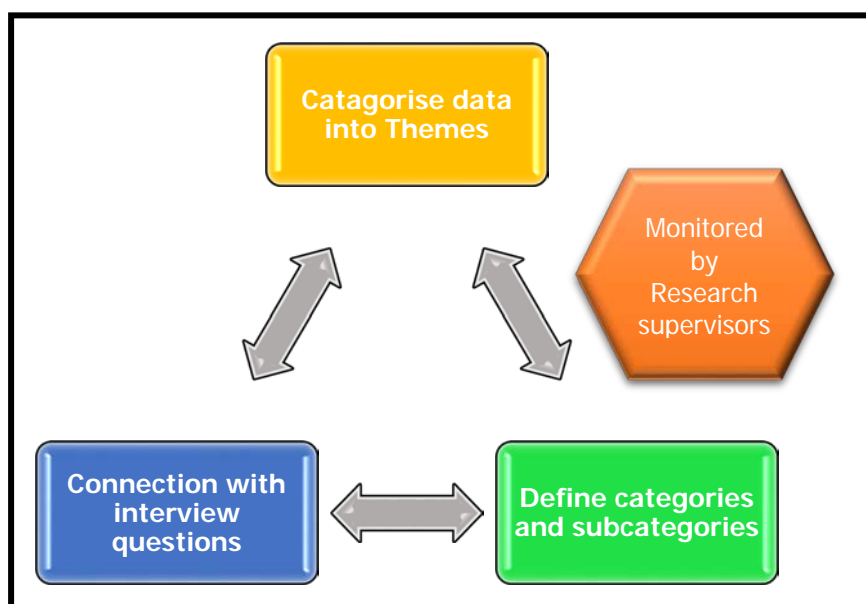


Figure 4.1: Semi-structured interview data analysis
(Compiled by the researcher, Jansen van Vuuren, 2018)

The reliability of the semi-structured interviews was certified by the consistent method of the interviewing procedure, the same interview guide was utilized by the researcher for conducting all the interviews. The researcher and an independent person verified the audio recordings and transcriptions to certify the reliability of the gathered data. Similar theories were gathered and congregated again, decreasing the multiplicity of responses and to streamline the reporting process. The simplification was done

meticulously to avoid altering the significance of responses. Phrases were linguistically adjusted or abbreviated to simplify reporting the results. The researcher analysed and interpreted the data.

The interviewees were assigned numbers to use in the reporting process. These numbers were assigned according to the sequence of the interviews. Interviewees one (1) and two (2) formed part of the exploratory interviews, conducted with a seasoned practitioner with a degree qualification in excess of 15 years' academic training in the tertiary environment and the other an experienced ECP with no less than eight years' uninterrupted operational service, mostly at roads but aeromedical as well.

The first official participant whose data were used in the study was participant 3, and the last participant interviewed was participant 17. Direct quotes of the interviewees are given in quotation marks to enhance the trustworthiness of the study.

The results are displayed in Tables 4.1 – Table 4.4.

4.3 REPORT ON THE RESULTS AND DATA ANALYSIS, DESCRIPTION AND DISCUSSION OF THE FINDINGS OF THE SEMI-STRUCTURED INTERVIEWS

To simplify the analysis process, each question of the semi-structured interview guide will be analysed and discussed separately. The questions were asked to all 15 participants and the answers were arranged into Themes and the Themes were in turn arranged into categories and subcategories. The comments from the participants were directly described but language was edited to maintain the academic quality.

Table 4.1: Overview of the Themes, categories and sub-categories

THEME	CATEGORY	SUB-CATEGORY
1. Additional training required	1.1 Professional confidence	1.1.1 Guidance 1.1.2 Competency
	1.2 Perceptions of influence of internship	1.2.1 Confidence 1.2.2 Less harm
	1.3 Mentorship	1.3.1 Clinical Environment 1.3.2 Benefit intern
2. Legal implications	2.1 Adverse events experienced after current training	2.1.1 Airway skills 2.1.2 Pharmacology
	2.2 Medico-legal implications	2.2.1 Not knowing about legal implications 2.2.2 Risk for the patient
	2.3 Prevention of adverse events	2.3.1 Yes 2.3.2 No

3. Development exploration	3.1 Theoretical	3.1.1 Theory 3.1.2 Practical
	3.2 Real life vs simulation	3.2.1 Real life environment 3.2.2 Simulation
	3.3 Assessment of competency	3.3.1 Reflective practice 3.3.2 Morbidity and mortality 3.3.3 Case studies 3.3.4 Written paper 3.3.5. Simulation 3.3.6 Portfolio 3.3.7 Work with experienced person 3.3.8 Road practical
	3.4 Contents of the internship	3.4.1 Pre-hospital environment 3.4.2 Neonatology & Paediatrics 3.4.3 Cardiology 3.4.4 ICU 3.4.5 Soft skills 3.4.6 Equipment management
	3.5 Duration of the internship	3.5.1 > 3 months < 6 months 3.5.2 > 6 months < 12 months 3.5.3 > 12 months
4. Regulation	4.1 Implementation	4.1.1 Existing 4.1.2 Proposed
	4.2 Problems	4.2.1 Placement sites 4.2.2 Support 4.2.3 Rural vs urban 4.2.4 Financials 4.2.5 ECP Shortage 4.2.6 Education of mentors 4.2.7 HPCSA additional category 4.2.8 Attitude
	4.3 Control	4.3.1 Training institutions 4.3.2 National health accredited providers 4.3.3. HPCSA
	4.4 Regulation	4.4.1 Supervised 4.4.2 Independent

4.3.1 The influence of internship on experience to benefit development of professional confidence

The question in the semi-structured interview guide was: “Do you feel that your experience in the first six months of your professional career as ECP would have been better if you had a mentor to work with or connect to?”, with the follow-up question: “Should you have had an internship, do you believe that the programme would have benefitted your development of professional confidence?”

The responses of the participants are tabled as Themes, categories and sub categories and then discussed.

Table 4.2: Theme 1: Additional training required

THEMES	CATEGORIES	SUB CATEGORIES
<p>1. Additional training required.</p>	<p>1.1 Professional confidence</p> <p>[P5] "... Yes, so my answer would be yes, so an internship would have contributed to confidence in practice and I think safety in practice as well."</p> <p>[P8] "... I went in for an LMA (Laryngeal Mask Airway), because of a lack of confidence to RSI."</p> <p>[P9] "... one of the big things is the confidence in practice, not just confidence but also your competency in practice in performing these skills, ..."</p> <p>[P11] "As a qualified ECP also I think coming with experience, as you know, couple of years of experience before I qualified as an ECP, I think that feeling of mentorship was not really needed."</p> <p>[P13] "... the procedures you have learned as a ECP, the new pharmacological routines that we need to apply, it most definitely will assist with people's confidence, if you have someone who looks over your shoulder just for the first few cases."</p> <p>[P17] "I think, because I did CCA and NDIP it was not that big a change for me being directly on the road, but I can also say that there were scenes that if I was a newly qualified ECP, I would have been a great danger to the patient, because of the difficult patients I had."</p>	<p>1.1.1 Guidance</p> <p>[P7] "Yes most definitely, I think we lack guidance as soon as we finish, ..."</p> <p>[P9] "Suxamethonium, especially and went in for the first time and to try intubate the patient, wasn't successful, attempted the second one and then realised that my paralytic start is wearing off, so in those circumstances if I had, if I look back at it now I would've done it differently or would've had the guidance and mentorship, ..."</p> <p>[P11] "As ALS, I think I would've felt a little more at ease with a mentor ..."</p> <p>[P12] "It probably would've been a gentler transition and a more confident transition had I had a mentor, yes."</p> <p>[P13] "..., if adverse events have occurred due to incorrect procedure or incorrect decision making then, which could have been avoided, should that practitioner encountered a similar situation while still on the internship programme that have assisted him to build his confidence, it might have been picked up and could have been corrected where it took place. In that case it most definitely could have been avoided, but if that occurrence occurred after the internship programme and somebody would have performed the skill the same in any case, then the internship would not have made a difference; thus a catch 22."</p> <p>1.1.2 Competency</p> <p>[P9] "Yes, gain confidence using new drugs, performing new skills, understanding the concepts that you've learned applying it into practice and most probably would've benefited the patient, the most important part."</p>

		<p>[P9] "..., a real patient environment is totally different and that would've contributed to competency levels which obviously directly influence your confidence."</p> <p>[P14] "Yes. Ja, I feel like especially in the South African context, you're very much, once you're qualified as the advanced life support and you're expected to know everything, and you're expected to lead the rest of your ship or your staff underneath you. And it is expected of you to know all the answers and to be competent the moment you step up."</p> <p>[P14] "I don't think you're prepared from university directly for you to go out and be competent in the task that you are expected."</p>
	<p>1.2 Perceptions of influence of internship</p> <p>[P5] "... Yes, not necessary, just on the clinical front, but it also builds social networks and employment opportunities in the long term ..."</p> <p>[P6] "... if I had the opportunity to intern in the different areas it would have been very beneficent."</p> <p>[P6] "..., we are the only profession which does not have an internship; vets have an internship, radiologists have an internship, optometrists have an internship, we are the only and yet we are the frontline, ..."</p> <p>[P7] "Absolutely, and I think especially if you're coming fresh from the ECP qualification, ..."</p> <p>[P12] "..., a private company where they implemented very strict policy that governed the use of our RSI skills, and I actually found that quite comforting, in my mind it was kind of like an internship because it was very strictly regulated, we had to follow specific guidelines, we had to call and consult before we proceeded."</p>	<p>1.2.1 Confidence</p> <p>[P4] "..., if you had an internship, yes it will give you that confidence of practicing ..."</p> <p>[P4] "... it will give you the confidence of, I have treated a patient, giving thrombolysis or RSI-ing the patient pre-hospital, yes I have done it, I have done that checks with someone, with somebody that has done it, next patient I can do it more comfortable then, ..."</p> <p>[P5] "..., internship would have contributed to confidence in practice and I think safety in practice as well."</p> <p>1.2.2 Less harm</p> <p>[P3] "... medico-legal aspect would be severe, so an internship might even help to mitigate some of the problems where you work with an experienced person, ..."</p> <p>[P9] "... I probably wouldn't have been in those specific situations which had potential of causing harm to the patient."</p> <p>[P14] "... I do feel if the practitioner has been given more opportunity to develop her or his skill, and under better supervision or more supervision,</p>

	<p>[P17] "If there was an internship, I think for the newly qualified paramedics it would be a great advantage, but for the BTech programme for the guys that are already qualified as CCA / N Dip I do not think that that will be necessary."</p>	<p>under better guidance and mentorship, I do feel you can reduce the number of adverse events."</p>
	<p>1.3 Mentorship</p> <p>[P3] "... I think it depends on the situation you are in, how comfortable you are with what you do, and your level of expertise ..."</p> <p>[P4] "... yes it will be better in general if you have a mentor..."</p> <p>[P4] "... if there is someone with you for the first couple of months it will always be better, ..."</p> <p>[P7] "..., if I do something then I could go and talk to my mentor as a guide and get guidance from them ..."</p> <p>[P7] "... student is not getting the right mentorship as students, ..."</p> <p>[P8] "... more than one mentor I will definitely recommend ..."</p> <p>[P9] "... having a mentor you would've had a person guiding you throughout the entire process, ..."</p> <p>[P11] "As you are aware currently in South Africa we don't have a mentorship programme currently running or an internship programme currently running, it would be nice if we could have something like that, but our system currently is not rigged to support the graduates and new graduates in that system in a way."</p>	<p>1.3.1 Clinical Environment</p> <p>[P9] "... I probably wouldn't have been in those specific situations which had potential of causing harm to the patient."</p> <p>[P11] "...I think the mentorship should be more on the operational side of it than it actually being on the clinical side."</p> <p>[P14] "... I do feel if the practitioners have been given more opportunity to develop their skill, and under better supervision or not supervision, under better guidance and mentorship, I do feel you can reduce the number of adverse events."</p> <p>[P17] "... it will be great to have it on the road and not on a fixed doll where they assess, but it might be difficult."</p> <p>1.3.2 Benefit intern</p> <p>[P9] "... I look back at it now and would've done it differently or would've had the guidance and mentorship ..."</p> <p>[P11] "... I would feel more comfortable with limited mentorship in a way." ..."</p> <p>[P12] "it probably would've been a gentler transition and a more confident transition had I had a mentor, yes."</p> <p>[P13] "... it would have been much better if there was a mentor ..."</p>

	<p>[P15] "... mentor would have been brilliant."</p> <p>[P16] "... without a doubt I would've done anything, in fact I would've done anything to have a mentor as a N Dip."</p> <p>[P16] "... Just knowing, as I said to you earlier, in the back of your mind, that if you are not successful that there is somebody else you could give this a go, takes that pressure off you immensely, it's not to say because the student, not the student, the intern is not capable, doesn't whoever is the mentor is going to be successful, but the likelihood is probably a lot better. "</p>	
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The first Theme that emerged was that of additional training required, which will be discussed now.

4.3.1.1 *Theme 1: Additional training required*

From the first Theme, three (3) categories emerged, namely professional confidence, perceptions of influence of internship and mentorship.

Professional confidence: The importance of professional confidence was reiterated during the semi-structured interviews. The subcategories were identified as guidance and competency.

Data analysis and description: Ten (10) of the participants agreed during the semi-structured interviews that professional confidence would have benefitted them directly and that there was a lack of guidance when they completed their studies P5; P7; P9; P11; P12; P13; P14; P15; P16 & P17. Remarks like those of P7, "Yes most definitely, and P11, "As ALS, I think I would've felt a little more at ease with a mentor" speak for themselves.

Another participant responded that because he/she did a Critical Care Assistant (CCA) course and then the National Diploma in Emergency Medical Care (NDip EMC), the change to ECP was not that big. However, the participant stated that if he/she had been a newly qualified ECP, he/she might have been a danger to the patients, because of the difficulty level of patients' conditions P17.

Guidance:

Five (5) participants mentioned guidance as a specific benefit. In the current situation guidance is lacking P7 and the practitioner would feel more at ease P11 with a gentler transition P1. One respondent P9 remarked that his/her first attempt to intubate a patient was not successful and in retrospect it might have been done differently with guidance. The guidance, however, only would make a difference if the practitioner encountered a similar situation during the internship P13.

Competency:

Two (2) participants mentioned competency. P9 described it as understanding the concepts that one had learned and applying it, and expressed the opinion that the real patient environment is totally different, and would contribute to competency levels (P9). Participant

P14 stated that in South Africa specifically, at this level, the perception exists that when you qualify from university “you’re competent and knows everything regarding the profession and must be able to lead others in the environment, however he/she believes you’re not that competent!”

The perceptions of the influence of internship: The importance of the perceptions of influence of internship was reiterated during the semi-structured interviews. The subcategories were identified as confidence and less harm.

Data analysis and description: An internship will provide confidence P4, and social networks and employment opportunities in the long term (P5). One remark P6 focused attention on the fact that there is no internship in the profession, yet “we are in the frontline”. Participant 12 stated that he/she worked at a company with strict policy and in his/her mind it was like an internship. Although one participant P17 was of the conviction that there should be an internship for the newly qualified ECPs with the BTech programme, but for practitioners who practised at the CCA or NDip level an internship was not necessary.

Confidence:

An internship will give confidence for practising P4 and safety P5. One participant remarked that, “... it will give you the confidence of, I have treated a patient, giving thrombolysis or RSI-ing the patient pre-hospitally, yes I have done it, I have done these checks with someone, with somebody that has done it, next patient I can do it more comfortable” (P4).

Less harm:

P3: “... medico-legal aspect would be severe, so an internship might even help to mitigate some of the problems where you work with an experienced person, ...”

P9: “... I probably wouldn’t have been in those specific situations which had potential of causing harm to the patient.”

P14: “... I do feel if the practitioner has been given more opportunity to develop their skill, and under better supervision or [if] not supervision, under better guidance and mentorship, I do feel you can reduce the number of adverse events.”

Mentorship:

The importance of mentorship was reiterated during the semi-structured interviews. The subcategories were identified as Clinical Environment and Benefit Intern.

Data analysis and description: Participant P3 stated that, “it depends on the situation you are in, how comfortable you are with what you do, and your level of expertise”. Participant P4 stated it would be better with a mentor, and P7 was of the opinion that “students are not getting the right mentorship as students”, while participant P8 stated that he/she would recommend more than one mentor. Participant P9’s exact words were: “I probably wouldn’t have been in those specific situations which had potential of causing harm to the patient”, and also maintained that he/she would have done differently if he/she had guidance and mentorship.

Participant P11 felt that mentorship was not really needed as he/she came with experience and knew ECPs before he/she qualified and did not feel that mentorship was really needed; yet, with further elaboration the same participant stated that he/she would’ve “feel more comfortable with limited mentorship in a way” and “currently in South Africa we don’t have a mentorship programme running or an internship programme running; it would be nice if we could have something like that, but our system currently is not rigged to support the graduates and new graduates in that system in a way.”

Participant P12 endorsed the mentorship as it would have provided a more gentle and confident transition if he/she had such an opportunity; while P13; P14; P15 and P16 utilised positive words in favour of mentorship like, “much better”, “would have been brilliant”, “without a doubt I would’ve done anything”, “takes that pressure off you immensely”.

Clinical Environment:

Being enmeshed in difficult situations would have been less if an internship had been in place in the clinical operational environment; guidance and mentorship would have diminished the number of adverse events, and such opportunities (internships) in the real environment would be valued greatly, however, might be difficult (P9; P11; P14; P17).

Benefit of internship:

Mentorship within an internship would have been rewarded with increased confidence and comfort, and with limited interaction a more gentle transition could result (P9; P11; P12; P13).

Discussion: There is a dire need for additional training in the profession, as the current training in South Africa, with the work integrated learning components and the different

qualification pathways to become an ECP does not seem to be sufficient to deliver fully satisfied employees. It became clear that a hunger existed among newly qualified ECPs for more confidence and competence within this emergency environment. Stein (2010) stated that “contrary to the typical framework of early practice in other health professions, there is little support for paramedics practicing in the pre-hospital environment. Newly-qualified paramedics typically work alone, or with less qualified personnel, from the first day of independent practice immediately after qualification.”

Practitioners are exposed to a magnitude of different environments, physiological draining cases which are physically and mentally exhausting to even the most experienced of us all working in the operational environment. We should be able to alleviate the lack of self-confidence and gain the belief of self-competence if attention of the highest order is granted to the newly qualified ECPs in these difficult environments. Such intervention will ensue in the alleviation of what could go wrong and the attention provided will benefit the patients in their hour of need. “Shadowing time could potentially have far-reaching positive effects on newly qualified doctors, confidence and competence, and more importantly could have wider implications for safety and quality of patient care (Teagle *et al.*, 2017).

