Exploring the application of Incident Command System in the Nkangala District Municipality

KE Ndabezitha

orcid.org 0000-0002-0228-740X

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Supervisor: Miss K Fourie

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Student number: 25734814
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ABSTRACT

Nkangala District Municipality consists of six local municipalities which are: Emakhazeni, eMalahleni, Dr. J.S Moroka, Steve Tshwete, Thembisile Hani and Victor Khanye. These municipalities have fully operational emergency agencies which respond and manage any type of incidents. These municipalities apply different tools to manage incidents and planned events.

Incident Command System (ICS) components are implemented but the model with all of its functions and characteristics are not fully implemented according to international standards. The Nkangala District Municipality disaster management centre and Steve Tshwete Local Municipality have a mobile Incident Command Unit which is installed with basic equipment to meet the crucial ICS operations outcome. Some of the short and prolong incidents or events which occurs within the Nkangala regions will find the mobile incident command unit without full utilisation for operation. The primary responders in the Nkangala District Municipality belongs to different organisations, for example: fire brigade services belong to local government, whereas EMS has its place in provincial government (Department of Health). This creates jurisdiction boundary issues including authority, resources, roles and responsibilities.

If Nkangala District Municipality adopts the application of the ICS to manage all the incidents and planned events, this will encourage the organisations to train officials on ICS in order to ensure effective and efficient incident management throughout the district. Furthermore it will install professionalism, coordination and unity within the emergency agencies (FEMA, 2008:66).

The empirical findings were concluded from semi-structured interviews and participatory observation. The data was collected from all six local municipalities in the Nkangala District Municipality. The analysis revealed that some of the principles of the ICS are being applied in NDM even though they are not integrated and guided by one ICS tool.

The study made recommendations that all response agencies in NDM must apply ICS to manage planned and unplanned operations for purposes to improve coordination, communication, integration, standardisation, the planning and management of resources during the operation. The recommendations made in the study highlighted the need to
implement the ICS to ensure there is one standardised organisational structure, common terminologies, Standard Operations Procedures (SOPs), names of positions, responsibilities of each function and planning processes. Further to this, the recommendations propose that the application of ICS will define responsibilities of Incident Command (IC), criteria for individual to perform the function of command and empower the IC function to command every agency during the operation.

**Keywords:** Application, Incident Command System, Incident and Event Management, Nkangala District Municipality.
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CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Orientation and background

South Africa is prone to a number of hazards with the potential to create disastrous events that can damage infrastructure and could kill people in the process. According to the Jager and Webster (2019) there were quite a number of meteorological hazards that have been recorded in 2017. The following two figures show the data for meteorology hazards with deaths per hazard type and fatal crashes respectively:

![Figure 1.1: Number of occurrence and deaths per meteorology hazards in South Africa (Jager and Webster, 2019)](image)

The numbers in Figure 1.1 indicate that South Africa has many severe hazards and events to consider in disaster risk management. The scale and magnitude of these events might differ and need a specific and appropriate National Incident Management System (NIMS) to guide and direct responders for all types of incidents. It will also improve Incident Management throughout the country.

There is no promulgated NIMS by South African government which is being applied to regulate the response, coordination and management of incidents and planned events involving the operation of multi-agencies on national, provincial and local level (Reid, 2005:11). In the absensia of promulgated NIMS in South Africa, it is important to
investigate existing South African legislation to determine how the issues of incidents and responding to incidents are addressed within the context of disaster management. It is evident from Section 156(4)(a) of the Constitution of the Republic of South Africa (South Africa, 1996: 48) that, on a day-to-day basis, the primary responders to any incidents should be agencies at the Local Municipal level. Section 19(e) of the Disaster Management Act 57 of 2002, calls for development of guidelines for integration of concepts and principles for disaster management and exclusive strategies on prevention and mitigation with national, provincial and municipal development plans and initiatives (South Africa, 2002:19). This study focuses on the application of the Fire Fighting Resource of California Organising for Potential Emergencies (FIRESCOPE) ICS model in the Nkangala District Municipality, situated in the Mpumalanga Province. The FIRESCOPE ICS model consist of Incident Command, operations, planning, logistics and finance and administration functions (FEMA, 2008:10-11). It focuses further on emergency agencies applying ICS to ensure coordinated management of major incidents and planned events.

Mpumalanga Province consists of three districts, which are Nkangala, Gert Sibande, and Ehlanzeni District Municipalities. According to the South African Local Government Association (SALGA) (2015:1), Nkangala District Municipality is the economical hub of Mpumalanga Province and consists of mines, power stations, a steel industry and agricultural activities. The Nkangala District Municipality Disaster Management Plan (2010:48-49) presents a risk profile which include the high priority hazards. These include veld and structural fire, hazardous materials spillage, sinkholes, floods, air and water pollution. As part of these hazards are some main roads bordering the Nkangala District Municipality like the Moloto Road (R573) which passes the District Municipality from Marble Hall to the north of the country. The other main road is the N12 which originates from the eMalahleni Local Municipality and continues through to George, in the west of the country. Another important bordering main road is the N11 which passes the District on route from Botswana to Ladysmith, in the south of the country. Moloto road (R573) is known for the numerous accidents with serious injuries and fatalities (Conradie et al, 2008:434).

The Nkangala District Municipality does implement to a certain degree, the Incident Command System (ICS) when managing operations (planned and unplanned events) based on the mentioned hazards (Nkangala District Municipality, 2010:28). However, not all agencies in the NDM implement the ICS model as a whole model. Therefore it was the
intent of this research to investigate to what extent ICS is applied in the Nkangala District Municipality to manage major incidents and planned events according to the international standard of ICS.

According to the Disaster Management Institute of Southern Africa (DMISA) (2003: 29) the concept of Incident Command System (ICS) was firstly developed in 1968 at a meeting of the Fire Chief Officers at Phoenix, Arizona located in the south-western part of the United State of America (USA). The main objective to develop the ICS was to replace the management hierarchy of the US Navy and primarily use it for fighting wildfires in Arizona and California, USA (DMISA, 2003: 29). In 1970 California experienced huge wildfires that lasted for thirteen days where 16 people died, 722 households were burnt down and the total cost of damages was estimated to be $233 million (Rowley, 2015:3). In view of the magnitude of the disaster, a task force comprising of different agencies dealing with fire was established to conduct post-incident analysis and recommendations. A number of challenges were discovered during the California’s wildfires post-analysis whereby different agencies were in operation to extinguish the blazing fire. According to Rowley (2015:7) in the post disaster assessment/analysis report of the California’s wildfires it was discovered that although most emergency agencies reacted positively and applied their skills to best of their abilities, still weaknesses were identified. These weaknesses are discussed in short. In the case of communication, it was found that interaction was poor among the emergency agencies and unedited information was released to the media (Rowley, 2015:7). Organisation and coordination was also inadequate since a variety of different emergency agencies worked in the same location on the same incident (Rowley, 2015:7). Furthermore, the joint operations planning session during the manoeuvre was also ineffective. The logistical management was not only insufficient but also poorly monitored, maintained and recorded (Rowley, 2015:7). Finally, there was also poor financial management which was meant to fund components, procurement of resources and overtime remuneration in order to ensure the positive outcome of the entire operation.

After this analysis the task force was required to provide recommendations for the way forward. According to Moeller (2007:355) the recommendations proposed two systems to be implemented. The first recommendation was the Fire Ground Command (FGC), a system intended to be applied in managing house fires and other incidents to which the fire department of United State of America (USA) had to respond. The second recommendation was to establish a Fire Fighting Resource of California Organising for Potential Emergencies (FIRESCOPE), with the primary intend to manage large veld fires.
but also other incidents that the fire department responds to. In this case the ICS was the key component of the system. The fire agencies developed the ICS model in the 1970s. The main purpose of the model was to primarily respond to and manage fire and other incidents in which fire agencies were involved.

This section will firstly outline the difference between National Incident Management System (NIMS) and Incident Command System (ICS). These concepts were established in the USA (FEMA, 2005:2). In 2005, the NIMS was established under the Homeland Security Presidential Directive-5 as the comprehensive national tool that all agencies use for mitigation, prevention, preparedness, response and management of incidents. Therefore, these incidents are managed through the application of ICS as a tool during the operation. This is, despite the fact that the ICS was developed in the 1970s as the tool for agencies to generally use when responding to incident and management planned events (Buck et al, 2006:1). The fire department of United State of America (USA) first developed the ICS tool in the 1970s. In 2005, the ICS was incorporated into the NIMS to accommodate other emergency agencies and promote a uniform approach to incidents and planned event management. According to FIRESCOPE (1999:9) the ICS is a “standardised on-scene emergency management concept specifically designed to allow its user(s) to adopt integrated organisational structure equal to the complexity and demands of single or multiple incidents without being hindered by jurisdictional boundaries”.

ICS was firmly established from the wildfires experienced in the 1970s in California, and it is a cornerstone of the National Incident Management System (NIMS) in the USA (Moeller 2007:358). According to Buck et al. (2006:3) the World Trade Centre disaster in 2001, Northdale earthquake in 1994 and heat waves in 1980 were among the nine different disasters that occurred in the USA where multiple-agencies responded and managed disasters through applying the ICS model. During the application of ICS in these disasters, it created challenges within the agencies which lead to the Federal Emergency Management Agency’s (FEMA) conducting further research on the application of ICS (Buck et al., 2006:3). According to Buck et al. (2006:1) the research findings of FEMA and Urban Search and Rescue (US&R) Task forces indicated that ICS does not provide universal applicable bureaucratic organisation within different agencies across the country to work effectively and efficiently. Due to these challenges it was proposed to enhance the ICS and implement the ICS model as the standard tool for all agencies to use for response as part of the National Incident Management System (NIMS) in the USA (Buck et al.,
According to Sachs (2011:3), NIMS is the bureaucratic tool which all agencies within the country, both government and non-government, should apply across all hazards to respond, manage, coordinate and plan for any incident irrespective of the size or cause. Therefore, NIMS was adopted as national policy in America which consists of valuable subsystems, namely: Incident Command System; training; accredited qualification and certificate; public management; and supporting technology (Sachs, 2011:1). It was critical for the USA government to adopt the NIMS with the above mentioned subsystems to support the ICS and to ensure the effectiveness of the national policy.

The ICS consist of a unique operational structure that can be seen in Figure 1.3. Figure 1.3 shows that the structure is divided into two sections namely the command staff and the general staff sections. According to FEMA (2008:8-10) the command staff consists of the Safety Officer, Public Information Officer and Liaison Officer; each reporting directly to the Incident Commander (IC).

![COMMAND STAFF](image)

**Figure 1.3: The Incident Command System structure (FEMA, 2005: 175)**

The Incident Commander (IC) is responsible for the overall incident or planned event management (FEMA, 2008:8). The first and critical task of the IC is to develop objectives, goals and strategy. All ICS staff have to follow the set strategies and objectives to achieve a positive incident management outcome. According to Yates (1999: 24), the ICS format is very bureaucratic with a semi-military structure. Therefore it requires well qualified IC to install and maintain order for the entire incident management. The Safety Officer fulfils the function and responsibility for overall safety of the entire operations. According to FIRESCOPE (1994:31), the Safety Officer assesses the incident scene, identifies hazards
and develops an action plan to eliminate hazards. During the operation, the Safety Officer has the full authority to stop the operation if it presents conditions which may harm the ICS staff (FIRESCOPE, 1994:31).

In addition, the Public Information Officer's objective is to ensure that the external stakeholders and communities are well informed through periodical media briefings (FEMA, 2008:9). The IC should approve all information to be released to the external stakeholders. The last function that forms part of the Command Staff is that of the Liaison Officer. The main objective of this officer is to identify threats which may create the inter-organisational problem, for example: poor coordination between the agencies and duplication of activities by certain agencies in the operation (FEMA, 2008:9).

According to FEMA (2008:10-11) the general staff functions of the structure consist of the operations, planning, logistics and finance and administration sections. FIRESCOPE (1994:21) indicates that general staff officials are regarded as the point of contact between the tactical officials and IC. Each of these departments or sections can be expanded depending on the magnitude of the incident. The IC is responsible for all these functions if she/he does not appoint any person for the role (FEMA, 2008:10).

1.1.1 ICS key components

All of the command staff subscribe to the key components of the ICS model to ensure effectiveness and efficiency in implementation of ICS to manage any incident or planned event. Hogan and Burstein (2007:143) show that ICS is rated as a unique, effective and efficient tool since it is based on evaluated and proven characteristics which will be discussed further. One of these key characteristics is that multiple-agencies are expected to work together and have a universal language as communication within the operation (Christian and Schwartz, 2005:331). Universal language refers to naming the operational equipment, staging area, personnel and facility to eliminate the confusion among the officials of ICS (Deal, et al., 2010: 2).

A further key component is the modular organisation of the system. This means that the system consist of four operational sections. These sections can be broken down into subsections to manage any size of operation (Walsh et al., 2012:31). Unified Command is another important key component. The system needs to have a clear chain of command whereby each official reports to one designated official (Walsh et al.. 2012:17). According
to FEMA (2005:20), unity of command encourages all the officials within the organisation to report only to their immediate supervisor to eliminate confusion. A further key component of the ICS model is the consolidated incident action plan (CIAP) (FEMA, 2005:11). It is the brief operational plan which the IC develops to outline the full operational goals, objective and support activities for a specific period. One component that allows the modular structure of the system to work efficiently is that of maintaining the correct span of control (FEMA, 2008:46). Span of control defines the number of officials that each supervisor has to effectively manage during operation (FEMA, 2008:47). The main objective of the span of control is to effectively manage the personnel within each group of operation.

The ICS is a good tool for primary responders as it promotes the professional management and coordination of incident and planned event (Bigley & Roberts, 2001:3). Buck, et al. (2006:21) indicates that USA's successful development and implementation of the ICS tool for the purposes of effective management of incident or planned events, is established in multi-agency collaboration. Where a country adopts the ICS as a national policy, it is very important to train all and the entire emergency agencies. Furthermore, simulations should accompany the policy to ensure the effectiveness of ICS in incident management (Moeller, 2007:362-363). Countries which have adopted the ICS as the tool for their National Incident Management System policy are France, Netherlands, Norway, Japan, Canada, India, Ireland, Australia, Brazil, China, and New Zealand (Boersman, et al, 2014:2). According to Yates (1999:22) Australia adopted the ICS tool that was incorporated into what is known as the Australian Inter-service Incident Management System (AIIIMS). The Australian authorities changed the name of Incident Command System to Incident Control System but the structure of the system remained the same. The reason for changing from ‘Command’ to ‘Control’ is that Command according to the Australian policy is defined as a vertical approach of management whereas ‘control’ refers more to a horizontal approach in management (Yates, 1999:22). The above information indicates the application of the ICS at the international level and the importance to scale down and adapt a system to best fit the context.

The following section discusses the problem statement. Since there is no appropriate national policy to guide the lower spheres of government in responding and managing major incidents in a coordinated manner, the application of the Incident Command System at municipal level will form the focus of the study.
1.2 Problem statement

Currently South Africa does not have a National Incident Management System (NIMS) that guides all the emergency agencies to respond, manage major incidents and planned events in a coordinated manner. According to Reid (2005:11-12) different emergency agencies have their own organisational response plan which is not integrated to other agencies. This creates challenges when different agencies approach one operation. These organisational response plans gives the most senior official within the agency the mandate to be in-charge of the scene or operation. As a result, this creates conflict between agencies superiors creating poor communication, coordination, planning and logistics management (Reid, 2005:12). In the absence of such a policy at national, provincial, district and local municipality levels flow disjunction, poor management and coordination between different agencies, but are required to perform multiple-agency operation. It is for this reason that different spheres of government in South Africa are using different tools to manage scene or operations in uncoordinated manner (Reid, 2005:12). Nkangala District Municipality under the study is also affected by before said status quo.

The South African Local Government Association (2015:1) indicates that Nkangala District Municipality consists of six local municipalities which are: Emakhzeni; eMalahleni; Dr. J.S Moroka; Steve Tshwete; Thembisile Han; and Victor Khanye. These municipalities have fully operational emergency agencies which respond and manage any type of incidents. These municipalities apply different tools to manage incidents and planned events. ICS components are implemented but the model with all of its functions and characteristics are not fully implemented according to international standards. The Nkangala District Municipality disaster management centre and Steve Tshwete Local Municipality have a mobile Incident Command Unit which is installed with basic equipment to meet the crucial ICS operations outcome. Some of the short and prolong incidents or events which occurs within the Nkangala regions will find the mobile incident command unit without full utilisation for operation. The primary responders in the Nkangala District Municipality belongs to different organisations, for example: fire services belongs to local government whereas Emergency Medical Services (EMS) have its place in provincial government (Department of Health). This creates jurisdiction boundary issues, like authority, resources, roles and responsibilities. If Nkangala District Municipality adopts the application of the ICS to manage all the incidents and planned events, this will encourage the organisations to train officials on ICS in order to ensure effective and efficient incident management.
throughout the district. Furthermore, it will install professionalism, coordination and unity within the emergency agencies (FEMA, 2008:66).

The main issue under investigation in this study is how Nkangala District Municipality manages the major incidents and planned events, while at the same time exploring the implementation of ICS and relevant literature as background. Furthermore, the way in which such a system could be used in the Nkangala District Municipality should be determined. According to the United States Department of Labour (2015:1) the ICS has proved to be a more effective tool to manage and coordinate all emergency incidents and planned events since it involves multiple-agencies.

1.3 Research objectives

The study had the following objectives:

- Explore relevant literature and theories to define the Incident Command System and how it is implemented as per international standards.
- Establish how agencies and the disaster management centre in Nkangala District Municipality manage major incidents and events.
- Establish how the current system that the Nkangala District Municipality applies, compares to the implementation of the ICS model as per international implementation standards
- Present recommendations regarding the identified gaps during planned and unplanned operations in Nkangala District Municipality.

1.4 Research questions

As the background, problem statement and research objectives present, the following research questions guided the study in order to complete the full spectrum of the problem to be addressed:

- How do the international standards define the Incident Command System (ICS) in and according to the relevant literature and theories?
- How are incident and planned events being managed in the Nkangala District Municipality?
- How is ICS being applied in the Nkangala District Municipality to manage incidents and planned events compared to international standards?
What recommendations can be made to improve the application of an ICS within the Nkangala District Municipality?

1.5 Central theoretical statement

Every operation which requires multiple-agencies intervention will only be effective and efficient if a proper incident management strategy exists and is correctly applied (Bogucki & Schulz, 2015:257). If different emergency services work together on one incident or planned event there will always be an issue of the one to be in charge of the overall operations. This will cause communication breakdown and show-off of power over one agency (Reid, 2005:12). FIRESCOPE’s development of ICS in the USA which was later adopted as part of NIMS, was to address this challenge when multiple-agencies responded to one operation (Moeller, 2007:354).

In the 1970s, the USA fire agencies developed ICS that fire services could respond to fire incidents (Moeller, 2007:356). The different response agencies like the police, EMS and other agency responders had to fit into a system they did not understand. This caused unnecessary disorder within the incident operation. In order to address this challenge, the Homeland Security Presidential Directive-5 (HSPD-5) intervened with the developing of the National Incident Management System (NIMS) which incorporated the ICS tool into a national policy (NIMS) (FEMA, 2005:3). According to FEMA (2008:1) the NIMS “provides a systematic, proactive approach to guide departments and agencies at all levels of government, non-governmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life, property and harm to the environment through the application of ICS as a tool”.

