.

CONTENTS

.

GOVERNMENT NOTICE

SOUTH AFRICAN QUALIFCATIONS AUTHORITY

No. 48   22 January 2007

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

Occupational Health and Safety

registered by Organising Field 09 – Health Sciences and Social Services, publishes the following qualification for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification. The full qualification can be accessed via the SAQA web-site at **www.saqa.org.za**. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the qualification should reach SAQA at the address below and *no later than 22 February 2007*. All correspondence should be marked **Standards Setting – Occupational Health and Safety** addressed to

> The Director: Standards Setting and Development
> SAQA
> *Attention: Mr. D. Mphuthing*
> Postnet Suite 248
> Private Bag X06
> Waterkloof
> 0145
> or faxed to 012 – 431-5144
> e-mail: dmphuthing@saqa.org.za

DR. S. BHIKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

QUALIFICATION:
National Diploma: Emergency Care and Technology

SAQA QUAL ID	QUALIFICATION TITLE		
58083	National Diploma: Emergency Care and Technology		
SGB		PROVIDER	
SGB Occupational Health and Safety			
ETQA			
o			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Diploma	9 - Health Sciences and Social Services	Curative Health	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	240	Level 5	Regular-ELOAC
REGISTRATION STATUS	SAQA DECISION NUMBER	REGISTRATION START DATE	REGISTRATION END DATE
Draft - Prep for P Comment			

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

This qualification is an entry-level qualification and recognises the key competences required of Emergency Care Technicians (ECT) who are able to work independently in a variety of contexts. This qualification will be particularly useful for:

• Individuals wishing to enter the profession.
• Existing basic ambulance assistants.
• Existing ambulance emergency assistants.
• Existing operational emergency care orderlies.

Holders of this qualification will operate mainly in and around the ambulance, within wide ranging contexts, including rural, urban, military, coastal, corporate, mass gatherings, homes and workplaces. In general, the ECT will provide an independent service within the pre-hospital context.

Scope of practice of Emergency Care Technicians:

The exit level outcomes, range statements and assessment criteria must be interpreted and applied within the context of the scope of practice of Emergency Care Technicians as defined by the Health Professions Council of South Africa.

Rationale:

This qualification is designed to produce a mid-level worker who will provide emergency care services primarily within South Africa, in contexts that range from rural, disadvantaged communities to sophisticated, highly technological urban areas. In addition, this qualification aims to produce a competent mid-level worker who will take cognizance of South African history and be able to adapt to the unique circumstances of a changing South Africa with emphasis on equity in health care and reduction of burden of disease.

The National Diploma in Emergency Care and Technology defines the competences needed by the Emergency Care Technician (ECT). The qualification provides the necessary foundational knowledge, skills and insights needed to form a platform for further study in the field of Emergency Care. The qualification is thus designed to enable learners to pursue further personal and professional development and to promote life-long learning.

This qualification will benefit individual holders of the qualification, the medical profession and society in the following ways:

Benefit to individual holders of the qualification:

This qualification provides an entry point to the career path of emergency care services while opening doors for employment and providing mobility for the individual to move between different areas within emergency care. The qualification provides for holistic development of individuals and the competencies required to do the job.

Benefit to the profession:

This qualification is of benefit to the emergency care profession as it:

• Provides a consistent and coherent foundation for practice at an entry level and progression within the profession in the context of a national qualifications framework.
• Provides a means for the critical function of formal certification and registration within the profession, thus ensuring society is served by competent Emergency Care Technicians.
• Helps to legitimise this level of practice in particular, as well as the profession as a whole.
• Provides a comparable benchmark within the health profession.
• Will lead to a reduction in the burden on other health structures and practitioners.
• Will lead to a reduction in the number of disciplinary occurrences that take place due to inadequate or inappropriate training.
• Will promote emergency care as a preferred career option.
• Will encourage individuals to enhance and develop the profession itself through their own innovation.
• Will help in the planning, implementation and monitoring of continuing professional development.
• Provides a more equitable basis for remuneration.
• Will enhance the societal image of the profession through improved quality of emergency care services.

In addition, employers of Emergency Care Technicians will benefit through enhanced efficiency, effectiveness and productivity (e.g. reduced accidents).

Benefit to society:

The key benefits to society are:

• Patients are served by competent Emergency Care Technicians, thus increasing their chances of survival and recovery.
• There will be a reduction in the cost of health care and hospitalisation through the more efficient use of resources.
• Society will be served by more efficient and effective service delivery.
• The country will be served by a broad reserve of competent individuals.
• Given South Africa's role as one of five developing nations, this qualification will provide a benchmark for the continent.
• The qualification provides a step towards world-leading practice in EMS.

• With a decreased burden on health structures, there are resultant benefits to allied services that are trying to meet EMS needs due to current inadequacies in competencies e.g. reduced contamination of crime scenes, how to give evidence in court; issues related to child abuse etc.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED TO BE IN PLACE
It is assumed that the learners have NQF level 4 mathematical literacy and literacy skills and the ability to undertake independent learning. In addition, it is assumed that learners are able to use information technology to access, present, record and disseminate information.

Access to the qualification:

Learners accessing this qualification will be expected to have an FETC or equivalent qualification at NQF Level 4. Employees of the Department of Health not holding appropriate NQF Level 4 qualifications may be required to access this qualification through a bridging course.

Recognition of Prior Learning:

This qualification may be achieved in part through RPL on presenting the relevant evidence that meets the outcomes of the qualification.