Regarding mentorship, the opinions provided by the participants were real concerns, and the honesty of the participants was extremely appreciated. Concerns regarding the quality and availability of mentors had been a thought on the mind of the researcher for some time. The researcher could not help to think that many newly qualified ECPs were lost to the operational environment due to the fact that they felt ill equipped to deal with what was expected from them with the added pressure of knowing that experienced ECPs might, but most probably were not available to assist them, and the amount of guilt they felt when they realized they actually were ill equipped to deal with a scenario. Edwards (2011:79-82) stated that “at the end of the graduate degree programme the graduate paramedic should have the core foundational elements to practise under supervision. At the end of the graduate internship ... the paramedic should be ready to practise independently”, and, “How soon are paramedics undertaking the preceptor role, and are they ready for that for?”. Lazarsfeld-Jensen (2014:online) states: “Role dissonance is an uncomfortable experience for graduate paramedics, and some blame their university education for the problem.” Furthermore, she states that paramedics are in conflict between their role as the rescuer or performing duties as the care-giver with different vocational pathways. A variety of uniformed professions are closing down in preference of the graduate entrants; therefore, these young professionals have to negotiate a rapidly changing working environment.

Paramedics found this problematic and the problem is compounded by the novelty of their place in the tertiary setting.

Literature:

According to Gurchiek (2011:40) a very significant but stressful position, is that of clinical preceptor, who has to balance taking care of the patient and the student simultaneously. The practice of the preceptor has been part of paramedic and nursing programmes for years, namely to teach, evaluate and socialize learners into their chosen profession. These preceptorship functions provide the learners with opportunities to practice assessments, skills and clinical judgement under the watchful eye of an experienced clinical practitioner. The clinical environment is made safe by the clinical preceptors for both the patient and the learner; however, the quality of the clinical experience will largely depend on the quality and the willingness of the specific preceptors to teach in the clinical environment.

Young people have been increasingly attracted to the rescue roles post 9/11; Lazarsfeld-Jensen *et al.* purport that an increased need and scope for health workers exist in the aging and remote populations in Australia, but this does not appeal to the young professionals as they are anticipating a more gallant opportunity. Professions such as nursing have established their conversations around culture, role and pedagogy, whilst paramedics are still trying to shape their distinctiveness. Myths regarding paramedic glories contribute to the uncertainties of these newly qualified graduates

Kennedy, Kenny and O'Meara (2015) report that incongruities between practice and theory emerged from their study, as Themes like "the ability to fit in" and "the expectation of controlled emotions" was mentioned. Kennedy *et al.* (2015) maintain that the literature which was reviewed, "implied that insufficient preparation and support given to new paramedics may evoke poor outcomes". The authors, however, admitted that the evidence for the conclusion drawn was from a limited quantity of resources.

4.3.2 Internship could limit adverse events and medico-legal implications

The question in the semi-structured interview guide, "Have you encountered / do you know of any adverse events in patient care after registration as an ECP paramedic?" with the follow-up question "Pertaining to the above question, do you believe that it could have been avoided if you / the practitioner had completed an internship programme?" and "What do you think are the medico-legal implications of not having an internship for ECP

Paramedic?" were aimed at gaining information on possible repercussions of the lack of an internship.

The findings of the responses categorised as Theme 2 are depicted in Table 4.3.

Table 4.3: Theme 2: Legal implications

THEMES	CATEGORIES	SUB-CATEGORIES
2. Legal implications	2.1 Adverse events experienced after current training [P6] "Just before I qualified I wanted to cardiovert ..." [P9] "Yes, I think all, each and every practitioner has had adverse events, and which affected or might have affected patients, ..." [P9] "... I probably wouldn't have been in those specific situations which had potential of causing harm to the patient." [P14] "... I do feel if the practitioner has been given more opportunity to develop their skill, and under better supervision or not supervision, under better guidance and mentorship, I do feel you can reduce the number of adverse events."	2.1.1 Airway skills [P4] "... Personally for myself no adverse events, but there might be examples where I needed to intubate quicker, ..." [P14] "... a common thing I have noticed is the lesser experience the ECP is the more likely; for instance if you take RSI they'll have adverse events such as clinical significant desaturation, failure of first pass success, unable to visualize generally due to a lack of experience in airway management and critical care." 2.1.2 Pharmacology [P5] "I think everybody had adverse events, be it is due to equipment failure, be it wrong dose, I think it would be stupid to assume or to categorically state that no one had adverse events." [P8] "... I once gave dormicum to a pregnant lady with a fracture instead of morphine, ..." [P12] "... classic case of the muscle relaxant that was accidentally given before induction was done, before the patient was sedated, ..." 2.2.1 Not knowing about legal implications [P6] "... currently we do not have an internship programme and there aren't any medico-legal implications that we are aware off, ..." [P7] "... there aren't any because we are in independent practice and we hide our mistakes; we haven't got a reporting structure and clinical governance ..." [P8] "I think there is currently something in place, but we do not know a lot about it, ..."
	2.2 Medico-Legal Implications [P3] "... an internship might even help to mitigate some of the problems where you work with an experienced person, ..." [P5] "..., we are not a very litigious society in South Africa, ..." [P5] "In all honesty it could decrease the adverse events in terms of medico-legal implications it could also hamper	

	<p>your own case, because if you do end up in such a situation, if you have your scaffolding, you got your clinical practice, you got your internship, you got your independent practice, it does make for a stronger case for better decision making."</p> <p>[P7] "... we don't yet have the maturity to discuss ..."</p> <p>[P7] "...my boss will cover me ..."</p> <p>[P11] "majority of your medico-legal issues that's coming with regard to treatment is not to new graduates, ..."</p> <p>[P12] "I think the potential is there, I think the potential is definitely there whether the internship will resolve it necessarily I'm not sure. I would imagine it might reduce the likelihood of a medico-legal issue..."</p>	<p>[P10] "Well, it's fairly obvious that most practitioners at the moment and certainly in my experience, they learn from their mistakes and because there is no real governance system in place other than medical aids watching through, ..."</p> <p>[P15] "None that I know of, it is purely your moral compass that has to guide you."</p> <p>2.2.2 Risk for the patient</p> <p>[P10] "Many staff members are learning by trial and error which means that from medico-legal perspective, a lot of patients are probably at risk and in the hands of inexperienced practitioners."</p> <p>[P13] "There can most definitely be if for some reason the ECP performs a skill that adversely affects a patient then there will be medico-legal implications but should everything go according to plan and there was no adverse events then there will not be any medico-legal implications obviously."</p> <p>[P13] "..., if adverse events have occurred due to incorrect procedure or incorrect decision making then, which could have been avoided, should that practitioner encountered a similar situation while still on the internship programme that has assisted him to build his confidence, it might have been picked up and could have been corrected where it took place, in that case it most definitely could have been avoided, but if that occurrence occurred after the internship programme and somebody would have performed the skill the same in any case, then the internship would not have made a difference - thus a catch 22."</p>
	<p>2.3 Prevention of adverse events</p> <p>[P9] "... I probably wouldn't have been in those specific situations which had potential of causing harm to the patient."</p>	<p>2.3.1 Yes</p> <p>[P4] "Yes & No, medico-legal implications you cite will never mitigate totally with internship, ..."</p> <p>[P6] "I think to a large degree yes, ..."</p>

		<p>[P6] "...there is always going to be the ones that are a near miss or that one that slipped through the system, however I think that the number of adverse events would definitely decrease."</p> <p>[P7] "Yes, absolutely because again we are growing as a profession and we are consulting with each other ..."</p> <p>[P12] "... statistically the chance of mistakes is less ..."</p> <p>[P12] "... I'd have to answer yes it probably would have helped and diminish the chances of those events happening, ..."</p> <p>2.3.2 No</p> <p>[P11] "I think to be honest, the academic institutions when they graduate students, those students are safe to graduate and they're safe to start treating patients and are safe to start learning."</p> <p>[P11] "...the majority of your negligence is coming in, it's not I think from your new graduates, because I think your new graduate is just qualified, they are too scared to do anything wrong ..."</p> <p>[P17] "No it would not have benefitted myself, it was just one of those scenes."</p>
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The second Theme that emerged was Legal Implications which now will be discussed.

4.3.2.1 *Theme 2: Legal implications*

From the second Theme, Legal implications, three (3) categories emerged, namely Adverse events experienced after current training, Medico-Legal Implications and Prevention of adverse events.

Adverse event experienced after current training: The importance of adverse events experienced after current training was reiterated during the semi-structured interviews. The subcategories were identified as airway skills and pharmacology.

Data analysis and description: Seven (7) of the participants agreed during the semi-structured interviews that they experienced adverse events after the current training and eight (8) elaborated on the medico-legal implications. On the question of the prevention of adverse events with an internship in place seven (7) participants responded and two (2) were of the opinion that an internship would not have benefitted the newly graduated ECPs.

One participant contradicted him-/herself by stating he/she had no adverse events and then in the same sentence mentioned that there might have been an instance where he/she could have intubated a bit quicker. Participants P5; P9; P12 and P14 knew of adverse events or had experienced adverse events. Participant P5 stated that, "I think everybody had adverse events, be it equipment failure, be it wrong dose, I think it would be stupid to assume or to categorically state that no one had adverse events."

Airway skills:

Faster intubation, clinical significant desaturation, first pass success and inability to visualize the vocal cords due to a lack of experience in airway management and critical care are the adverse events mentioned by participants P4 and P14 were noticed amongst the lesser experienced ECPs.

Pharmacology:

Adverse events had been experienced by everybody. Reported incidents were equipment failure, dosage administered, dormicum to a pregnant lady with a fracture instead of morphine, or a muscle relaxant given before induction was done (participants P5, P8 & P12).

Medico-legal implications: The importance of an awareness of medico-legal implications was reiterated during the semi-structured interviews. The sub-categories identified were: not knowing about legal implications, and risk for the patient.

Data analysis and description: Participant P3 states that “an internship might even help to mitigate some of the problems where you work with an experienced person”, while P5 stated that, “we are not a very litigious society in South Africa”, and that an internship could decrease the adverse events in terms of medico-legal implications. However, this could also create more stress for the practitioners qualified if they had an internship by arguing that they received their clinical practice, they had their internship and are independent practitioners, thus making it a stronger case for better decision making. P15 stated that one’s moral compass had to guide one. Participant P6 was not aware of any medico-legal implications, while P7 stated that they were independent practitioners and hid their mistakes, as they do not have a reporting or clinical governance structure controlling the profession. According to P7, “we don’t have the maturity to discuss” such matters, and they believed that “my boss will cover for me”.

Participant P8 states that he/she thinks there is something in place but that they do not know about it. Practitioners, according to P10, at the moment, according to his/her experience, learn from their mistakes or from trial and error, and because there is no real governance system in place other than medical aids, according to him/her, from a medico-legal perspective, there are a lot of patients that probably suffer the consequences at the hands of inexperienced practitioners.

P11 states that the majority of the medico-legal issues are not from the new graduates with regard to treatment. The likelihood of a medico-legal issue might be reduced by internship P12.

Not knowing about legal implications:

Remarks by the participants varied between: ‘There are not any medico-legal implications’, ‘we are in independent practice’ and ‘we hide our mistakes as we do not have a clinical guidance and reporting structure available’, to ‘there might be something in place, but we do not know a lot about it, as our moral compass has to lead us’ (P6, P7, P8 & P15).

Most practitioners, according to participant P10, learnt from their mistakes because there is no real governance system in place other than the medical aids.

Risk for the patient:

Inexperienced practitioners reported that they learnt by trial and error and this practice put patients at risk. As long as no adverse events occurred during the performance of a skill, it had no medico-legal implications; however, something could go wrong, which might result in medico-legal actions (P10; P13). Participant P13 further stated that should the skill have been performed during an internship, adverse consequences would have been avoided.

Prevention of adverse events:

The importance of the prevention of adverse events was reiterated during the semi-structured interviews. The subcategories were identified as yes and no.

Data analysis and description: Participant P4 was of the opinion that the medico-legal implications would never totally disappear with internship, while P6, P7, and P12 expressed the opinion that an internship to a large degree would rid them of adverse events, but also proclaimed that there always would be near mistakes, or one mishap that slipped through the system; however, they were confident that the number of adverse events would decrease. Participant P9 was of the opinion that he/she would probably not have been in situations which had the potential of causing harm to the patient, had they had internships.

P11 was of the opinion that learners qualifying from academic institutions were safe to practice and to start to learn; according to him/her, the majority of incidences of negligence did not involve the newly qualified graduates, because they were too scared to do anything wrong.

P17 stated that he/she would not have benefitted from an internship as “the scene was just one of those scenes”.

Prevention of adverse events by internship: Yes:

Participants P4; P6; P7; and P12 were of the opinion that even with an internship medico-legal implications would never be mitigated totally, but believed to a large extent that the internship would add value to the growing profession, and statistically the chances of mistakes would be fewer.

Prevention of adverse events by internship: No:

Graduate students from academic institutions, according to participant P11, were safe to treat patients and to start learning. According to this participant, negligence did not occur

among the newly graduated practitioners, as they were too cautious and scared to do anything wrong. Participant P17 inferred during the interview that an internship would not have benefitted as the scene referred to was just one of those cases.

Discussion:

The researcher initially was very skeptical with regard to these specific questions and honestly had a concern about the truthfulness with which the questions would be answered as this profession is perceived as extremely egoistic (Dreyer & Campbell 2018). The researcher was convinced that a number of adverse events did take place after graduating from the programme. Blencowe *et al.* (2015) state that the regularity and ruthlessness of mistakes that new doctors make are not focused on. Teagle *et al.* (2017) report about the importance of adequate preparation of medical students for clinical practice and that it could not be overemphasized; an inclination towards suboptimal preparation relates to medical graduates feeling unprepared.

Rittenberger (2006) perceived a feeling of 'You are left to your own devices and you have to be able to achieve the absolute impossible' as a real concern. It also was found that respondents regarded themselves as being fortunate to have been able to work with medical officers with much experience, increasing the possibility of adverse events slowly but surely decreasing over time. Collaboration between universities and paramedical service providers is the key to address the university students' clinical and field placements. The development of standards, the purpose of placements, and the expectations of learners and facilitators need to be addressed (O'Meara *et al.*, 2015).

The researcher valued the opinion of participant P5 who stated that the internship could be a two-edged sword. The responsibility on the practitioner would increase after successful completion of the internship. The argument would be that the practitioner had all the opportunities to learn ways to avoid making mistakes and a thorough process of mastering critical thinking and clinical decision making was undergone during the internship training.

The increasing availability of electronic equipment, which could be used in a court of law, has become a concern over the recent years. The researcher is of the opinion that it is the responsibility of the qualified and experienced providers to lead the way and provide a safe milieu for the newly graduated colleagues.

4.3.3 Development (compilation) of the internship

The third question in the semi-structured interview guide was,

- "What should the contents of the internship programme be?"

This question was followed up with the following questions:

- "How should the assessment / competency judgement of the internship programme be conducted?";
- "Should there be a component of theory and a component of simulation?";
- "How do you envisage the internship should fit into the existing and future training framework of South Africa?"; and
- "Your opinion on the duration of an internship for ECPs?".

In Table 4.4 the responses to these questions are summarised.

Table 4.4: Theme 3: Development exploration

THEMES	CATEGORIES	SUB-CATEGORIES
3. Development exploration	3.1 Theoretical [P10] "So yes, definitely needs to be both".	3.1.1 Theory [P5] "Only if shortcomings are identified, ..." [P8] "Except in the case where you get to the end of your time, ..." [P8] "there must be room for it." [P8] "theory you will basically be continuously reviewing and referred back to ..." [P9] "The theory will be part of the case discussions and reflective practice reports." [P10] "I think there needs to be deepened knowledge about some things like intensive care and ventilation ..." [P11] "... case discussions and maybe reflective journals ..." [P12] "... a theory component, possibly some case studies based on cases they do during their internship, with reflection in all those case studies ..." [P14] "I don't personally believe there can be a mentor without there being theory involved, without discussing evidence and that will result in clinical argument formulation." 3.1.2 Practical [P4] "I will say only practicals with skills and that, because you have done all your theoretical work in your course work, ..." [P8] "I do not think that would be necessary, ..."