In the context of the USA, the ICS as a tool was adopted and enhanced into a national policy called NIMS. This policy (NIMS) is intended to accommodate all the emergency agencies (state and private) and promotes a uniform and coordinated approach for incident management in the USA (FEMA, 2008:3). In South Africa there is no directive from government to adopt and implement the ICS as the national policy (Reid, 2005:11). Favard (2011:11) states that the Forest Fire Association (FFA), Working on Fire, Disaster Management Solutions and the North-West University have introduced a roll out of ICS training programmes in South Africa. The ICS tool undeniably provides efficiency, coordination and bureaucracy towards event management (Bigley & Roberts, 2001:1281).
Lately, fire services as well as other agencies across the globe have used the ICS tool (Moeller, 2007: 356).

It is very important to note that ICS is the element of the NIMS and that the difference between the two is: ICS is the single tool to be used by each agency to respond and manage the incident(s). NIMS is the holistic national system that all state and private emergency agencies use to plan, respond and manage incidents and planned events (Moeller, 2007:355). The ICS as a tool is designed to coordinate multi-jurisdictional, multi-agencies that respond to massive incidents and planned events (Boguckit and Schulz, 2015:257). The application of the ICS in an operation allows a unified command system to take place. A unified command system refers to the individuals of different agencies that meet to determine operational plans - that will include event objectives and priorities toward which all the agencies should work to achieve the desired outcomes (Bice and Brown, 2008:3). According to Boguckit and Schulz (2015: 257) the ICS is regarded as a highly flexible and reliable tool to be applied in emergency environment. As a result, ICS has become highly regarded in the USA and across the world. The application of ICS provides efficiency, coordination and bureaucracy towards event management and rejects laziness of officials within operation (Bigley and Roberts, 2001:1281).

The following section describes the methodology that was used in this study to collect the data necessary to achieve the research objectives.

1.6 Methodology

Research methodology refers to the research process or logic that is to be followed in order to conduct scientific or social research by utilising the appropriate tools and procedures (Mouton, 1996:56). The research methodology that was followed is discussed in the next subsections.

1.6.1 Literature review

The topic for study consists of extensive literature that was needed to analyse the data collected and therefore answer the research questions. The literature review consists of examining the relevant literature on the specific subject in order to answer the research questions and achieve the objectives (Terre Blanche et al., 2006:22). Despite the amount of available literature on the subject, the search should be well executed through a systematic strategy. According to Terre Blanche et al. (2006:22) formulating a systematic strategy consists of two steps which will be also applied in this study. Firstly key concepts
in research were identified that define the guidelines of the ICS. Secondly, applicable and credible sources which provided relevant information about the research topic, were identified. This section provides information obtained from international and local documents which include: journals, government and Non-Government Organisations (NGO’s) reports, International and local legislations, books, academic materials (dissertation and theses) and conference papers. The initial investigation into the topic of ICS indicated that there were enough available materials to conduct credible academic research on this subject.

The aim of the literature review was to provide an in-depth body of knowledge on the subject, justify the research, find gaps from previous materials and enhance the subject for current need (Welman et al., 2005:38). Furthermore it revealed in-depth history, current and possible future projection on the subject.

1.6.1.1 Databases consulted

The literature review for this study was based on primary sources. According to Welman et al. (2005:213), secondary data refers to books or journals related on the same topic of study that was reviewed to acquire new information. The additional information on the study was obtained from the following sources:

- Government legislation and reports;
- Journals;
- Conference papers or reports;
- Publications;
- Ebscohost;
- Emerald;
- North-West University on-line library; and
- Thesis papers.

The information collected on the above sources was processed and interpreted in a manner to achieve the previous stated research objectives.

1.6.2 Research Design

The study followed a qualitative research design. According to Maxwell (2013:4) the qualitative research approach is to be applied in order to answer the questions such as how and why certain human behaviour and experience unfolds in a specific way.
According to McLeod (2011:3) qualitative research is firmly based on the narrative presentation of outcome of a study. In contrast, quantitative research design presents the findings in statistical format through graphs and the comparison of various statistical information. This study is structured on exploratory research design to discover how the Nkangala District Municipality manages major incidents and planned events with regard to the application of ICS model with similar functions to those of FIRESCOPE ICS model developed in USA on 1970’s. Welman et al. (2005:52) explain research design as the constructive plan that is applied to acquire specific research participants to provide relevant information for the study. Thus, the research objectives of this study was reached through collecting data by qualitative methods, namely through semi-structured interviews and participatory observations. The research design involves a distinct process that examines a certain theoretical statement to provide clarity on the research questions (Sofaer, 2002:334). The qualitative design, namely exploratory research design, was applied to determine and investigate the application of the Incident Command System in major incident operation within the Nkangala District Municipality, Mpumalanga.

1.6.2.2 Sampling

According to Terre Blanche et al. (2011:49), sampling encompasses the process and criteria of selecting the participants who will take part in the research. Due to time, cost and data saturation concerns it is not viable to include each individual of the population as part of the empirical phase and therefore a sample is selected. This study utilised a non-probability sampling method that included the purposive sampling method (De Vos et al., 2011:328). Purposive sampling method consists of the intentional selection of particular units over another unit(s), based on the area of interest and/or pertaining to the area of study (Teddie and Tashakkori, 2009:188). The main reason for utilising the purposive sampling for this study, was due to the fact that ICS is the technical concept which requires people who are knowledgeable about this concept. The sampling for the study consisted of the following participants:

- Nkangala District Municipality Disaster Management Centre – One official;
- Fire and Rescue Services – Two officials;
- Emergency Medical Services (EMS) – Two officials;
- South African Police Services (SAPS) – One official;
- Traffic Police – Two officials;
- Working on Fire (WoFire) – One official;
- South African National Defence Force (SANDF) – One official; and
The purposive sampling approach focused more on the superior and experienced officials within the abovementioned agencies, since they are primary responders to incidents and expected to be custodians of the ICS.

1.6.2.3 Instrumentation

Two data gathering instruments were utilised in order to obtain the relevant information. For the purposes of this study, semi-structured interviews and participatory observation were applied as data gathering methods. In general, the semi-structured interviews involve non-rigid sets of questions which guides the conversation and allows the interviewee to express his/her views without limitations (Hesse-Biber and Leavy, 2011:102). For this specific study, the semi-structured interviews were conducted by way of semi-structured questions. Thus, critical questions guided the interviewer to make sure that all relevant areas of interest in the study is addressed (Gill et al., 2008: 291). The interview is a widely used information gathering tool for qualitative research (De Vos et al., 2011:342). It involves direct, face-to-face communication, which in this study's instance was applied in a semi-structured manner. The semi-structured interview differs from the structured interview in that it allows the participant freedom to respond and illustrate concepts (Morse and Field, 1996:76). The device such as audio was used during semi-structured interviews to record the exact responses for analysis. However, the participant(s) were informed prior the use of a recording device and consent was obtained in advance (Whiting, 2008:36).

Participatory observation refers to the process whereby the researcher becomes actively involved in the activities intended for investigation (DeWalt and DeWalt, 2011:1). This means that the researcher was participating in the events and operation to discover information regarding the application of ICS in NDM. The researcher recorded notes according to the research questions that have been established in advance. The researcher of this study was personally involved in a number of incidents and planned events to observe the application of ICS within the Nkangala District Municipality.

1.6.2.5 Data analysis
Data analysis is the phase whereby the researcher examine and evaluate the data that has been collected (i.e. questionnaire, videotapes and images) to produce narrative findings (De Vos et al., 2011:403). Data analysis in the qualitative design usually starts during or immediately after the initial data has been collected which will then continue throughout the study (Burnard et al., 2008:430). Sofaer (2002:334) states that all data and statements collected from participants and through observations should be presented in a narrative format and not in numbers, statistical analysis and graphs. According to Welman et al. (2005:211) the process of converting the raw data from rough notes and tape recordings should be well converted in order to be readable and accurate to reflect what is happening in the field or on grassroots. Welman et al. (2005:211) propose a “Theme identification method” for this type of study as it is regarded as the most foundational task in qualitative research consists of the following:

- **Word analysis e.g. keyword in context** - the researcher uses a simple observation to examine in which context the specific word or term was utilised to define something to eliminate misinterpretation of the meaning or concept;
- **Intentional analysis of linguistic elements e.g. metaphors** - as the interviewee uses metaphors, it is the duty of the interviewer to ask the interviewee to elaborate or explain the metaphor and not the interviewer to make an assumption and present the assumption as the concluding remark;
- **Secondary data analysis** - the researcher should consult the data with the same topic which was previously analysed, with the intention to discover new information; and
- **Reading of the larger unit e.g. searching for missing information** - during the interview the respondent might deliberately omit the critical and uncritical information and it is the responsibility of the researcher to return to the field to determine the reasons for information omission.

The element of fairness and openness is very critical during the data analysis phase, as the findings should reflect what was learned and not to suit the individual's desired outcome for the study (Sofaer, 2002:335).

### 1.6.2.6 Limitations of the study

The limitations of the study are those conditions which are regarded as challenges and weaknesses that are out of the research team's control and hindering the reach of objectives although the study is conducted to the best of the researcher's ability (Simon.
2011:2). The data collection and analysis processes in qualitative design are regarded as time consuming activities. As a result, sufficient time need to be allowed for these processes to be addressed accordingly and thoroughly without compromising the quality of the outcome (Choy, 2014:102). The participants who were selected based on purposive sampling may be biased during the observation and semi-structured interviews, which could affect the participant's response (Anderson, 2010:3). Nonetheless, the purpose of the study and importance of the outcome was explained before the interviews were conducted. Participants were requested to therefore respond in their honest opinion. During the interpretation of results, factors that could have influenced participants to be biased, were taken into account and were reported on. The focus area of the study was only on Nkangala District Municipality and the findings cannot be generalised for the entire Province.

1.7 Ethical consideration

According to De Vos et al. (2011:113), the human being are the main objects for social science study. Therefore, people should be treated with the greatest respect and researchers should also avoid exploitation during the research process. In the application of this study, there were ethical elements which were considered or observed at all times, namely: the researcher obtained informed consent prior to investigation, kept participants' right of privacy, kept to the ‘protection from harm’ obligation, and guarded against the level of involvement of the researcher (Welman et al., 2005:201). These ethics in detail are (Welman et al., 2005:201):

- Obtained informed consent: the researcher obtained the informed consent from the participants. The researcher disclosed the full truth about the purpose of the research and how it can benefit the participants. Based on the truth presented, the participant(s) then agreed and some disagreed to participate in the research.
- Right of privacy: the researcher assured all the participants regarding their right of privacy and personal identity to always be kept anonymous.
- Protection from harm: the researcher assured the participants' about their right in protection from harm and that they may at any period or time abort from participating in the research if they do not feel safe. Involvement of the researcher: the researcher guaranteed to the keeping of the high standard of ethical conduct at all time. In the event where there were slight changes about the research scope, the participants were informed and relevant approval for the change was obtained.
Therefore, participants were updated at all times regarding any new developments to guard against any exploitation of the participant.

According to McLeod (2011:66) qualitative research is also conducted with consideration of the ethical principles. In recent years there has been a growing appreciation of additional ethical concepts within qualitative research compared to quantitative research.

1.8 Significance of the study

The USA regards the Incident Management System as the best concept to manage multiple-agencies during major incidents or planned events. Thus, it resulted in other countries adopting the concept (FEMA, 2008:3). South Africa is also known for its major incident and planned events, which requires effective coordination of the stakeholders to execute duties during operation. Currently, South Africa has not adopted a national policy that will regulate and guide the stakeholder in the management of major incident or planned events. However, the NIMS could be the generic policy which can address the managing of different hazards at different levels of government (FEMA, 2008:66).

The study was therefore significant as there is currently no national policy in South Africa, yet the agencies attend to major incidents and planned events all year round in NDM. Furthermore, it was a great interest to discover which model or guide agencies of NDM do apply during these events and how they end up managing the events in NDM.

1.9 Provisional chapter layout

The study is divided into five chapters which are structured as follows:

Chapter 1

This chapter presents the orientation and background, problem statement which was investigated for the study, research objectives and questions.

Chapter 2
Chapter two provides the literature review which defines the ICS concept, how it is being applied globally and then concludes with its application in South Africa.

Chapter 3

This chapter gives an in-depth explanation of the research methodology which is based on descriptive and exploratory research. It further indicates the key elements of qualitative design.

Chapter 4

Chapter 4 provides the full analysis of the observed findings as well as the discussion and presentation of the outcomes with regard to ICS.

Chapter 5

Chapter 5 presents the conclusion and recommendation with regard to the application of the Incident Command System in major incident operation within the Nkangala District Municipality, Mpumalanga.
CHAPTER 2: THEORETICAL REVIEW OF INCIDENT COMMAND SYSTEM

2.1 Introduction

Chapter two outlines the literature review to define the Incident Command System (ICS) concept, the principles of ICS, the application of ICS globally and its application in South Africa (SA).

According to Bigley and Roberts (2001:4) and Nogara (2014:146) ICS is a highly dynamic system that can be utilised in emergency agencies to control personnel, equipment and communication during a planned event or incident. ICS is implemented during the convergence of multi-agencies on one operation for the purposes to instil order and coordination (Bigley and Roberts, 2001:4). Any emergency agency can apply ICS when responding to any type of hazard event, regardless of their duration, geographic scope or complexity (Jensen and Thompson, 2016:159). Based on the nature or uniqueness of ICS, as mentioned in the statement above, it is evident that ICS is regarded as a tool to instil order, professionalism and coordination during the incident or planned event operation.

It is for these reasons that this study explored the application of the ICS within Nkangala District Municipality (NDM) during the management of major incident or planned events. It is to be noted that in South Africa (SA) law mandates policy to promote a uniform approach to management of the incidents throughout the country (Reid, 2005:11). However, there are some agencies, like the South Africa National Roads Agency Limited (SANRAL) that has developed their own standard incident management system which is intended to save lives, infrastructure and environment during incident(s) on the major roads of South Africa (South Africa National Roads Agency Limited, 2017). In addition to this, different provinces in South Africa are using different approaches and systems to management incident(s) within their jurisdiction (Department of Provincial and Local Government, 2007:121). Reid (2005:12), indicates that in 2005 there is already an urgent
need for South Africa to develop a standard incident management system that will ensure proper coordination and integration of agencies in SA. The planned events are administered by Safety at Sports and Recreational Events Act 2 of 2010 whereby Chapter 3 of the Act outline the measures to ensure safety and security at events (South Africa, 2010:1). However this section of the Act does not stipulate the principles to ensure coordination and integration during event management. The discussion in this chapter unpacks the principles and benefits of using the Incident Command System (ICS) as a standard tool to manage incidents or planned events.

2.2 Defining the ICS concept

ICS refers to the Incident Command System and was developed as a response tool after the city of California experienced massive wildland fires in 1970 that caused huge damage to property, lives and environment (Bigley and Roberts, 2001:4, FEMA 2005:2, Buck et al., 2006:1). The extend of the damages that these wildland fires of 1970 caused, led to the establishment of enquiry to investigate what went wrong during the operation to extinguish fires (Rowley, 2015:7). The Firefighting Resource of California Organising for Potential Emergencies (FIRESCOPE) executed this enquiry through federal funding in 1972 (FIRESCOPE, 2017). The task team composition for the enquiry included the representatives from local, rural, metropolitan fire departments, California Department of Forestry, Fire Protection and federal fire agencies (FIRESCOPE, 2017; Rowley, 2015:14).

The findings of the enquiry set out which difficulties were experienced these difficulties included the lack of centralised information to the public, confusion as a result of different terminology, different organisational structures, inadequate joint planning, poor resource management, poor control and command of the operation (Rowley, 2015:7). The reason for the difficulties that were experienced included that the different agencies shown in Figure 2.1 were working in one jurisdiction with different Standard Operation Procedure (SOP). As a result there was no integration, common terminology and organisational structure (Fugate, 2014:15). It is the same scenario even in South Africa whereby private ambulance services, government ambulance services, local municipality Fire and Rescue Services, private Fire and Rescue Services (for example: Langamed Emergency Management, Working on Fire and Eskom), Provincial traffic department and Local municipality traffic department have different SOP’s (Reid, 2005:14). It is impossible for these agencies mentioned above to act in isolation because they are working towards the same goal of saving lives and preserving infrastructure (Van Niekerk, 2005:117). In order
to address all these difficulties within the operation, the Federal Emergency Management Agency (FEMA) introduced the ICS concept to manage all operations in the USA in February 1987 (Rowley, 2015:14). Therefore all the agencies working on the same incident works with a common understanding and tool, namely the Incident Command System.

Figure 2.1 Status quo of emergency agencies in California before the introduction of ICS (Chase, 1980:1)

The findings of the devastating wildland fires of the 1970-investigation, FIRESCOPE produced the ICS concept with the objective to promote generic procedure and organisational structure to be applied during any type of incident or planned event which exceed, or threaten to exceed capacity of a single emergency agency (Chase, 1980:2, FIRESCOPE, 2017 and Rowley, 2015:14). Where the ICS model is not applied in the operation, characteristics like poor coordination, communication, integration and duplication of activities among the agencies can clearly be recognised (Cashman, 1995:75). ICS is a tool that acts as the linkage between the scene command and controlling structures like political structures or top administration offices that have jurisdictional power over any event (Newlon and Faiola, 2006:3). This may include the event of chemical spillage or operation that affects a large jurisdictional area and require a great number of resources for intervention (Newlon and Faiola, 2006:3). Furthermore, ICS is an effective tool to ensure a sound organisational structure, coordination within multi-
agencies, using common terminology and ensuring integrated communication and resource management (Rowley, 2015:9).

Since it was FIRESCOPE that originally developed ICS, it was seen as their concept and this concept consisted of two major independent components. The first of these components is the actual ICS structure that provides more efficient and effective onsite management of personnel and resources on an incident. The second component is the multi-agency coordination system that is used to facilitate the efficiency and effective allocation of resources between the different agencies involved in the operation of an incident. The multi-agency coordination system allows agencies to work freely without the hindrance of jurisdiction or lengthy bureaucratic processes to approve the sharing of resources (Chase, 1980:3).

2.2.1 Overview of the ICS structure

According to Waugh (2006:133) disaster risk management is the process of ensuring that activities such coordination, planning, prevention, mitigation, preparedness and response to disasters are implemented effectively in order to save lives, the environment and infrastructure. Through these specific activities ICS can be used as a tool to ensure that there is coordination, control and clear communication in the abovementioned activities to effectively manage disaster incidents (Khan, 2008:47). Preparedness in disaster management is the process of building capacity for efficiency and effective management of all types of emergencies caused by any hazard (Schneid and Collins, 2000:4). This preparedness is being achieved through developing policy, training, appointment of qualified staff, simulation of emergency evacuation procedures and an on-scene management tool (Coppola, 2007:209). Therefore preparedness to ensure people are well trained, oriented and undergoing intensive simulation to ensure that they understand their role and responsibilities during an operation. During the activities of the preparedness process, ICS can be best utilised after the training. Simulation ensures that the people that are involved in preparedness will fully understand the functions of the ICS.

Another area in which the ICS system can be used effectively is the response process in disaster management. Response is the process of immediate provision of emergency services with the intention to save lives and reduce the impact to the people or infrastructure affected by the occurrence of disaster (Awasthy, 2009:8; UNISDR, 2009:23). This is done through the deployment of trained emergency personnel, volunteers and
logistical support to effectively mitigate the effects of the phenomenon (Awasthy, 2009:8). Therefore, the ICS is a very useful tool for all spheres of government emergency management services and disaster management to facilitate standardisation during response and recovery (Jensen and Thompson, 2016: 160). The main objective of disaster management during the response phase is to recover and rehabilitate what had been affected by disaster (South Africa, 2002:1). This means recovery is another critical phase where ICS as a tool can be utilised to manage the entire operation (Madry, 2015:20).

The above discussion indicates that the processes of preparedness and response are critical phases of disaster risk management where ICS can be utilised. Figure 2.2 below outlines the ICS structure and functions during a standard application of the system to convey a better understanding of ICS as a tool.