QUALIFICATION RULES
Learners are to achieve all the credits for:

• The Fundamental component (16 credits).
• The Core component (200 credits).

Qualification Overview:

Learners are to achieve one of the four Electives (24 credits).

Fundamental (16 credits)

• Communicate with patients, colleagues and other services through oral, written and electronic media: (10 credits).
• Promote awareness of HIV and AIDs in self and among others: (6 credits).

Core (200 credits)

Foundations of Professional Practices

• Demonstrate understanding of the structure and function of Emergency Medical Service (EMS) systems in South Africa and how the EMS relates to the broader health care structures within the country: (4 credits).
• Demonstrate an understanding of and apply the principles of medical ethics, professional behaviour and the legal framework to the context within which the emergency care provider operates: (10 credits).
• Maintain personal health, wellness and safety: (10 credits).

Scientific Knowledge

• Demonstrate knowledge and understanding of clinical gross human anatomy: (20 credits).

• Demonstrate understanding of fundamental human physiology and bioprocesses: (20 credits).
• Demonstrate understanding of fundamental integrated sciences underpinning emergency care: (30 credits).

Emergency Care Practice

• Provide clinical emergency care independently within an EMS environment: (66 credits).
• Perform clinical assessment and clinical decision making, and provide treatment for minor injuries and minor ailments in specific controlled circumstances: (30 credits).
• Carry out operational routines within an EMS environment: (10 credits).

Electives (select 24 credits)

• Perform medical rescue in selected contexts: (24 credits).
• Provide support in specialised transport of patients: (24 credits).
• Carry out call taking and dispatch in an emergency communication centre: (24 credits).
• Provide emergency care within a military environment: (24 credits).

EXIT LEVEL OUTCOMES
Fundamentals:

• Communicate with patients, colleagues and other services through oral, written and electronic media: (10 credits).
• Promote awareness of HIV and AIDs in self and among others: (6 credits).

Core:

Foundations of professional practices

• Demonstrate understanding of the structure and function of Emergency Medical Service (EMS) systems in South Africa and how the EMS relates to the broader health care structures within the country: (4 credits).
• Demonstrate understanding of and apply the principles of medical ethics, professional behaviour and the legal framework to the context within which the emergency care provider operates: (10 credits).
• Maintain personal health, wellness and safety: (10 credits).

Scientific knowledge

• Demonstrate knowledge and understanding of clinical gross human anatomy: (20 credits).
• Demonstrate understanding of fundamental human physiology and bioprocesses: (20 credits).
• Demonstrate understanding of fundamental integrated sciences underpinning emergency care: (30 credits).

Emergency care practice

• Provide clinical emergency care independently within an EMS environment: (66 credits).
• Perform clinical assessment and clinical decision making, and provide treatment for minor injuries and minor ailments in specific controlled circumstances: (30 credits).
• Carry out operational routines within an Emergency Medical Services environment: (10 credits).

Electives:

Any one of:

• Perform medical rescue in selected contexts: (24 credits).
• Provide support in specialised transport of patients: (24 credits).
• Carry out call taking and dispatch in an emergency communication centre (24 credits).
• Provide emergency care within a military environment: (24 credits).

Critical cross-field outcomes:

The following critical cross-field outcomes are addressed by this qualification:

• Identify and solve problems using critical and creative thinking in relations to the assessment and treatment of patients.
• Work effectively with others as a team, group, organization and community within the context of providing emergency care and supporting other services.
• 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.
• Collect, analyze, organize and critically evaluate information for the assessment and treatment of patients.
• 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.
• Demonstrate cultural and aesthetic sensitivity in dealings with patients, colleagues and communities.
• Demonstrate an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation.
• Demonstrate ethical and professional behaviour in relation to personal conduct, and interactions with patients, colleagues and other services.
• Lay the foundation for life-long learning and ongoing competency.

1. Communicate with patients, colleagues and other services through oral, written and electronic media.

2. Promote awareness of HIV and AIDs in self and among others.

3. Demonstrate understanding of the structure and function of Emergency Medical Service (EMS) systems in South Africa and how the EMS relates to the broader health care structures within the country.

4. Demonstrate understanding of and apply the principles of medical ethics, professional behaviour and the legal framework to the context within which the emergency care provider operates.

Range:

• Patient Rights Advocacy.
• National principles aimed at enhancing service delivery.
• Patient confidentiality.
• Consent.
• Patient handover.
• Patient record keeping.
• Reporting duties: Rape; Abuse (Children, women, elderly); Ethics; Malpractice.
• Counselling for the prevention of illness and injury and to improve the individuals state of health.

5. Maintain personal health, wellness and safety.

6. Demonstrate knowledge and understanding of clinical gross human anatomy.

Range:
• Knowledge and understanding of clinical gross human anatomy as is relevant to the field of Emergency Care in general, and the scope of practice of the emergency care technician in particular.

7. Demonstrate knowledge of fundamental human physiology and bioprocesses.

Range:
• Knowledge of human physiology and bioprocesses as is relevant to the field of Emergency Care in general, and the scope of practice of the emergency care technician in particular.

8. Demonstrate knowledge of fundamental integrated sciences underpinning Emergency Care.

Range:
• The integrated sciences include chemistry, physics, pharmacology, general pathology and microbiology, with particular reference to the principles and concepts in relation to the needs of Emergency Care.