		<p>[P8] "I do not think that would be necessary, because as you and your mentor will have discussions on patient management or a debrief on a call, you would likely cover the theory part because of your discussions, so physical theory tests and simulation, ..."</p> <p>[P13] "I do not think theory is necessary, ..."</p> <p>[P17] "I think you can do it without the theory, ..."</p> <p>[P17] "... I think if you finish your theory you finish it, but are you safe on the road? That is the thing."</p>
	3.2 Real life vs simulation	<p>3.2.1 Real life environment</p> <p>[P3] "... simulations are always helpful, but you need to work with a real actual patient, and there will be nothing wrong with incorporating simulations into an internship."</p> <p>[P17] "... it will be great to have it on the road and not on a fixed doll where they assess, but it might be difficult."</p> <p>[P15] "... simulations I do not know, I think simulations are overrated ..."</p> <p>3.2.2 Simulation</p> <p>[P5] "Only if short comings are identified, so if the guy cannot tube as an arbitrary matter, then corrective training could occur, but not as a standard."</p> <p>[P6] "patient simulations for evaluations are always a good option in my books, because it tells me what you are doing on the road, it tells me how you are practising, ..."</p> <p>[P8] "Especially on the simulation, where you might lack skills, ..."</p> <p>[P8] "I do not think that would be necessary, because as you and your mentor will have discussions on patient management or a debrief on a</p>

		<p>call, you would likely to be covering the theory part because of your discussions, so physical theory tests and simulation, ..."</p> <p>[P9] "Not as assessment component, but it could be used as a method of achieving a very scarce skill"</p> <p>[P10] "... simulation is probably one of the better ways of working with understanding people's decision making."</p> <p>[P11] "..., a simulation can be used but the simulation should not be used as a form of assessment..."</p> <p>[P13] "... I think simulation-based discussions would probably be more effective than just a normal theory paper."</p> <p>[P14] "Simulation, ja, I think simulation can be beneficial, if you do simulations with other operational staff, I think it could be greatly beneficial to everyone."</p>
	<p>3.3 Assessment of competency</p> <p>[P6] "... presentation ..."</p> <p>[P6] "... blended learning..."</p> <p>[P7] "... peer review documents, ..."</p> <p>[P7] "... peer review documents, and then doing formal teaching sessions for your colleagues..."</p> <p>[P9] "..., should be a continuous assessment, ..."</p> <p>[P10] "... very clearly delineated outcomes at the beginning of the internship ..."</p>	<p>3.3.1 Reflective practice</p> <p>[P4] I think the reflective practice is going to give more substance than just an assessment, because if you are going to do an assessment and somebody else is going to assess you, it is also subjective, but if you do a reflective practice, it is going to be more of, I have read of some things, I have seen this and I have discussed it with other people - RSIs, and their experiences, which means you have learned actually more out of that than with just an assessment."</p> <p>[P6] "... reflective practice ..."</p> <p>[P7] "... a practice review, ..."</p> <p>[P9] "... continuous case reviews, case discussions, case reflections, ..."</p>

	<p>[P10] "... time and the process of assessment are not directed by a formal process but rather directed by the person undertaking this internship himself."</p> <p>[P10] "... assessment should be in various forms, ..."</p> <p>[P11] "... I do not think there should be assessments in an internship, and no simulation as well, thus no for assessments."</p> <p>[P12] "... I wouldn't advocate that they need to do a whole battery of tests and sims again because they've already proven themselves ..."</p>	<p>3.3.2 Morbidity and mortality</p> <p>[P5] "I would advocate for doing morbidity and mortality meetings, case presentations, things on those lines ..., and maybe a couple of preceptor reports."</p> <p>[P12] "... you know with paperwork, but I definitely think that there should be a need instituted in the internship whereby when they do a call, specially where they're carrying out their skills at the highest level, their drop of the tick, rapid sequence intubation skills, then there need to be a follow up of that case and a debrief of that case, a write up of that case, reflection on that case, you know; a discussion about it, whether with one specific supervisor in a forum such as an M & M, I think that's very important, because if they just do the course and you know, tag them and bag them, as we say, they master the psychomotor skills to get the hands on time, but I don't know how much of that is connecting with the cognitive."</p> <p>3.3.3 Case studies</p> <p>[P7] "... case studies, handing in your patient records,</p> <p>[P7] "... case presentations in front of groups of people, ..."</p> <p>[P9] "... continuous case reviews, case discussions, case reflections, ..."</p> <p>[P11] "... maybe bring in case discussions, ..."</p> <p>[P14] "... I feel like it should be with an interview, maybe with the mentor with the mentee present, or it should include documentation of adverse events or cases; cases should be discussed and debriefed and it shouldn't just be a single questionnaire at the end of the internship, it should be a continuous process to determine whether they can see a trend, or establish improvement: is a student or mentee stagnant in that role, or are they actually improving in that role."</p>
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		<p>3.3.4 Written paper</p> <p>[P8] "... by means of checklists, ..."</p> <p>[P8] "... rating on that specific form"</p> <p>[P15] "... a 3-hour paper, it could encompass anything that you have done in that year or six months' internship, just to prove the competency, because what will the HPCSA judge you on, ..."</p> <p>3.3.5 Simulation</p> <p>[P8] "... almost use the same principles as with a simulation, ..."</p> <p>[P13] "The safest way would probably be simulation at best, ..."</p> <p>3.3.6 Portfolio</p> <p>[P6] "... portfolio based, ..."</p> <p>[P8] "... you will basically compile a portfolio of evidence of maybe feedback forms from your mentor, then as I have said earlier, move the person between mentors, do not let the person alone to a mentor, give him the opportunity to work with 3, 4, 5 mentors."</p> <p>[P9] "..., well you managed to get your actual qualification, your degree, but before you haven't submitted your portfolio of evidence with your minimum required skills and patient assessments and procedures that you should have, you cannot register as an independent practitioner within that scope of practice."</p> <p>3.3.7 Work with experienced person</p> <p>[P7] "... work maybe for six (6) months under the direct supervision of your mentor/ supervisor."</p> <p>[P8] "... road evaluations by your mentor, ..."</p>
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		<p>[P8] "... the best in my eyes as well, is not only to work with one mentor, or one ECP to mentor, you must work with different mentors ..."</p> <p>[P10] "It's got to be pragmatic as well, so I think the part of that process needs to be a correlation with a mentor and the mentor is part of the assessment process, ..."</p> <p>[P10] "...New South Wales, having seen their system here in Australia, the person gets employed as a student paramedic and then they go through three labels before they become a fully-fledged independent paramedic, what they call a P1, a paramedic one. So they start out as an intern paramedic and they have to go through certain hoops and certain educational processes at a certain period of time with a mentor. They come in for formal teaching and an assessment and then they go to the next level and the same things happens and at the end of that second level they undertake a final exam and then get signed off as a paramedic - one which is an independent practitioner paramedic, but because the ambulance service regulatory system in Australia is fairly good, it works."</p> <p>[P17] "I would say that, maybe the final part of the internship must include working with a college representative, a guy with a lot of experience, and that also evaluate all these students. The problem is that it must also be at the place where it is very busy, so he can evaluate the guy or at least evaluate one RSI and see if the guy or girl can do the RSI, so that will be great."</p> <p>3.3.8 Road practical</p> <p>[P13] "... shadow and see how the intern ECP actually performs, that I think actually would be the most effective way."</p> <p>[P16] "... final road shift, a road practical, and you pretty much were ..., whatever you got dealt with ..."</p> <p>[P17] "must be a training orientated type of an assessment, ..."</p>
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	<p>3.4 Contents of the internship</p> <p>[P3] "... neuro ..."</p> <p>[P4] "...you go with an anaesthetist to theatre, and see, this is the medication and you draw it up, you do that, not in theatre,"</p> <p>[P5] "I do not think specifically in hospital as the clinical requirements from the HPCSA there are already a lot of work in hospital, ..."</p> <p>[P6] "... education ..."</p> <p>[P7] "More practicals, ..."</p> <p>[P8] "..., seeing more patients."</p> <p>[P9] "... primary health care ..."</p> <p>[P9] "... orthopaedics, ..."</p> <p>[P10] "... certain critical components that should be mastered from a knowledge base so things like certain drug pharmacologies, certain practices like RSI, ventilation and taking the concept of ventilation much deeper so that people have an understanding, a true understanding of how ventilation works, rather than just purely a superficial understanding..."</p>	<p>3.4.1 Pre-Hospital environment</p> <p>[P3] "... Doing it on the road is completely different from working in the hospital ..."</p> <p>[P4] "...trauma it is a very similar situation as pre-hospital, ..."</p> <p>[P4] "...I will rather say in trauma, not theatre, because when you go to theatre, theatre is very controlled, it is very selective intubation that, but in trauma it is a very similar situation as pre-hospital, little more quite, little bit more of your own space to do your skill, but it is very similar to pre-hospital, there are differences, but I will say, then you go there do your RSI, you go there and do your delivery, or you go there and do your re-sus there, just to get to the skill of, I have done a re-sus, I have done this practically, I have built my confidence."</p> <p>[P5] "Response, Ambulance, ICU transfer, Rescue ..."</p> <p>[P5] "...primary health care and control room (call taking) ..."</p> <p>[P6] "... aeromedical ..."</p> <p>[P6] "... road ..."</p> <p>[P8] "..., being on the road, ..."</p> <p>[P8] "..., road experience ..." RSI and Aeromedical</p> <p>[P14] "I feel like an internship should be in the tasks they would be performing so operational frontline paramedic."</p> <p>3.4.2 Neonatology & Paediatrics</p> <p>[P3] "... neonatal transfers ..."</p> <p>[P4] Maternity</p>
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		<p>[P4] "...then I would suggest that you go in-hospital, to a division where there is going to be pre-term labour, or there is going to be breech labour, you go and do your skill there, ..."</p> <p>[P9] "... Neonatal ICU units..."</p> <p>[P9] "... paediatrics in general, ..."</p> <p>[P9] "... obstetrics and neonatology in general, ..."</p> <p>[P15] "... Paediatric Advanced Life Support (PALS), "</p> <p>3.4.3 Cardiology</p> <p>[P3] "... Cardiac ..."</p> <p>[P4] "... presentation delivery, or to cardioversion, pace, to give a drug that could stop somebody's heart, are you comfortable in doing that, are you comfortable in treating reperfusion rhythms, and I would be inclined to say, 70 – 80% will say, no they are not."</p> <p>[P9] "... Coronary Care Units (CCUs), ..."</p> <p>[P10] "... Cardiology where if they are doing thrombolysis they should have a much deeper understanding of Cardiovascular anatomy or Cardiovascular physiology, pathophysiology and clinical care, particularly around ECG diagnosis ..."</p> <p>[P15] "... go a little bit more into Advance Cardiac Life Support (ACLS), ..."</p> <p>3.4.4 ICU</p> <p>[P7] "Aeromedical and ICU are very, very specialized fields, and the reality of it is that I do not believe, again in my opinion, that any ECP</p>
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		<p>should touch that environment until they have been qualified for at least five (5) years, ..."</p> <p>[P7] "... ICU ..."</p> <p>[P9] "... Intensive Care Units (ICUs), ..."</p> <p>[P9] "... Multi-Disciplinary ICU Care Units, ..."</p> <p>[P9] "... critical care in general, ..."</p> <p>[P10] "... very good knowledge of intensive care, ..."</p> <p>3.4.5 Soft skills</p> <p>[P5] "... in all graduates are those graduate attributes, those things that make that graduates stand out, you know, that sense of we always focus on that sense of urgency, but what of that compassion, what about the other areas that do not get looked at, and I think by them seeing the other side of the world there is better communication we close our gaps, and so forth, so forth."</p> <p>[P9] "... communication, ..."</p> <p>[P9] "... leadership, ..."</p> <p>[P9] "... communication with crews, families, with other health professionals, ..."</p> <p>[P9] "... leadership in the sense of taking charge of situations, ..."</p> <p>[P11] "... interpersonal relationships, ..."</p> <p>[P11] "... management styles ..."</p>
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		3.4.6 Equipment management [P6] "... management ..." [P11] "Fleet management, ..." [P11] "equipment management ..."
	3.5 Duration of the internship programme [P4] "... I will say it has more to do with how many skills you have performed, than in a certain timeframe, and how your confidence has grown..." [P11] "... it will depend on your case load in your area where this person finds himself." [P12] "... needs to be flexible to a degree based on where you are doing that internship, ..." [P13] "... depends, what is your call ratio, what is the type of calls you attend to, how many actual calls do you attend to that require ECP skills. ..."	3.5.1 > 3 months < 6 months [P11] "..., it might only have to be 3 months or so or 6 months." [P12] "..., three months in a busy area and six months in a quieter one." [P13] "no longer than six months, ..." [P14] "3-6 months" [P17] "... six months with specific goals ..." 3.5.2 > 6 months < 12 months [P3] "... At least 6 months to a year ..." [P5] "... for government you will work for at least 6 to even 12 months, but if it is a private internship I would recommend it should be longer, just due to the volume and the exposure, provided that it is a structured internship..." [P8] "... minimum of (6) months to a year, ..." Depending on outcomes, for example RSI" [P9] "... I think a six months to a year internship would've been sufficient, [P10] "... I would probably say at least 6 months to a year at advanced life support level and at ECP level probably 6 months, ..."

		<p>[P15] "So as a bare minimum six months, in rural areas people will complain about being judged differently, but six months to a year then."</p> <p>[P16] "... I think a bare minimum of six months, and I think ideally a year basically working on the same vehicle with the physical person not just a phone call away."</p> <p>3.5.3 > 12 months < 24 months</p> <p>[P6] "anything from a year to 2 years ..."</p> <p>[P7] "Minimum of a year (12 months) ..."</p> <p>[P9] "... with the new programme that is out, I would think anything from a year to at least two years of mentorship or internship with guided practice."</p> <p>[P10] "... ECP particularly thrombolysis and RSI and so on at least a year of internship would probably be beneficial."</p>
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The third Theme that emerged during the data analysis was Development Exploration, which now will be discussed.

4.3.3.1 Theme 3: Development exploration

In the third Theme four (4) categories came to the fore, namely theoretical, real life vs simulation, assessment of competency, contents of the internship, and duration of the internship programme.

Theoretical:

The importance of theoretical training was reiterated during the semi-structured interviews. The subcategories identified were theory and practical.

Data analysis and description: Participants P4; P5; P8; P9; P11; P12; P13 and P17 all were inclined to disagree that theory should be present in the internship; participant P17 mentioned that, "... I think if you finish your theory, you finish it, but are you safe on the road, that is the thing." However, P5, P8 and P12 also mentioned that in the event of shortcomings being identified, the gaps would have to be covered by the theory, because there needed to be a deepened knowledge about certain aspects (P10). P14 stated, "I don't personally believe there can be mentoring without theory, without discussing evidence, how will clinical argument formulation be conducted?" Eight participants were against theory being part of the internship programme, four (4) participants indicated they were for and against theory being part of the internship, and one (1) participant proclaimed that theory definitely should be part of the internship.

Theory:

According to participants P5; P8; P9; P10; P11; P12 and P14, theory during the internship could be implemented when shortcomings were identified and a continuous deepened knowledge was required. Mentoring might prove to be extremely difficult without theory, as discussing evidence and clinical argument formulation would be lacking.

Participants P4 and P17 were of the opinion that the theory component during the course work was enough and the internship could be successful without the theory.

Practical:

Interviews with participants P4; P8; P13 and P17 exposed their conviction that the practical

work and skills were dealt with sufficiently during the newly graduates' course work.

Real life vs simulation: The importance of practical vs. theoretical training was reiterated during the semi-structured interviews. The subcategories were identified as theory; real-life environment and simulation.

Data analysis and description: Participant P3 was positive regarding simulations but expressed the need for real patients. P6; P8; P10, P13 and P14 were of opinion that simulation was "more effective" and the better way of understanding people's decision-making processes. Participant P5; P9; P11; P15 and P17 were not very positively inclined to simulations, and P9 and P11 were very explicit in their statements that simulations should not be used in assessments.

Real-life environment:

Participants P15 and P17 believed that the real-life environment would hold the best training possibilities, but also expressed the concern that it might be very difficult to provide sufficient opportunities and that simulation was overrated.

Simulation:

To obtain scarce skills, simulations were second to only real actual patients, as simulations exposed what the practitioner would encounter during road shifts; it exposed their method of practice, and their decision making, especially where they might lack skills (P3; P6; P8; P9; P10 and P14).

During the interviews participants P9; P11 and P13 expressed the opinion that simulation-based discussions would probably be more effective as a training tool; however, it should not be utilised as a form of assessment.

Corrective training could occur when a shortcoming was identified with simulation, but however, it should not be a standard P5, and participants P8; P15 and P17 did not feel that simulations were necessary or were overrated; not working on a doll but in the real environment would be great, but understandably might be difficult.

Assessment of competency: The importance of the assessment of competency was reiterated during the semi-structured interviews. The subcategories were identified as reflective practice, morbidity and mortality, case studies, written paper, simulation, portfolio, work with experienced person and road practical.

Data analysis and description: Participants were extremely passionate with regard to the assessment for the graduated ECP completing the internship, should an internship be instituted. Participants P3 and P8 were positive regarding the “tick box/checklist” assessments, where critical points were identified, and confirmation of competency needed to be obtained to successfully pass that component of the assessment. P4; P6 and P9 expressed their opinions and suggested reflective reports to be submitted; other suggestions entertained were portfolio-based evidence, blended learning, mortality and morbidity, case presentations, case studies and peer reviewed documents. P8 and P16 suggested road evaluations. Participants P11 and P12 were of the opinion that there should be no assessments as the “interns” already had proven themselves during their formal studies at the tertiary institutions. Participants P10 and P15 suggested a final exam (3-hour paper) to prove their competence.

Reflective practice:

More substance than just assessment would be provided with reflective practice (P4; P6; P7 & P9).

Morbidity and mortality:

Participants P5 and P12 stated that should the newly graduated attend morbidity and mortality meetings, it would be most beneficial to their development as they would be gaining psychomotor skills.

Case studies:

Case studies were supported by participants P7; P9; P11 and P14 to be part of the development for the newly graduated practitioners.

Written paper:

Participants P8 and P15 expressed the need for written papers, as it would provide evidence for the HPCSA to judge the practitioner.

Simulation:

The safest assessment method probably would be simulation, according to participants P8 and P13.

Portfolio:

A portfolio of evidence would be crucial to the development of the practitioner, as stated by participants P6; P8 and P9.

Work with experienced person:

Direct supervision, road evaluations and successes achieved with the mentioned practices were supported by participants P7; P8; P10 and P17.

Road practical:

Shadowing and seeing the practices of the practitioner, final road shifts and training-orientated types of assessments would be required, according to participants P13; P16 and P17.

Contents of the internship: The importance of the contents of the internship was reiterated during the semi-structured interviews. The subcategories were identified as pre-hospital environment, neonatology and paediatrics, cardiology, ICU, soft skills and equipment management.

Data analysis and description: P3 expressed concern by stating, "Doing it on the road is completely different than from working in the hospital ..."; therefore, neonatal transfers, cardio and neuro would be beneficial. Participants P4, P9 and P15 expressed the need for further training in the neonatal/paediatric environment. P5, P7, P9 and P11 stated that more training in the ICU environment was required. Refreshing ideas like, "Fleet management P11, primary health care, communications, leadership P9, P6 and P7 mentioned aeromedical exposure that would be required, while P6 also suggested educational and management training. Cardiology, and the mastering of knowledge of certain pharmacological agents, as well as the in-depth understanding of ventilation were considered important (P10). Participant P11 mentioned interpersonal relationships to be added to the internship. P15 expressed his/her support for the ACLS, PALS and ATLS courses and studying these in more depth.

Pre-hospital environment:

Practice in the real environment is very different from working in hospitals; however, trauma units would add value to the newly graduates' abilities, according to participants (P3; P4; P5; P6; P8 & P14).

Neonatology and paediatrics:

Participants P3; P4; P9; P15 were all of the conviction that training in maternity units, paediatric advanced life support (PALS) courses, and neonatology and paediatric units would add benefit to the development of the newly graduated.

Cardiology:

More knowledge of and experience in advanced cardiac life support (ACLS) and coronary care units would significantly add to the development of the newly graduated, according to participants (P3; P4; P9; P10 & P15).

ICU:

Extensive knowledge is required in the Intensive Care Units (ICUs) and the opinion of participants P7; P9; and P10 was that it would be beneficial if they had exposure to such units; however, P7 stated that the newly graduated should not touch this environment until they had at least five years' experience.

Soft skills:

Participants P5; P9 and P11 stated that soft skills such as a sense of urgency, compassion, communication, leadership, interpersonal relationships and management styles should be explored during internship.

Equipment management:

Participant P6 and P11 expressed the need for management, fleet management and equipment management training during the internship period.

Duration of the internship: The importance of the duration of the internship was reiterated during the semi-structured interviews. The subcategories identified were: more than three months, but less than six months; more than six months, but less than a year, and more than twelve months (a year).

Data analysis and description: Participants P3; P5; P8; P9; P10; P15 and P16 expressed the opinion that such an internship should have a duration of between six to twelve months. P11 and P14 indicated that three to six months would suffice. Participant P12 suggested that the duration should depend on the area and the case load. Periods of longer than twelve months were suggested by P6.