**Figure 2.2: ICS organisational structure (Deal et al, 2010:2, FEMA, 2008:7, Karen, 2012: 13 and Hannestad, 2005:21)**

The ICS organisational structure is a form of top-down bureaucratic system which consist of five major functions: command, planning, operations, logistics and finance/administration (Bigley, 2001:5 and DeVoe and Rahman, 2013:10). The functions of the command structure, the general staff and the operational staff are configured in three levels. Firstly a strategic level (command structure) that is viewed as being responsible for
overall direction of the incident or operation. Secondly, the tactical level (general staff) assigns operational objectives and finally the task level (operational) where specific tasks are assigned to teams (FIRESCOPE, 1994:10). ICS was developed based on the premise of top-down bureaucracy design. This allows various superior positions within the ICS structure to manage the subordinates to achieve overall objectives of operation (DeVoe and Rahman, 2013:10). These positions are also grouped into different levels of command to keep one position within the system from being overloaded (Panlati, 2006: 7). The two main levels in the structure are the command staff and the general staff. The command staff structure includes the positions of the Incident Commander (IC) who is to determine incident or operational priorities and objectives and takes responsibility of the overall management of the rest of the structure (Karen, 2012:13-18, Goldammer and Ronde, 2004:260, FEMA, 2006:SM2-5; Erickson, 1999:86). IC is responsible to manage a single agency in one jurisdiction whereas the unified command is responsible to manage multi-agencies involved in one jurisdiction or multi-jurisdiction operation (Jamieson, 2005:293 and FEMA 2008:46).

According to Nagata et al. (2012:348), Unified Command is established when two or more agencies are involved in a complex operation or if the operation involves more than one municipal boundary (Molino, 2006:226). The multi-jurisdiction refers to more than one municipal boundary using different laws to govern their respective municipal area (Smimiotopoulos, 2017:145). Conversely, multi-agencies refer to different emergency units from various governmental spheres (local, provincial and national), mixture of government agency (South African Police Services, government emergency medical rescue services and traffic management) and non-government agencies (private ambulance services) (Molino, 2006:226). A single agency consists of only one agency managing the operation under one commander for example the South African Police Services managing a huge protest (Canton, 2007:107). An IC has the responsibility to achieve three sets of objectives for every operation and those objectives are to save lives, infrastructure and environment. The function of the information officer is to manage and coordinate all the media related queries about the operation (Goldammer and Ronde, 2004:260). The function of the safety officer is to ensure there is a safe environment within the operation by developing and monitoring safety policies (Goldammer and Ronde, 2004:260). The function of the liaison officer as part of the command staff is to ensure there is free flow of communication within different agencies, other stakeholder and communities during the operation (Goldammer
and Ronde, 2004:260). These are crucial priority functions that ensure effective flow of information as well as effective structure for coordination.

The general staff of the ICS model include the operational section that is responsible for the development and execution of all tactical operations directly related to the primary objectives and goals for handling the incident (Owens, 2012:19 and DeVoe and Rahman, 2013:12). The function of the planning section is to collect, evaluate and disseminate information to and from other functions in the ICS structure (Owens, 2012:19 and DeVoe and Rahman, 2013:12). The logistics section which is regarded as one of the most critical functions in the ICS structure are responsible to obtain, support and manage all the equipment/resources that are needed to manage the incident (O’neal, 2005:261). The logistic section is critical in the sense that it provides the support, resources and all other resources needed to achieve the main objectives of the operation (More and Miller, 2015:422). The functions of ICS can be established, but if there is no logistic section to provide resources which will enables the various functions of ICS to perform their duties accordingly, the organisational structure will be ineffective. The functions of ICS are divided into the functions which are to be performed to achieve the objectives of the operation. Furthermore, the ICS presents the opportunity for an operation section to be subdivided into different units, branches, groups and divisions depending on the magnitude of the operation.

It is very important to conclude by indicating that ICS has the characteristic of modular organisation flexibility. The modular organisation flexibility refers to the ability of the ICS structure to expand and become smaller based on the need and complexity of the operation (Moats, 2007:37). According to O’neal (2008:137) the structure needs only one person to function within the ICS and that person is the Incident Commander (IC). This means an IC performs all other functions (such as safety officer, planning section, logistics section etc.) until the need is created to appoint other persons to perform the functions. This could mean that an incident exceeds the capacity of the IC to perform all functions effectively and thus will need more people to assist. When the situation becomes less complex, the modular flexibility of the structure allows the IC to make the functions less as they see fit (Moats, 2007:37). FIRESCOPE (1997:5) states that the first responder on a scene of an incident should perform the IC function to ensure that lives, environment and infrastructure is preserved. Therefore, the IC is responsible to perform all of the functions if the scale of the operation is small. It is all within the discretion of the IC to expand or cut
down the ICS organisational structure based on the magnitude of the operation (O’neal, 2008:137).

2.3 Principles of ICS

ICS can be applied to any type of incident, planned event, environment and any magnitude of operation (Chase, 1980:3; Deal et al., 2010:37). In applying ICS to various situations allows for improved and coordinated communication among stakeholders through the usage of common terminology to eliminate confusion, procedures and incident management structure to install order during the operation. This is the testimony to the fact that ICS was developed under the approach called “Management by Objective” that means everything should happen under a specific structure, goal with unique characteristics and principles (FEMA, 2008:3). “Management by Objective” calls for managers to formulate specific and measurable objectives to manage incidents in an effective manner, where all activities are recorded for the purposes of monitoring and evaluation (FEMA, 2008:3). The objectives of the ICS is to save lives, environment and infrastructure (Nagata et al, 2012:348). Therefore these objectives constantly remind all the role players involved in operation to act accordingly in order to achieve primary objectives of the operation. Therefore, IC or UC resumes the command position with the objective to achieve these three objectives (saving lives, protecting environment and infrastructure) and above all should consider the safety of the responders (Firescope, 1997:5; Panlati, 2006:5).

ICS is to ensure effective coordination, communication and integration during the operation through application of the specific ICS principles (Alperen, 2017:371). These principles of the ICS include standardisation, command, the establishing and transfer of command, chain of command and unity, span of control and planning “P” (Chang, 2015:6, Jensen and Thompson, 2016:160). These principles are what makes ICS unique and an effective tool that other countries have adopted to manage their operations. It is therefore important to understand what each of these characteristics are and how they contribute to the effective management of the planned and unplanned operation.

2.3.1 Standardisation

In business literature, standardisation is the framework where everyone involved agree that all the relevant parties in an organisation must adhere to the rules and policies to
ensure there is a corporate approach or practice toward a set of guidelines or achievement of objectives (Wright, 2006:51). Similarly in the ICS structure, all parties must follow rules, and/or policies to achieve primary objective of operation and standardisation (Kline, 2000:94). Standardisation is very critical during response and recovery phases. This is to ensure there is no confusion during any operation and standardised rules and policies are implemented and followed (Cashman, 1995:75). Furthermore, standardisation in organisational literature ensures there is transparency and equal basis for all role players involved in the achievement of the objectives of the organisation (Ho, 1999:100). The importance of standardisation in the organisation is that it creates one common understanding of the direction, guidelines or activities that need to be followed to achieve the shared objective of the organisation (Kline, 2000:94). Standardization ensures that all response agencies working in an ICS structure achieves the objectives for the operation. Methods in which standardisation is achieved in the ICS structure include the use of common terminology, standard operating procedures (SOP’s), common names for logistics, resources and position.

2.3.1.1 Common Terminology

It is mandatory to use common (or familiar) terminology during the implementation of ICS in order to eliminate confusion and foster standardisation to ensure that the objectives to save lives, property and environment and ensure safety of responders are achieved accordingly (Hannestad, 2005:21). Common terminology during the operation ensures there is one standard and agreed procedure that every agency personnel understands and adhere to during the operation. Common terminology is very important to ensure that there is a clear and understandable language applied by all different agencies working within one operation (Panlati, 2006:1). This also has an implication on the actual language that is spoken. Different agencies uses different terminology during their respective operations. It is therefore very important that common terminology is applied and agencies should adhere to the call of standardisation during the operation (Owens, 2010:10). The use of common terminology during the operation is very useful in order to define various position titles, facilities and logistics within the ICS organisational setting (Deal et al., 2010:2 and FEMA, 2008:46).

Therefore, this is a critical characteristic of ICS which is to ensure effective communication among the agencies for speedily and effective management during the operation (Owen, 2012:10). During the application of ICS in any operation, agencies will have to use
common terminology. It is only achieved through on-going training and simulation which will contribute to eliminating the challenges during the state of emergency (Wilson, 2007:4-10). Another function of using common terminology is to give resource descriptions such as personnel, equipment and facilities common names within a specific category and categorisation (Walsh et al, 2012:14).

From the above discussion it is clear that if there is no common (or familiar) terminology during any operation there will be various consequences that include: confusion, disorder, delays, ambiguous communication, inefficiency and ineffectiveness (Ciottone, 2006:211 and Strehlow, 1988:24). Therefore standardisation is the key principle in ICS in achieving the objectives of saving lives, infrastructure and environment during the operation.

2.3.1.2 Standard Operating Procedures

Standard Operation Procedure (SOP) is the organisational directive that establishes a uniform course of action in the form of written guidelines. These guidelines explain what is to be done and by whom in order to achieve a specific organisation directive (FEMA, 1999:2). The SOP details the step-by-step of activities which are to be performed by a particular individual with a set of competence. To illustrate this through an example, patient treatment on a scene will involve: Airway (open, clear and maintain); Breathing (check and maintain breathing); and Circulation (check and stop bleeding) (Klaene and Sanders, 2016:54 and Schottke, 2014:118).

It is critical for the command function in ICS to formulate the overall SOPs which will eliminate the guess work among the agencies during an incident or planned event operation (Klaene and Sanders, 2016:54). These SOPs must be developed by the command function to ensure there is a standard approach and activities throughout the duration of the multi-agency operation (Dunn, 2007: 28). According to FEMA (1999:3), SOPs on multi-agency operation are there to enforce an agency’s SOP or create particular SOP if there is no existing SOP for any operation. The use of emergency vehicles is an example in this regard and will involve: having valid driver’s licenses, trip authorisation, the recording of every trip in logbooks, wearing reflective clothing at all times, headlights must always be on etc. Therefore, everyone within the organisation is required to adhere to such SOPs since it is regarded as the rules and regulations of the organisation (Smeby and Mifiree, 2006:19).
2.3.1.3 Common names for logistics, resources and position

ICS requires all agencies involved in the operation to use common terminology for the purposes of controlling personnel, equipment, facilities and communications within operational venue of the incident or planned event (Panlati, 2006:1). Common terminology refers to naming or identifying of resources for example different sizes of fire engine. The use of common terminology also refers to common language for, call signs, enforcing the International Radiotelephony Spelling Alphabet (IRSA) and the positions within the operation in order to eliminate confusion (FIRESCOPE, 1994:15). For example, the big size of the fire engine will be called bravo foxtrot echo number one (BFE-1) which refers to big fire engine number one; while the small size of the fire engine will be called sierra foxtrot echo number one (SFE-1).

A further motivation for using common terminology is for organisational functions and activities to be named or defined in a manner that everyone within the operation will be able to relate to that specific definition. The person in command of the incident is an Incident Commander (IC) within the ICS structure and nobody else may be called IC within one operation (Klaene and Sanders, 2008:1). With the use of common terminology, operations facilities are named, and call signs may be given to ensure common understanding within the operation (Panlati, 2006:1). This is critical to ensure common understanding within the operation which will lead to effective and efficient response during the cause of operation.

2.3.2 Command

According to Shamir (2011:9) command is the act of exercising the authority invested on the leader to direct, instruct, coordinate and direct human resource under his/her leadership. Therefore the command structure for ICS is having the full authority to command the entire ICS functions to delivery in their duties in order to save lives, environment and infrastructure.

Command is the function within the ICS organisational structure. Organisation structure is defined as the “formal system of task and authority relationships that control how people coordinate their actions using resources to achieve organisational goals” (Aquinas,
Based on this definition, organisational structure is the best tool to ensure that people and resources are utilised in a coordinated manner to achieve the sets of objectives that have been formulated. In-line with this definition, ICS is the organisational structure which was formulated to coordinate people and resources to achieve the set objectives. The command function is responsible to utilise all the resources of ICS to ensure there is coordination towards saving lives, environment and infrastructure (Nagata et al., 2012:348). Based on these objectives, the command function is fully responsible for reaching these objectives and can be held accountable for failing to achieve these primary objectives to manage an incident (King, 2007:7; Ciottone 2006: 209). Therefore the benefit of organisational structure helps to guide the people and resources to achieve their primary objectives for the establishing the organisation (Bradley, 2010:166). Based on this statement, it is clear that without sets of objectives in an organisation, it is impossible to control and guide the resources to achieve expected outcomes. The benefits of the organisational structure are only achieved through the intense planning, organising, controlling and leading to attain primary objectives of the organisation (Aquinas, 2008:73-74). Hence the ICS consist of the intense planning during a process called the “Planning P”. This comprises the defining of functions and assigning the relevant people to lead functions to achieve the primary objectives of the ICS. The command structure is responsible to formulate guidelines and the Incident Action Plan (IAP) which all participants within ICS are to follow (Owens, 2012:19). IAP is the comprehensive plan of the entire operation that spells out all the duties and guidelines to achieve the primary objectives on ICS (Owens, 2012:19 and DeVoe and Rahman, 2013:10:12).

The command function is one of principle which have to be respected within the ICS organisation and the IC have the authority to instruct the ICS personnel to deliver objectives of the IAP under the command (FEMA, 2008:46). The act to command as being defined above, empowers the command function to instruct other role players within ICS. No power to command ICS, will prevent the organisation to achieve the overall mandate which is to save lives, the environment and infrastructure (FEMA, 2008:46). Therefore the command function should be established to ensure that the resource units’ objectives can be executed (Operations, Planning, Logistics and Finance) and implemented in a coordinated manner to achieve the goals of the incident.

Incidents are not usually as simple to only involve one area or jurisdiction and most often an incident may involve multiple jurisdictions. As a result of this scale of the incident
different agencies from various spheres of government and private sector agencies may join in one operation (Bice and Brown, 2008: 3). In such situations unified command (UC) must be established in order to develop operational plans, objectives and priorities for the operation (Bice and Brown, 2008: 3). UC is a unique principle for ICS which is intended to accommodate all superior officials during the multi-agency and multi-jurisdiction operation with the objective to eliminate multiple policies managing one operation (Jamieson, 2005:293). The danger of the operation that involves multi-agencies and multi-jurisdiction is that all the superior officials from the respective agencies will command their respective agencies which will lead to chaos operation (Klaene and Sanders, 2016:7). For this reason, unified command was established with the objective to bring harmony among these superior officials by working together to achieve common sets of objectives in a coordinated manner (Born et al, 2007:392). Failure to establish unified command will create chaos as the agencies will be working in silos with poor coordination as the result (Cashman, 1995:76). If each agency work independent of one another and do not use one structure, there will be poor coordination of resources, duplication of activities, poor communication and incorrect information sent to media (Owens, 2012:18). The superiors of these multi-agencies are expected to form one unified command structure for decision-making and formulation of one IAP (Karen, 2012:16 and FEMA, 2008:49).

According to FEMA (2008:3), the singular IC is only recommended for small operation which last for a short period whereas UC is recommended for complex operation which involve multi-jurisdiction and agencies. The complete command structure should consist of the information, liaison and safety officer (Bigley and Roberts, 2001:7, Boguckit and Schulz, 2015:261 and Born et al., 2007:392). Therefore, the IC or UC is responsible to command and coordinate all the multiple agencies within the temporary central authority hierarchy structure for ICS (Moynihan, 2007:896).

The command function have the responsibility to establish the Incident Command Post (ICP) on the safety zone within the vicinity of the operation (Cooper, 2005:30). ICP is being defined as the on-site office for planning, strategic and tactical decision making for the entire operation as the critical duties of the command function (Chertoff, 2008:119). The command function have the responsibility to ensure the safety of the ICP by positioning the ICP away from any hazard and consideration of the safety of the personnel performing the command function (Schnep, 2016:123). Furthermore, the command function is to ensure that there is only one ICP on the operation to avoid the duplication of duties and
multiple centres of power which will create division within operation (Deal et al., 2010:1-9; Cooper, 2005: 30).

The main objective of ICP is to allow the command structure to make critical decisions such as strategic and tactical objectives, resource deployment, budget, communication management, expand or decrease of ICS organisational structure and approving of information for media release (Chertoff, 2008:119). The ICP is regarded as the on-site office for management of the operation which is to ensure effectiveness and efficiency in decision making.

The command function can establish the ICP on the temporary or mobile structure (for example: tent, caravan, panel van etc.) which will allow smooth administrative work to be performed during the day and night (Molino, 2006:57). ICP is very important since the ICS was formulated under the approach “Management by Objective”. Therefore ICP allows the command function to have the venue to formulate measurable objectives and goals for operation (FEMA, 2008:3).

2.3.3 Establishment and transfer of command

The first responder on the incident have the duty to assume the command function with the intention to achieve the objectives of the ICS (FIRESCOPE, 1997:5). Therefore the first responder have to immediately analyse the scene, determine the strategy and compile the initial report to brief the other responders (O’neal, 2008: 21). Upon the arrival of a more senior official in terms of qualification and experience, the first responder will have to transfer the command by handing-over a report of the initial operation details and command structure. This process in ICS is referred to as the transfer of command.

Panlati (2006:11) states that “command represents a function not a person”. Therefore it is very important that command as the function is established as the operation. Also, a smooth transition of the command function from first responder to designated Incident Commander needs to happen. Furthermore it is very important for officials to respect the authority of the official executing the command function. It is of utmost importance that the establishment of command is formulated right at the beginning of the operation. This will ensure order and accountability during the operation management (Cashman, 1995:76). The immediate establishment of the command will help identify and prioritise problems in order to develop the Incident Action Plan (IAP) to resolve the incident or disaster:
disseminate the IAP to all the resources leaders for effective application; control and coordinate all activities outlined from the IAP; and provide leadership to ensure that the ICS priorities are achieved without failing (Sangkamanee et al., 2008:314).

Transfer of command occurs under various circumstances. Firstly, the junior official in terms of qualification and experience has to handover the operation to more superior officials arriving on scene (Schottke, 2014:131; FIRESCOPE, 1994:7). During this process, the junior official, transferring command has to brief the incoming superior official regarding the initial state of the incident, strategies deployed during the operation, available resources and pending resources to arrive on scene (FIRESCOPE, 1994:7). Furthermore during this transfer of command, strengths and weakness of the operation should be outlined so that necessary measures can be implemented for the sake to save lives, the environment and infrastructure. Secondly, change over from single command structure into unified command function (Panlati, 2006:25). This transfer happens when the operation involve multi-agencies and multi-jurisdiction. Therefore transfer of command is critical to ensure that all the agencies that resume the command function understand what have to be done in order to achieve the primary objectives of the operation. Thirdly, transfer of command occurs when the operation is prolonged and as a result IC or UC may be changed during a shift change (Panlati, 2006:25). According to DeLuca (2005:14), fatigue is a serious condition that presents itself in a form of symptoms with a negative affect on the functioning of the body, causing poor concentration. Fatigue during the incident management or planned event operation can be very dangerous as it may lead to more mistakes and negative outcomes into the ICS objectives.

Transfer of command is very important to ensure there is smooth transfer of information between people who are expected to perform the command function.