9. Provide clinical emergency care independently within an EMS environment.

Range:

There must be evidence of the ability to apply and practice emergency medical care in an authentic environment, and in particular within the following contexts:

• Ambulance.
• Communications Centre.
• Casualty/Trauma Units (emergency centres).
• Ante-natal Unit.
• Labour Ward.
• Mass gatherings.

10. Perform clinical assessment and clinical decision making, and provide treatment for minor injuries and minor ailments in specific controlled circumstances.

Range:

Assessments:

There must be evidence that the learner can carry out the full range of assessments within the scope of practice of the ECT as identified below:

• Examination and assessment of head and neck, abdomen, thorax, pelvis and extremities.
• Examination and assessment of cardio-vascular system, neurological system, respiratory system, musculo-skeletal system.
• Taking and recording of pulse, blood pressure and perfusion, breathing, skin condition (skin colour), level of consciousness (e.g. GCS, AVPU), blood glucose analysis, pupil assessment, revised trauma score, blood pressure, pulse oximetry, body temperature, capnography, APGAR assessment.

Treatments:

The range of treatments include at least: headaches, abdominal cramps, indigestion, fever, diarrhoea, nausea, vomiting, muscle pain, allergy, insect bites and stings, cuts and bruises, blisters, rhinitis.

Contexts:
The contexts for assessment and treatment mainly relate to mass gatherings and major events supported by the primary, secondary and tertiary health care system e.g. Primary Health Care nurses, doctors, physiotherapists.

11. Carry out operational routines within an Emergency Medical Services environment.

Range:

Routines relate to:

• Maintaining and operating emergency vehicles and equipment.
• Using communication and information systems.

12. Perform medical rescue in selected contexts.

Range:

The scope of performance to include the ability to:

• Conduct basic search and rescue in a fire environment with the express purpose of reaching and evacuating a patient.
• Extricate patients trapped in vehicles using the following extrication and rescue tools:
◦ Electric and hydraulic generators.
◦ Lighting systems.
◦ Hydraulic rescue tools.
◦ Pneumatic tools.
◦ Winches.
◦ Reciprocating saw and chain saw.
◦ Rescue patients using rope rescue tools and techniques.

13. Provide support in specialised transport of patients.

Range:

This refers to inter-hospital transportation of the critical ill or injured patient in support of the emergency care practitioner, including dealing with patients with the following special needs:

• Neonates, paediatrics, children, geriatrics, blind, deaf.
• Spinal injury, abdominal surgery, head surgery, maternity, burns, pacing.
• Communicable diseases.

14. Carry out call taking and dispatch in an emergency communication centre.

15. Provide emergency care within an austere military environment.

Range:

Emergency care within a military environment is about stabilizing, treating and evacuating casualties in austere military conditions applying core competencies in military operational circumstances in conventional, peace support and urban warfare.

This elective builds on the pre-knowledge contained in the core of the Emergency Care Technician qualification and adds the unique operational emergency care applicable to the military environment.

ASSOCIATED ASSESSMENT CRITERIA
1.
● Communication with patients, colleagues and other services is effective, clear, direct, and accurate, with appropriate use of correct media. Terminology is consistent with profession usage.
● Interactions promote human dignity and are undertaken with due sensitivity to ethnic, cultural, linguistic, religious and gender diversity.
● Responses to individuals show a clear understanding of issues under discussion in one-on-one or group situations.
● Own understanding is clarified and further developed during discussions and opportunity is provided during interactions for the clarification of one another's understanding.
● Information is accessed, processed, re-organised, and synthesised in terms of the requirements of the communicative task.
● Report writing and administration is comprehensive, comprehensible, accurate, relevant, up to date and compliant with organisational requirements.
● Language conventions, textual features and style of recording are appropriate for specific workplace purposes.

2.
● The differences between HIV and AIDS, and Sexually Transmitted Diseases (STDs) are outlined in terms of risks and consequences for people.
● Descriptions of ways in which HIV, and STDs, can be transmitted include common myths and misconceptions.
● The severity of the HIV/AIDS pandemic to South Africa is described in terms of the impact on population characteristics and potential consequences for the emergency care services.
● The severity of the HIV/AIDS pandemic in South Africa is described in terms of comparative infection rates and government action in neighbouring countries and the rest of the world.
● Precautionary measures and behaviours are described and linked to the general ways in which HIV and STDs are transmitted. The benefits of voluntary testing and awareness of one's own status are described in terms of self and others.
● National and local sources of information and education programmes on HIV/AIDS are identified.
● The risks associated with the transmission of HIV/AIDS are identified for the emergency medical services.
● The prevalence or significance of risk of HIV/AIDS is described for the emergency medical services. Measures to reduce risk of HIV/AIDS transmission are described in accordance with guidelines and practice within the health profession.
● Ways in which a colleague with HIV/AIDS may be assisted to deal with their condition are described in terms of occupational guidelines and practice.
● HIV/AIDS education, counselling and/or support services are identified for the emergency medical services.
● individual, while helping to increase support and decrease discrimination and stigma against people with HIV/AIDS.
● Information shared is consistent with national policies and guidelines on HIV/AIDS.
● The need to protect the rights to privacy of information regarding HIV/AIDS status is described in terms of potential consequences for the individual and their family.
● Ways in which the individual with HIV/AIDS may be assisted to deal with their condition are described in terms of positive personal actions and behaviours. The different treatments, care and support options are identified and shared with empathy and confidentiality.
● National and local support and counselling groups are identified in terms of contact details and the nature of assistance offered in each identified group.