> 3 months < 6 months:

Participants P11; P12; P13; P14 and P17 proposed an internship of at least three months, but no longer than six months, with specific goals.

6 months < 12 months:

Participants P3; P5; P7; P8; P9; P10; P15 and P16 proposed an internship of between six months and one year, depending on the outcomes.

> 12 months:

Participants P6 and P9 proposed a guided internship of between one year and two years.

Discussion: The researcher is of the opinion that it would be very irresponsible to not include theory with the internship. To be equipped with the theoretical knowledge will support sound critical thinking and clinical decision-making processes which will empower the interns and foster their confidence. To put the theoretical knowledge obtained during the initial formal tertiary studies into perspective through practical application in the operational environment might prove to be irreplaceable. Boyle *et al.* (2007) explicate that, "Without clinical placements, educational quality could be potentially reduced as students would have to rely on artificial patient simulations for the linkage between theory and practice. ... Real-life exposure and active learning provide the student with a richer source of learning and experience."

Edwards (2011) proclaims that there is a high probability that recently graduated paramedics will be expected to take on preceptor roles, and this increased demand for preceptors has raised the question about the education of paramedics and their work readiness.

Pointer (2001) infers that emergency medical services systems do not generally have set standards to ensure that a newly-licensed paramedic is competent to practise alone. Other health care workers require hours of supervised practice to ensure competence, but the inexperienced paramedic needs mentoring to benchmark skills.

Simulation is a crucial component in the training environment and the researcher is of the opinion that with the appropriate facilitator/lecturer at the helm of the simulation training, it might very well prove to be absolutely the most valuable component in the practical training, which will empower the ECP 'intern' with the confidence required to manage and deal with high fidelity scenarios, not causing harm to a patient in the process, and staying clear of legal prosecution. Rogers, McConnell, De Rooy, Ellen and Lombard (2014) provide proof that extended immersive simulation has educational impact and may provide an important supplement to experiential learning in real clinical settings to prepare medical

students. Stroben *et al.* (2016) state that best-practice simulation remains expensive in the conceptual process, however, it does increase the feeling of preparedness in medical students.

Theoretical and/or practical assessment is and will always be a daunting experience for a learner and the focus of being evaluated should be shifted to enthusiasm from the side of the learner in order for them to feel confident and to demonstrate competence.

4.3.4 Control of the internship

The fourth question in the semi-structured interview guide was, "How do you envisage control over the internship programme, and if the need is determined, how should it be implemented?" This was followed up with the question, "Should the HPCSA regulate the registration as independent and/or supervised practice of the newly graduated ECP?"

Table 4.5: Theme 4: Regulation

THEMES	CATEGORIES	SUB-CATEGORIES
4. Regulation	4.1 Implementation <p>[P5] "In terms of BTech I would say no, because most of the people were already practitioners and already working, ..."</p> <p>[P14] "It's very difficult; in my personal opinion there is, as you can see, a clear divide between the groups, that the way I understand airway management is different from most of the BTechs that are newly qualified that I encounter."</p> <p>[P17] "I think the old BTech route is the better route, ..."</p>	4.1.1 Existing <p>[P3] "... add another 6 months to a year onto the programme"</p> <p>[P4] "..., once you are post graduate, there needs to be something that says for the next 3 months or whatever the time period is going to be, it is going to be set out for this programme, ..."</p> <p>[P7] "I think the way that the programmes is structured currently is nice, but you need an additional year's practice under supervision"</p> <p>[P8] "... you need to add another year to the programme to get qualified, ..."</p> <p>[P12] "The only way I could think it could potentially work is in a similar fashion to the internship done by medical doctors and also in a similar fashion to what was usually called a Zuma year, community service, ..."</p> <p>[P13] "..., I think a forced internship programme once you have qualified, before you move into any other part of the industry, it might be very beneficial, ..."</p> <p>[P15] "... can be added onto it, ..."</p> 4.1.2 Proposed <p>[P4] "...you will have to work a certain amount of time in-service with a person, before you can work on your own, just to mitigate the law, there is a law that says you need to do this, ..."</p> <p>[P6] "... have to get the industry on-board ..."</p>

		<p>[P9] "... need the support and the structural support from the Department of Health."</p> <p>[P9] "... practitioners should go into the Dept. of Health, not into the private services, ..."</p> <p>[P10] "... need to be managed on a dual basis between the professional regulators and the formal education system."</p>
	<p>4.2 Problems</p> <p>[P5] "Working as a practitioner and working as a student are two totally different things, ..."</p> <p>[P6] "... people misunderstand the idea of an internship..."</p> <p>[P7] "I think the bachelors is still a nice new programme, we should try and implement it quite fast before these guys come out, and make it part of the programme ,..."</p> <p>[P8] "... ends up into a five (5)-year degree, ..."</p> <p>[P10] "... lack of infrastructure to manage it; both interns and universities and in terms of organizations themselves."</p> <p>[P10] "... very deliberate process from central government ... creating a system in government services for mentoring. I think it probably will fall flat very early."</p>	<p>4.2.1 Placement sites</p> <p>[P8] "Then the place where you are going to work, ..."</p> <p>[P17] "..., if he works in private practice he is going to work on a mine where he doesn't see any patients, ..."</p> <p>[P17] "..., if he works for the state, where is he going to work, ..."</p> <p>[P17] "... a great challenge, especially for the guys implementing it, and I also think that you must take each region on its own..."</p> <p>4.2.2 Support</p> <p>[P9] "... a system which will support them, ..."</p> <p>[P9] "... need the support and the structural support from the Department of Health."</p> <p>4.2.3 Rural vs urban</p> <p>[P3] "... work in a rural vs an urban area, a small little town does have many cases but your interaction with the patient is prolonged."</p> <p>[P9] "... practitioners will be put into the rural areas, they will be used to work and assist in shortages, instead of actually having a mentorship programme ..."</p>

	<p>[P10] "..., do it as quickly as possible so that they can get practitioners out on the road, as opposed to a proper learning process ..."</p> <p>[P11] "Current state there is no platform for it, ..."</p> <p>[P11] "... no one who wants to take ownership of it, ..."</p> <p>[P11] "..., with the falling away of the short courses, there is going to be a lot of resistance against it, ..."</p> <p>[P13] "..., they might feel that the university has found them competent ..."</p> <p>[P15] "... time might play a role ..."</p> <p>[P17] "... equipment to do the skill ..."</p> <p>[P17] "Politics are definitely a problem"</p>	<p>4.2.4 Financials</p> <p>[P4] "...legal implications, financial implications, that is obvious; yes I have done my qualification and I can practise on my own, that is the law ...".</p> <p>[P5] "... governmental service you get a wider variety of exposure to a lot of different types of scenarios ..."</p> <p>[P8] "... financial problems ..."</p> <p>[P12] "... financial ..."</p> <p>[P13] "... financial, ..."</p> <p>[P15] "..., financial constraints."</p> <p>[P16] "... financial challenge is massive in terms of both government and provincial, just simply not having the ability to do it or reluctantly having to do it because of finances ..."</p> <p>[P16] "... resources, because we are limited - we are stretched as we are right now, ..."</p> <p>[P17] "..., who is going to pay those guys, ..."</p> <p>4.2.5 ECP shortage</p> <p>[P6] "..., we sit with a huge problem in terms of mentorship, ..."</p> <p>[P7] "standardize them, there is a too big a mismatch between the 3/4 universities offering this bachelor programme, and at the moment there is still a lack of mentors, ..."</p> <p>[P8] "... shortage of ECPs is a problem."</p>
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		<p>[P9] "... your current pool of practitioners ..."</p> <p>[P10] "... physical, a lack of ECPs out there."</p> <p>[P10] "... in SA there's probably not a big pool of people who could act as mentors."</p> <p>[P16] "... not that many ECPs who are looking to go and work in these remote areas of the country ..."</p> <p>[P16] "... experienced practitioners, ..."</p> <p>4.2.6 Education of mentors</p> <p>[P6] "..., we sit with a huge problem in terms of mentorship, ..."</p> <p>[P8] "... you currently do not have enough mentors, ..."</p> <p>[P9] "... mentors will have to be educated to be mentors, ..."</p> <p>[P10] "... lack of quality mentors in SA, ..."</p> <p>[P10] "... just because somebody has a qualification doesn't make them a mentor."</p> <p>[P10] "..., invariably the quality of on-road mentoring in SA is really poor because most paramedics use it as a power game to beat people around..."</p> <p>[P11] "..., limited experienced staff, ..."</p> <p>[P11] "... you cannot request a medical officer to be in charge of an internship ... you are sitting with a pre-hospital specialist, being overseen by a GP, and I think that is completely not appropriate, ..."</p> <p>[P12] "... have got to be supervised, ..."</p>
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		<p>[P13] "... experienced enough ECPs ..."</p> <p>[P14] "... finding good mentors, mentors that truly want to teach, are competent in their skills, and are truly good mentors, and not just that it's a student doing their time to meet the requirements."</p> <p>[P15] "... you get good instructors and you get bad instructors."</p> <p>[P16] "... do we have enough ECPs as mentors? ..."</p> <p>4.2.7 HPCSA additional category</p> <p>[P6] "... Health Professions Council, if I understand correctly, because I found them to be very narrow minded, ..."</p> <p>[P7] "... an additional registration category at the HPCSA" ..."</p> <p>[P17] "... who is going to do the evaluations? ..."</p> <p>4.2.8 Attitude</p> <p>[P4] "Pride number (1) one ..."</p> <p>[P4] I have my HPCSA card, I can do it, but that people with that attitude towards this, but at the end of the day, people that have gone through it will know, it is better to have something like this to build your confidence, to build your experience in treating, than someone who has not gone through it, and sometimes it is going to be too late, when you are already in it, then you realise that I actually needed it , and I know a lot of people, when they first started they have phoned a lot, what do you think about this, what do you think about that, and then some of them will not even phone and just do their own thing, which is a dangerous practice. When you have an internship, that will iron out all those small nitty gritty stuff, and it will make you a better practitioner!"</p>
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		<p>[P6] "somebody who really wants to do it, who wants to teach and who is passionate about what they do, and I think that is a struggle because they might be willing in the beginning, and then not so willing towards the end, and people always want to know what they will be getting out of it, ..."</p> <p>[P7] "... the arrogance of us, ..."</p> <p>[P11] "..., in the current state, it is going to be very difficult to bring it in."</p> <p>[P13] "... resistance from the students ..."</p> <p>[P14] "Many people will be hesitant or against it, the SA EMS people are incredibly hesitant to change."</p>
	<p>4.3 Control</p> <p>[P6] "...academic institutions and the industry, to me the two have to be on board."</p> <p>[P6] "there is definitely a lot of situations that internship will cater for, as long as the internship is monitored appropriately, ..."</p> <p>[P10] "... joint venture between industry, higher education and the national regulatory HPCSA, the professional board."</p>	<p>4.3.1 Training institutions</p> <p>[P6] "... academic institutions and the industry, to me the two have to be on board."</p> <p>[P7] "..., control has to come from the HEIs, the universities, ..."</p> <p>[P9] "... higher education institutions ..."</p> <p>[P10] "So the regulators and probably higher education would have to work hand in hand to develop and monitor and support the process of internship".</p> <p>[P14] "..., I think ultimate control will have to come from the universities' side."</p> <p>[P15] "... register at a training institution."</p> <p>[P17] "I think the control must be under the training college or operations if they are closely combined or have a good relationship, ..."</p>

		<p>4.3.2. National Health accredited providers</p> <p>[P5] "... the government services ..."</p> <p>[P6] "... control has to be dually managed, ... from a government service side..."</p> <p>[P9] "... department of health ..."</p> <p>[P10] "... joint venture between industry, higher education and the national regulatory HPCSA, the professional board."</p> <p>[P11] "National Health ..."</p> <p>[P13] "Just logistically I do not see it to become a private institution's problem, it would most probably be the HPCSA in collaboration with government, ..."</p> <p>[P16] "... government and through private practice or private services, and the only way to get that done is to make it a legal requirement ..."</p> <p>[P17] "..., National Health, I think the biggest role will be, probably National Health have to implement that, ..."</p> <p>4.3.3 HPCSA</p> <p>[P4] "... the HPCSA ..."</p> <p>[P6] "...the Health Professions Council has to be on-board..."</p> <p>[P9] "... HPCSA ..."</p> <p>[P10] "... joint venture between industry, higher education and the national regulatory HPCSA, the professional board."</p>
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		<p>[P13] "Just logistically I do not see it to become a private institution's problem, it would most probably be the HPCSA in collaboration with government, ..."</p>
	<p>4.4 Regulation</p> <p>[P5] "Supervised practice, after which it will become independent practice"</p> <p>[P12] "... register them as neither, as inter ..."</p> <p>[P12] "... transitional practice."</p> <p>[P13] "... register as supervised practices for the duration ..."</p> <p>[P15] "It has to be supervised until he has finished his internship."</p> <p>[P16] "... So I think this is all dependent on whether this is in place or not, if it is that's the only way to do it ..."</p>	<p>4.4.1 Supervised</p> <p>[P3] "Supervised"</p> <p>[P4] "... supervised, ..."</p> <p>[P6] "Supervised practitioner - you should not be in independent practice while you are an intern"</p> <p>[P7] "Yes, absolutely, ..."</p> <p>[P7] "I think the wording needs to change, no one ever cleared up the wording of a BAA as a supervised practice, in our profession, on our board, they did it for the psychiatric board or something, but we can word it the same as the medical and dental board, ..."</p> <p>[P8] "Yes, it must be regulated, ..."</p> <p>[P9] "... register them as supervised practitioners ..."</p> <p>[P10] "Yes, I don't think that should be left up to organizational level because there's organizational processes in place that will cause them to hide any kind of weakness in the practitioner because of needing bums on seats ..."</p> <p>[P14] "Let me answer yes, if they're ideally doing their job they should be doing then yes they should be."</p> <p>4.4.2 Independent</p> <p>[P17] "I think yes, that will be great if they do supervised initially and then independent when they qualify, after internship then they can qualify as independent practitioners - that would be great."</p>

The fourth Theme that emerged from the analysis was regulation.

4.3.4.1 *Theme 4: Regulation*

In the fourth Theme four (4) categories, namely Implementation, Problems, Control and Regulation were identified. The first category, Implementation, was sub-divided in the following sub-categories: Existing and Proposed, the category Problems was sub-categories into Placement sites, Support, Rural vs urban, Financials, ECP Shortage, Education of mentors, HPCSA Additional Category and Attitude. The category Control was sub-divided into Training, National health accredited providers and HPCSA. Regulation as a category was sub-divided into Supervised and Independent.

Implementation: The importance of implementation was reiterated during the semi-structured interviews, and was divided into the sub-categories of existing and proposed.

Data analysis and description: Thirteen (13) participants actively took part in the discussion during the semi-structured interviews and the following evidence of the discussions emerged. The sub-categories were identified as *existing* and *proposed*.

The participants, P3; P4; P7; P8; P12 and P15 would feel comfortable should an extra period be added to the existing training. P12 stated, "The only way I could think it could potentially work is in a similar fashion to the internship done by medical doctors and also in a similar fashion to what was usually called a Zuma year, community service, ...", while P4 stated, "... you will have to work a certain amount of in-service with a person, before you can work on your own, just to mitigate the law, there is a law that says you need to do this".

Participant P5 was of the opinion that the BTech practitioners should not need to do an internship, while P6 believed that the industry should come on-board. P9 stated the need for support as well as structural support from the Department of Health, and expressed the opinion that these graduates should practice in the Department of Health and not in the private service sector. A need exists to manage the internship on a dual basis between the professional regulators and the formal education system [P10]. Participant P13 was convinced that the graduates should commence with their careers in a "forced internship programme" and stated that this might be very beneficial. Participant P17 was of the opinion that the BTech route would be the better route.

Existing:

The participants mentioned that additional training was required under supervision for up to one year after the successful completion of the current existing programmes. Suggestions were that this training should be similar to the programme followed by the MBChB students on completion of their formal programme (P3; P4; P7; P8; P12; P13 & P15).

Proposed:

Participants P4; P6; P9 and P10 proposed programmes in which the ECPs should work for a certain period of time with a mentor before they should be allowed to enter independent practice. The establishment of such a programme should be supported by law, industry, the Department of Health, the formal education system and the professional regulators.

Problems: Problems were reiterated during the semi-structured interviews. The sub-categories in this regard were identified as placement sites, support, rural vs urban, finances, ECP shortage, education of mentors, additional HPCSA categories, and attitudes.

Data analysis and description: Ten participants indicated finances as an obstruction, namely P3; P4; P5; P7; P8; P9; P12; P13; P15 and P17. Other problems that were mentioned were rural vs. urban practice, pride, legal and financial implications, attitude, arrogance, and dangerous practices (P3; P4; P15 & P17).

Participant P5 was of the opinion that practitioners had a “wider variety of exposures to a lot of different types of scenarios” and that working as a student and working as a practitioner were totally different.

Participants P6; P7; P8; P9; P10; P11; P12; P13; P14; P15; P16 and P17 all mentioned that mentors would be a problem if an internship were to be accepted as the way forward. Remarks in this regard were, “Do we have enough ECPs as mentors?” P16; “lack of quality mentors in SA” P10; “mentors will have to be educated to be mentors,” and “... finding good mentors, mentors that will truly be wanting to teach, are competent in their skills, and are truly good mentors ...” P14. P11 remarked that, “... you cannot request a medical officer to be in charge of an internship ... you are sitting with a pre-hospital specialist, being overseen by a GP, and I think that is completely not appropriate, ...”.

Placement sites:

Concerns mentioned by participants P8 and P17 were that placements should not be in

private services or off-shore, but with the government services, which hold challenges for implementation, and if the regions have to act on their own should be deliberated.

Support:

Participant P9 deliberated that support should be provided by the Department of Health.

Rural vs urban:

Rural vs urban for the placement of the newly graduated ECP, should be considered, as the number of cases might be decreased in the rural environment, but an increase might occur with the interaction between the practitioner and the patient with the increase of ECPs' skills and ability. Care should also be taken that the newly graduated ECP should not be used to assist in shortages instead of attending a mentorship programme (P3 and P9).

Finances:

Participants P4; P5; P8; P12; P13; P15; P16 and P17 expressed their concerns about financial problems newly graduated ECPs might experience during internships. It was mentioned that this matter would be very important, and should receive due attention.

ECP shortage:

A standardisation of the programmes presented by universities was described as urgently required, as a mismatch existed in the current pool of experienced practitioners and the physical lack of ECPs. Such a shortage would remain problematic, as all qualified ECPs would not be able or capable to act as mentors (P6; P7; P8; P9; P10 & P16).