2.3.4 Chain of command and unity

According to Swansburg (1996:322) the chain of command principle is found in the organisational hierarchy relationships within which authority flows from top to bottom of the structure of the organisation. Within the ICS structure, the chain of command flows from the command function to operational functions. The benefit of having a chain of command is that there is only one centralised authority of command where all the information should flow freely from top to bottom of the organisational structure in order to achieve the primary objectives of the organisation (Swansburg, 1996:322).
Hannestad (2005:23) states that the chain of command and unity of command are both regarded as the most fundamental and inter-related concepts of the ICS. Furthermore, the chain of command is defined as an unbroken line of authority that connect the people in the structure and clarifies who reports to who within the hierarchy of the ICS structure (Daft and Marcic, 2001:226). The unity of command allows one person or group of people to be accountable to one supervisor as to instil order and professionalism within the organisation (Hannestad, 2005:23; Daft and Marcic, 2001:226). The chain and unit of command automatically grants the supervisor the authority to issue the instruction, request or command to his/her subordinates to perform a certain task with full compliance (Gitman and McDaniel, 2008: 251; Daft and Marcic, 2001:226). The most important objective of both the chain of command and unity of command, include to clarify reporting relationships and eliminate the confusion when one or more agencies are involved in one operation (Homeland Security, 2004:11). This is achieved by only section chief reporting to command structure and prohibit any junior section member reporting straight to command structure (Partridge, 2012:135). This is to allow coordinated actions and flow of information from lower subordinate to senior official within the hierarchy of the ICS organisational structure (Moats, 2007:41). Therefore only one message will be sent to external stakeholders and media platforms (Ciottone, 2006:235).

Therefore, the principle of chain and unity of command within the ICS is very important as it instil order and professionalism. It is for this reason that only the command function is authorised to give order to the operational functions which flows from top to bottom with the objective to save lives, environment and infrastructure.

2.3.5 Span of control

The span of control is another unique principle of ICS which calls for a minimum of three and maximum of seven (five being an optimal number) people reporting to one supervisor (Benette, 2007:398; Walsh et al., 2005:17). This element of ICS is to ensure that ICS is effective and efficient in any area of the organisational setup. Caroline (2010:17) states that one supervisor can only effectively manages three to seven people with the benefit to produce positive results from their input effort. Effective management for span of control will be achieved since the concentration and attention of the supervisor will only be limited to minimum subordinates during the operation (Tripathi and Reddy, 2006:7). Wood (2002:439) confirms that monitoring and mentoring a small group of subordinates is more
effective as compared to a large number of subordinates. Based on this statement, the supervisor of the minimal span of control has the great potential to manage the span of control in achieving the positive objectives of the ICS.

Furthermore, the span of control is instituted to avoid a large number of people reporting to one supervisor and might lead to many people roaming around without proper delegation and monitoring. Therefore the span of control is to only allow a group of three to seven people and logistics to be managed within the manageable number in order to produce positive output. Klinoff (2012:444) indicates that span of control is a key element to achieve effectiveness and efficiency within any type of operation. The section chiefs are responsible to establish and manage the proper span of control throughout the ICS structure. Therefore all section chiefs are to make sure that all tactical activities are carried out to achieve positive ICS objectives (FEMA, 2008:58).

Based on the above discussion, it is evident that the element of span of control within the ICS ensures efficiency, order and proper management of resources during the operation. If the span of control is not implemented during a complex operation, the entire operation will suffer from overcrowding of resources and disorder during the execution of duties in the operation.

### 2.3.6 Planning “P”

The planning “P” process is another unique principle of ICS which ensures effective management by following nine consecutive steps. These steps are shown by a diagram in Figure 2.3.

The components of the planning process as part of the Planning “P” include the series of planning meetings with very specific outcomes. All of which should collectively culminate in an Incident Action Plan which must be adopted as guiding the plan for operation (Ciottone 2006: 253 and FEMA 2012:6). The different meetings with all of the included activities are grouped in five phases that each have its own objective within the planning process. These phases with their different steps can be seen in Figure 2.3 below (O'neal, 2008: 21, and FEMA 2012:5, Chase, 1980:8, Annelli, 2006:226 and Deal et al., 2010:43). The participants during the planning “P” involve the command structure and all the section chiefs (Glarum, 2017:63). Therefore, it is very critical that all the determined participants should participate in all five phases of Planning “P” in order to obtain full understanding and ownership of the operation. For example, phase one provides the full details of that
which have led and/or caused an incident (Glarum, 2017:63). Full participation of all five phases of Planning “P” assists in formulation of constructive and clear IAP (O’neal, 2008: 21, and FEMA 2012:5). The five phases of the Planning “P” are continuous throughout the operation in order to ensure that objectives and plan are aligned to the latest development of the operation (Brunacini, 2002:372). These continuous planning meetings are to prevent using the outdated plan since the operations and challenges are continually changing. All these meetings during the operation emphasises the importance to ensure efficiency/ effectiveness in executing activities to achieve positive ICS objectives. The effectiveness and efficiency is achieved through continuous evaluation of the objectives, plan and strategies involved to execute the plan. The first responders (Incident Commander/ Unified Command and general staff) initiate the planning “P”. Later on, the planning unit administers this function throughout the operation till the close up of the operation (FEMA, 2012:5).

![The Planning “P”](image)

**Figure 2.3: The Planning “P”** (FEMA, 2008:20, FEMA 2012:7 and Deal et al, 2010:43)

The bureaucracy system involves more of the planning process to ensure objectives of the organisation are achieved through following organisation policies and procedures (Kaplan and Owings, 2017:15). Thus, the planning is critical to take place within the bureaucracy system to ensure strategic and logic management of the organisational affairs to achieve
positive outcomes (Water, 2015:9). ICS is the organisational structure which is based on ensuring the standardisation, command, chain of command and unity, span of control, policies and intense planning during the planning “P”. These policies of the ICS include the IAP and various SOPs to guide all the activities’ primary sets of organisational objectives. Child (2015:467) mentions that ICS is the bureaucracy standardised system that produces flexible and reliable arrangements to manage small and complex operations through the collective.

Rules and procedures in ICS is achieved through the creation of the IAP to guide the bureaucratic organisational system. Establishing the IAP is the command structure’s overall objective in order to initiate the planning “P” processes. IAP provide concise, detailed, coherent means of capturing and communicating the overall incident objectives, priorities, tactics, and strategies that are meant to guide both operational and supporting activities and functions (Panlati, 2006: 5; FIRESCOPE, 1997:5).

2.4 ICS application globally

After the development of ICS as a result of the disastrous wildfires in California during the 1970s, there has been a wide spread of adoption or usage of ICS in other countries for major operations, planned or unplanned (Cole, 2000:207& 209). FEMA has rated ICS as the preferred system as it provides a comprehensive approach throughout the four phases of an emergency that include mitigation, preparedness, response and recovery (Owen, 2012:5). FEMA considered ICS as one of the longest-running operational system that had been applied throughout the world in many emergency complex operations (Cole, 2000: 207).

During the International Symposium on the use of Incident Command Systems in Fire Management which was held in South Korea in 2009, it indicated that ICS is being applied across the world including in countries such as Australia, Brazil, China, Canada, France, India, Ireland, Japan, Korea, Netherlands, Norway and New Zealand (Georg, 2009:14; Kook, 2009:15; Boersman, et al, 2014:2). During the presentations from the representatives, these countries mentioned that ICS was the effective tool to promote coordination with the intention to save lives, infrastructure and environment (Georg, 2009: 14). ICS is also applicable in African countries since it is an adaptive and flexible organisational model which can suit any environment as long as the basic principles and characteristics of ICS are not being compromised (Goldammer and De Ronde. 2004:268).
Although the ICS is adaptive and flexible, it should still suit the country’s administrative, political agenda, developmental status and cultural systems or beliefs (Goldammer and De Ronde, 2004:336; Kook, 2009:37). These are critical factors which can make or destroy the effectiveness of ICS. An example of the ICS applied in an African context is that of Ethiopia as a means to fight and manage major fires in 2000 (Georg, 2009:14; Goldammer and De Ronde, 2004:259). Through the application of ICS in Ethiopia it was noted that there was effective coordination to achieve the three main objectives of an incident which is to save lives, environment and infrastructure (Kook, 2009:15).

The abovementioned countries experienced challenges which amounted to poor organisational structure, unintegrated communication between the agencies, unclear chain of unit and command, inconsistent terminology, inefficient supervisory on span of control and poor planning before application of ICS (Dudfield and Latapie, 2003:2). All these challenges made it impossible to save lives, the environment and infrastructure in a coordinated manner. Therefore these challenges caused poor coordination and control of resources during the operations in the countries mentioned above.

It is important to note that those countries mentioned during the International Symposium regarding the Use of Incident Command Systems in Fire Management were applying the ICS base on the common organisational structure indicated in Figure 2.2 (Kook, 2009:15). Throughout the above discussion and outcome from the International Symposium on the use of Incident Command Systems, it indicates that the ICS principles and characteristics are available to implement around the world to ensure coordination within the operation. This can be achieved through proper planning during: the five phases of the Planning "P" process; the development of IAP; establishing the command; enforcing the chain and unit of command; establishing manageable span of control; and applying the policies to ensure standardisation during the operation (Gallant, 2008:33).

It is for these reasons that there has been a growing demand of implementation of ICS across the world (Kook, 2009:15). The growing need for multi-agency and multi-country involvement in one operation, informed the growing demand for application of ICS within a country/state as well as internationally. Thus, a standard inter-agency incident management system is vital for effective operation management (Georg, 2009:14). The great importance that countries should use ICS as the standard tool for incident management; is to enhance the cooperation between the countries in the event that two or
more country agencies assist a specific country in a state of national disaster (Kook, 2009: 15).

The application of the ICS in Australia has introduced the common framework for emergency agencies to manage any type of incident. This resulted in the agencies that are involved, to be able to manage the incident(s) in the most professional manner possible. The application of the ICS by the Canadian emergency services has resulted to better preparedness, communication, response and management of operations within the country (Battram, 2010:202). However, most rural municipal officials do not have the same understanding about the application of ICS. This is evident in the lack of understanding of ICS terminology, reporting procedure and command principle (Battram, 2010:205). The lack of understanding by these rural municipal officials creates confusion, poor communication, uncoordinated activities and ultimately poor response which exacerbate the extend of the incident (Battram, 2010:205). The application of ICS in Norway has created a systematic approach and organised structure to manage any type of incident (FitzGerald et al, 2017:194). The effectiveness of ICS was tested during the 2011 terrorist bombing incident whereby there was good management of the incident. Yet, the Incident Commander was delaying in executing critical decisions (FitzGerald et al, 2017:194).

According to FitzGerald et al (2017:194) the delay by IC to make critical decisions was due to the inexperience of the IC to perform its command function. Thus, it is recommended that for ICS to be effective, the command function should be directed to the most experience emergency practitioner. China has previously issued some emergency management regulation and laws which are not detailed as compared to ICS to address poor management of operations (Yongsheng, 2016:144). ICS is detailed in the sense that it consist of ICS organisational structure and other principles of ICS (See section 2.3, Chapter 2). Therefore, the application of ICS in China has resulted to efficient allocation of resources, personnel, effective communication, rapid response and goal driven planning (Yongsheng, 2016:144). Bangladesh government has implemented the ICS with the greater need to strengthen the professional approach, improve emergency institutionalisation, integration, coordination and response to any type of incident or disaster (Ullah, 2010:5). A number of disasters that had happened in Bangladesh influenced the implementation of ICS. These disasters included the “Bhola” cyclone in 1970, famine in 1974, floods and cyclone in 1988, 1991, 1997, 1998, 2004 and 2007 and numerous other earthquakes with the magnitude exceeding 8 scale (Ullah, 2010:5).
Bangladesh government regarded ICS as the best model to promote good working relationships between political groups, NGOs, civil-military administration and ministry of Food and Disaster Management (MoFDM) which are the main stakeholders for implementation of ICS (Ullah, 2010:5).

It is important that the working group for ICS implementation in a specific country must get the political and academia’s support in order to adopt and implement the ICS in a specific country (Phelan, 2008:59). This is very critical as the politics control and channel the direction on the country whereas the academics will champion the policy development and training.

2.5 Application of ICS in South Africa (SA)

Boersman, et al (2014:1) state that in all the countries, the main objectives of emergency response operation in a complex event; include the fundamental goal to save lives; the environment and infrastructure. Even in South Africa the Bill of Rights in the Constitution of the Republic of South Africa, Act 109 of 1999, states that everyone has the right to life, property and quality service delivery (South Africa, 1996: 8-11). As a result Section 19(e) of the Disaster Management Act 57 of 2002 reads with Disaster Management Amendment Act 16 of 2015: "requires the development of guidelines for integration of concepts, plans and principles for disaster management to ensure basic right to life is ensured in all spheres of government" (South Africa, 2002:19).

In South Africa, there is no promulgated system similar as compared to the National Incident Management System (NIMS) as it was promulgated by the United States of America government that calls for the full integration and implementation of ICS throughout the country of USA in 1970’s (Reid, 2005:11). Therefore there is no standardised or similar system which is to regulate the response, coordination and management of incidents and planned events throughout South Africa. Each agency is using their own standard operation procedure (SOP) that is not integrated into other agencies. As a result, it creates havoc when different agencies come together for one operation that involve multi-jurisdiction operation (South Africa, 2005:11-12). Provinces of South Africa are using different systems with different names. An example of this is the Gauteng Provincial Disaster Management Centre (GPDMC) that has developed the Provincial Incident Management System (PIMS). PIMS was developed to ensure the effective and efficient incident management through the integration of personnel.
equipment, facilities, procedures and communications operating within one temporary organisational structure which is similar to ICS of USA (Department of Provincial and Local Government, 2007:121). Mpumalanga Provincial Disaster Management Centre (MPDMC) has a Joint Operations Committee (JOC). This JOC is to be activated whenever the need arise to manage major incident or planned event. This is the administrative structure at high level and it does not consist of ICS functions such as command, finance, logistics, operations and planning (Department of Provincial and Local Government, 2007:121).

Western Cape Province is a high fire prone area in SA due to the fact that it is a coastal and mountainous area with bad weather conditions which fuel the spread of veld fires causing huge damages to lives, environment and infrastructure (Kruger et al, 2000:1 and Geldenhuyys, 2007:46). In response of these veld fire occurrences, Western Cape Provincial Disaster Management Centre (WCPDMC) has developed the ICS toolkit with the objective to provide guidance on the emergency agencies of how to manage planned and unplanned operations in the Western Cape Province (SAWCG, 2017). This ICS toolkit of the Western Cape Province has the same organisational structure, duties and forms as compared to the ICS originated by the USA. Furthermore, this ICS was implemented during the major operation in Western Cape to extinguish wildfires which occurred during the period of February to March 2015 (Deiner, 2015:5). In KwaZulu-Natal PDMC (KZNPDMDMC) has instituted the incident management committees. These committees are only established to coordinate major incidents (Department of Provincial and Local Government, 2007:121). The heads of the disaster management act as chair for both the committees from KZNPDMDMC and MPDMC. They also gather the committees to plan for operation and there is a standardised approach to be followed during the operations. The standardised approach involves all organisations such as the Department of Health, South African Social Security Agency (SASSA), and None Profit Organisations (NPO). The JOC is the high level administrative structure which reports to the ministerial committee and it does not consist of ICS functions as compared to the one of USA (Department of Provincial and Local Government, 2007:121).

2.5.1 The latest development regarding ICS in South Africa

Section 5 of the Disaster Management Act 57 of 2002 (Act 57 of 2002) mentions the formulation of the National Disaster Management Advisory Forum (NDMAF) whereby national, provincial, local government and other disaster management role-players consult one another and co-ordinate their actions on matters relating to disaster management.
Based on this provision of the Act, the NDMAF has accepted the South Africa Incident Command System (SA ICS) Working Group as the sub-committee developing and investigating the use and implementation of ICS (SA ICS, 2017). The SA ICS Working Group was formed in March 2004 after the 3rd International Wildland Fire Conference held in Australia in 2003 (Geldenhuys, 2007:48; SA ICS, 2017; Kleinhans, 2017:2). The authorised national body, like the Disaster Management Advisory Forum, was to adopt the SA ICS Working Group to facilitate and establish joint standards of practice as it is outlined in section 7(2)(c)(iii) of the Act 57 of 2002. The objectives of this SA ICS Working Group is to coordinate the implementation of ICS in South Africa, get support from government and non-government agencies, facilitate training in higher education institutions, standardisation and the rollout of the ICS throughout the Country (Geldenhuys, 2007:47 and SA ICS, 2017). Furthermore, SA ICS Working Group coordinates ICS trainings in SA through the assistance of USA facilitators from FEMA (Geldenhuys, 2007:47 and SA ICS, 2017).

The South Africa National Roads Agency Limited (SANRAL) has developed the Incident Management System (IMS) as mandated by the National Transport Policy 1997 (South Africa National Roads Agency Limited, 2017). This IMS have been implemented throughout the national roads of SA. It covers the over 18 000 kilometers with the purpose to coordinate and pre-plan through the use of mechanical tools, human, and electronic resources to manage incidents and restore road network traffic as soon as possible to allow the free follow of traffic (South Africa National Roads Agency Limited, 2017). The IMS consist of similar functions of the ICS which include: command, finance, logistics, operational and planning which are similar to the ICS of USA. The scope of the IMS is only limited to the national roads managed by SANRAL whereas ICS can be used throughout the country in any type of incident.

The NDMC has developed a manual called the joint management of incidents involving chemical or biological agents or radio-active materials. The manual is intended to describe the joint management of incidents that involves Chemical, Biological agents and Radioactive materials (CBR) (South Africa, 2006:6). Within this manual there is the Incident Command tool which is used to control and manage freighter which is transporting the dangerous goods on SA roads. The structure of the Incident Command tool has been adopted and applied during the CBR materials incident and is illustrated in Figure 2.4:
The above incident command structure is having similarities to the original ICS structure that was developed in USA. This is the indication that they are incident management system which are being applied in SA and are running parallel to another. This may work in favour of the SA ICS as the recognised working group to coordinate the implementation of ICS in SA.

In the South African context there is a similar component of ICS from USA and it is called the Venue Operations Centre (VOC). VOC is intended to perform the same duties as compared to the component of ICP. Both VOC and ICP are to be established within the vicinity of the operation to ensure effective and efficient decision-making for the specific operation. Furthermore both VOC and ICP can be established on the temporary or mobile structure (for example: tent, caravan, panel van etc.) which will allow smooth administrative work either at night or during the day and irrespective of whatever the weather condition may be (Molino, 2006:57).

The only difference between these two components is that, VOC is only administered under the Safety and Sports and Recreational Events Act 2 of 2010 (Act 2 of 2010). This means the Act 2 of 2010 was developed under the ministry of Sport and Recreation whereas National Disaster Management Centre is under the ministry of Cooperative
Governance and Traditional Affairs (CoGTA). Act 2 of 2010 was developed to ensure the safety of physical well-being and property at sports, exhibition, recreational, religious, cultural, organisational or similar events held at stadiums or any venues of operations (South Africa, 2010:1). Therefore the VOC is only to be established during the planned events as per Act 2 of 2010. Outside of Act 2 of 2010, no other national legislation or system exists that calls for the establishment of the VOC to manage complex and multi-agency incident management throughout South Africa (Department of Provincial and Local Government, 2007:121). It is only the provinces within South Africa that have established their own systems to be applied within their provincial jurisdiction. This information was already presented in the above discussion (Department of Provincial and Local Government, 2007:121). Section 17 of Act 2 of 2010 spells out the duties and stakeholders to be part of the VOC; and only if the event is categorised as high or medium risk (South Africa, 2010:26; Tassiopoulos, 2010:352). The VOC members or suitable police official that was designated by the National Commissioner of the SAPS will authorise a VOC member to manage the VOC.