3.
• The EMS are described in terms of structure, role and function, both public and private, within the South African context.
• Explanations are provided of the interdependence and interrelationships occurring between EMS and other Allied Health Care structures.
• The role of the health care team is explained in terms of key responsibilities of each role and the relationships between each role.

4.
• Professional relationships are characterised by mutual respect, cooperation, accountability, rapport and effective communication.
• Interactions display empathy and unconditional positive regard for the patient and others. Individual and group interactions are conducted appropriately and effectively.
• Interactions with patients and others are sensitive to ethnic, cultural, linguistic, religious and gender diversity. Communication modalities and styles are adapted to meet individual patient needs.
• Language barriers are identified and addressed appropriately, using interpreters where possible.
• Ethical principles of beneficence, autonomy and justice, truth telling, promise keeping and confidentiality are applied in all contexts.
• All clinical interactions and related practices are in line with the provisions and rules of the codes of ethics of the HPCSA and professional associations.
• Confidentiality is maintained in line with medical ethical practices. The need to override the principle of confidentiality when superseded by legal authority is explained and applied in line with accepted protocols.
• Consultation with and referral to the health care team is carried out when necessary and appropriate. The patient and family are included as integral members of the health care team as and when possible.
• Practices are characterised by appropriate dress, grooming and punctuality within the context of the requirements of the profession.
• Explanations are provided of the legal framework within which an emergency service provider and/or practitioner operates.
• Explanations are provided of the medical legal implications and importance of accurate record keeping.

5.
• The need for mental wellness on the part of the emergency care provider is explained, highlighting its role and importance, with particular reference to the impact on job effectiveness.
• Methods for obtaining and maintaining operational fitness are identified and described in terms of lifestyle, diet and exercise techniques, highlighting the impact on self and job effectiveness.
• The physical demands of emergency care are described in terms of biokinetic principles, with particular reference to techniques for lifting and carrying heavy objects.
• Techniques are described to identify and manage own stress and stressful situations.
• Personal stress disorders and stress factors are identified based on an accurate reading of symptoms and patterns. Appropriate sources of help are identified and actions are taken with appropriate urgency to deal with identified problems.
• Methods for maintaining personal safety are identified and demonstrated through appropriate risk assessment, scene assessment, decision making and option taking.
◦ Range: this includes extricating oneself from dangerous situations, handling a hijacking threat, self-defence, use of protective clothing, prevention of infection by pathogens and the importance of relevant prophylactic immunisations.

6.

• The thorax is explained in terms of its composition, general form, spatial orientation, structures and position of the cavities. The explanations demonstrate an ability to integrate surface topographical and clinical anatomy of the thorax.

• Explanations of the normal abdominal anatomy are provided, demonstrating an ability to integrate surface topographical and clinical anatomy of the abdomen.

• The pelvis is explained in terms of its structure and contents, with particular attention to gender. The explanations demonstrate an ability to integrate surface topographical and clinical anatomy of the pelvis.

• The structures of the lower extremity are explained in terms of composition and relative position. The explanations demonstrate an ability to integrate surface topographical and clinical anatomy of the lower extremities.

• The structures of the upper extremity and back are explained in terms of composition and relative position. The explanations demonstrate an ability to integrate surface topographical and clinical anatomy of the upper extremity and back.

• The structures of the head and neck are explained in terms of composition and relative position. The explanations demonstrate an ability to integrate surface topographical and clinical anatomy of the head and neck.

7.

• The organisation of the body is explained with respect to the cellular physiology, the tissue physiology, the major systems, homeostasis and feedback.

• The human body is explained in terms of the principles of support and movement.

• The control systems of the body are explained in terms of the nervous and endocrine components.

• The special senses are explained in terms of function.

• The following systems are explained in terms of structure and function:

◦ The nervous system.
◦ The cardiovascular system.
◦ The lymphatic system and immunity.
◦ The respiratory system.
◦ The digestive system.
◦ The reproductive system.
◦ The integumentary system.
◦ The muscular-skeletal system.
◦ The urinary system.

• The fluid, electrolyte and acid-base dynamics are explained with reference to impact on human physiology.

8.

• The following key principles of chemistry are explained and applied to emergency medical care contexts:

◦ Foundational chemistry (matter, atomic structure and chemical bonding).
◦ Chemical equations and reactions.
◦ Acids, bases and salts.
◦ Radioactivity.
◦ Properties of specific gases.
◦ Water and solutions.
◦ Organic chemistry.
◦ Biochemistry.

• The following key principles of physics are explained and applied to emergency medical care contexts:

◦ Basic measurement.
◦ Mechanics.
◦ Fluids.
◦ Heat.

° Electricity and magnetism.

• The following key principles of microbiology are explained and applied to emergency medical care contexts in general, with particular reference to communicable diseases and infection control:

° Gross Classification System of applicable micro-organisms.

° Modes of transmission.

° Applied basic hygiene and protective measures.

° How micro-organisms are destroyed.

° Infection control measures, including basic elements of Epidemiology:

> Identify related health status indicators.

> Utilise outbreak trip wires appropriately.

> Interpret incidents in context.

> Incidents and prevalence reporting.

> Contribute to data gathering.

• Methods for dealing with medical waste, disinfection procedures and infection control are demonstrated and or explained in line with established protocols.

• The pathogenesis of disease is described in relation to the anatomy and physiology of the applicable systems.

• Problem-based scenarios are interpreted based on integration of anatomy, physiology and pathology.