Education of mentors:

The lack of ECPs willing to be educated as mentors, a lack of quality mentors, and the fact that having a qualification doesn't make one a mentor were added to the problems. On-road mentoring in South Africa is poor due to paramedics using it as a power game to manipulate or boss people. These were concerns mentioned by participants P6; P8; P9; P10; P11; P12; P13; P14; P15 and P16. Participant P11 stated that one would not be able to request a medical officer to be in charge of an internship because he/she would not be the appropriate person to deal with pre-hospital specialists.

HPCSA additional category:

Participants P6; P7 and P17 were of opinion that an additional registration category at the HPCSA would be required.

Attitude:

Pride, the arrogance of some ECPs and resistance of the new graduates were some of the attitude problems, which might be experienced, as stated by participants P4; P6; P7; P11; P13 and P14.

Control: The importance of control was emphasised during the semi-structured interviews. The sub-categories under this Theme were identified as training institutions, National Health accredited providers and the HPCSA.

Data analysis and description: Seven participants P6; P7; P9; P10; P14; P15 and P17 stated that the control and regulation should come from the tertiary institutions. P10 mentioned that it should be a "joint venture between industry, higher education and the national regulator HPCSA." P5; P6; P11; and P17 stated that control and regulation should be from government, while P5 argued "the government services", and P11 recommended "National Health".

P13 explained: "Just logistically I do not see it to become a private institution's problem, it would most probably be the HPCSA in collaboration with government ...", and P16 stated, "government and through private practice or private services, and the only way to get that done is to make it a legal requirement". Participant P17 stated that "National Health has to implement" the internship.

Participants P4; P6; P9; P10 and P13 all agreed that the HPCSA should control and regulate an internship, or should be part of the regulatory process.

Training institutions:

Participants P6; P7, P9; P10; P14; P15 and P17 expressed the opinion that academic institutions should control or be the regulators to control the said internship.

National Health accreditation providers:

National Health in a joint venture between the HPCSA and the training institutions would be crucial to the success of an internship, which should be instituted by a legal requirement (P5; P6; P10; P11; P13; P16 and P17).

HPCSA:

Participants P4; P6; P9; P10; and P13 stated that the HPCSA should be involved in the

control of the internship; while joint ventures between higher education and industry would be imperative to the success of an internship.

Regulation: The importance of regulation was reiterated during the semi-structured interviews. The sub-categories were identified as *supervised* and *independent practice*.

Data analysis and description: Participants P3, P4, P5, P6, P7, P8, P9, P10, P13, P14 and P17 agreed that registration should be in the category of *supervised* and only after the internship they would become *independent practitioners*. P12 suggested that newly graduated ECPs should not be registered as either, because they should be registered as interns.

Supervised:

Participants P3; P4; P6; P7; P8; P9; P10 and P14 were of the opinion that the newly graduated ECPs should work under supervised practice until the completion of the internship.

Independent:

Permission to independent practice should only be granted once supervised practice was successfully completed (P17).

Discussion:

The researcher was relieved that mention was made that the internship should be conducted in a fashion similar to that of the MBChB programme. This programme has to be practised for an extended period as the researcher personally worked with many qualified doctors who commended the internship to have been a crucial component in their training to become doctors. Mention was also made about negative components during their training being an "intern". The researcher believes that this programme for MBChB graduates should be scrutinized and information thus obtained might be utilized to support the implementation of an internship programme to the benefit and worth of our profession.

Problems mentioned during the semi-structured interviews were much focused on financial concerns and the concern of appropriately trained mentors being available (Participant 3; P4; P5; P7; P8; P9 P12; P13; P15 & P17).

Towards the end of the study the researcher came into contact with a number of practitioners who mentioned their concern that our profession was increasingly guided by the HEIs and that this has become an operational problem within the profession claims R Dreyer (2018, pers. Comm. 3 June). The researcher is inclined to agree with the operational environment personnel that the need locally should be examined and that Higher Education Institutions (HEIs) should not distance themselves from misperceptions of what the operational requirements entail (Dreyer 2018). Sadly, very little to no research has been conducted in South Africa into the operational requirements of emergency medical practitioners in the outstretched environments of the Northern Cape, Free State and Eastern Cape which complicates the argument.

4.4 SUMMATIVE DISCUSSION

There is a dire need for additional training in the profession of ECPs in South Africa. Despite the work-integrated learning (WIL) components and the different qualification pathways to become an ECP, it is clear that there is a hunger by newly qualified ECPs for confidence and competence within the emergency environment.

Should the authorities be able to alleviate their lack of self-confidence and increase the belief in their competence, it will be to the benefit of the patients in their hour of need. Attention of the highest order should be granted to the newly qualified ECPs working in these difficult environments. They often are ill-equipped to deal with what is expected from them, and have to work with the added pressure of knowing that experienced ECPs might and most probably will not be available to assist them if and when needed. Added to this is the guilt they have to bear if they realize they actually are not sufficiently equipped to deal with some of the scenarios they have to confront.

Pressure on the academic institutions to graduate learners, the governmental subsidies to the institution for the graduation of students, the shortage in the operational environment, the number of learners, and the fact that learners have the ability to work in a safe environment during their studies, and lecturers becoming attached to students and feeling responsible for their abilities in real-life environments add up to profound concern about the profession. The value of these practitioners' opinions cannot be ignored.

To be equipped with the theoretical knowledge will support sound critical thinking and clinical decision-making processes, which will empower the "interns" and increase their

confidence. Putting theoretical knowledge obtained during the initial formal tertiary studies into perspective during practical application in the operational environment might prove to be irreplaceable.

Simulation is a crucial component in the training environment and the researcher is of personal opinion that with the appropriate facilitator/lecturer at the helm of the simulation training it would prove to be absolutely the most valuable component to the practical training which will empower the “intern” with the confidence required to manage and deal with high fidelity scenarios and not to harm a patient in the process and thus stay clear of legal prosecution.

Theoretical or practical assessment is and will always be a daunting experience for a learner and the focus of being evaluated should be shifted to enthusiasm from the learner’s side to feel confident to demonstrate competence.

Internship should be conducted in a fashion similar to that of the MBChB programme. Problems mentioned during the semi-structured interviews were very much focused on financial concerns and the concern of appropriately trained mentors being available.

4.5 CONCLUSION

Chapter 4 provided an overview of the results of the data analysis, and a description of the responses received during the semi-structured interviews. The interviewees participated enthusiastically and valuable information was collected. The method of data collection was proved to be successful for the purpose of the study.

In the next chapter, Chapter 5, the findings of the semi-structured interviews will be discussed.

CHAPTER 5

FINDINGS ON THE NEED FOR AN INTERNSHIP FOR THE ECP PARAMEDIC IN SOUTH AFRICA

5.1 INTRODUCTION

In Chapter 4 the qualitative results of the findings of the data collected by means of semi-structured interviews were presented in line with the research question (cf. 1.4), objectives (cf. 1.5) and the aim (cf. 1.6) stated in Chapter 1, to determine the necessity for an ECP internship. The responses of the open-ended questions (qualitative data) included in certain questions in the questionnaire were also discussed. The need for an internship may result in a critical reconsideration of the current curriculum. Dent and Harden (2013:31-42) describe the ten steps in curriculum review, the first of which being to identify the need:

- Identify the need;
- establish the learning outcomes;
- agreeing on the content;
- organising the content;
- deciding the educational strategy;
- deciding the teaching method;
- preparing the assessment;
- communication about the curriculum;
- promoting an appropriate educational environment; and
- managing the curriculum.

In this study the first step was a focus point, namely to establish the need for an internship. The responses from the participants, however, included ideas regarding outcomes, content, teaching strategies and assessment, as well as management of the internship. The outcome of the current study was to establish the need, but will not be complete without a short discussion regarding the other important factors to take into consideration in future planning of an internship.

5.2 MEDICO-LEGAL IMPLICATIONS OF NOT HAVING AN INTERNSHIP FOR ECPS

Gifford (2018) states that the environment of South Africa's health and education system is undergoing major changes. Despite democracy, the infrastructure and financial challenges remain and are getting bigger as the population growth continues. The proposed National Health Insurance (NHI) system will be able to benefit from an additional resource becoming available if such an internship is realised, and the retention of "internship degree paramedics" at least for the period that they are doing their internship training.

Considering the current medical malpractice litigation in South Africa, the article by the Health Minister Dr Aaron Motsoaledi – 'Medical malpractice litigation: Undermining South Africa's Health system' - describes the current situation in South Africa as an "explosion". He expresses a warning that health care and medical practice, which essentially are founded on caring about human suffering, might be substituted for "defensive medicine and mistrust". The Provincial Health Departments find it almost impossible to provide the required health services due to a lack of sufficient funds, have to spend billions on claims lodged against them. According to Justin Malherbe, Senior Associate at an international law firm, the increase in claims, *inter alia*, can be attributed to an increasing awareness of the public about their rights and the targeted, deliberate promotion by personal lawyers eager to exploit this awareness (Gifford 2018).

When prompted during the semi-structured interviews, 50% of the participants were of the opinion that with additional training, medico-legal implications would not be mitigated, 38% of the participants stated that to a large degree the medico legal implications would subside or be eliminated, and 13% of the participants in this study were of the opinion that the number of medico legal implications would decrease (cf. Figure 5.1).

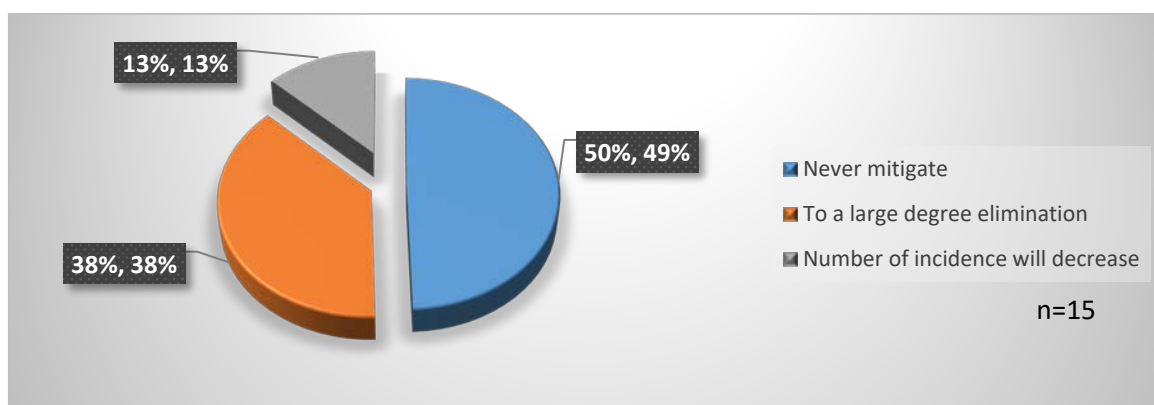


Figure 5.1: Medico legal implications of not having an internship for ECPS

The HPCSA document titled *Education and training of Doctors in SA* states that the faculties of health sciences need to educate competent, knowledgeable, skilful and caring health care professionals, conforming to modern medical standards, who can acclimatize to transformation and will have lifelong learning attitudes (HPCSA 2011:1-9). The rolling out of the Continuous Professional Development (CPD) programme was a result of this document and the Emergency Care Practitioners have to comply with the requirements of the CPD document and programmes (Porter 2016:118). This applies equally to the all healthcare practitioners as stipulated by the HPCSA.

Despite our democracy, the infrastructure and financial challenges remain and are increasing as the population growth continues. Especially in the rural areas of South Africa, medical services are faced by the biggest challenges. These challenges provided a rationale for identifying the gap that prompted this study, namely to determine the need for an internship for ECPs. Currently the student gains experience during work-integrated learning (WIL) that will be explained consequently.

5.3 WORK-INTEGRATED LEARNING

The institutions in South Africa offering the Bachelor's Degree: Emergency Medical Care have a work-integrated learning (WIL) component, which all the participants of the study have to complete to qualify for the degree. The participants in this study, however, were of the opinion that they would have benefitted by additional training after their successful completion of the degree programme (cf. Figure 5.4). Advantages contained in the WIL are illustrated in Figure 5.2, and the researcher is of opinion that with an internship the advantages will increase even more for the newly graduated Emergency Care Practitioners (ECPs).

Although work-integrated learning is part of the current qualification, it has become abundantly clear that additional training is required. "EMS providers have a lot of responsibility on their hands and the fact that their working environment can be anything from a wrecked and burning car to a small shack with only a candle providing light, does not make things any easier" (Van Huyssteen 2016: 11). Currently the newly graduated ECP paramedic is not afforded the opportunity of an internship or community service to progress like other healthcare professionals in radiography, pharmacy, clinical technology, occupational health, medical physics, pharmacy and physiotherapy, to name but a few. It is currently assumed that the ECP paramedic is ready to work independently as an expert.

Illustrated in Figure 5.2 are the advantages, including academic, personal, and career benefits and skills development. The academic benefits include: Improved general academic performance, enhancement of interdisciplinary thinking, and an increased motivation to learn. Personal benefits include: Improved communication skills, enhancement of teamwork, leadership and co-operation. Career benefits include: career clarification, professional identity, increased employment opportunities, and development of positive work values and ethics. Skills development advantages with WIL include: Increased competence and increased technical knowledge and skills (higher Education Act, no 101 of 1997).

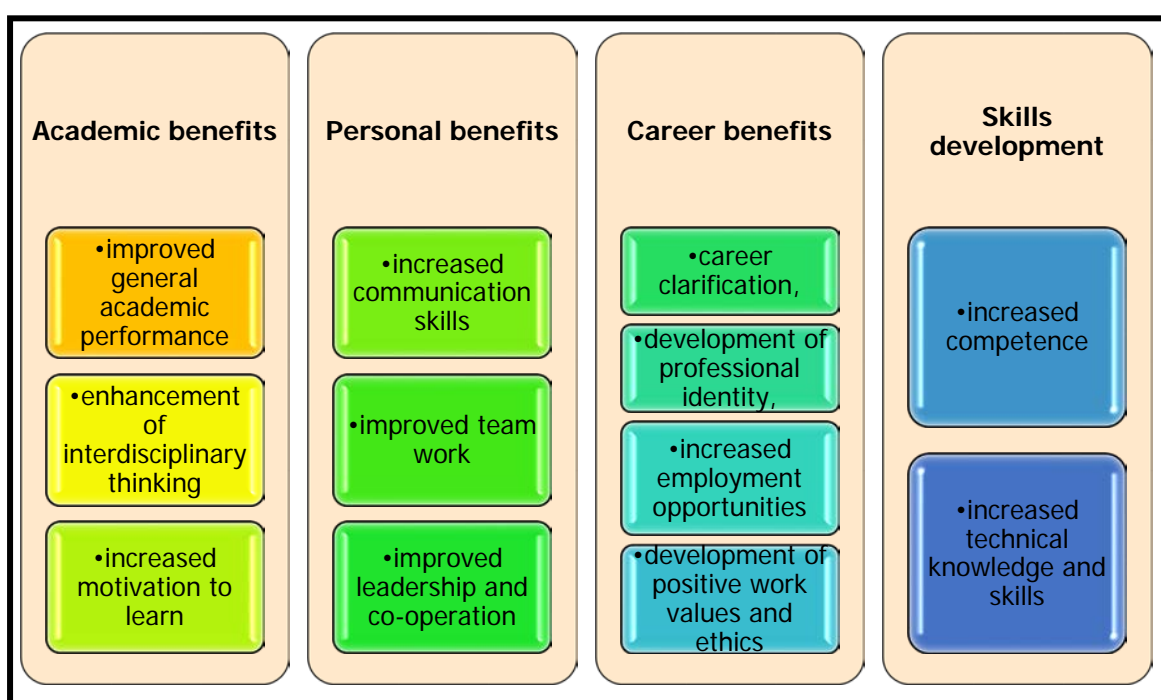


Figure 5.2: Advantages for students who engage in Work-Integrated Learning (WIL)
(adapted from the Higher Education Act, no 101 of 1997)

5.4 MENTORSHIP

A significant number of participants (67%) indicated that with a mentorship/internship programme after tertiary studies, the transition to the world of work would be gentler (cf. Figure 5.3). The researcher thus accepts the findings of the study: a gentler transition from being a registered student at an accredited tertiary institution to the operational demands of a graduated paramedic would be beneficial to the newly graduated paramedic. This gradual approach might also help to retain ECPs in South Africa after the internship was completed.

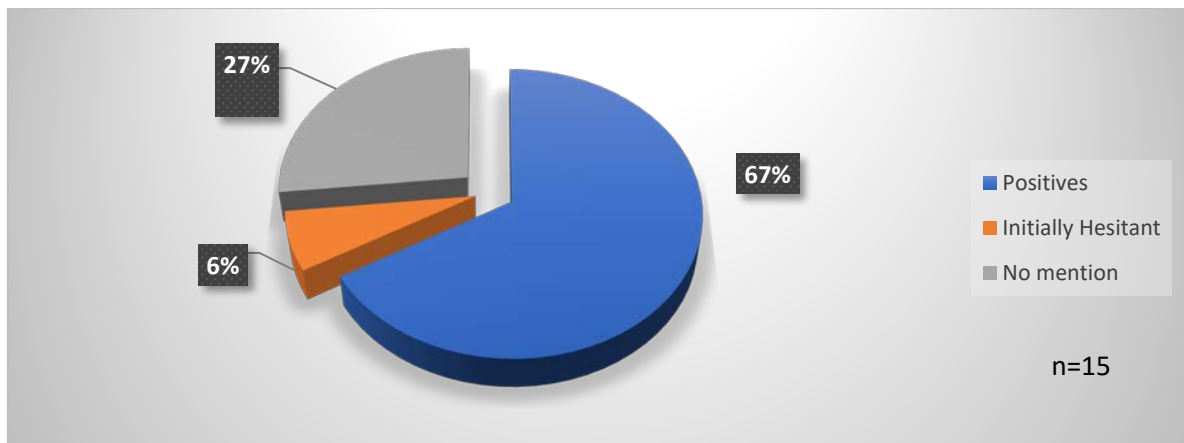


Figure 5.3: Mentorship

Ideas about where the internship could fit into the current system, possible outcomes and essential content for a proposed internship also were elaborated on during the interviews and will be discussed now.

5.5 INTERNSHIP PROGRAMME

It would be ideal if the internship programme could be part of a community service year during which the new ECP graduates could work in the specific areas identified. Some of the shortcomings of the current primary health care system might be addressed by this additional resource becoming available.

District Specialist Teams (DSTs) do not have pre-hospital staff employed within their structure and if these newly graduated ECP paramedics should become part of the teams, the decentralization of the teams will address the National Health Call mentioned above. The internship could fit into the current qualifications framework between NQF Level 8 and NQF Level 9 as illustrated in Figure 5.4 below, indicated with the green arrows.