The above discussion depicted both the advantageous and disadvantageous essence of the standardised system to manage both planned and unplanned operation. The advantage of the absence of a national policy or system to manage planned and unplanned events; is that there are already a number of systems and components of ICS which are being implemented in South Africa. This shows a positive indication that South Africa will soon have the integrated and standardised national policy with full characteristics of ICS. The disadvantage is that all these policies and systems are not integrated into one national policy to manage both planned and unplanned events throughout South Africa.

2.6 Conclusion

This chapter examined the application of a standardised system known as Incident Command Systems (ICS) to manage both planned and unplanned operations. The ICS seeks to coordinate multiple response organisations under a temporary hierarchical structure. The ICS is of critical interest because it has a dominant mechanism which the USA and other countries around the world apply to organise their emergency responders. It is of theoretical interest because it provides insights into how a highly centralised mode of network governance operates. Despite the hierarchy principle of the ICS, the network properties of emergency responders fundamentally affects its operations. Yet, in order to
build trust it is very important to achieve the positive objectives of ICS (Moynihan, 2007:14). Deal et al., (2010:1) state that “ICS is like a math or sport, if you don’t practice it, you become rusty, therefore refresher on the ICS principles, terminology, processes and organisational structure it is very critical in order to make it the critical tool that it is”. Based on this statement, it is very important that ICS is applied and rehearsed continuously to ensure effective application during the operation. As the ICS is spreading throughout the world from USA, it is very important that each country adopts the ICS and modifies it to suit its own administrative, cultural system, customs and values, political climate and type of resources available for emergency services (Kook, 2009:15). The great importance that countries should use the ICS as a standard tool for incident management; is to allow for the effective and efficient response in case countries have to assist one other in the event of a state of national disaster (Kook, 2009:15).

The establishment of a SA ICS Working Group is the indication that ICS has been taken seriously as the only efficient and effective tool for planned and unplanned operations in South Africa. These trainings are to ensure that most South Africans are equipped with the necessary knowledge and skills to allow the rollout of the ICS in South Africa, as soon as the NDMC has finalised the administrative processes. The successful implementation of ICS in the Western Cape during the wildfires was the indication that most emergency officials who participated during this operation were well trained on the implementation of ICS. Hence, the SA ICS Working Group is in partnership with different training institutions to facilitate trainings throughout SA (Geldenhuys, 2007:47; SA ICS, 2017). Therefore South Africa is in a better position to rollout ICS as the national policy, when the NDMC has declared the ICS as the national policy.
CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter presented the literature review that aimed to unpack what the Incident Command System (ICS) is, how the ICS concept is being applied globally, the application of ICS in South Africa as well as the latest developments with regard to ICS in South Africa in order to achieve the first objective of the study. Based on this background, Chapter 3 discusses the appropriate research methodology that was applied during this study. Thus, this chapter addresses the objectives of the study; namely to collect necessary data about how agencies and the disaster management centre in Nkangala District Municipality manage operations (planned and unplanned events) by implementing the ICS model. Chapter 3 presents the research methodology that was applied in full detail. This is done to explore the application of ICS in the major incident and planned events within the Nkangala District Municipality (NDM). According to Creswell (2014:11) there are three types of research designs that can be used during a scientific research study namely, qualitative, quantitative and a mixed-method design. A qualitative research design was chosen in order to conduct the study under review. Various methods under the qualitative research design have been applied to achieve the overall objective of the study (Kothari, 2004:2). Therefore this chapter explains why the qualitative research design was chosen and further outlines the specific methods that were applied. These methods include sampling, data collection, data analysis, interpretation and presentation. The chapter concludes with a presentation of the ethical clearance and some limitations of the study.

3.1.1 Study area

Nkangala District Municipality (NDM) is one of three districts that is located in the Mpumalanga Province, South Africa. Nkangala is a Nguni word that means Highveld and describes the geographical location of the area in the Mpumalanga Province where the district is located (Nkangala District Municipality, 2017). The Nkangala district municipal area includes six local municipalities namely, Dr. J.S Moroka; eMalahleni; Emakhazeni; Steve Tshwete; Thembisile Hani; and Victor Khanye (Nkangala District Municipality, 2017). These local municipalities have fully operational emergency agencies that respond and
manage all types of incidents within the jurisdiction of NDM. The study area is displayed by the geographical layout of the NDM as illustrated in Figure 3.1.

**Figure 3.1: Nkangala District Municipality map (Nkangala District Municipality, 2017).**

There are major incidents in NDM which are caused by a number of hazards which include fires (veld and structural), floods, road accidents, hazardous materials, and spillage (Nkangala District Municipality, 2017:48-49). Furthermore there are numerous accidents occurring on the major roads within NDM. These roads include the Moloto Road (R573) which passes through the District Municipality from Marble Hall to Pretoria. The Moloto road (R573) is famously known for serious injuries and fatalities as a result of horrible accidents which usually involve bus services as it transport large number of communities (Conradie et al., 2008:434). The other main road is the N12 which originates from the eMalahleni Local Municipality and continues through to the town of George in the Western Cape. Another important national road is the N11 that pass through Steve Tshwete Local Municipality from Botswana to Ladysmith in KwaZulu-Natal Province. In addition to these incidents, NDM host numerous planned events which are organised by various
organisations and different spheres of government (Service Delivery Budgeted Implementation Plan, 2017). Therefore, NDM participates in these planned events to ensure safety of the people, environment and infrastructure.

3.2 Qualitative research design

Gorard (2013:8) defines research design as an organised manner of collecting and analysing data for a specific research project for the purposes to generate evidence that seeks to provide convincing answers for specific research questions. There are three types of research designs that can be used to this end namely, qualitative, quantitative and a mixed-method design (Gorard 2013:6; Creswell, 2014:3, 6&12). Each of these research designs provide specific tools for collecting data and specific methods for analysis (Gorard 2013:7). Creswell (2014:13) states that the historic origin of the qualitative research design was formulated from the sociology, anthropology and humanity fields of study. Therefore the qualitative research design refers to the study of people’s behaviour/actions, lives, practice, cultural phenomena, social movements, emotions and interactions that are shaped by unique circumstances (King and Horrocks, 2010:21; Maxwell, 2005:22). Flick (2009:21) adds that qualitative research design “is orientated towards analysing concrete cases in their temporal and local particular starting from people’s expressions and activities in their local contexts”. This study was about exploring the application of ICS with the intention to analyse the emergency practitioner’s behaviour in managing the incidents and planned events in NDM.

Quantitative research design was not chosen as the best option in research design since the quantitative research design is regarded as a more experimental and descriptive design (Hammersley, 2013:10). Kumar (2011:104) considers quantitative research design as a more rigid structure to collect data by using quantitative questionnaires. Furthermore, quantitative questionnaires are impossible to change during the research process and can only allow a specific set of answers from the participants (Kumar, 2011:104). Qualitative research design was chosen as it gave the researcher more flexibility towards questions and questioning in order to gain more in-depth understanding of the phenomenon under study (Patton, 2002:41). Quantitative research design was not chosen as it tends to generalise, replicate and predict findings (Harwell, 2011:149). The current study did not require generalisation regarding the facts of the management of incidents and planned events in NDM. The facts may be used to better improve the situation of the operations whenever there are gaps identified. The main characteristics of the quantitative studies
involve more use of experiments, surveys and interpretation of tests. As a result of the nature of quantitative research design; findings will be presented in graphs and numbers (De Vos et al., 2011:252). Ritchie et al. (2014:3) and Taylor et al. (2016:7) state that the qualitative research design presents collected data in the form of narrative or images rather than numbers or percentages as is done in quantitative research design.

The major distinction that differentiates qualitative research design from quantitative research design is that it involves the purposeful use of data in the form of narratives to explain, interpret and describe a specific situation to understand the context of that situation (Gibson and Andrew, 2009:47). The following discussion will explain the core characteristics of qualitative research design that motivated the researcher to utilise the qualitative research design instead of a quantitative research design.

Firstly, the qualitative research design allows the researcher to investigate and understand the phenomenon under study through literature review, participant viewpoint and participatory observation (Struwig and Stead, 2001:12). Therefore, the qualitative research design allows the participants to voice their views on the subject, also known as “trying to see through the participant eyes” (Struwig and Stead, 2001:12 and De Vos et al., 2011:308). This was the primary intention during data collection that the researcher allowed the participants to give their views on the research topic through the assistance and guidance of research questions. The qualitative research design in a natural setting allows the qualitative researcher to collect data directly from the environment and participants who are familiar with the study which the researcher is curious to understand (Creswell, 2014:186; Hatch, 2002:6). Similar to quantitative research design, the qualitative research design also provides the researcher with multiple sources of data, which was collected from and through various sources like participatory observation, and interviews. These sources are very useful during the data analysis as the qualitative researcher evaluates and examines the data to form a comprehensive picture from the findings (Creswell, 2014:186, De Vos et al., 2011:403; Hatch, 2002:9). In this study, the researcher collected the data from the agencies of NDM through semi-structured interviews. Furthermore, data was gathered through participatory observation within the true environment and natural situation during the operations (planned and unplanned events).
Secondly, the qualitative research design consists of the characteristics called reflexivity (King and Horrocks, 2010:23). Reflexivity refers to how objective or subjective the research can be within the research design (Tim, 2012:12). In qualitative research design it is not possible for the researchers to exclude their personal experience, background and culture from the process of collecting and analysing the data as they serve as a filter for the data that were collected (King and Horrocks, 2010:23). They are therefore ingrained in the process and cannot be completely objective in the process (Mann, 2012:8).

A third characteristic of the qualitative research design is its flexibility and emergent design. Flexibility means that the initial research plan can be altered or restructured as the researcher enters the field of study to collect data (Creswell, 2014:186). Therefore, even research questions for the interview, area and participants may be changed or modified to suit the research objectives (Roller and Lavrakas, 2015:6; Creswell, 2014:185). Furthermore, flexible design is useful to elaborate on the research questions and address the validity threats which happens concurrent throughout the research project (Maxwell, 2013:2). Emergent design refers to the great potential to adapt into the inquiry as the understanding deepens and situation changes from time to time (Roller and Lavrakas, 2015:6; Taylor et al., 2016:29&43; Struwig and Stead, 2001:12). The emergent design in qualitative research design is ideal for social events as these events are not static and can change anytime as it is all about real-life events (Struwig and Stead, 2001:12).

Fourthly, the qualitative research design allows the researcher to utilise open-ended research questions as the method to collect data (Johnson and Christensen, 2012:170). The open-ended research questions were quite useful in collecting the data since it assisted in capturing the direct quotations from the participants. It also gave participants the opportunity to fully elaborate on the topic that was explored. The open-ended research questions empowered the research to obtain an in-depth knowledge and understanding of the topic that was investigated (Hatch, 2002:6-10).

Based on the above discussion, the researcher chose the qualitative research design rather than the quantitative research design; since the characteristics mentioned support the nature, style and research objectives of this study.
3.3 Sampling

Thompson (2012:1) and Creswell (2014:158) define sampling as the process of selecting a manageable number of individuals from a larger population in order to conduct a study on a particular subject. This is a necessary step in research, because the researcher cannot interview all individuals of a larger population regarding a specific subject, specifically because of practical aspects like time and information saturation (Thompson, 2012:4). In this study, it means that not all the emergency practitioners within NDM were included in the data collection phase to explore the application of ICS during major incidents and planned events. However, a representative sample was drawn from the larger population. Thus, data collected from the sample represented the rest of the population.

For the purpose of this study the non-probability sampling method was used and it is regarded as the most suitable sampling technique for the qualitative research design (Merriam, 2007:77; Babbie, 2017:203). The non-probability sampling method is the intentional selection of a chosen group of people that the researcher intended to interview based on the type of the study (Hall, 2008:194). There are six types of non-probability sampling techniques usually used as part of the qualitative research design. These types are the purposive, theoretical, deviant case, sequential, snowball, key informant and volunteer sampling (De Vos et al., 2011:391-394). In this study the researcher chose the purposive and key informant sampling techniques to select the respondents for the study from the larger population in the emergency fraternity within the Nkangala District Municipality to explore the application of ICS.

Purposive sampling “is based entirely on the judgement of the researcher, in that a sample is composed of elements that contain the most characteristics, representative or typical attributes of the population that serve the purpose of the study” (Grinnell and Unrau, 2008:153). Therefore, in this study respondents were selected for the sample within six local municipalities with the relevant experience and knowledge that can provide the necessary information needed to answer the research questions. The second sampling method that was used for this study is the key informant sampling technique. Key informant sampling is the systematic strategy of selecting respondents who are experts in the area and are those that will be able to give key information to answer the research questions (De Vos et al., 2011:394). That is why relevant, experienced and knowledgeable responders were chosen
to be part of the semi-structured interviews. The sample also included key people like managers and people working or should be working with ICS during the operation.

By using the abovementioned sampling methods, respondents for this study included one government official from NDM Disaster Management Centre; six government officials: one from each of the local municipalities' Fire and Rescue Services; six officials: one from each of the local municipalities Emergency Medical Services (EMS); six officials from the South African Police Services (SAPS); six officials from the local municipality traffic police, four officials from the Mpumalanga provincial traffic police, three officials from Working on Fire (WoFire); one official from the South African National Defence Force (SANDF); and one official from South African National Roads Agency Limited (SANRAL). People from private agencies will not be interviewed since they are only servicing small population and not covering the entire Nkangala District Municipality for example some rural municipalities they do not have the service of private agencies. All the officials, participated in the semi-structure interviews they cover the majority of the municipal area.

These respondents were selected purposefully because they are from the emergency management and response agencies. Thus, they are likely the ones to apply the ICS model. These agencies form part of the incident or major event operations in the NDM area. The key informant sampling only focused on the most superior and knowledgeable officials from the above mentioned agencies. Furthermore ICS is regarded as a technical concept that is expected to be executed at a strategic level by these agencies during a major operation. Therefore these officials are presumed to have relevant, accurate and valuable information that can assist to address the objectives of this study. The sampling for participant observation in two planned and four unplanned events were chosen if the operation consisted of two or more agencies that were interviewed during the semi-structured interviews.

3.4 Data collection methods

This study was done through the application of a semi-structured interview and participatory observation to explore the application of ICS in the NDM, Mpumalanga, South Africa specifically. According to Creswell (2014:52) there are four basic sources of collecting data in qualitative research design. These include the interviewing of participants, observations and audio-visual materials in the field of study. Dikilitas and Griffiths (2017:228) state that the researcher has the privilege to utilise more than one data
collection tool to achieve the research objectives of the study. Based on this statement, the researcher of this study utilised two data collection tools to collect data; namely the semi-structured interviews and participatory observations.

3.4.1 Semi-structured interviews

The interview is an activity that involves the interviewer and interviewee, whereby the interviewer is the main driver of activity that aims to acquire specific information as a means to answer the research questions (Gubrium and Holstein, 2001:3). In this process the interviewee is only required to provide the relevant answer based on his/her ability, knowledge and experience, voluntarily (Gubrium and Holstein, 2001:3). This means the interviewer must obtain the permission from the interviewee to use the information, prior to commencement of the interview. De Vos et al. (2011:347) state that there are different types of interviews that form part of the qualitative research design. The type of interview method that was selected for this study is the semi-structured interview. It was chosen for this study based on the fact that it allows the researcher to have sets of predetermined questions in the form of a questions sheet. This question sheet acts as a guideline for the interview rather than a strict interview schedule to which one has to adhere to without adding questions or asking probing questions to get a better understanding of a topic (De Vos et al., 2011:352).

The interview questions were formulated based on the identified themes found in the literature review content (Chapter 2, section 2.3 principles of the ICS). The semi-structured interview also allows the interviewee the advantage to answer without any limitations with regard to time. The predetermined questions were asked in the form of face-to-face interaction during the current study. This format allowed the participants an opportunity to elaborate more on the subject as they are regarded as experts in the field of emergency services (Galletta, 2013:2; De Vos et al., 2011:352). One of the advantages of the semi-structured interview format, is that it allows the researcher to have a flexible conversation-styled interview with the respondent while the researcher has the full control of questioning and is guided by the questions sheet with pre-developed themes and questions (Creswell, 2014:191; De Vos et al., 2011:353). The tool, namely interview questions (Annexure B), were utilised for this data collection. The interview questions also assisted with the data interpretation and analysis.
3.4.2 Participant observations

The second type of data collection method that was chosen for this study; involved participant observation. The researcher collected data during the operations as an observer. The researcher became the observer as participant in the operation to collect data in the natural setting in line with the study topic. Participants in this regard should not be informed that are being observed with the purposes of the study because participants might change their behaviour to impress the research (DeWalt and DeWalt, 2011:23). The researcher became the observer only to collect the data and not to influence the participant behaviour (Flick, 2009:286). Participant observation is one of the best methods for data collection to contribute to social scientific data analysis (DeWalt and DeWalt, 2011:3). This activity only involves observing the activity of the phenomenon under investigation in order to formulate the theory (De Vos et al., 2011:329). During the observation, the researcher took field notes through the use of Annexure B as field guide (De Vos et al., 2011:335). The field notes contained a comprehensive account of participants’ attitude, behaviour, conduct and actual activities in relation to the study topic that has been investigated (Schutt, 2009:324). It was important that the researcher kept focused on well-defined, purposeful objectives while executing the participant observation and remain on direction of the study (Flick, 2009:284). Therefore, it was of utmost importance for the researcher to apply Annexure B as field guide to keep the research objectives, questions and problem statement in mind. It also assisted the researcher to not lose track of the research objectives (De Vos et al., 2011:335).

Furthermore, participant observation was chosen as a method for this study based on three reasons (De Walt and De Walt, 2002:8). Firstly, to enhance the quality of the study which was obtained from raw data during the major incidents and planned events. Secondly, to enhance the quality of data as interpreted and analysed by the researcher, and thirdly to enhance the quality of data considering the researcher’s exposure to the field of operation.

3.4.2.1 Sampling of people and event

The sampling of the people and events is very important in order to ensure the study focuses on the targeted outcome (Schutt, 2009:330). The participants that were targeted to be observed were the following emergency agencies: NDM Disaster Management Centre; local municipalities’ Fire and Rescue Services, EMS; SAPS, local municipality
traffic police; Mpumalanga provincial traffic police; WoFire; SANDF; and SANRAL. It was very important that the researcher focused on these abovementioned agencies so that the focus of the study was not lost and data collected from semi-structured interviews could be verified (DeWalt and DeWalt, 2011:23). The abovementioned agencies were observed during two planned and four unplanned events within the jurisdiction of the NDM with the intention to explore the application of ICS. The two planned and four unplanned events were selected as it consisted of more than two agencies that were interviewed during the semi-structured interviews. It was for this reason that these events were attended to verify data and formulate an unbiased conclusion (De Vos et al., 2011:335).

The two planned events were the operations that consisted of the majority of the agencies mentioned above. The two planned events consisted of one low-risk event in Victor Khanye Local Municipality (VKLM) and one medium to high-risk event in Steve Tshwete Local Municipality (STLM). This medium to high-risk event is categorised as per section 6 of the Safety at Sports and Recreational Events Act 2 of 2010 (Act 2 of 2010) (see section 2.5.1, Chapter 2). The low-risk event of VLKM was the Emergency Services Open day which consisted of the agencies indicated above, except for the participation of SANRAL. This event was chosen to observe the application of ICS since there was a high number of agencies who were interviewed during the semi-structured interviews. The NDM Disaster Management Centre, as the main organiser, coordinated planning meetings in preparation of this event. This event was classified as a low-risk event, because of the representation of the executive mayors and councillors from both NDM and VKLM. The medium to high-risk event in STLM was the “Taking the Legislature to the People” (TLP). During this event, there were high involvement from the agencies mentioned above, except for participation from SANRAL. Prior to this event there were planning meetings. An authorised member of SAPS (as per the Act 2 of 2010) coordinated all these meetings (see section 2.5.1, Chapter 2). This event was classified as a medium to high-risk event because there were full legislature members, executive mayors and councillors of all municipalities within NDM. These two planned events consisted of operations where emergency agencies were involved to ensure the safety of lives, infrastructure and the environment.