• Principles of pharmacology as applied to the emergency care context are described in terms of the following:

° Mechanisms of drug action.

° Pharmacokinetics.

° Routes of drug administration.

° Drug interactions and adverse drug reactions.

• Drugs used within the scope of practice of the ECT are described in terms of class, schedule, trade name, generic name, mechanism of action, indications, contra-indications, precautions, side effects, packaging, dosage and administration and route of administration.

9.

• Possible hazards within the emergency service environment are identified in terms of their sources, impact and means for preventing or minimizing their negative impact. Scene hazard control is carried out in line with established procedures.

• Strategies for dealing with bystanders and crowds are appropriate to the situations.

• Patients are assessed and managed in a pre-hospital emergency context consistent with the scope of practice of an Emergency Care Technician.

• Acute life-threatening medical and/or trauma related disorders are detected based on an applied understanding of the basic pathophysiologies behind common medical and trauma related disorders.

• Decisions on treatment are based on and validated by history taking and appropriate patient assessment. The need for a higher level of clinical competencies is identified correctly.

• Emergency care equipment related to the care of ill or injured patients is explained in terms of function, storage, maintenance and use.

• Basic life support interventions and emergency care for adults, children and neonates are explained and applied in line with accepted life support theory and principles and the acceptable code of practise and protocols as defined by the PBECP.

• Infection control is executed in line with organisational requirements.

• Integrated patient care is demonstrated in simulated patient scenarios.

• The assessment and treatment of adult patients are explained and demonstrated within the scope of practice of the Emergency Care Technician with reference to the various body systems.

• The anatomical and physiological differences between adults and children are described consistent with prevailing theories.

- The anatomical and physiological adaptations to pregnancy are explained in line with prevailing theories.
- The pathophysiology of disease processes are explained in terms of obstetrics and paediatric patients.
- The assessment and treatment of obstetrics and paediatric patients are explained and demonstrated within the scope of practice of the Emergency Care Technician with reference to normal vaginal delivery, complicated deliveries and paediatric emergencies.
- The assessment and treatment in environmental emergencies are recognised and explained within the scope of practice of the Emergency Care Technician.
- Patient hand over to other services is carried out in line with local protocols and procedures.
- Records provide accurate details of the patient information and treatment.

10.
- Assessment is carried out in a manner that is consistent with principles of medical history taking.
- Assessments are carried out in accordance with accepted medical principles of physical examination.
- Clinical assessments successfully narrow down the possibilities of conditions and identify probable conditions.
- Clinical decision-making is appropriate to the presenting condition.
  ○ Range: decision-making includes treatment, advise, referral and transportation.
- Treatment, where applicable, is in line with the clinical decision, and is applicable to the assessed conditions.
- Transportation is provided to the appropriate care centre, only as and when necessary as supported by the clinical assessment.
- Records provide accurate details of the clinical assessment, decisions and treatment.
- Interactions display empathy and unconditional positive regard for the patient and others.

11.
- Emergency vehicles are identified according to specific tasks within the emergency care environment.
- The emergency vehicle is set up ergonomically and maintained in a state of constant readiness. Vehicle problems are identified and reported according to local operational procedures.
- Emergency equipment is checked with required regularity and is maintained in a clean, disinfected and ready state at all times as per local procedures. Troubleshooting of equipment failure is successful in identifying problems, and appropriate actions are taken to address identified problems according to local procedures.
- Emergency equipment is identified and described in terms of indications, contra-indications, precautions, complications, use and, where applicable, assembly.
- Vehicles are operated with due respect for other road users and in compliance with the Road Traffic Act and prevailing road conditions. The vehicle is controlled under high speed conditions, with effective use of warning devices and with due respect and safety for other road users.
- The correct procedures relating to registration, modification and marking of emergency service vehicles is explained as per given regulations.
- The relevant legislation is described as it relates to emergency vehicles responding to incidents, and transporting patients and or pressure cylinders.
- Navigation is carried out effectively using appropriate navigational tools.
- Procedures to be followed should a vehicle become involved in an accident are explained and or demonstrated in line with relevant legislation.
- Communication devices are used according to established protocols to ensure effective communication.
- A variety of communication devices are compared to identify their fundamental components, principles of operation, advantages and disadvantages.
  ○ Range: radio, cell phone, satellite phone, paging systems, and telemetry devices.

Elective A:

12.

• The science of fire behaviour is described in terms of its impact on rescues and the applications of principles of fire safety.

• Correct personal protective equipment is used in line with standard operating procedures.

• Methods of fire extinguishment are described and demonstrated with appropriate reference to the following:

◦ Classes of fire.

◦ Extinguisher markings.

◦ Extinguisher types.

◦ Water supply and hoses.

◦ Basic fire tactics.

• Possible hazardous materials and situations are identified and described in terms of their potential impact and methods to avoid or minimize their harmful effect.

• Self-contained breathing apparatus is used in line with standard operating procedures.

• Search and rescue operations are carried out in line with established procedures and maximize the potential for affecting a safe rescue of patients.

• Vehicle collisions and extrication principles are described in line with the related principles of physics.

• Descriptions are provided of structural and damage characteristics of different types of motor vehicles.

• Vehicles in various positions are stabilised as per established procedures.

• Safety zones are established using scene security barriers, patient protection and personal protective equipment in line with standard operating procedures.

• Appropriate tools and techniques are used to create access and egress openings to extricate an entrapped patient.