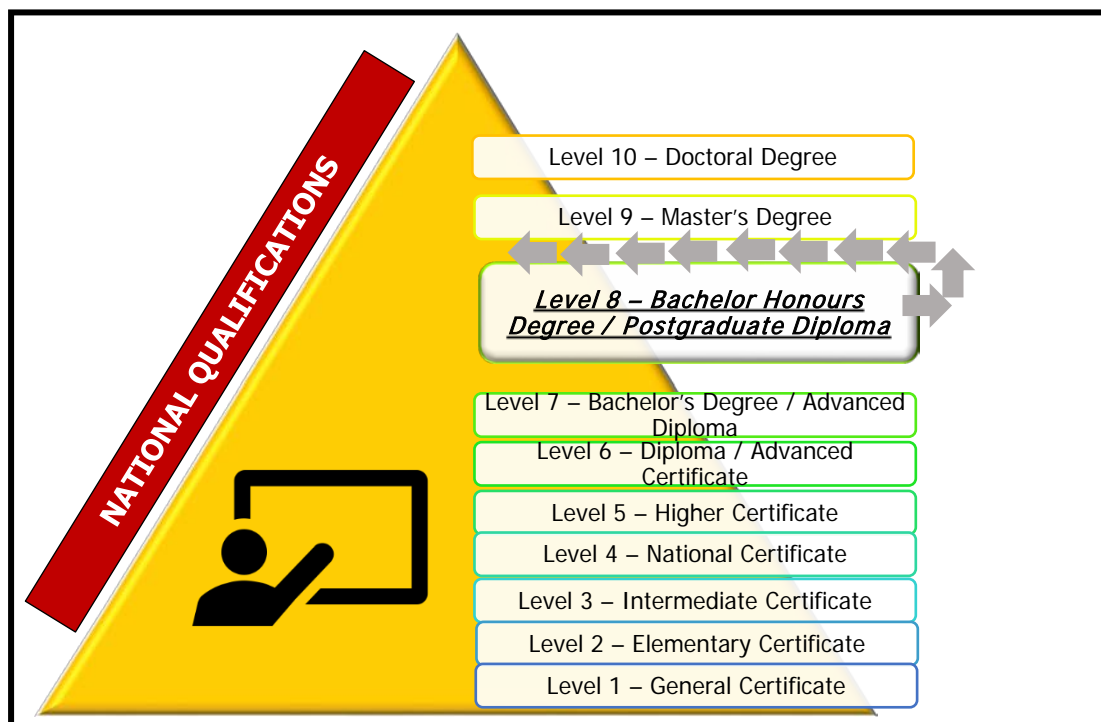


Figure 5.4: National Qualifications Framework
(Compiled by the researcher, Jansen van Vuuren, 2016 – adapted from: Campbell 2015)

5.6 NATIONAL QUALIFICATIONS FRAMEWORK

After successful completion of the bachelor's degree at the National Qualifications Framework (NQF) Level 8 (cf. Table 2.1), the internship could be fitted in before Level 9; however, cognizance should be taken of the Level 9 level descriptors for the internship programme, in order not to overstep the boundaries for the said level. To be sensitized towards the NQF Level 9 descriptors, these are presented in Table 5.1. NQF Level 8 descriptors have been listed in Chapter 2 (cf. Table 2.1 for comparison).

5.6.1 NQF level, designator, qualifiers and credits

According to the Higher Education Qualifications Sub Framework explains its approach to qualifications design as follows:

The HEQSF incorporates a nested approach to qualifications design. Within a nested approach to standards development, qualification specification requires a movement from generic to specific outcomes. The most generic standards are found in the level descriptors. The most specific standards are found in the programmes that lead to qualifications. Specific standards always meet the requirements of the generic standards within which they are nested or framed. Within this broader context, the focus of the HEQSF is on qualification type descriptors - the second layer of a nested approach. Within the nested

approach, the outer layer provides the context for qualification specification. The National Qualifications Framework (NQF) level and its level descriptor form the outer and most generic layer in terms of the knowledge and skills that learners are required to acquire, integrate and demonstrate (applied competence) at each level of cognitive complexity on the HEQSF” (HEQSF 2013:13).

The level descriptors and qualification descriptors are listed as learning outcomes and curriculum design takes into consideration content that will achieve the outcomes (CHE 2013:15). The level descriptors are the outermost layer of qualification specification. At each level the generic nature of learning achievements and their complexity are described. Level descriptors thus are broad qualitative statements against which more specific learning outcomes can be compared and located (CHE 2013:18).

5.6.2 Minimum admission requirements for the internship programme

The minimum admission requirements for an internship would have to be an appropriate Bachelor’s Degree, such as a BHS, B EMC or equivalent degree on NQF Level 8 (cf. HEQSF 2013:30).

In order to position the internship after Level 8, it will be necessary to take cognisance of the Level 9 level descriptors so that possible outcomes can be determined.

5.6.3 Level descriptors at NQF exit Level 9

Illustrated in the table (cf. Table 5.1) below is the Level 9 level descriptor as published by the Higher Education Qualifications Sub-Framework.

Table 5.1: NQF Level descriptors at Level 9 (HEQSF 2013:30)

NQF level descriptors	NQF Level 9
Scope of knowledge	<ul style="list-style-type: none"> • Specialist knowledge to enable engagement with and critique of current research or practices; • An advanced scholarship or research in a particular field, discipline, or practice.
<i>A learner is able to demonstrate:</i>	
Knowledge literacy	An ability to evaluate current processes of knowledge production and to choose an appropriate process of enquiry for the area of study or practice.
Method and procedure	A command of and ability to design, select and apply appropriate and creative methods, techniques, processes or technologies to complex practical and theoretical problems.
Problem solving	<ul style="list-style-type: none"> • An ability to use a wide range of specialised skills in identifying, conceptualising, designing and implementing methods of enquiry to

	<p>address complex and challenging problems within a field, discipline or practice;</p> <ul style="list-style-type: none"> • An understanding of the consequences of any solutions or insights generated within a specialised context.
Ethics and professional practice	An ability to make autonomous ethical decisions which affect knowledge production, or complex organisational or professional issues, an ability to critically contribute to the development of ethical standards in a specific context.
Accessing, processing and managing information	An ability to design and implement a strategy for the processing and management of information, in order to conduct a comprehensive review of leading and current research in an area of specialisation to produce significant insights.
Producing and communication information	<ul style="list-style-type: none"> • An ability to use the resources of academic, professional/occupational discourses to communicate and defend substantial ideas that are the products of research or development in an area of specialisation; • A range of advanced and specialised skills and discourses appropriate to a field/discipline/practice, to communicate to a range of audiences with different levels of knowledge/expertise.
Context and systems	An ability to make interventions at an appropriate level within a system, based on an understanding of hierarchical relations within the system, and the ability to address the intended and unintended consequences of interventions.
Management of learning	An ability to develop own learning strategies which sustain independent learning and academic, or professional development, and can interact effectively within the learning or professional group as a means of enhancing learning.
Accountability	An ability to operate independently and take full responsibility for own work, and where appropriate accountability for leading and initiating processes and implementing systems, ensuring good resource management and governance practices (SAQA 2013:4-6).

5.6.4 Specific outcomes to be addressed by the internship programme for the degree ECP paramedics proposed by the researcher

In order for the graduate to be ready for the clinical environment without supervision, the researcher is of the opinion that the following objectives should be achieved during the internship year.

- i. Apply effective communication and identify the principles of medical ethics, professional behaviour and the legal framework to the context within which emergency care practitioners operate while maintaining personal health, wellness and safety.
- ii. Discover, supervise and facilitate the provision of emergency medical care to all sectors of the community utilising specialised strategies and technologies.
- iii. Perform medical rescue in a wide range of rescue contexts.
- iv. Utilize knowledge and understanding of human and basic sciences underpinning emergency medical care.

- v. Show an understanding of the management, structure and function of Emergency Medical Service (EMS) systems in South Africa and provide operational and clinical supervision within an emergency medical and rescue service.
- vi. Appraise the principles of medical ethics.

This will be achieved by making sure that the systems are decentralized to the DSTs, newly graduated ECPs in turn may work under supervision, and the ECPs can assure that patients be seen in a primary setting and not just referred to the centralized systems, relieving the burden on the health system.

The internship will provide an opportunity for the ECP graduate to gain confidence as a professional.

5.7 PROFESSIONAL CONFIDENCE

Feedback received from participants during this study and analysed revealed that 67% of the participants' professional confidence would have benefitted by additional training after they had qualified from their tertiary studies. Participants who obtained EMS qualifications and had operational experience stated that they required less operational duties compared to the new-comers to the profession.

The researcher is of opinion that, taking into consideration the qualifications and experience obtained by the participants, this observation is correct, and in cases where ECPs have not received previous training and operational experience prior to their graduation as degree paramedics, the benefit of professional confidence gained from an internship will increase. In Figure 5.5 the finding of the study in this regard is depicted.

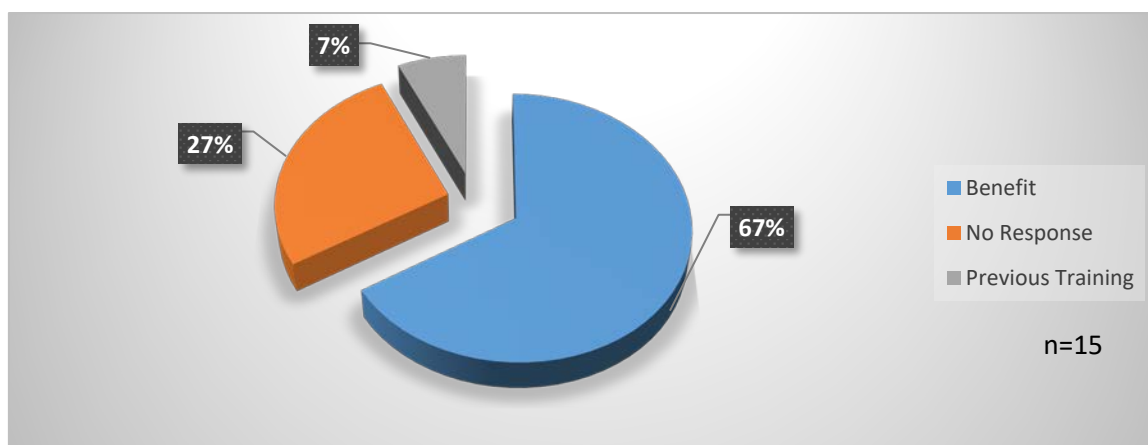


Figure 5.5: Professional confidence, benefit with additional training

5.8 STEPWISE DEVELOPMENT OF EXPERTISE

“Expertise may be considered as the end point in the stepwise development of cognitive, psychomotor and affective skills” (Dent & Harden 2013:156) The Dreyfuss (2005 in Porter 2016) brothers describe five levels of expertise as set out in Figure 5.6. It is the opinion of the researcher that with successful completion of the degree in emergency medical care the graduate will only find him-/herself on the “Dreyfuss Model” at Level 3 (Competent) and the wish of the researcher is that on successful completion of the internship programme the newly graduated practitioners will find themselves having progressed to the next level, the level of proficiency. Level 5, the level of expertise will only be achieved after years of in-depth engagement at an academic, practical and operational level.

The researcher is thus in agreement with the participants that professional confidence can be improved with an internship. The researcher is of the conviction that the newly graduated ECP paramedics are yet to progress from a level of competency to the level of proficiency (and can only progress to the level of expertise after years of applicable operational experiences). The guidance required after graduation to progress to the level of proficiency could be achieved by means of mentorship as explained above (cf. 5.3).

Level 1	Novice
	Rigid adherence to taught rules and plans.
	Little situational perceptions.
Level 2	Advanced beginner
	Guidelines for action based on attributes and aspects of situations.
	Situational perception limited.
Level 3	Competent
	All attributes and aspects treated separately and given equal importance.
	Sees actions in terms of longer term goals.
Level 4	Proficient
	Conscious deliberate planning.
	Standard routine performance.
Level 5	Expert
	Sees situation holistically
	Sees importance in situations
Level 5	Expert
	Perceives deviations from normal
	Decision-making less laboured
Level 5	Expert
	Uses guidance but recognises variations
	Analytical approach uses only novel situations.
Level 5	Expert
	Vision of what is possible.
	Intuitive grasp of situations based on tacit understanding.

Figure 5.6: The levels of expertise
(Dreyfuss [2005] adapted from Porter 2016)

5.9 DEVELOPMENT STEPS TO UNCONSCIOUS COMPETENCE

Expertise may also be seen as a relative, graduated concept. It is then helpful to conceptualize development steps. Howell (1982:29-33) developed a two-dimensional matrix of cognizance and competence.

In the opinion of the researcher and based on the information collected during the interviews, it is presumed that on successful completion of the degree the newly graduated ECPs find themselves on Howell's model of development of cognizance and competence as **unconscious incompetent** – not cognitively aware that they do not know, progressing towards the next step in the model of **being conscious incompetent** – becoming cognitively aware of their shortcomings/shortfalls. Only when they accept this fact and become engaged in overcoming this level of conscious incompetence, progression will occur to the level of **conscious competence** – really understanding what they have to do and knowing exactly how to do it, which in turn will develop in an **unconscious competence** level, at which the competent ECP will be practising, as illustrated in Figure 5.7.

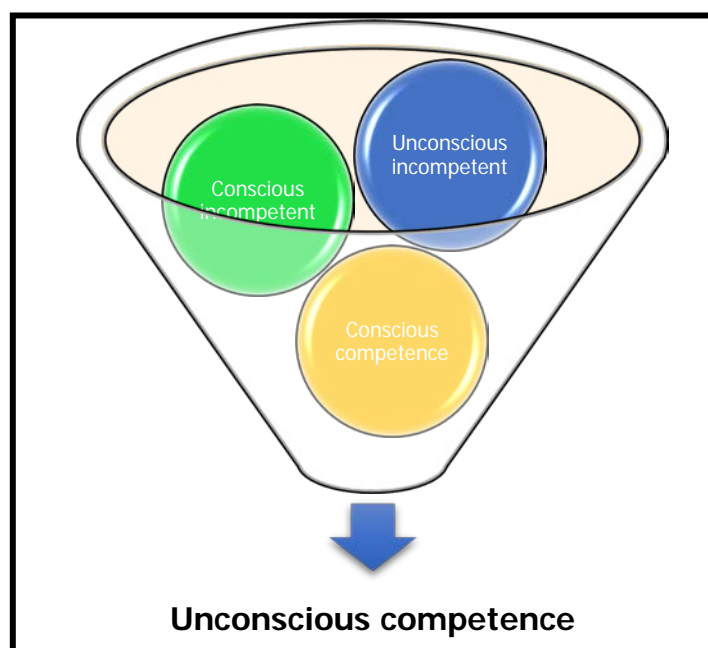


Figure 5.7: Howell's model of the development of cognizance and competence (1981:29-32)

5.10 THE NEED FOR THEORY IN THE INTERNSHIP

Feedback received from participants during this study and analysed revealed that 8% of the participants were of the opinion that there should be no theory in the proposed

internship, 31% stated that should the mentors experience a gap in the training that theory might be valuable to rectify that gap in knowledge, while 62% of the participants in the study stated that neither mentoring nor training could take place without theory education during the internship. The conclusion can be reached that the internship will require theory, but in a practically applicable mode, as progression without theory does not have a sound foundation to support the ECP practitioner. Without theory, the ECP will experience practising in silos, instead of having a holistic approach to his/her patients.

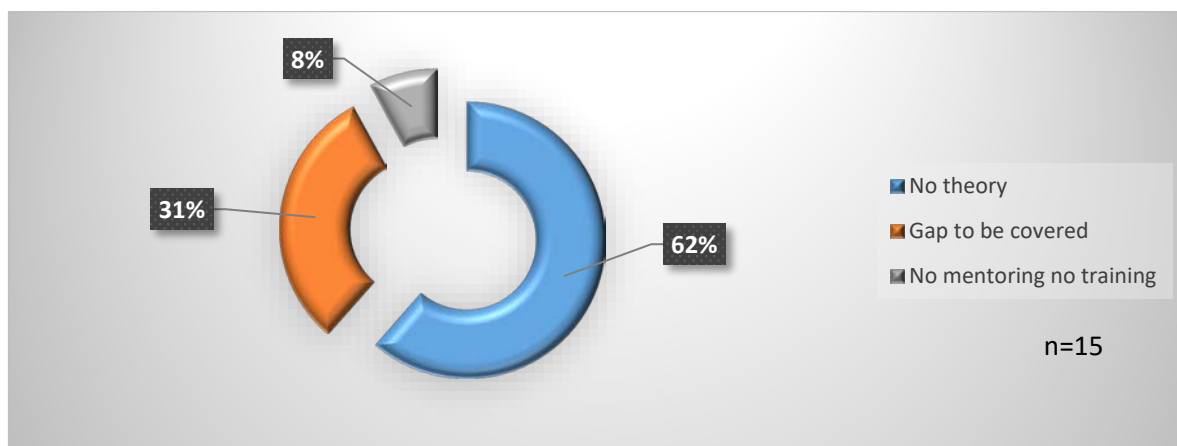


Figure 5.8: Theory in internship

5.11 SIMULATION TRAINING DURING INTERNSHIP

Forty percent (40%) of the participants in the study were of the opinion that simulation training would be beneficial as part of the training during an internship, as 13% of the participants were against simulation training, while 33% of the participants were not very positive towards additional simulation training. Thirteen percent (13%) of the participants did not provide feedback regarding simulation training during an internship. As researcher, however, I now am convinced that simulation needs to be an integral part of the proposed internship programme, as simulation has the ability to replicate scenarios with which the ECP practitioner might be confronted during practice. These high acuity cases which can be repeated have incredible advantages which fast track the experiential framework depending on how realistically the scenarios could be portrayed with the added ethical advantage of not performing the skills and procedures on live human beings, exposing themselves to litigation and the patient to possible harm.