The four unplanned events consisted of the three road incidents and one fire incident. One of the road incidents occurred on the N4 road within the jurisdiction of eMalahleni Local Municipality (eLM). A major pile up of multiple of vehicles occurred due to mist which decreased the visibility on the road. Most of the emergency agencies that responded to the
scene (N4 road, eLM), were these agencies mentioned above (except for the participation of SANDF in the operation). The second road incident occurred on the R555 road (Moloto road) within the jurisdiction of Thembiile Hani Local Municipality (THLM). A major accident occurred that involved multiple vehicles. In this accident most emergency agencies mentioned above responded to the scene (with the exception of the participation of SANDF). The third road incident occurred on the small municipal road within the jurisdiction of Emakhazeni Local Municipality (ELM). A 22-seater bus overturned and there were multiple casualties as a result of the accident. This accident was attended mostly by emergency agencies indicated above, with the exception of participation from the SANDF. The one fire incident, as the unplanned event, occurred in Siyabuswa Mall. A blazing fire burned down 60% of the stores and infrastructure. The Siyabuswa Mall is located in Dr. J.S Moroka Local Municipality and most emergency agencies mentioned earlier in this section, responded to assist local municipalities’ Fire and Rescue Services in managing the incident.

The researcher participated in both planned and unplanned events as the disaster management coordinator while observing the implementation of the ICS. The detailed analysis of the observation data is presented in Chapter 4 of this document. The researcher selected both semi-structured interviews and observation as best methods of data collection for qualitative research design to explore the application of the ICS by emergency agencies in the event of major incident operation within the Nkangala District Municipality, Mpumalanga.

3.5 Qualitative data analysis

Flick (2014:5) defines qualitative data analysis as the process of interpreting and classifying the observations with the objective to make a non-numeric statement or theory. Boeije (2010:76-77) says “qualitative data analysis consist of cutting data up in order to put it together again in a manner that seems relevant and meaningful”. In order to achieve this task of data analysis, the qualitative research design applied a thematic data analysis.

3.5.1 Thematic data analysis

Thematic data analysis is regarded as one of the major data analysis methods in qualitative research design. It comprises the process of reducing data into meaningful and manageable groupings (Grbich, 2013:61). Thematic data analysis consists of six steps that
have to be followed when applying data analysis (Silver and Lewins, 2014:30 and Brunt et al., 2017:297). The data of this study was thus analysed through the thematic data analysis by following the six steps as described in the sections to follow.

3.5.1.1 Familiarisation of data and coding

The initial step of thematic data analysis consists of repeatedly reading data with the intention to scrutinise and record initial ideas through coding (Guest et al, 2012:58). This initial step is critical for the searching of patterns and similar meanings in the data (Braun and Clarke, 2013:204). Coding is the process of identifying aspects of the data that relates to the research questions under investigation (Bazel, 2013:125). Therefore, a selective coding approach was applied in order to purposefully select aspects within the data that were related to the research questions under the investigation (Braun and Clarke, 2013:206).

3.5.1.2 Identifying initial themes

After reading the data repeatedly, the researcher then identified the list of initial items and patterns from the data set that had been recurring for a number of times (Allen, 2017:1757). The list of items and patterns are then referred to as themes in the data (Guest et al, 2012:68). A theme is thus the repeated patterns that are discovered from the data which relates to the research questions under investigation (Jason and Glenwick, 2016:34). Therefore, identifying themes in this study was done after carefully scrutinising the data in each selective coding, and then selecting information related to the research questions.

3.5.1.3 Constructing the themes network

After identifying the themes, the researcher then create the themes network. This is the process to collate codes into the potential themes which is then gathered together in order to group all the data related to each’s potential theme (Peachey and Childs, 2011:43). These potential themes are then assembled together into a similar network of grouping to form the basic themes of analysis (Bazel, 2013:193). Thereafter, these groupings of the basic themes become the thematic networks. It was within this thematic networks that the researcher searched for connections and links between the overlapping themes. In this
study, the researcher only focused on the significant aspects to discover reasons why these themes were related to each other.

3.5.1.4 Describe and explore the thematic networks

In this step, the researcher defined and explained themes in detail to provide deeper meaning relating to the thematic network (Guest *et al.*, 2012:51). The researcher also returned back to the initial step (familiarisation of data and coding) to further interpret and explore underlying patterns that might have been omitted or overlooked during the initial step (Guest *et al.*, 2012:51). The researcher then explored the underlying patterns that were omitted and overlooked during the initial step of thematic data analysis.

3.5.1.5 Summarise the thematic network

After exploring and describing all the thematic networks, the researcher made a summary using the main themes. These main themes were established from ideas and patterns that characterised the main themes (Walmsley and Kading, 2018:110). Summarising the thematic network was very critical in order to present clear patterns that have emerged from the exploration and description of the primary thematic network.

3.5.1.6 Interpretation of patterns

The last step was to compile the deductions that have been made from all the summarised thematic networks, based on the relevant theory that provided more information for the patterns and themes that emerged from the text (Walmsley and Kading, 2018:110). This last step was important for the researcher to assure that the arguments from the themes and patterns were addressing the research questions of the study.

3.6 Ethical clearance

Research should be scientific. Therefore a great deal of ethical consideration has to be applied, including what is known as the “universal principles”; namely justice, respect and honesty (Miller *et al.*, 2012:19). These universal principles were therefore applied during this research. The researcher applied these universal principles throughout the research project.
3.6.1 Informed consent

The informed consent refers to the principle which calls for respondents to give the researcher the permission to ask questions regarding the topic under investigation. This usually happens after the researcher has thoroughly briefed the respondent about the integrities of the study (Berg et al., 2001:3). Therefore the respondent must give consent to the researcher to use the information that the respondent shares with the researcher, based on his or her ability and capacity. The respondent must be well informed about the goal and objectives of the study, based on the clear ethical conduct, honesty and transparency regarding the study (Miller et al., 2012: 19). The respondent gives the permission to the researcher to include him/her in the research study, based on the honest and transparent briefing about the study. This is known as informed consent. In this study, the purpose of the research, objectives and approach was well explained to the participants prior the commencement of the research. All the respondents were briefed about the research objectives and permission was requested to ask research questions with the intention to fulfil the research objectives. Furthermore the letter of consent with the letterhead from the North-West University was presented to the participants (see Annexure A).

3.6.2 Voluntary participation

The principle of voluntary participation requires the interviewee to participate on semi-structured interview and/or research without being forced to participate. They should also have the liberty at all times to withdraw from the semi-structured interviews and/or research study anytime during the project without being intimidated (Ray, 2012:110). Therefore it was important that all the respondents should take part in the research on a voluntary basis and no one was forced to participate in the research project (De Vos et al., 2011:116). Since the semi-structured interviews were all done on a voluntary basis, all the respondents had the right to withdraw from participating at any given time during the research study (Rubin and Babbie, 2009:257). Based on this background, all the respondents in this study were informed that their participation in the research is on a voluntary basis and there is no incentives for participation in this research project. Furthermore, all the respondents had the right to withdraw during any stage of the research and no form of penalty would incur by withdrawing from the study.
3.6.3 Compensation

Compensation refers to the act of rewarding the participant in the form of monetary or non-monetary for the service that was provided to the employer (Deb, 2009:30). Since participating on this research was voluntary, there was no monetary incentives given to the respondents for participation in the research. Besides the fact that this study was a personal study in the fulfilment of the requirements for the degree Masters in Development and Management, Disaster Studies at the Potchefstroom Campus of the North-West University, the researcher did not have a budget to compensate all the respondents who took part in the study. The researcher was fully aware that not compensating the respondents, might negatively affect the research as some respondents might be hesitant to participate in the study (De Vos et al., 2011:121).

The participants were appropriately informed about the purpose of the research project and that it is for the fulfilment of a mini-dissertation qualification. As a result, there was no compensation for the respondents that took part in the research project.

3.6.4 Confidentiality and anonymity

The principle of confidentiality requires that only the researcher should be aware of the identity of the respondent. The researcher should maintain the commitment of confidentiality towards the respondent (De Vos et al., 2011:120). This principle is of utmost importance in this study, since the sample of this study involved junior and superiors in one agency. Anonymous means that no one, not even the researcher, should be able to identify respondent and information after it went through analysis (De Vos et al., 2011:120). Therefore in this study there is no section in Chapter 4 that reveals the identity and information disclosed during the data collection. Therefore all respondents were ensured that their identity will remain confidential and information given during the data collection will be presented in an anonymous format. Also, the North-West University’s ethical committee granted ethical clearance and permission to conduct research at the relevant organisations in the research project.

3.7 Limitation of the study

The limitations of a study include those characteristics, conditions, choices and methods that were evident and applied during the data collection which limited the outcome of the
research project (Buckingham, 2016:111). Therefore, the limitations of this particular study were identified as:

3.7.1 Single area

The research focus area of the study only included the Nkangala District Municipality (NDM). Thus, the findings cannot be generalised for the entire province as the Mpumalanga Province consists of two other district municipalities (Gert Sibande and Ehlanzeni). The researcher purposively chose NDM as the area of focus for the following two reasons: Firstly, the researcher is based within the NDM for operations of disaster management. Secondly if the researcher had to expand the research for the entire Mpumalanga Province, the scope of research would be too big and expensive.

3.7.2 Validity and reliability

The general assumption is that “it is very difficult to associate validity and reliability with qualitative research” (McLeod, 2011:265, Creswell, 2014:201 and De Vos et al., 2011:419). This gives the researcher a huge responsibility to ensure the reader that the necessary measures were applied to assure that the research product is credible, dependable and conformable (De Vos et al., 2011:419). Baumgarten (2010:4) defines reliability as the consistency of measurements of a concept using the identical measurement procedure to be able to produce the same findings when the procedure is to be repeated in exactly the same way. Whereas validity is the way to ensure quality has been measured, and demonstrated the expected causalities and permitted generalisation (Baumgarten, 2010:4).

Therefore the researcher deployed measures to ensure validity and reliability throughout the research (McLeod, 2011:267, Creswell, 2014:201-203 and De Vos et al., 2011:420). The first of these measures was the continuous checking of transcripts to ensure accuracy and authenticity of the data. Secondly, was to ensure that there is no drifting of definition of codes during data categorisation and coding. Third, was to facilitate and coordinate the information between the different codes by the conducting of regular reviews on the codes. Lastly, triangulation of different data sources was applied to ensure that the data had been amplified for better research outcome.
All the above mentioned measures were followed to ensure validity and reliability of the study to explore the application of the ICS in major incident and events operation within NDM.

3.8 Conclusion

The primary aim of Chapter 3 was to provide the reader with the full overview of the research methodology that was used to collect data for this study. This was done by applying systematic and scientific methods which guided the researcher to meet a credible research product. These systematic and scientific methods were in line with a qualitative research design as the chosen design for this study. Some of the points that were discussed in this chapter included the two sampling techniques applied in this study as well as the reasons the researcher opt for these specific techniques. The sampling techniques were appropriate for this study as the research focused on a technical topic, and the sampling techniques were critical to ensure selecting the relevant respondents and material for data collection and analysis.

The research methodology is the cornerstone of the research project and can make or break a research project. This chapter formed the core of this study and directs the reader in advancing towards Chapter 4 of this research project.
CHAPTER 4: RESEARCH FINDINGS

4.1 Introduction

This chapter presents the findings of this study based on the data that were collected in order to answer the research questions for this study. In order to achieve the objectives of this study, by using semi-structured interviews and participatory observation, the data were collected within the jurisdiction of NDM. The researcher attended two planned and four unplanned operations in order to further explore the information that were collected through the semi-structured interviews. Themes that were identified from Chapter 2, were used to develop the semi-structured interview questions and further applied as a guideline for data collection during the participatory observation activity.

This chapter starts off with a description of the research context in which the research project was conducted. Then the research findings as gathered according to the themes from both semi-structured interviews and participatory observation, are discussed. The chapter concludes with a summary by providing closing remarks about the discussion of Chapter 4.

4.3 Research findings

During the semi-structured interviews participants were asked eleven questions (Annexure B) which were formulated based on themes extracted from literature (Chapter 1). Furthermore, these eleven questions (Annexure B) were used as a guideline to collect data during the observation during both planned and unplanned events. The identified sub-themes from the analysis are discussed further; as resulted from the identified themes in Chapter 1. The identified themes and sub-themes are presented in Table 4.1.

Table 4.1: Identified themes and subthemes

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### 4.3.1 ICS as generalised management tool

The use of ICS as generalised management tool by agencies to manage operation is considered to be effective for a sound organisational structure, coordination within multi-agencies, integrated communication and resource management (see section 2.2, Chapter 2). ICS was developed in the USA to install order and coordination of agencies to accomplish the task of planned or unplanned operation (See section 2.2, Chapter 2). It is a generalised management tool which consists of standardised organisational structure that is outlined in Figure 2.2 (Chapter 2). The ICS organisational structure consists of vital positions which are intended to ensure order and professionalism in managing operations, planned and unplanned. The importance of ICS as a generalised management tool, is that all agencies in response should follow the ICS organisational structure. It works at its best
when it is accepted as a national management tool to manage any type of incident, planned or unplanned operation like for example is the case in USA. Therefore, it is suggested to consider the full application of ICS as generalised management tool towards mitigating poor coordination, communication, integration and duplication of activities among response agencies (See section 2.2, Chapter 2). The literature indicates that the application of ICS assists to eliminate the challenges outlined above. Therefore, the implementation of ICS can facilitate standardisation during response and recovery by all spheres of government agencies (See section 2.2.1, Chapter 2). It is for these reasons that different spheres of government agencies in NDM were interviewed and observed during the incidents to explore the management of operations in relation to the principles of ICS.

4.3.1.1 Availability of a generalised management tool to manage operations in NDM

The findings revealed there is no standardised organisational structure or systematic approach which is being followed to manage planned and unplanned operations across NDM. Therefore, each response agency is using their own internal Standard Operating Procedure (SOP) that is not integrated or linked to any of the agencies except for national agencies like SANDF and SAPS. The data from participants confirmed that NDM does not have the generalised management tool as compared to ICS of USA, which is being applied across all the agencies of NDM to manage planned and unplanned operations. SA does not have a generalised management tool like ICS that is being applied throughout the country and all response agencies adhere, to and work with, to manage operations in a coordinated manner (See section 2.5, Chapter 2). Therefore, the absencia of the generalised management tool like ICS in South Africa, leaves different provinces and districts to develop their own management tool without the guidance of a national tool or policy.

However, SOP from respective agencies such as local municipalities' Fire and Rescue Services, EMS, local municipal traffic police, SAPS, Mpumalanga provincial traffic police, WoFire, SANDF and SANRAL have some principles which are similar to the principles of command principle, chain of command and span of control (See section 2.3, Chapter 2). Agencies of NDM apply these principles, however there is no integration and similarity in application for example no standardised number of span of control across agencies in NDM. One of the participants emphasised this by saying:
“It is impossible to run the operation in a well-coordinated and integrated manner since different agencies use their own SOPs with other agencies” – Semi-structured interview participant, response official, NDM.

These SOPs are informed by each agency’s own internal policies and guidelines. Participants indicated that SANRAL always try to enforce the implementation of their own Road Incident Management System (RIMS) only on the national roads such as N12, N4 and R573 within the boundaries of NDM. The emergency vehicles from SANRAL always patrol and respond to every incident on the N12, N4 and R573 to ensure that RIMS is being applied by agencies conducting the operation on these roads. RIMS includes a standardised organisational structure which is similar to the ICS organisational structure. RIMS requires every first responder to create an Incident Command Post (ICP) by placing a cone or flag on top of the first responder’s vehicle with the intention to notify other agencies arriving at the operation.

ICP is the place where all agencies will report for duty and be briefed about the incident. It is the place where all incident coordination takes place (See section 2.3.2, Chapter 2). The first responder created the ICP by placing the road cone on top of the vehicle. All responders reported for ICP where SANRAL is responsible to manage national roads. The participants indicated that the Incident Command duties as per RIMS include coding the scene, scene assessment, calling for extra agencies and coordinating every agency arriving at the scene. These are all similar to that of ICS. However, the same agencies such as local municipalities’ Fire and Rescue Services, EMS, local municipal traffic police and SAPS are using principles similar to ICS when applying the RIMS, but these very same agencies are not applying the RIMS when responding to municipal roads to manage operations.

It is evident from the data that most participants hold the opinion firmly that all emergency management agencies should utilise one generalised management tool which all emergency response agencies will be able to understand and be familiar with for the benefit of the operation. Based on the data from participants, though there is a willingness to work together during an operation, the SOPs differ too much from one another and agencies like local municipalities’ Fire and Rescue Services, EMS, local municipal traffic police, SAPS, Mpumalanga provincial traffic police are regulated from both local and provincial sphere of government. This means agencies in NDM are working in isolation because their SOPs are not integrated which also creates division during an operation. It is
impossible for emergency management agencies to work in isolation because they should be working towards the same goal of saving lives, infrastructure and the environment (See 2.2, Chapter 2).

The research data confirmed participants’ viewpoint that implementing a general management tool such as ICS can assist greatly with the improvement of coordination, planning, communication, the management of resources and onsite organisational structure. A generalised management tool like the ICS creates unity and integration among the agencies in different spheres of government. One of the participants emphasises this by saying:

“The introduction of one generalised management tool will improve the management of the operations since every agency will be trained on one management tool as a result will destroy divisions and ignorance among us”. – Semi-structure interview participant, response official, NDM.

The findings from the participatory observation during the unplanned operation include that agencies were not following one generalised management tool, instead organisational SOPs were applied. From the observation data it is evident that the organisational SOPs are formulated as per the organisational internal policies and legislation. Therefore these organisational SOPs are not integrated into other agencies’ SOPs. During the unplanned operation there was no formulation of the organisational structure to direct and coordinate the operation. None of the organisational SOPs was similar to the ICS, except for the application of some principles of ICS such as the command principle and chain of command. Therefore poor coordination, planning and communication were identified during the unplanned operation. The participatory observation data confirmed the participants’ responses that NDM does not have a generalised management tool like the ICS that is being applied in NDM to manage an operation.

During the planned operation, it was observed that the hosting agency developed the overall operational plan for the operation and another agency moved in to support the operation. The overall operational plan had only provided an outline for the deployment of resources according to each agency, the names of the supervisors of each agency and the duration of the operation. The hosting agency was trying its best to coordinate all the agencies and maintain a high level of discipline among the agencies during the operation. However, the overall operational plan was not formulated according to or aligned with the
ICS management tool. This meant, the operational plan did not consist of the organisational structure to coordinate and direct the operation. It has been specified that the Incident Commander should fulfil all of the relevant functions in the ICS model (See section 2.2.1, Chapter 2). If the incident overwhelms the IC, more people are appointed for assistance. However, when no other staff is appointed the IC will be responsible for both general and command functions. In the planned incident, it was observed that an Incident Commander had been appointed for the operation, yet the agencies did not follow the ICS structure. On the other hand, the Incident Commander in this specific operation, did not perform the general and command functions as is required of the ICS structure. Due to the absentia of these functions, coordination, planning, information and resource management were poor during the operation. The poor coordination was observed especially during operations where agencies were not reporting to one Incident Commander taking the lead in the operation.