• Entrapped patients are stabilised, removed and packaged in accordance with standard procedures.

• Mass casualty scenarios are managed effectively and in line with established procedures.

• Rope rescue teams for incident management are described in terms of composition and roles and responsibilities of members.

• Effective communication and operational working components of a rope rescue system are described and demonstrated with reference to the following:

◦ Working and belay lines.

◦ Static and dynamic rope.

◦ Equipment care and safety.

◦ Uses and performance specification of knots.

◦ Anchor points.

◦ Belaying techniques.

◦ Ascent/descent techniques.

◦ Stretcher lowering and raising techniques.

◦ Principles of mechanical advantage.

◦ Friction and abrasion and the role they play in rope rescue.

◦ Patient packaging and removal.

• Rescue operations are carried out using rope rescue techniques and equipment appropriate to the situation.

Elective B:

13.

• Patient history is taken and handover from a referring health worker is affected according to organisational procedures. This includes a routine examination of the patient and obtaining vital signs.

• Preparation of the patient for transportation is carried out with due regard for mode of transportation.

• Standard transport equipment is identified in terms of what it is used for, when to use it and basic operation.

◦ Range: Transport ventilator, incubator, ECG, infusion devises, specialised stretchers, vital signs monitors and external pacemakers.

• Hospital bed to stretcher transfers are carried out using appropriate ergonomic procedures and techniques.

• Descriptions are provided of the following in terms of their importance in the transport of patients:

◦ Commonly used chronic medication and intensive care infusions.

◦ Transport incubators, ventilators, infusion devices.

◦ External pacing devices.

◦ Care of central venous pressure and central intravenous lines.

◦ Care of arterial lines.

◦ Care of blood infusions.

◦ Care of endotracheal tubes.

◦ Care of intercostals drains.

◦ Care of NG tubes.

◦ Care of tracheostomy tubes.

◦ Care of urine catheter.

◦ Care for specialised life support devices.

• Hydration and nutritional status of the patient is maintained in line with specified requirements.

• Ventilation and temperature control is maintained in line with the patient's needs.

• Calculations of vehicle fuel consumption and oxygen and fluid requirements are carried out to ensure they are sufficient for the duration of the transfer.

• Basic nursing procedures are maintained for the duration of the transfer, including turning, cleaning, emptying catheter bag and prevention of pressure sores.

• Support is provided to emergency care practitioners through effective team work, clear communication, careful following of instructions and effective execution of tasks allocated.

• Patient handover to receiving facility, filing and record keeping are carried out in line with organisational procedures and requirements.

• The aviation environment is described in terms of atmospheriology.

◦ Range: Components of the atmosphere, barometric pressure, layers of the atmosphere, physiological zones of the atmosphere.

• The gas laws are described in terms of their importance with respect to aero-medical evacuation.

◦ Range: Gas Laws of Boyle, Dalton, Henry, Charles and Graham

• The physiological effects of altitude are identified and managed, including the use of a hypobaric chamber

• Stresses of flight are described in terms of causes, effect and treatment.

◦ Range: Dysbarism, hypoxia and hyperventilation, noise and vibration, toxicology and G-forces.

• Influences from the aero-medical environment are described in terms of their effect on equipment and procedures.

• Aero-medical transportation considerations are described with reference to the following factors:

◦ Temperature variations.

◦ Humidity.

◦ Noise.

◦ Vibration.

◦ Turbulence.

◦ Acceleration/deceleration.

◦ Lighting.

• Spatial disorientation, as it affects pilots, is described in terms of causes, effects, methods for prevention and corrective actions.

• Types of aircrafts used for aero-medical transportation are described in terms of general characteristics, primary and secondary considerations, emergency procedures, and loading and unloading of patients.
• The procedures for air evacuation of patients are described and applied in line with air evacuation principles and criteria.
  ◦ Range:
    > Acute and chronic poly-trauma.
    > Facial, mandibular, neck and eye injuries.
    > Burns.
    > Shock.
    > Cardio-vascular.
    > Combative, infectious, orthopaedic and obstetric patients.

Elective C:

14.
• Descriptions are provided of the key functions, roles and responsibilities of the Emergency Medical Dispatcher in general.
• Different types of response modes utilized within emergency care services are identified.
• Descriptions are provided of the principles of major incident debriefings.
• Descriptions are provided of the following key issues related to emergency flight operations:
  · flight tracking / progression
  · safety procedures in and around aircraft
  · flight briefing
  · different types of landing zones
  · how to communicate with the different types of aircraft
• Descriptions of the following legal concepts and issues related to dispatch are consistent with documented definitions:
  · liability
  · liability exemptions and dispatcher immunity
  · negligence and how courts determine negligence.
  · standard of care
  · abandonment
  · types of consent
  · confidentiality
  · litigation and how to avoid it

• The communications network is set up to meet the particular needs of the communication centre, with particular reference to the human element.
• Radio networks and equipment are set up and maintained to meet the needs of the dispatch centre.
• The essential information required from callers is obtained using established and approved techniques and according to the philosophy of Emergency Medical Dispatch call taking.
• Emergency care instructions are provided in line with established principles and procedures, while using appropriate and effective techniques to overcome the hysteria threshold in callers.
  ◦ Range: instructions to include telephonic CPR and telephonic medical instruction with regard to the basic treatment of patients.
• Emergency care instructions are of a nature and quality that maximises the patient's chances of overcoming a serious medical or traumatic event.
• Radio communications are carried out according to radio etiquette, using accepted radio terminology, and in line with the radio regulations as set out by ICASA.
• Calls are handled in a professional manner, ensuring that the required quality of care is dispatched, and so as to promote a positive image of the emergency care services to the public.
• Appropriate resources are allocated by considering such factors as:
  · the nature of the problem

    ·   personnel and vehicles available
    ·   vehicle proximity to the patient
    ·   ambulance coverage zones
    ·   the type of equipment and trained personnel carried by each resource.
• Mass casualty incident management, especially with regard to communications, is carried out in line with the principles of disaster management.