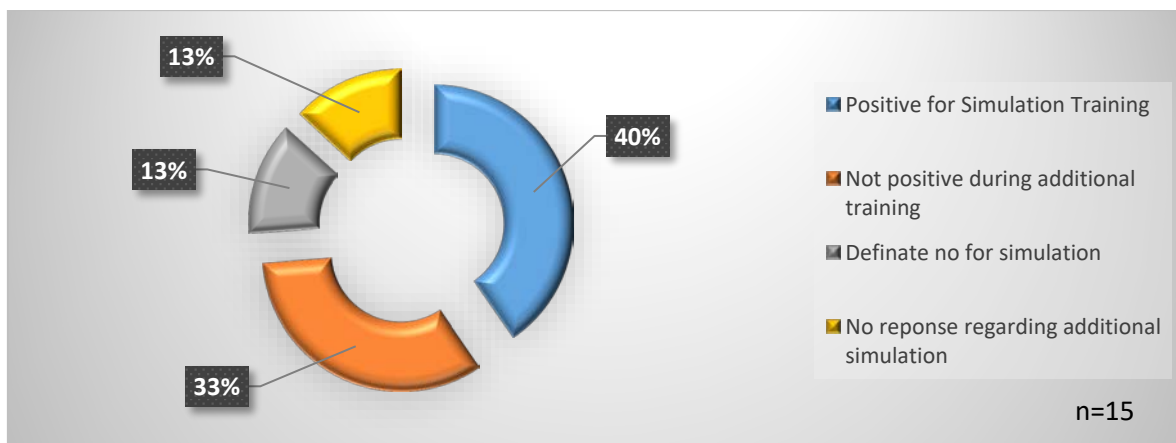


Figure 5.9: Simulation training during internship

5.12 DURATION OF THE INTERNSHIP

It cannot be assumed that pre-hospital expertise is dependent on extraordinary talent. Widely-quoted studies have attempted to set lower limits on the time needed to achieve expertise (Chase & Simon 1973:215-281; Ericsson, Ericsson, Krampe & Tesch-Romer 1993:363-406).

In the opinion of the participants in the study, with regard to the duration of an internship programme, 50% stated that a period longer than six (6) months and less than twelve (12) months would be sufficient, 31% stated that the internship should be more than three (3) months, but not longer than six (6) months. Six percent (6%) of the participants mentioned that the duration of the internship should be determined by the area in which they would be completing their internship period. The researcher believes that an internship of twelve (12) months needs to be completed to be valuable, efficient and in line with the other health care professions.

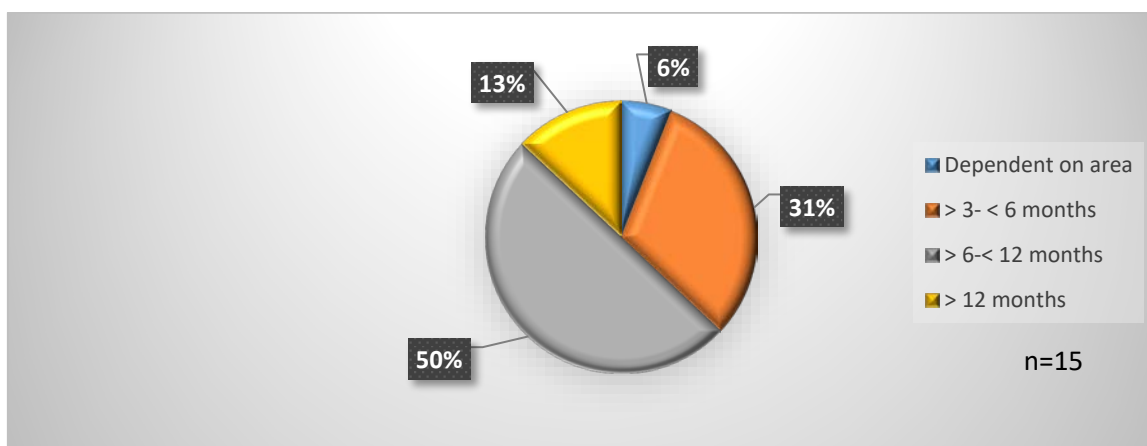


Figure 5.10: Duration of the internship

5.13 CONTROL AND REGULATION OF THE INTERNSHIP PROGRAMME

The participants reflected that national health and the tertiary institutions should take control of the internship programme and the researcher agrees with the participants. and the reasoning being that uniformly the internship should be structurally contracted providing an equal opportunity for all the newly graduated to progress. Funding during the internship period also should be investigated, for example, through national grants for the newly graduated rendering a service to the community.

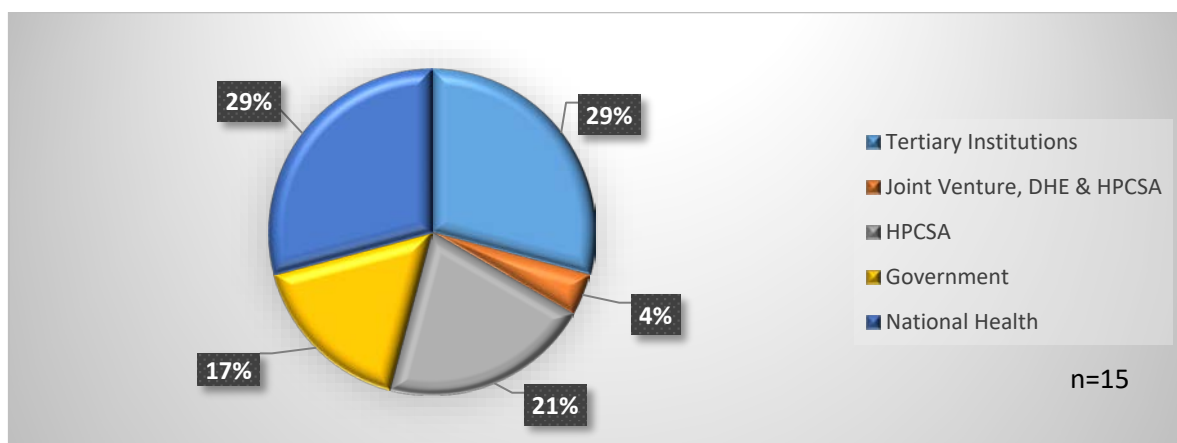


Figure 5.11: Control and regulation of the internship programme

5.14 INTERNSHIP SUGGESTED DISCIPLINES

During this study the participants made suggestions with regard to the different disciplines which need to be included in training during the internship; however, further research needs to be conducted to determine the specific needs. Components the participants mentioned, like fleet management, communications, and management came as a surprise, as the clinical management of the newly graduated practitioners might suffer if these components are put first.

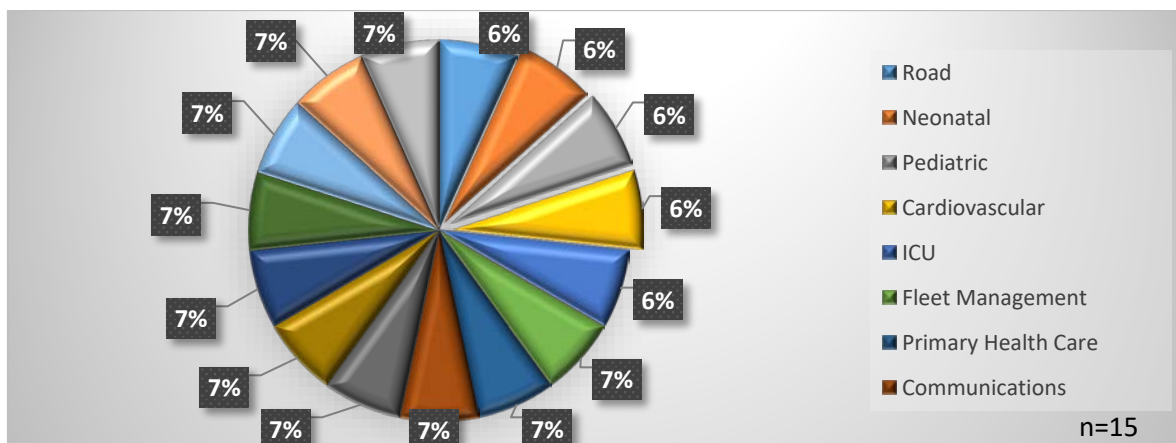


Figure 5.12: Internship suggested disciplines

5.15 CONCLUSION

Chapter 5 provided an overview of medico-legal aspects of not having an internship for ECPs. Research done on the topic cautions healthcare workers to be aware of the inclination to bring lawsuits against healthcare practitioners. An internship will be useful to complement the current WIL, so that the graduate will have the opportunity to gain higher proficiency levels. Work-integrated learning currently is practiced by learners in degree programmes throughout South Africa, and has valuable attributes; however, the concern of the participants was that it was insufficient, and additional training was required. Gradually entering the realities of the profession with a mentorship was suggested and supported by the participants.

Suggestions regarding the institution of an internship for ECPs and the benefit to the primary health care system by means of the implementation on the district specialized teams were discussed and suggested. An overview of the National Qualifications Framework was provided with the level descriptors and a suggestion that the internship programme should be developed to be pegged on the NQF level between Level 8 and Level 9 qualifications. Stepwise development of expertise and the steps to unconscious competence were explicated. The need for theory in the internship was discussed, as well as the value of simulation training. The duration of the suggested internship and the suggested disciplines to be covered in the outcomes of the content during the internship were discussed.

In the next chapter, Chapter 6, conclusions, recommendations and the limitations of the of the study will be discussed.

CHAPTER 6

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

6.1 INTRODUCTION

An in-depth study was conducted to determine the need for an internship for the degree ECP paramedics qualified from tertiary institutions in South Africa.

Working under a supervisor, being monitored and mentored form an integral part of education within the medical environment. Building confidence in performing a procedure with all its challenges and integrities of getting to the point of physically performing the skill, invasive or none invasive, the decision-making processes, plus clinical and critical thinking are part of the curriculum in most of the medical disciplines offered within South Africa. However, when it comes to the pre-hospital environment the absence of formal mentoring for post-qualification paramedics was identified as a gap in the training. The focus of this study was on the highest registered clinical level currently available for paramedic members registered with the HPCSA, and aspects regarding the current practices, needs, and confidence of newly graduated ECP paramedics were investigated and evaluated.

The aim of this chapter is to provide a short overview of the study and to present comments and some concluding thoughts on the findings. The chapter commences with an overview of the study, followed by recommendations for the said internship programme to be researched further for the degree ECP paramedic in SA. The chapter concludes with some final thoughts from the researcher, a short discussion on the limitations of the study, the contribution to knowledge, and some conclusive remarks.

6.2 OVERVIEW OF THE STUDY

The research was conducted and completed based on four research questions. The findings of this research may serve as a starting point for further research into the development of a curriculum for internship for the degree ECP paramedics qualified from accredited institutions in South Africa.

In Chapter 1 (cf. 1.4) the main research questions and objectives (cf. 1.5) which fuelled this investigation were presented. The research questions guided the study and shaped the final outcome of the analysis.

With Chapter 1 the reader was orientated to the study, and a brief background to the research problem and the research question was stated. The aims, objectives, and methods employed to achieve them were discussed briefly. The demarcation of the field and the scope of the study, its value and significance, and the implementation of the findings were also explained.

Chapter 2 was devoted to theoretical perspectives on the study. The development of emergency medical care into a career and how the field has progressed to what it is today came under discussion. Literature from various sources was discussed. South African and international practices were analysed, compared and discussed. Continued professional development, educational approaches and learning tools were explained before assessment and the South African Qualifications Authority perspectives were discussed.

In Chapter 3, the design of the study and the methods implemented to collect data for the empirical part of the study were explained.

In Chapter 4, the results of the semi-structured interviews were presented, analysed, discuss and explained.

Chapter 5 reported on the need for an internship by explaining and interpreting some findings to take into consideration in future planning of an internship.

This chapter concludes this dissertation.

The overall goal of this study was to determine the need for an internship for the degree-qualified (ECP) practitioners in South Africa. Four main objectives were pursued in order to obtain answers to the research question and achieve the aims of the study.

6.2.1 The main research questions

The main research questions for the investigation were:

- i. *Is there a need for an internship for postgraduate ECP paramedic training in South Africa?*
- ii. *What is the nature and risk profile (dangers) of the emergency care profession in South Africa?*
- iii. *Are there medico-legal implications of not having an internship for the ECP paramedic in South Africa?*
- iv. *What are the advantages and disadvantages of having an internship for the ECP paramedic in South Africa?*

The researcher consulted various scholarly works, electronic searches using Google Scholar, PubMed, Science Direct and the University of the Free State's library search, as well as other search stations. Recent studies were found related to the training of pre-hospital personnel but none addressed the current holistic operational readiness for the degree ECP paramedic. In conclusion, no recent scientific research seems to have been done with regard to the need analysis for an internship programme for the ECP paramedics qualified at accredited tertiary academic institutions in South Africa.

6.2.2 Research objectives

To achieve the aim the following objectives were pursued:

This objective addresses research question 1.

- *Determine the necessity for an ECP internship by means of semi-structured interviews and literature.*

This objective addresses research question 2.

- *Contextualise and conceptualise the risk profile and the nature of emergency medical care by means of an extensive literature study and a semi-structured interview.*

This objective addresses research question 3.

- *Determine the medico-legal implications of not having an internship for the ECP paramedics with semi-structured interviews.*

This objective addresses research question 4.

- *Determine the advantages and disadvantages of having an internship for the ECP paramedics by means of semi-structured interviews.*

6.2.3 Attaining the objectives

- Determine the necessity for an ECP internship:*** A dire need exists for additional training in the profession. The current training in South Africa with the work-integrated learning components and the different qualification pathways to become an ECP, does not satisfy a hunger newly qualified ECPs have for more confidence and competence within the emergency care environment (cf. 4.3.1.1). The categories identified in this regard were professional confidence, perceptions of influence of internship, and mentorship. Sub-categories of professional confidence were guidance and competency. Sub-categories identified under perceptions of influence of internship were confidence, competency and less harm. In the last category, mentorship, the clinical environment and benefits for the intern were identified as the subcategories (cf. Table 4.2).
- Contextualise and conceptualise the risk profile and the nature of emergency medical care:*** The environment of South Africa's health and education system is undergoing major changes. As the population growth continues, challenges pertaining to our democracy, infrastructure and finances increase. The retention of graduate paramedics will be favourable to the proposed National Health Insurance (NHI) system. Medical malpractice litigation in South Africa is blossoming, to an extent that the Minister of Health even issued a warning that compassion-based medicine is being replaced by defensive medicine and mistrust (Gifford 2018) (cf. 5.1). The categories identified were adverse events experienced after current training. Sub-categories identified under adverse events experienced were the lack of airway skills, and insufficient knowledge of pharmacology. The category of medico-legal implications came with the sub-categories of being unaware of legal implications of actions and the risks of certain actions for the patient. The last category identified under the Theme legal implications was the prevention of adverse events with the sub-categories of merely 'yes' and 'no' (cf. Table 4.3).
- Determine the medico-legal implications of not having an internship for the ECP paramedics:*** Fifty percent (50%) of the participants were of the opinion that additional training did not mean that medico legal implications necessarily would decrease; 38% of the participants, however, were of opinion that the medico legal complications would subside or be eliminated, and 13% of the participants were of the opinion that the number of medico legal implications would decrease (cf. Figure 5.1).
- Determine the advantages and disadvantages of having an internship***

Table 6.1: Advantages and difficulties of an internship

Advantages	Difficulties
Building of experience – valuable hands-on experience which might not be available in an entry position.	Some people may treat the interns as inferior
Building of confidence and repetition of procedures by clinical personnel engaging in operational clinical medicine.	Not direct registration as independent practitioners
Career compass – working with variety of people in different departments/disciplines	Financial implications – in other professions payment basically occurs in experience
Increase practical knowledge in the field of operations and the units which will accept the patient from the interns in future.	Inequality, the interns being seen as inferior by other health care practitioners while doing the internship.
Opportunity to perform scarce skills with back-up	
Networking – meeting people in key positions which will be able to assist to the benefit of the patients.	
Resume enhancer – employment opportunities.	
Interesting – new	

In summary the research questions were answered as follows:

- i. **Is there a need for an internship for postgraduate ECP paramedic training in South Africa?** The researcher was always of the opinion that an internship would be beneficial to the profession and was delighted when the study results showed that other professionals participating in the study agreed whole-heartedly. The need was identified among the graduates to be retained in the operational environment prior to them being absorbed in the academic sphere, empowering them with a practical approach supported by the academic knowledge obtained during their tertiary studies.
- ii. **What are the nature and risk profile (dangers) of the emergency care profession in South Africa?** Except for the bodily harm and theft of personal belongings currently occurring in certain locations within South Africa, the threat of litigation has become more imminent. Lawyers prosecuting medical care providers due to real or perceived negligence, and the increase in claims against practitioners are expanding progressively. Practitioners working on physically and mentally draining cases in difficult circumstances may be removed from technological assistance; therefore, they are becoming more dependent on self-confidence and personal competency, which both are seen as results of internship programmes.
- iii. **Are there medico-legal implications of not having an internship for the ECP paramedic in South Africa?** No medico-legal implications have been identified yet as being the result of not undergoing an internship *per se*. Learning from one's mistakes (with a patient as the subject), or violating the health status of the patient is

unacceptable among paramedic staff, and taking into consideration the statement by the Minister of Health (cf. 6.2.3), about litigation against health care providers being on the increase, all possible measures need to be taken timeously to guard against negligence and allowing health care providers to practise should they not be confident and competent (cf. 4.3.2.1).

iv. **What are the advantages and disadvantages of having an internship for the ECP paramedics in South Africa?**

Table 6.2: Advantages and disadvantages of an internship for paramedics

Advantages	Disadvantages
Retaining ECP paramedics in South Africa for at least one year post their graduation from tertiary institutions.	Financial concerns on the part of the newly graduated, further research on the availability for governmental grants for the internship year.
Valuable communications in the various disciplines with a thorough knowledge of the procedures and knowledgeable personnel that will ease the process of handing over or acceptance of patients for inter-hospital transfers.	Supervised practice and not directly available for autonomous practice.
Working in the operational environment and concentrating on the newly graduated paramedic's full potential regarding the cases at hand.	The duration of the tertiary programme and the internship programme adds up to five years.
Working with a variety of qualified people, thus limiting personal preferences.	Not directly addressing the shortages of ECPs in the operational environment immediately.
Having the opportunity to work in urban and rural areas during the internship	

6.3 LIMITATIONS OF THE STUDY

The researcher recognises some limitations in the study.

- Nowhere in the world a similar qualification could be found with the same history and challenges as the South African system that could be used to benchmark the internship.
- The participant sample was limited to fifteen (15) participants, although with a combined post ECP qualification time of 114 years and combined operational experience of Advanced Life Support registration of 176 years (cf. Figure 3.6 & Figure 3.7) the sample was considered sufficient.
- Although a sufficient response rate was obtained, time constraints, technology and a heavy workload (24/7 operational responsibilities) on the part of the researcher may have impacted negatively on the timelines set.

- The accumulation, ordering and analysis of qualitative data posed a real challenge for the researcher who is more comfortable in the clinical setting; however, borders of knowledge were expanded.

6.4 VALUE, SIGNIFICANCE AND CONTRIBUTION OF THE RESEARCH

The value of this research is contained in it determining that the ECPs trained in South Africa will benefit from additional training to further their competence towards proficiency. Enhanced competence has the potential to improve the confidence of the paramedics as operational clinicians to the ultimate advancement of the patient's right to receive competent care over the full continuum of medical care.