Reporting to one incident Commander assists to centralise information for better and efficient decision making regarding the operation (See section 2.2.1, Chapter 2). There was also poor coordination of resources and personnel during the operation, for example the recording of resources and setting up the staging area for resources. Logistics function in ICS assist to properly coordinate, monitor and control all the resources for efficient execution of the task during operation (See section 2.2.1, Chapter 2). The poor planning was the end result of no planning taking place during the operation (compared to the recommended Planning “P” process discussed earlier in this study) (See section 2.3.6, Chapter 2). During the participatory observation it was evident that there was no interval planning meeting in order to update and review the initial plan. The overall operational plan did not provide the standardised SOP to be used by all agencies involved in the operation. As a result, different agencies were using their own organisational SOPs. Consequently there was no integration of activities and principles during the operation. For example the SAPS SOP states to barricade the incident area; while participatory observation confirmed that other agencies such as EMS did not have entrance route to attend to patients who required urgent medical attention. Since there was no integration between these agencies SOPs, access to the incident scene was delayed; as well as urgent exit to transport patients to the nearest health facility. Therefore ICS is important to provide integration of activities among the agencies involved in the operation.
4.3.2 Standardisation during operation

Standardisation during the operation is critical to ensure common understanding and a shared approach to achieve specific objectives during operations (See section 2.3.1, Chapter 2). Standardisation is achieved where all the agencies in an operation adhere to set rules and policies that determines the goals, facilitates coordination of activities and assists the general understanding of all parties working in the operation (See section 2.3.1, Chapter 2). Therefore specified sets of rules and policies are meant to create a standardised environment where confusion and disorder will not exist in an operation. The standardisation in an operation is to ensure there is common understanding and efficiency among the agencies involved to achieve the objectives of the operation without any misunderstanding (See section 2.3.1, Chapter 2). The set of rules and policies in ICS enforces standardisation through the application of SOPs, common terminology, common terminology for logistical arrangements, recourses and position throughout the agencies. The implementation of standardisation in ICS ensures effective and efficient response during the cause of an operation.

4.3.2.1 Standard Operating Procedures in NDM

During the discussion with participants it was revealed that each agency has its own organisational SOP, common terminology, unique terminology for resources and designation. An agency’s SOPs are not interlinked and integrated with other agencies’ SOPs. Participants further indicated that an agency’s SOPs are informed by organisational policies and legislations. Therefore these agencies’ SOPs were part of the tool to ensure standardisation within the operations of the particular agency. An example to illustrate this, is that EMS SOP will outline the operations of how to treat and transport a patient from an incident scene to the nearest health facility. One of the participants emphasises this by saying:

“This form of standardisation introduced and emphasised during the professional training of responders. Furthermore, the standardisation is recapped during the refresher courses while during the service for example the management of the organisation will arrange refresher course for fire fighters to refresh on the firefighting procedures once in 24 months period or less” – Semi-structure interview participant, response official, NDM. The refresher course will either be provided by senior fire fighters or external recognised training institutions. The agencies such as EMS, SAPS, SANRAL and other agencies also
provide the refresher courses for their personnel to update their SOPs based on the latest development.

The data revealed that most participants confirmed that different agencies have unique SOPs which consist of common terminology and names of tools which are to ensure standardisation within each emergency response agency. These common terminology and name of tools are not similar to all agencies within NDM. However despite the uniqueness within agency’s standardisation, all agencies in NDM are using the international terminology such as International Radiotelephony Spelling Alphabet (IRSA) and triage codes for patients (P1-red, P2-blue, P3-green and P4-black). This is the only form that creates standardisation across the agencies of NDM during an operation.

4.3.2.2 Standardisation across agencies in NDM

It is evident from the research data that most participants indicated there is no similarity within the agencies form of standardisation within NDM except for the use of the IRSA and triage codes for patient classification. Data from participants revealed there is disagreement regarding the usage of the term Incident Commander (IC) during a multi-agency operation. It has been indicated that agencies, as an alternative, prefer the term Incident Coordinator as the function is to coordinate professional officials during the operation. Beside the disagreement, the incident command and coordinator performs the same function during the operation. As evident from the data, the term “commander” has a negative stigma and therefore the term “coordinator” is rather to be used, as one official from another agency does not have the authority to command a professional from a different agency. One of the participants emphasised this and mentioned:

“You can’t come into my profession and command me of what to do” – Semi-structure interview participant, response official, NDM. The way in which terminology is used for a function could avoid situations where some terms as it is applied in other agencies, may create negative attitudes toward the function during an operation.

Different agencies are using different terminologies when referring to the ranks of officials and resources during the operation in NDM. An example in this instance, is that the title of senior official from local municipal traffic police is different from the senior official employed by Mpumalanga provincial government traffic. One of the participants pointed this out through expressing that:
“It is impossible for ranks to be similar since some agencies are being managed by different sphere of government” – Semi-structure interview participant, response official, NDM. Data indicated that most participants were of the opinion that even during the operation there is no common terminology for functions as ICS recommends for Operation section chief (See section 2.2.1, Chapter 2). Therefore, the different terminologies for functions within NDM creates confusion as there is no standardisation for functions. This is due to the fact that there is no standardisation intended to enforce similar terminology among the agencies in NDM. Furthermore, there is no effort that has been made by the professional training colleges and spheres of government to align these aspects from different agencies to promote standardisation as described here during the operation. It is for these reasons that a model, such as ICS, is critical in order to establish standardisation for effective and efficient management of an operation.

Data collected during the planned and unplanned events showed that each agency has its own organisational SOPs, common terminology, unique names for resources and designation. Since SOPs are not interlinked or integrated, it confirms that there is no standardisation in NDM. Thus, there is no common understanding and poor coordination in achieving the objectives of the operation. Confusion resulted because of the lack of structure, no common terminology and SOP used by agencies across NDM. To counter confusion, ICS can be implemented to establish common terminology, SOP and a common understanding of resources during an operation. The application of ICS across jurisdiction of NDM could further assist to improve the response and efficiency during the operations, for example eliminating confusion caused by different names of tools and rank titles.

The use of IRSA and triage of patients were the only elements which were understood and used by all agencies in NDM. Therefore IRSA and triage of patients are the only elements that promote standardisation across the agencies in NDM. The data collected from participatory observation proved that there is standardisation within each agency, though such standardisation is not interlinked and integrated across the agencies of NDM.

**4.3.3 Authority to direct operation**

An effective operation in the ICS model means that the Incident Commander (IC) will direct and coordinate the activities of the operations. The IC assumes the responsibilities to direct the operation with huge responsibility to achieve the objectives of the operation (See
Therefore, the first responder from any agency is the one that assume the Incident Commander authority to direct the operation by analysing the scene, developing a strategy and compiling an initial report to brief other agencies as they arrive on scene. Any responder that first arrives on the scene, taking on the responsibility of Incident Commander, has the task to make himself/herself visible for all other agencies that arrive at the scene by wearing a reflective vest with the inscription ‘Incident Commander’. It is the responsibility of the IC to fulfil all of the other responsibilities described by the ICS model until and when he/she deems it appropriate to appoint other persons to take on a function within the system (See section 2.3.3, Chapter 2). To have someone as the IC to direct the operations is to ensure there is order, efficiency, compliancy and accountability while performing the duties in the operation.

Planned events in South Africa are being managed through the application of the Safety at Sports and Recreational Events Act 2 of 2010 (Act 2 of 2010) (See section 2.5.1, Chapter 2). Any low-risk operation is being managed by the primary owner of the operation. Thus, a particular agency or organisation takes full responsibility to coordinate and direct the operation led by most senior officials. Whereas high to medium-risk operations are managed by the authorised police official designated by the National Commissioner of the South African Police Service (see section 2.5.1, Chapter 2). The authorised official to direct the operation uses the command principle to ensure all participants in the operation comply with directives for the benefit of the operation (see section 2.3.2). Therefore the following discussion presents the findings.

**4.3.3.1 Authority to direct operations in NDM**

The data verified that most participants were of the opinion that there is no guideline that specify who should assume the responsibility to direct unplanned operations in NDM. However, the agency’s SOPs permit the most superior official of the agency to assume the responsibility to direct the agency’s operation and activities during the operation. The most superior official who direct the operation does not have a specific title as is indicated in the ICS model for example an Incident Commander. The data from the participants also indicated that any superior official who assumed the responsibility to direct the operation in NDM is referred to as the agency’s title or rank; for example Chief Fire Officer in the event of fire operation. The superior official will be identified by the rank epaulettes or the reflective vest rank position inscription ‘Chief Fire Officer.’ This form of identification by rank epaulettes or reflective vest rank position inscription is not effective enough to other
agencies if they are not familiar with rank epaulettes or with the position of a particular agency. On the other hand, the application of the ICS model, the superior official is required to wear a reflective vest and helmet with the inscription “Incident Commander” which is much easier identifiable by agencies arriving at the scene of the operation.

During unplanned operations that involves multi-agencies, participants revealed that the authorised official should be from the agency who has the most responsibility during that particular operation. An example is a fire related incident where the Chief Fire Officer should take the full responsibility to manage the entire operation. One of the participants emphasised that:

“All the senior officials from different agencies has to work hand in hand with the Chief Fire Officer but will not be called Incident Commander rather called Incident Coordinator” – Semi-structure interview participant, response official, NDM.

Therefore, the Chief Fire Officer will lead other superiors from other agencies to plan for operation and deploy resources during the operation. The discussion from participants regarding the planned operations in NDM, has revealed that the organiser and SAPS have the authority to direct the operation in NDM depending on the risk categorisation of the event.

The planned event can either be categorised low-risk, medium-risk or high-risk according to the Safety at Sports and Recreational Events Act 2 of 2010 (Act 2 of 2010). A low-risk event will be directed by the main organiser of the event and will be referred with his/her organisational title for example Chief Executive Officer or Manager: Youth Development. The main organiser might be from any organisation; for example from Department of Arts and Culture which is hosting a massive cultural event and will remain as the coordinator of the emergency agencies throughout the operation. The emergency agencies will have to follow their SOPs to achieve the operation objectives. Due to the provision of Act 2 of 2010 regarding the low-risk event, there is great possibility of poor coordination during the low-risk events since these events are coordinated by any general organiser who have less authority to direct the emergency agencies. The application of the ICS model requires every operation with emergency agencies to be directed by the authorised official from an emergency agency. This is to ensure coordination, order and professionalism during the operation during a mass gathering of people.

However, the discussion with participants revealed that medium and high-risk event are being directed by the SAPS which is in line with section 16(3) and section 17(3)(b) of Act 2
of 2010. The authorised member of SAPS will be referred to as the rank of position for example Lieutenant-General or Brigadier. To call on an authorised official by their rank creates confusion if you are not familiar with the SAPS ranking positions. It furthermore creates barriers if the wrong rank is used. One of the participants confirmed that:

“The application of the ICS model will assist in the introduction of the term IC as the authorised official to direct the operations in NDM. Furthermore, it will assist by applying the standardised terminology for authorised member to direct the operation which will helps in eliminating the confusion and promote effective communication during the operation” – Semi-structure interview participant, response official, NDM.

During the unplanned operation, it was observed that the Chief Fire Officer continued with the responsibility to direct and lead the operations since it was a fire incident. All the superiors from various agencies taking part in the operation were working hand in hand with the Fire Chief Officer. Throughout the entire operation all agencies called on the authorised official to direct the operation. Also, the authorised official was referred to as Chief Fire Officer and the term Incident Commander was never used. However, there was poor identification of the Chief Fire Officer because the rank epaulettes were only visible and familiar to fire personnel. Poor identification of the Chief Fire Officer through rank epaulettes created delays within other agencies because of identification and reporting issues on the scene. The ICS model, on the other hand, promotes the visibility of the authorised official directing the operation to wear a reflective vest and helmet indicating “Incident Commander” for easy identifiable purposes.

During the planned operation, the researcher observed that a member of the SAPS coordinated and directed the medium-risk event. A senior member of the SAPS, by the rank of Brigadier, directed and coordinated this planned, medium-risk event. Again, it is important to note that the authorised member from SAPS has throughout the operation been called upon and referred to as “Brigadier”, and not “Incident Commander” as proposed or suggested by the ICS model. This was a challenge since some people participating in the operation were not used to SAPS rank names and epaulettes identification. The senior members of SAPS worked hand-in-hand with senior officials from other agencies to deliver the objectives of the master operational plan as it was developed during the planning meetings. The researcher observed that throughout the operation the senior member of SAPS was named according to rank title “Brigadier” and not Incident Commander. Not applying the general title and reflective vest with the inscription “Incident
Commander”, created confusion amongst other incoming agencies working and participating in the operation.

4.3.3.2 Compliance with the directive in NDM

It is evident from the discussion with participants, that all agencies in NDM are using the command principle as their medium of instruction. Superior members from respective agencies are using the command principle to ensure that the objectives of the operation are achieved. The ICS model applies the command principle to ensure personnel comply with the instruction (See section 2.3.2, Chapter 2). This was an indication that agencies within NDM used some international principles like the command principle to ensure that agencies and officials comply with instruction without any delay for the sake of operation objectives. The overall outcome from the discussion with the participants indicated that every emergency agency applied the command principle. The discussion also confirmed that the agencies experience no challenges to apply the command principle. One of the participants mentioned:

“All the juniors they know have to take the command or instruction from their seniors and failing to do so, amounts to a charge of insubordination” – Semi-structure interview participant, response official, NDM.

One of the participants confirmed:

“It is the principle that you comply with the command and complain later but it is the chargeable offence of failing to comply” – Semi-structure interview participant, response official, NDM.

The overall views of the participants were that the command principle is being implemented to install order and respect during the operation. One of the participants stated:

“The command principle it is used to prevent direct argument among the subordinates during the operation because if you ask subordinates to do a specific task they won’t do it and will have the huge problem for the entire operation” – Semi-structure interview participant, response official, NDM.

During the unplanned and planned operation in NDM, the command principle was the only mode of instruction. The researcher observed a high level of respect during these operations as the personnel from various agencies have acted in accordance with the instructions they have received from their supervisors. During the operations, the overall
incident coordinator briefed the superiors of the respective agencies. Then, those superiors instructed their subordinates at the beginning of the operation. There was the incident whereby the supervisor from SAPS was not happy with the behaviour of some members of a particular agency. The supervisor from SAPS went straight to the superior in the agency to report the matter in a professional manner. Then, the superior in the agency went to subordinates to command to do the task as required from them. The observation findings confirm the data collected during the interviews; namely that NDM agencies are using the command principle as one of the principles of the ICS model.

4.3.4 Transfer of command

Transfer of command is critical to ensure a smooth transition from one official to another official in order to achieve operation objectives (see section 2.3.3, Chapter 2). Therefore, transfer of command is important for the incoming official or agency to understand the initial report, strengths and weaknesses of the operation, current status quo and available as well as pending resources (See section 2.3.3, Chapter 2). Transfer of command duties may occur during three circumstances. In the first instance, the first responder have to transfer the command to the most superior or qualified official than the first responder to take over the operation. Secondly, in a situation where there is a change over from a single authorised structure into a multi-agency authorised structure, the transfer of command has to be done to ensure smooth transition (See section 2.3.3, Chapter 2). In the third case, transfer of command occurs when the operation is prolonged and the single authorised, multi-agency or changing during shift; change some of the members in the same agency (See section 2.3.3, Chapter 2).

Based on the literature review in section 2.3.3 the handing over of duties is particularly important during an operation. It is therefore that this principle of ICS was investigated in NDM during planned and unplanned operations.

4.3.4.1 Transfer of command during the operations in NDM

It is clear from the data that most participants are of the opinion that all agencies in NDM do apply the principle of transfer of command when the incoming official or authorised structure of the operation arrives. The data from participant discussions revealed that the information which is usually included during the transfer of command process, are: reporting of the initial state of the incident or planned event to the arriving authority; strategies deployed during the operation, status quo of resources; and required resources
to achieve the objectives of the operation. Furthermore, during this process participants indicated that another aim of the process is to record all the resources that were assigned during the initial handover. These resources are reordered on the Occurrence Book (OB) to trace any discrepancy or missing resources during the operation. Transfer of command during the operation is one of the principles of the ICS to further ensure the smooth transition during an operation (See section 2.3.3, Chapter 2). One of the participants pointed out that:

“It is the fundamental principle that the outgoing official or structure should handover the duties and it must be writing down on the Occurrence Book (OB) because if it is not written down then it was not done” – Semi-structure interview participant, response official, NDM.

Feedback from participants verified that handover happens during the operation when a particular agency performs a particular task with the intention to enable other agencies to continue with their activities. An example of this is crime intelligence collecting evidence on a scene and then handover the scene to the incident coordinator to continue with the operation. Therefore it can be said that agencies within NDM adhere to the transfer of command principle because participants indicated it as a critical element and very useful in the event when an operation is challenged by the court of law based on any litigation.

During the observation of the planned and unplanned operation, there was one OB for all agencies that was used on-site for recording all the activities and information during the handover. In the authorised structure there is only one scribe from SAPS who was delegated to write the OB on behalf of all the agencies. The researcher observed that agencies recorded information twice; namely agencies recorded the information on-site through the OB from SAPS and in their respective communication centres via two-way radio communication. The researcher also observed handover during the shift change while participating in the prolonged operation. In this operation, personnel were not allowed to leave the operation until the resources were verified. This was to ensure that everything had been verified and signed off for the operation. Based on the observation, it can be concluded that the handover of duties are done during an operation in NDM and all agencies are used to this principle of ICS which is the transfer of command.
4.3.5 Organisational structure directing operations

The literature review confirmed that ICS consists of authorised organisation structure which is to manage and direct the planned or unplanned operation (see section 2.2.1, Chapter 2). The onsite authorised structure of the ICS forms the top-down bureaucratic system and has five major functions: command, planning, operations, logistics and finance/administration (see section 2.2.1, Chapter 2). The command structure is made up of the Incident Commander responsible for a single agency or for multi-agency the Information, Liaison and Safety Officers assist in unified command (see section 2.2.1, Chapter 2). Unified command (UC) is the structure for two or more agencies during a complex operation. This structure accommodates all superiors of all the agencies involved for managing the operation (See section 2.3.2, Chapter 2). The main purpose for formulating the UC structure is to avoid division among agencies and allow the agencies to make collective decisions (See section 2.3.2, Chapter 2). The overall benefit of UC is that it establishes a single, comprehensive operational plan that aims to eliminate duplication in activities and poor coordination. Therefore, unified command may be established when the operation involves more than one municipal boundary and multi-agencies from various spheres of government. Failure to establish unified command will result in agencies working in silos that will cause poor coordination and could lead to further loss of lives, environment and infrastructure (See section 2.3.2, Chapter 2).

The importance of the command structure (simple Incident or Unified Commander) is to formulate the operational plan, manage and direct the operations to save lives, infrastructure and environment (see section 2.2.1, Chapter 2). The benefits of establishing the ICS organisational structure is to establish account for all the activities and functions of the operations. Thus, the establishing of the ICS organisational structure ensures that every function in the operation will be performed as the ICS organisational structure commands these functions to be performed. An example is the planning function: the ICS organisation structure will instruct that the Chief planning section, which is only responsible for the planning function, to lead the planning section.

The ICS organisational structure is useful to provide coordination, effective and efficient management of resources throughout the operation. Therefore the establishment of the ICS organisational structure is meant to eliminate disorder and instil accountability to the functions of the operations.
4.3.5.1 Organisational structure directing operation in NDM

In the data collected from participants it is evident that the only authorised structures to direct operations in NDM, are the Joint Operation Centre (JOC) and Venue Operation Centre (VOC). Both JOC and VOC in NDM were established similar to the concept of the Unified Command of the ICS model. The JOC is regarded as a high strategic body that is established through multi-agencies for decision making. It performs duties from remote areas distances away from the operation. An example is to station a JOC room in a Municipal Disaster Management Centre or SAPS building. Alternatively, the VOC is the onsite structure working in conjunction with the members deployed at the JOC. The second in-charge managers of the agencies manage the VOC as they work hand-in-hand with the superiors from the respective agencies in the JOC room. However, neither the JOC nor the VOC executes functions such as the logistic, finance/administration, planning, operation, liaison, and information management (See figure 2.2, Chapter 2). Therefore, the JOC and VOC have less impact on the operation with their absence in the setup of functions such as logistic, operation, liaison and information management in NDM.