Elective D:

15.
• The ethical principles and conventions guiding operational emergency care within a military environment are described in line with International Humanitarian Law taking into account ethical challenges on the battlefield
◦ Range:
    > Geneva Conventions.
    > Activities, rights and duties of Medical Personnel in Armed Conflicts.
    > Emergency Care of Enemy Prisoners of War/Internees.
    > Medical Units in occupied territories.
    > Medical Transportation.
    > Abandoning wounded or sick to the enemy.
• Military injuries are described in terms of their frequency and the mechanisms that cause them, and with reference to:
◦ Weapons effects
◦ The principles with regard to explosives, blast injuries and ballistics.
• Injury patterns caused by blast and ballistics are recognised and described with reference to their mechanisms and patterns.
Range:
◦ Antipersonnel mines and landmines.
◦ Small arms and shrapnel wounds, including lead poisoning.
◦ Armoured vehicle crew casualties.
◦ Unexploded ordnance in patients.
◦ Parachute injuries.
• Reasonable basic casualty estimates are calculated based on battle plans at a tactical level.
• The levels of medical care in military operations are described and applied to land, sea and air operations across the range of levels 1, 2, 3 and 4.
• Initial assessments are executed and battlefield casualties are managed according to military procedures. This includes recognising life threatening injuries during the primary and secondary survey in the battlefield casualty and disarming casualties with altered mental status.
• Sick or injured people are appropriately prioritised for treatment and evacuation in operational circumstances according to the seriousness of the condition or injury, using the principles of the triage process.
◦ Range: To include the application of the principles used in triage for chemical and radiation Incidents.
• Emergency care is provided under fire with due regard for the dangers of rendering medical treatment on the battlefield and knowledge of the tactical situation and the drills during contact. Drills for self protection and protection of the casualty under fire are applied according to military procedures.
• Tactical emergency care is provided with due regard for the dangers of rendering medical treatment on the battlefield and knowledge of the tactical situation and the drills during contact. Drills for self protection and protection of the casualty under fire are applied according to military procedures.
• Personal battle stress is identified through self evaluation and acute situations and crises are managed using available support resources.
• Casualties are evacuated safely from point of wounding while maintaining effective analgesic control, as and when required, in line with the principles in the use of analgesia.

• Helicopter evacuation of casualties is managed according to the principles of air evacuation.

• Clinical assessment and treatment for minor injuries and minor ailments in military environment are carried out according to military approved protocols.

• Operational emergency care within a particular battle space is provided independently in line with the principles, procedures and needs of that battle space.

° Range: Learners are to provide operational emergency care in ONE of the following three particular battle spaces, as detailed in the curriculum guidelines specified by the Health Professions Council of South Africa:

> Land base battle space.

> Maritime battle space.

> Airborne and special forces battle space.

Integrated assessment:

Formative Assessment:

Learning and assessment are integrated. The scheme of work includes tests and assignments, practical work and competency evaluation of practical skills. The process is continuous and focuses on smaller sections of the work in limited number of outcomes.

Summative Assessment:

Summative assessments evaluate the learners' abilities to manage and integrate a larger body of knowledge and to achieve the stated outcomes. The summative assessment also focuses on the learners' ability to integrate knowledge and skills in the particular area of specialisation.

Summative assessments include theory and practicals.

Integrated Assessment:

Integrated assessment strategies across related modules and critical cross-field outcomes will be developed. Learners will be assessed in simulated work environments.

INTERNATIONAL COMPARABILITY
Comparison with US qualifications

This qualification was compared against the United States qualifications for an EMT-Paramedic which are established by United States Department of Transportation National Highway Traffic Safety Administration.

The USA has been a world leader in establishing EMT standards since The National Highway Traffic Safety Administration (NHTSA) assumed responsibility for the development of training courses that are responsive to the standards established by the Highway Safety Act of 1966 (amended). These training courses are designed to provide national guidelines for training. NHTSA's intention is that they be of the highest quality and be maintained in a current and up-to-date status from the point of view of both technical content and instructional strategy. The EMT-Paramedic: National Standard Curriculum represents the highest level of education in EMS pre-hospital training.

The US EMT-Paramedic certificate course typically is a 1000 - 1200 hour course. Students follow the one-year paramedic program, which consists of classroom instruction, clinical, field, and skills training. Successful completion of the program prepares students to take the National Registry EMT-P certification examination.

Several vocational, technical, and Junior colleges offer a 2 year Associate's of Applied Science Degree, Emergency Management Services (AAS, EMS) requiring approximately 70-75

semester hours of study. These programs prepare students for certification as a paramedic and further provide them with the background to manage and supervise emergency medical first responder units in support of fire departments, ambulance companies and other first responder agencies. In addition to EMT courses students also take courses such as:

- English Composition.
- Modern College Mathematics or Introduction to College Algebra & Trigonometry.
- Principles of Ethics.
- On Being a Supervisor.
- Anatomy & Physiology for Paramedics.
- Computing Concepts & Applications.
- Introduction to Human Communication.
- Managing the Emergency Medical Service Paramedic.
- Fire Education and Public Relations.