This study lays the groundwork and the basis for the development and implementation of an internship for the ECP graduate paramedics. As some of the respondents of the semi-structured interviews were lecturers at universities, their enthusiasm and experience could facilitate the future institution of the proposed internship.

6.5 RECOMMENDATIONS

In order for the study to yield **significant and valuable** results, the researcher takes the liberty of recommending the following towards an internship for the newly graduated ECP practitioner:

- The teaching and learning during the course of the internship should be well-planned and structured. To map the delivery of internship regarding constructive alignment, the choice of curricular modalities/learning modes and assessment methods for the internship, the research advise that the internship be curriculated as a module on its own for completion after qualifying with the NQF Level 8 degree in Emergency Medical Care, which will complement the current WIL.
- Degree emergency medical care learning programmes should give urgent attention to the training of clinical coordinators/mentors. The researcher suggests the delivery of a structured course carrying some Continues Professional Development Units (CPU's) to encourage clinical coordinators/mentors to empower themselves to assist with the supervision and mentoring of students in clinical practice.

- The education and training programme for Emergency Medical Care should play a proactive role to stimulate the use of modern educational methods such as the use of skills laboratories and e-learning activities.
- Further research is recommended to investigate specific aspects such as the training for coordinators/mentors, the management and coordination of the internship and the development and assessment of generic skills in the clinical environment.
- Categories recommendations under the Themes identified for chapter 4:

- **Additional training required**

Perceptions of influence of the internship, statements reflected that the internship programme will not only benefit in the clinical environment but also assist in the building of networks and increase employment possibilities. Not having an internship in the frontline creates cause for concern, especially for new graduates from academic institutions. Professional confidence will greatly benefit from the internship, newly graduated ECP's will be able to hone their confidence during the internship and not becoming vulnerable to litigation whiles under the mentorship of experienced health care practitioners. During the interviews, the emergency care practitioners were extremely inclined towards the idea of having a mentor. The identification and training of practitioners to become mentors has to be investigated.

- **Legal implications**

Adverse events experienced after current training, is not uncommon, the increase in legal action towards health care practitioners as stated by the minister of health would suggest that action should be taken as soon as possible to decrease the likelihood of legal action against health care practitioners. Medico-legal implications stays a real threat, specifically in the emergency context where pre-hospital personnel functions under a huge amount of pressure to save and prevent further harm to patients.

- **Development exploration**

Theoretical knowledge is the cornerstone and foundation to sound clinical judgement and should be part of the internship, not in specific to write theory papers during the internship, but to guide the clinical decision-making processes. Real life vs simulation, simulation is an integral part of the training and provide unique opportunity for the practice of scarce skills. Assessment of competency will be necessary to empower the practitioner with the knowledge that he or she does understand and has sound judgement in the clinical environment.

- **Regulation**

Implementation of the internship would be advised to occur as soon as possible, problems identified should be investigated and resolution has to be implemented and control of the internship should be regulated by the National Department of Health.

The researcher is of the opinion that the research made a significant contribution to the body of knowledge, in the field and that the recommendations will contribute to the development of a quality internship education and training program for newly qualified degree ECP's in South Africa.

6.6 CONCLUSIVE REMARKS

The introduction of an education and training programme for internship as part of the pedagogy in emergency medical care training will add a new dimension to teaching and learning of the emergency medical care students.

The development of an internship education and training programme for newly graduate emergency medical care practitioners as medium of instruction, which portrays sound pedagogical principles, will enrich the training of the highest qualified registered pre-hospital practitioners in South Africa. Consequently, an internship programme could have the potential to prepare and produce better-equipped professional who will render an optimal service to the patients and the community.

There is an eminent need, for abrupt implementation of the internship programme it is however illustrated in this study that the graduates will require more than just competency but they will require a proficient level to be able to address the needs of their clients, the patient to do them no harm and to stay clear of litigation.

In South Africa (SA), there is currently no internship or community service for the ECP paramedic although the latest SAQA document of August 2018 states that the USA model is followed by fieldwork and internship. In SA the clinical placement is scheduled before graduation and referred to as work integrated learning (WIL).

It is in the best interest of the profession to undertake the internship as soon as possible so the benefit could be achieved to the advantage of all which do require urgent medical attention not only in the urban areas but also in the rural areas.

The researcher believes that an internship of 12 months has to be performed to be valuable, efficient and in line with the other health care professions.

"The will to win, the desire to succeed, the urge to reach your full potential? These are the keys that will unlock the door to personal excellence"

(Eddie Robinson)

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APPENDIX A

APPROVAL LETTER FROM THE HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

LETTER FROM THE HEALTH SCIENCES RESEARCH ETHICS COMMITTEE



IRB nr 00006240
REC Reference nr 230408-011
IORG0005187
FWA00012784

14 February 2017

JJ JANSEN VAN VUUREN
HEALTH PROFESSIONS EDUCATION
FACULTY OF HEALTH SCIENCES
UFS

Dear JJ Jansen Van Vuuren

HSREC 19/2017 (UFS-HSD2017/0047)

PROJECT TITLE: INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC IN SOUTH AFRICA: A NEEDS ANALYSIS

1. You are hereby kindly informed that the Health Sciences Research Ethics Committee (HSREC) approved this protocol after all conditions were met. This decision will be ratified at the next meeting to be held on 28 February 2017.
2. The Committee must be informed of any serious adverse event and/or termination of the study.
3. Any amendment, extension or other modifications to the protocol must be submitted to the HSREC for approval.
4. A progress report should be submitted within one year of approval and annually for long term studies.
5. A final report should be submitted at the completion of the study.
6. Kindly use the HSREC NR as reference in correspondence to the HSREC Secretariat.
7. The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services- (HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the HSREC of the Faculty of Health Sciences.

Yours faithfully

DR SM LE GRANGE
CHAIR: HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

Health Sciences Research Ethics Committee
Office of the Dean: Health Sciences

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APPENDIX B

LETTER REQUESTING APPROVAL FROM THE DEAN OF THE FACULTY OF HEALTH SCIENCES AT UFS

LETTER REQUESTING APPROVAL FROM THE DEAN OF THE FACULTY OF HEALTH SCIENCES AT UFS

Professor G.J. van Zyl
Dean of the Faculty of Health Sciences
University of the Free State
Bloemfontein

Application: Permission to continue with the research and collecting data

TITLE: INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC IN SOUTH AFRICA: A NEEDS ANALYSIS

Dear Prof van Zyl

I would hereby like to ask your blessing and permission to continue with the above-mentioned study. The aim of this study, 'THE NEED FOR AN INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC IN SOUTH AFRICA' is to determine the need for an internship programme for the ECP paramedic in South Africa.

My study leaders are:

1. Prof Martin Jansen van Vuuren, Emeritus Associate Professor, School of Medicine, University of the Free State.
2. Dr Belinda van der Merwe, Senior Lecturer, Department of Clinical Sciences, Faculty of Health & Environmental Sciences, University of Technology Free State.

I would like to thank you and trust that my request will receive your favourable consideration.

Yours faithfully

Mr J J Jansen van Vuuren
Student number: 2015142538
Cell phone number: 082 557 3008
Work number: (051) 507 4072
Email: mhpe2016@gmail.com

APPENDIX C

CONSENT FORM FOR PARTICIPANTS IN THIS RESEARCH

CONSENT FORM FOR PARTICIPANTS IN THIS RESEARCH

TITLE: INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC IN SOUTH AFRICA: A NEEDS ANALYSIS

You are invited to participate in a study conducted by J.J. Jansen van Vuuren. An in-depth study will be done by the researcher on the need for an internship programme for the ECP paramedics in South Africa.

Your participation will involve partaking in a semi-structured interview via video Skype. You will not receive any remuneration for your contribution. This study is conducted in partial fulfilment of my master's degree. **Will you please respond regarding your willingness to participate / not to participate in this study?**

Risks and discomforts

There are no known risks associated with this research.

Potential benefits

This research may determine a need for the creation of an internship programme for the newly qualified ECP paramedic in South Africa.

The following objectives and proposed research actions are formulated for this study:

- Determining the necessity for an internship programme.
- Gaining insight into the risk profile and the nature of emergency medical care.
- Determining the risk of not having an internship programme.
- Determining the advantage of having an internship programme for the ECP paramedic.

Protection of confidentiality

I will do everything I can to protect your privacy. Your identity will not be revealed in any publication resulting from this study.

Voluntary participation

Your participation in this research is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalised in any way should you decide not to participate or to withdraw from this study. The duration of the interview is expected to be approximately 45 minutes.

Contact information

If you have any questions or concerns about this study or if any problems arise, please contact Mr J.J. Jansen van Vuuren at the Central University of Technology Free State (CUT FS) at (051) 507 4072. If you have any questions or concerns about your rights as a research participant, please contact the Health Sciences Research Ethics Committee of the University of the Free State.

Consent

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

Participant's Initials & Surname: _____

Participant's Signature: _____

Date: _____

The interview will only be conducted if the signed consent form was received by the researcher before or on the day prior to the interview commencement.

APPENDIX D

QUESTIONNAIRE FOR THE SEMI-STRUCTURED INTERVIEWS

QUESTIONNAIRE FOR SEMI-STRUCTURED INTERVIEWS

INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC IN SOUTH AFRICA: A NEEDS ANALYSIS

Biographical Information:

- Age
- Gender
 - o MaleFemale
- Year qualified = _____
- Years in operations = _____ Years
- Current position = _____

-
- Do you feel that your experience in the first 6 months of your professional career as ECP would have been better if you had a mentor to work with or connect to? Please motivate your answer!

Yes / No:

- Should you have had an internship programme, do you believe that the programme would have benefitted your development of professional confidence? Please motivate your answer!

Yes / No:

- How long should the duration of the internship be?

- Have you encountered / do you know of any adverse events in patient care after registration as an ECP paramedic?

Yes /No

Please explain if yes!

- Pertaining to the above question, do you believe that it could have been avoided if you / the practitioner had completed an internship programme?

Yes /No

Please motivate if yes!

- When and how long should the internship programme be?

Please motivate your choice:

Should the need for internship be determined, could you please share your thoughts on the following questions?

- What should be the contents of the internship programme?
- How should the assessment / competency test of the internship programme be conducted?
- How would the internship fit into the existing training framework of South Africa?
- How would the internship fit into the future training framework of South Africa?
- Should there be a component of theory and a component of simulation?

Please motivate:

- What problems do you expect to be faced by internship programmes?
- How do you envisage control over the internship programme and if the need was determined, how should it be implemented?
- Should National Health / HPCSA regulate the registration as independent / supervised practice of the newly graduated ECP?

APPENDIX E

LETTER FROM THE LANGUAGE EDITOR

LETTER FROM THE LANGUAGE EDITOR

DECLARATION

23 January 2019

TO WHOM IT MAY CONCERN

I herewith declare that I did the language editing of the dissertation on **Internship for the emergency care practitioner (ECP) paramedic in South Africa: A needs analysis**, by JJ. Jansen van Vuuren, student number: 2015142538.

The track changes function was used and the student was responsible for accepting/rejecting the changes and recommendations, and for finalising the document.



Dr MJ Bezuidenhout PhD [HPE]; BA [Languages]

Language Practitioner
Waverley Bloemfontein
e-mail: mjbezuidenhout@absamail.co.za
Cell: 0724360299



SATI /SATI membership number 1003226

South African Translation Institute

APPENDIX F

LETTER FROM THE BIOSTATICIAN

DR J. RAUBENHEIMER

LETTER FROM THE BIOSTATICIAN

APPENDIX F



10 November 2016

For attention: Health Sciences Research Ethics Committee
Faculty of Health Sciences
University Of The Free State
Block D, room 104
Francois Retief Building
Po Box 339 (G40)
Nelson Mandela Drive
Bloemfontein
9300

Title of project:

INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC
IN SOUTH AFRICA: A NEEDS ANALYSIS

Researcher:

Mr J.J. Jansen van Vuuren

As this study is a qualitative research study, the input of a statistician is not required,
and approval should rather be sought from an expert in qualitative research.

Yours faithfully

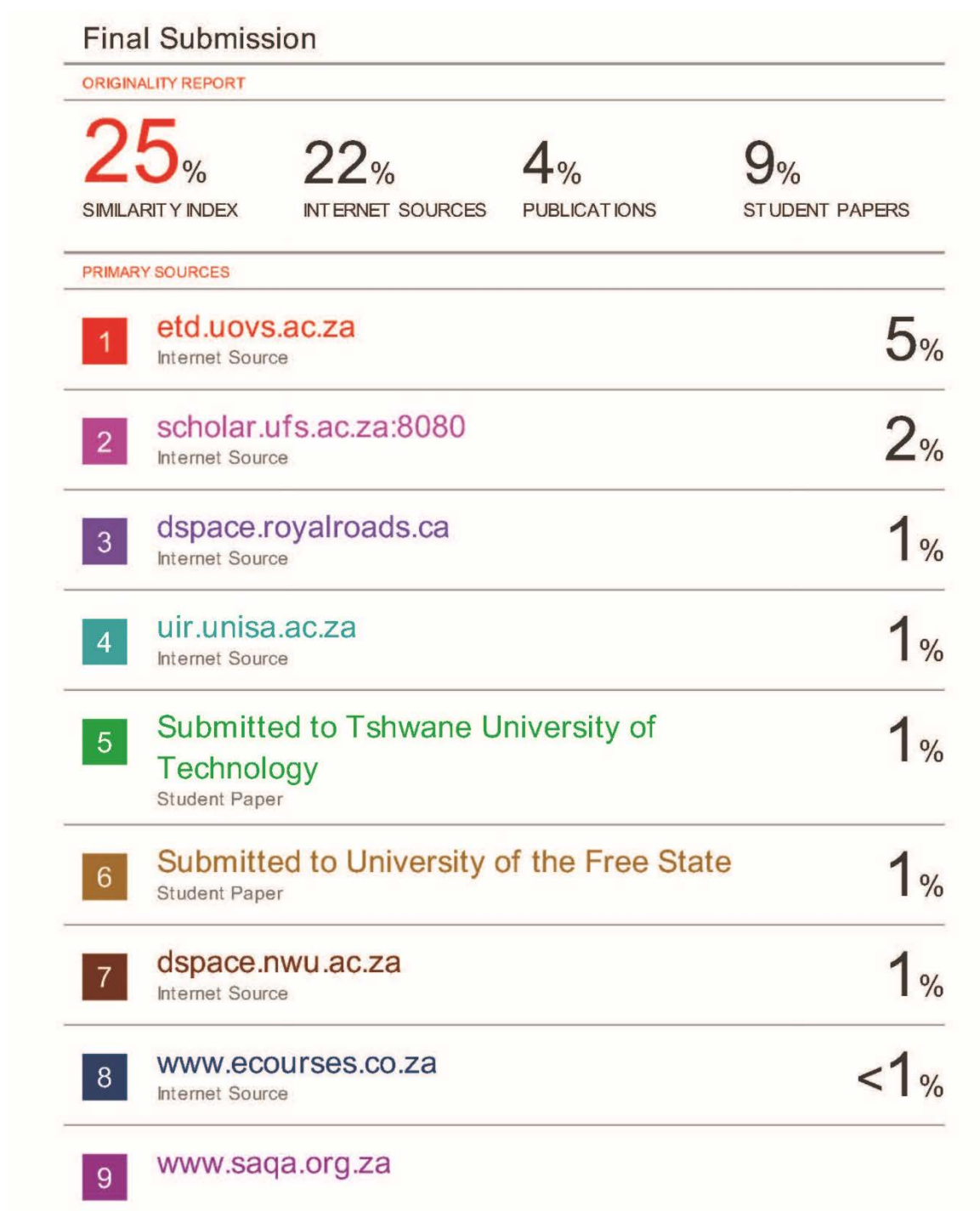
A handwritten signature in black ink, appearing to be 'Dr. Jacques Raubenheimer', written over a horizontal line.

Dr. Jacques Raubenheimer

APPENDIX G

TURN-IT-IN REPORT

TURN-IT-IN REPORT





25 January 2019

TO WHOM IT MAY CONCERN

DECLARATION ON PLAGIARISM

According to the University of the Free State's Policy on the Prevention of Plagiarism and Dealing with Academic Writing Misconduct definition:

Plagiarism implies direct duplication of the formulation and insights of a source text with the intention of presenting it as one's own work. Plagiarism cannot be confirmed as a result of mere similarities of words between the source text and the borrowed text as in the case of terminology, commonly used phrases and known facts. If plagiarism is suspected it must also be provable. The source text and borrowed text must therefore be placed side by side. The mere suspicion of plagiarism cannot form the basis of an accusation. Plagiarism is distinguished from forms of academic writing misconduct such as:

- cribbing in tests and examinations;
- collusion and fabrication or falsification of data;
- deliberate dishonesty;
- purchasing assignments, dissertations and/or theses on the Internet and presenting such documents as one's own work;
- presenting the same work for more than one course or in consecutive years; and
- the submission of another person's work as one's own original work.

To check for plagiarism the UFS uses software programmes like TURNITIN. The programme does not show plagiarism but rather focus on similarity in text against certain criteria.

In this spirit the promoters are satisfied that in the report following this letter it shows a **25%** similarity in the dissertation.

The full report is electronically available on request from examiners (assessors).

Yours sincerely,

Prof M. V. Jansen van Vuuren
Emeritus Professor

Dr B. van der Merwe
Senior lecturer





25 January 2019

TO WHOM IT MAY CONCERN

DECLARATION ON PLAGIARISM

According to the University of the Free State's Policy on the Prevention of Plagiarism and Dealing with Academic Writing Misconduct definition:

Plagiarism implies direct duplication of the formulation and insights of a source text with the intention of presenting it as one's own work. Plagiarism cannot be confirmed as a result of mere similarities of words between the source text and the borrowed text as in the case of terminology, commonly used phrases and known facts. If plagiarism is suspected it must also be provable. The source text and borrowed text must therefore be placed side by side. The mere suspicion of plagiarism cannot form the basis of an accusation. Plagiarism is distinguished from forms of academic writing misconduct such as:

- cribbing in tests and examinations;
- collusion and fabrication or falsification of data;
- deliberate dishonesty;
- purchasing assignments, dissertations and/or theses on the Internet and presenting such documents as one's own work;
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INTERNSHIP FOR THE EMERGENCY CARE PRACTITIONER (ECP) PARAMEDIC
IN SOUTH AFRICA: A NEEDS ANALYSIS

Mr J.J. Jansen van Vuuren

*A study completed in fulfillment of the requirements for a Master's degree in
Health Professions Education (M.HPE)
in the
Division Health Sciences Education,
Faculty of Health Sciences at the University of the Free State*

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