A limited number of colleges offer a 4 year Bachelor of Science in Emergency Medical Services (BSEMS). The bachelor's degree requires 128 semester hours of course work consisting of liberal arts core courses as well as 51 hours of paramedic course work. Students going for the BSEMS will focus on concentration areas such as Emergency Medical Services Administration, Emergency Medical Services education, or Upper level EMS Clinical Courses during their third and fourth year of school. Many students in the clinical concentration use these classes as pre-med classes.

The South African National Diploma in Emergency Care and Technology Fundamental, Core, and Elective required courses are very similar to a 2 and 4 year program in the USA. Educational institutions offering an EMT-P certificate in the USA must adhere to the United States Department of Transportation National Highway Traffic Safety Administration standards and objectives. The assessment criteria for the different Exit Level Outcomes are very similar to the objectives stated in the USA's National Curriculum for EMT-P programs.

The United States Department of Transportation National Highway Traffic Safety Administration states that a paramedic programme should consist of four components of instruction: didactic instruction, skills laboratory, clinical education, and field internship. The first three typically occur concurrently, and the field internship serves as a verification that the student is serving as a competent, entry level practitioner. The South African qualification has the same components as the USA's National Curriculum for EMT-P programmes as follows:

Preparatory:

- EMS Systems/The Roles and Responsibilities of the Paramedic.
- The Well-Being of the Paramedic.
- Illness and Injury Prevention.
- Medical/Legal Issues.
- Ethics.
- General Principles of Pathophysiology.
- Pharmacology.
- Venous Access and Medication Administration.
- Therapeutic Communications.
- Life Span Development.

Airway management and ventilation medical:

- Pulmonary, Cardiology.
- Neurology, Endocrinology.
- Allergies and Anaphylaxis.

- Gastroenterology, Renal/Urology.
- Toxicology, Hematology.
- Environmental Conditions.
- Infectious and Communicable Diseases.
- Behavioral and Psychiatric Disorders.
- Gynecology, Obstetrics.

Patient assessment:

- History Taking.
- Techniques of Physical Examination.
- Patient Assessment.
- Clinical Decision Making.
- Communications and Documentation.

Trauma:

- Trauma Systems/Mechanism of Injury.
- Hemorrhage and Shock, Burns.
- Soft Tissue Trauma.
- Head and Facial Trauma, Spinal Trauma.
- Thoracic Trauma, Abdominal Trauma.
- Musculoskeletal Trauma.

Special considerations:

- Neonatology, Pediatrics.
- Geriatrics.
- Abuse and Assault.
- Patients with Special Challenges.
- Acute Interventions for the Chronic Care Patient.

Assessment based management:

Operations:

- Ambulance Operations.
- Medical Incident Command.
- Rescue Awareness and Operations.
- Hazardous Materials Incidents.
- Crime Scene Awareness.

Clinical/field requirements:
Objectives for the USA's National Curriculum: EMT-P programmess are available.

In the United States, EMT-P certificate, associate, and bachelor degree students are not required to study "how to provide emergency care within a military environment". However this is an elective within the South African qualification and training is provided specifically by the military to military personnel.

EMT training in a country similar in socio-economy to SA:

Senegal has no on-going EMT-P training programme remotely close to the South African qualification. Medical training for ambulance personnel is similar to EMT-B standards but there

are no national standards for training throughout the country. Individuals in communities away from the major cities such as Dakar receive very little training.

The United Arab Emirates has a limited number of medics trained to EMT-P standards but this training was received primarily outside the country. Different governmental agencies contract with companies from different countries such as the USA, Germany, Canada, UK, Australia, and Saudi Arabia to come in to conduct training. Each contractor brings in standards from his country. There are no national level standards for paramedic training in the country. Additionally, there are no standards for maintaining medical competency or life time development.

Benchmarking of Military Elective:

The military elective has been benchmarked against the following programmes:

- United States Army. 91W Training Program.
- SAMHS Operational Emergency Care Orderly Learnership.
- US Navy: Fleet Medicine Training Program.
- South African Maritime Authority: Ship Captains Programme.
- Pre-hospital Trauma life Support (PHTLS) (military version).
- Tactical Combat Casualty Care Programme.
- ICRC: War and Public Health.
- US Tactical Combat Casualty Care in Special Operations.
- Wilderness Medicine Programme.

Conclusion:

The National Diploma ECT compares favourably with 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 a mid-level worker.

ARTICULATION OPTIONS
- Vertical articulation is possible as the holder of this qualification may gain direct entry into the Professional Degree in Emergency Medical Care.
- Horizontal articulation is limited to science-related credits in common with other health-related fields.

MODERATION OPTIONS
- Providers offering learning towards this qualification or the component unit standards must be accredited by the appropriate ETQA. In particular, accreditation is dependant on providers demonstrating that their curriculum and learning programme/s meet the curriculum requirements specified by the Health Professions Council of South Africa.
- Moderation of assessment will be overseen by the appropriate ETQA according to moderation principles and the agreed ETQA procedures.

CRITERIA FOR THE REGISTRATION OF ASSESSORS
Assessors must be registered in terms of the requirements of SAQA and the appropriate ETQA.

UNIT STANDARDS
This qualification is not based on Unit Standards.