The structures of NDM (both JOC and VOC) have the similar objectives as compared to the Unified Command function of the ICS model, namely to formulate and review the operational plan, to manage and direct the operations to save lives, infrastructure and the environment (see section 2.2.1, Chapter 2). The data from participants indicated that agencies of NDM cannot achieve the above primary objectives because various agencies of the NDM are placing the wrong officials for the various purposes. An example that was mentioned is that a junior official will be placed for decision making within the JOC structure. One of the participants emphasised this by stating:

“Yes, we do establish the JOC and VOC structures but there is great evidence that there is misunderstanding regarding the role and responsibilities for both these structures (the JOC and VOC) in terms of who should work where”– Semi-structure interview participant, response official, NDM.

The formulation of Unified Command and organisation structure in the ICS model was to improve communication and coordination among the agencies involved in the operation (See section 2.2.1, Chapter 2). The establishing of the JOC and VOC in NDM as the only structures to direct operations fails to improve communication and coordination among the agencies. The data from the participants indicated a challenge regarding communication
because some agencies’ members will just leave the operation without reporting to the senior/superior official situated at the VOC. One of the participants pointed this out:

“You’ll find some of the agencies sitting on the JOC without two-way communication radios, OB but playing games on smart phones without making any follow-up on their respective responders” – Semi-structure interview participant, response official, NDM.

Therefore, the JOC and VOC are structures of NDM that are meant to manage the entire operation to deliver excellent result without the proper organisational structure as compared to the similar structure in the ICS model. One of the participants mentioned: “Even this JOC and VOC are not well coordinated because, you’ll find the officials in this structures but they don’t know what they are doing since there is no clear guideline regarding these structures” – Semi-structure interview participant, response official, NDM.

Compared to the ICS model, it is evident that neither the JOC nor the VOC has the standardised functions that guide how the emergency agencies of NDM should manage planned and unplanned operations (See section 2.2.1, Chapter 2). The feedback from participants outline that both the JOC and VOC are meant to improve decision making, communication, integration and the coordination of logistics. Although both JOC and VOC are the decision making structures, it does not consist of the entire onsite organisational structure with the functions outlined in Figure 2.2 of Chapter 2.

Furthermore, it is evident that neither the JOC, nor the VOC has a guiding document which instructs the emergency agencies of NDM to formulate functions such as logistics, planning and information. Therefore, it can be concluded that onsite authorised structure in NDM does not have the key functions such information, safety, liaison, finance, logistics, operations and planning. The importance of such functions outlined above are to ensure efficiency and effectiveness in managing the operation. Therefore, there are minimal benefits of establishing the JOC and VOC in NDM since it does not consist of the functions that will help the operation to run smoothly.

It was observed during the planned and unplanned operations, that agencies will only establish the JOC and VOC as their authorised structure to direct the operation. In both these structures (JOC and VOC) the functions of liaison, safety and information were absent for both planned and unplanned operations. Since there was no liaison officer, it was observed that the information sharing was happening spontaneously when there is a need to make a decision and there was no central person who was facilitating the information between agencies. Furthermore, there was no function dealing specifically with
logistics, finance/administrative, planning and operations as compared to the ICS model. Since there was no function just dealing with logistics, there was moderate management and coordination of tools during the operation. The scribe assigned to manage the OB is only responsible to record general events but not detailed logistical arrangements. The logistics function is required to support and manage all resources that are needed for the operation (See section 2.2.1, Chapter 2). There was no interval planning meetings during the operation as compared to planning “P” of the ICS model (See section 2.3.6, Chapter 2).

4.3.6 Information management and reporting during operation

Information management and reporting during an operation is very important for achieving the operations' objectives. Information management and reporting during an operation is divided into three components. The first component is the reporting and management of information among the officials within the operation. The officials are free to communicate among themselves or through the use of the liaison officer to facilitate the communication between the different agencies and external audience (thus include communities and other stakeholders in a multi-agency operation (see section 2.2.1, Chapter 2). Therefore, the main objective of the liaison officer is to manage the information among the internal and external agencies further prioritise the information that should go to the Incident Commander (see section 2.2.1, Chapter 2). The second component is the reporting and information management about the operation which is circulating in and out the operation through different media platforms for example radio interview or print media. The responsible function for this is the information officer that is meant to manage and coordinate all the media related queries about the operation (see section 2.2.1, Chapter 2). The third component is the reporting and information management from junior to senior/superior official or vice versa within the operation. This type of information and reporting is done under the chain of command principle. The chain of command is implemented as per hierarchy of the organisation and the information flows from top to bottom or vice versa (see section 2.3.4, Chapter 2). The chain of command is regarded as the tool to instil order and discipline among the officials involved in operational or organisation activities. Furthermore, chain of command is defined as an unbroken line of authority that connects the people in the structure and clarifies the reporting lines within the hierarchy of the operation (see section 2.3.4, Chapter 2).
Information management and reporting during the operation is very important in order to keep the operation on course and to achieve the primary objectives of the operations. All the information within the operation, and the information spreading out the operation must be well managed for the purpose of maintaining professionalism within the operation. The professionalism is kept intact to ensure there is no inaccurate information distributed outside the operation that will jeopardise the operation, victims and relatives of the incident.

4.3.6.1 Liaison officer in NDM

The data from the participants revealed that the function of the liaison officer is not being performed by an authorised official to direct the operations in both planned and unplanned operations in NDM. As a result, the agencies of NDM communicate among themselves since the IC was highly committed to other duties of the operation than what is being proposed by the ICS model regarding the liaison function. It is even worse since the channel of the two-way radio communication is not interlinked to other agencies during the planned or unplanned operation, for example SAPS and the local municipality traffic police are using separate radio channels. Therefore intercommunication among agencies during the operation does not exist within NDM operations; for example to discuss progress, challenges, extra intervention or for general information sharing. There is no generalised management tool in NDM that provides for the appointment of the liaison officer during the operation in order to improve the information sharing among the agencies involved in the operation.

The researcher also observed that information only flows within a particular agency, for example SAPS, and there was then no information sharing from SAPS to the local municipality traffic police, Fire and Rescue Services and the other agencies involved in the operation. The authorised official to direct the operation did not perform the function to liaise among the agencies that were involved in the operation. Since the function to liaise among the agencies was not performed, poor information sharing and management among the agencies involved in the operation existed. The researcher further observed that senior/superior officials from a particular agency will inform other agencies only if the information has to do with handover of duties or major decision making concerning the proceedings of the planned or unplanned operation. Therefore, it can be concluded that during both planned and unplanned operations of NDM, the function to liaise between the agencies to ensure a smooth flow of information during the operation, is not performed.
4.3.6.2 Information officer in NDM

The data from the participants revealed that the authorised official did not perform the function of the information officer to direct the operation. The organisational information officer, for example SAPS Information Officer, also did not perform this function. Therefore, both planned and unplanned operations of NDM did not have the function to inform the external audience (thus include communities and other stakeholders) regarding the status quo of the operation. A general organisational information officer performs the function to inform the external audience, yet this is not an emergency expert information officer or authorised official to direct operations in NDM. The function to inform the external audience is only assigned to an organisation information/communication officer who is authorised to speak on behalf of the organisation to any media platforms. This create a problem since the general information officer cannot attend every operation, especially those unplanned operations in order to perform the function to update the external audience regarding the incident status quo. One of the participants stated:

“Due to the nature of the emergency field it requires designated or expert information officer in the field of emergency to attend all operation to simplify the emergency terminology to the audience” – Semi-structure interview participant, response official, NDM.

Hence these information officers are not experts on the field of emergency and they have to be briefed about some terminologies before going to the media. It is even worse since the head of the disaster management centre cannot perform the function of the information officer in the operations of NDM, namely to inform the external audience through different media platforms. One of the participants said:

“It is bad because even disaster management centres they do not have the function to provide a situation report to the media and even head of the disaster management centres are not authorised to speak to the media except the information officer appointed by the council” – Semi-structure interview participant, response official, NDM.

Therefore the head of the disaster management centre has to brief the council information officer in order to brief the media. Most of the organisation information policies in NDM are prohibiting the senior/superior officials to perform the function of the information officer. Also, only the authorised information officer should perform the function to address the media. During most of the unplanned operations in NDM, the media community have to wait for organisational information officer to arrive on the scene, receive the situation
report from the expert (for example Chief Fire Officer) before sharing the information with the media. One of the participants expressed:

“The absentia of an expert information officer in emergency services to perform the function to address the media it therefore cause the media to report inaccurate information because some of the information will be gathered from the by-standers” – Semi-structure interview participant, response official, NDM.

The absentia of the function of the information officer in NDM operations creates problems for emergency officials since the journalist will be disturbing the emergency officials requesting updates regarding the operation. One of the participants pointed out:

“This issue of not having the expert information officer it is irritating in the event whereby those amateur journalist will harass us while we are busy with our duties” – Semi-structure interview participant, response official, NDM.

The function of the information officer it is very critical for any operation, therefore great consideration of this function is very important and appropriate to eliminate misconception about the operation. The introduction of such function will eliminate wrong information being shared on different media platforms which consist of incorrect terminology usage or translation.

From the observation data it revealed that both planned and unplanned operation in NDM did not perform the function of the information officer which is to brief the external stakeholders through different media platforms. Since the authorised official to direct the operation did not perform the function to inform the external stakeholders, the media fraternity waited for hours for organisational information officer without arriving and end up collecting the information from the by-standers. It was also noted that only councillors may perform the function to brief the media regarding the update of the operation after the briefing from the qualified emergency practitioner. The participation of councillors in briefing media present the great political interest in matters concerning emergency operations within the NDM. It was also noted both unplanned and planned operations which were attended, there was no organisational information officer and media release statement would be released to correct untrue statement which were circulated on the different media platforms. The ICS model of USA created the function of the information officer to address some of the challenges mentioned above.
4.3.6.3 Chain of command in NDM

From the data most participants revealed that all agencies in NDM are using chain of command for information management and reporting purposes. It was also revealed that juniors collect and verify the information before reporting to the supervisors. Supervisors are the only authorised officials to escalate the information to organisational information officer or communication centre for further record keeping. One of the participants made emphasises by saying:

“Chain of command is there to instil order and professionalism among the officials” – Semi-structure interview participant, response official, NDM.

It was also revealed that seniors only give orders to his/her immediate supervisor, then the immediate supervisor communicate with his/her fellow junior officials. That is the standard manner to manage information and reporting within the emergency agencies in NDM. Data also revealed that senior official from other agency will only request to speak to some of his/her level of seniority during the operation. As part of the chain of command principle there will no junior official who may go and communicate with the senior of other agency without reporting to his/her senior on the matters related to the operation. Such behaviour is being defined as the defiant of authority and it is the chargeable offence.

Based on data collected from the participants, conclusion can be made which says chain of command in NDM is fully in action and there is not confusion in implementation of such principle. Chain of command is one of the principles of ICS which is there to instil order and professionalism within the agencies. It was interesting to discover from the data that the same principle of chain of command is fully implemented by all agencies in NDM.

From the data collected during observations, it was also discovered that the chain of command is fully implemented and agencies of NDM were adhering to the principle of chain of command. Observational data also revealed that the junior officials collect the information and escalate the information into their immediate supervisors until it reaches the highest organisational structure. Junior officials would collect and record the information into their pocket books before report to their immediate supervisors. Great level of respect and professionalism was observed in regards to information management and reporting without undermining the seniority. From the observation data, it can be concluded that chain of command principle is being implemented by agencies of NDM in both planned and unplanned operations.
4.3.7 Management of resource during operation

The management of resources (human and tools) during the operation is considered to be one of the most important aspect in the ICS or any other unplanned and planned operation since the outcome of the operation depends of the manner authorities manage resources (see section 2.3.5, Chapter 2). Human resource is one of the resources which require good management to achieve the organisational objectives which is to save lives, environment and infrastructure. To achieve best management of human resources, span of control have to be implemented and monitored throughout the operation. Span of control is regarded as the determined number of people which one supervisor can effectively and efficiently manage during the operation. The ICS principle calls for minimum of three and maximum of seven (five being an optimal number) people reporting to one supervisor (see section 2.3.5, Chapter 2). This principle in the ICS made the determination of the span of control which the supervisor can able to management accordingly. Span of control is to ensure the effective monitoring and mentoring as compared to a large number of responders (see section 2.3.5, Chapter 2). Furthermore, span of control is implemented to avoid a large number of people reporting to one supervisor (see section 2.3.5, Chapter 2).

Furthermore, the minimum of three to seven people as a span of control shall effectively manage the tools assigned to them as a responders (see section 2.3.5, Chapter 2). This is to ensure that tools are managed in a responsible manner for the benefit of the operation (see section 2.3.5, Chapter 2). Failure to introduce span of control during a complex operation will result to overcrowding of people and resources without accountability. The following paragraph will present the findings from the participants and participatory data.

4.3.7.1 Supervision of responders and resources in NDM

From the data most participants, revealed that every responders in the planned and unplanned operation in NDM are operating under the supervision. However, different agencies have different prescribe and accepted minimum of responders to be monitored by one supervisor which is called span of control. Data from participants also revealed that different agencies are using the minimum of three to ten people within one span of control which is determined by their respective organisational SOP’s. These responders will be assigned to the tools which they have to be responsible and accountable for the duration of the operation. As a result every damaged or missing tool, the specific responders have to account and necessary measure to discipline such members will be applied accordingly.
as per organisational disciplinary policy. The data from the participants revealed that the function to manage logistics is not being performed by the authorised official to direct operation or any other official during the operations in NDM. The ICS model calls for establishment of the logistics function and assign the logistic officer to manage all the logistics for the operation. Senior official will send anyone to collect a particular tool on the response van. Since they collect the tools on the response van, this was the indication that staging area is not being established during the operations in NDM.

Based from the participants data, it can be concluded that every responders in NDM is being managed by one supervisor guided by the agency’s SOP. ICS principle calls for minimum of three and maximum of seven (five being an optimal number) people reporting to one supervisor. However, the minimum of three to ten members are regarded as the accepted span of control in NDM as per the various agency’s SOP. This means three to ten people are the accepted and manageable span of control in NDM. Lastly, the function of the logistics management during the operation in NDM is not being performed as a result there is no establishment of staging area for a particular agency or for the entire operations in NDM.

From the observation data on both planned and unplanned operation, it was revealed that each responder was having their supervisor monitoring and guiding their activities throughout the operations. As result of there was no responder which was not unaccounted for both of planned and unplanned operation in NDM. These responders were having the minimum of three to ten people supervised by one senior. Throughout the agency’s operation, it was noted that only the supervisor will lead the responders and make decisions regarding the task at hand. Each and every responder was responsible for their resources which were kept on their emergency vehicles. Both on planned and unplanned operation there was no staging area for tools. Therefore, the officials were collecting tools in their respective emergency vehicles in order to perform a specific task and will have to return back to emergency vehicle since there was no staging during the operation. The ICS model calls for the establishment of the logistics function and the appointed of the logistics officer to management resources during the operation. The consequences of not performing the logistics function and that of establishing the staging area caused unnecessary delays when official was to collect tools on their emergency vehicles. Therefore each agency official was witnessed running into their emergency vehicle which was parked away from the operation to collect tools for operations.
The conclusion from the observation data, the span of control for three to ten members is being implemented in NDM as compared to ICS principle which calls for minimum of three and maximum of seven (five being an optimal number). It was the positive observation to discover that there was an application of the span of control by agencies of NDM with the minimum of three to ten people on responders was managed accordingly. However, both planned and unplanned operations in NDM they do not perform the function of logistics in order to manage tools neither through establishment of the staging area or by authorised official to direct the operation performing the function of logistics management.

4.3.8 Planning process for both planned and unplanned operation

The first responder have the responsibility to immediate initiate the planning process to analyse the incident/event and formulate strategies to save lives, infrastructure and environment (see section 2.3.6, Chapter 2). The command structure and section chiefs have the responsibility to participate on the planning processes throughout the duration of the operation (see section 2.3.6, Chapter 2). The planning process of the ICS consist of nine consecutive steps to ensure effective planning and management of the operation (see section 2.3.6, Chapter 2). These nine consecutive steps consist of meetings that are grouped into five phases with the specific objectives to achieve during the planning process. This planning process it is called Planning “P” and it is shown on figure 2.3 (see section 2.3.6, Chapter 2). The end result of these planning meetings is to develop the Incident Action Plan (IAP) which must be adopted as the guiding the plan for operation (see section 2.3.6, Chapter 2). It is recommended that all members of the command structure and section chiefs must participate on the Planning “P” process with the intention to formulate the IAP (see figure 2.2, Chapter 2). Furthermore, the five phases of the Planning “P” are continuous throughout the operation in order to ensure that objectives and IAP are forever aligned to the latest development of the operation (see section 2.3.6, Chapter 2).

The main objective of the continuous planning processes is to ensure efficiency and effectiveness in execution of activities to achieve positive outcome of the operation. It is another strategy to conduct the monitoring and evaluation based on the IAP in achieving the objectives of the operation. Therefore, it was important for the study investigate the planning processes in NDM versus the information outlined on section 2.3.6 of Chapter 2. The following paragraphs will present the findings from the individual participants and participatory observations both from planned and unplanned operation for NDM.
4.3.8.1 Planning process for planned operation in NDM

From the data most participants indicated that every planned operations are management through the application of the Safety at Sports and Recreational Events Act 2 of 2010 (Act 2 of 2010) in NDM. The procedure requires the event organiser to apply for risk categorisation of the event to the South African Police Services (SAPS). According to the Act 2 of 2010 event may be categorised as either low-risk, medium-risk to high-risk (see section 2.5.1, Chapter 2). Therefore, planning processes are different as per these categorisations. The following paragraph will present data collected from both participants and observations.

4.3.8.1.1 Low-risk event planning processes in NDM

Data from most participants revealed that all the low-risk operations in NDM are being planned and coordinated by the event organisers. The event organiser can be anyone either the emergency or non-emergency agency/organisation for example Department of Arts and Culture can be an event organiser when they are hosting their cultural event. In the low-risk event, the event organisers have the responsibility to arrange the plenary meetings to brief all the emergency agencies about the program and logistics of the event. Based on the risk assessment, emergency agencies will deploy the fleet and personnel to be part of the event. One of the participants made emphasises by saying:

“In the low-risk event you won’t witness any formal planning during the operation expect the event organiser acknowledging your presence on the event” – Semi-structure interview participant, response official, NDM.

Even at the end of the event there is no formal or informal debriefing meeting. One of the participants made emphasises by saying:

“You will find the agencies going into this low-risk event just to show a face as a result there is no formal planning and engagement during the event but only if there is a problem that to be addressed” – Semi-structure interview participant, response official, NDM.

Based on the data collected from the participants, conclusion can be made that the planning only happens before the event, during and after the event there is no planning activities during the low-risk event. Therefore the planning process of low-risk event is not similar to the Planning “P” principle of ICS. This means low-risk event planning does not consist of the phase to develop and disseminate a plan during the operation as compared to the Planning “P” which is the principle of ICS (see section 2.3.6, Chapter 2). Furthermore, low-risk event planning does not involve the phase of evaluation and revising
of the plan during the event as compared to the Planning “P” principle of ICS (see section 2.3.6, Chapter 2).

From the observation data for planned operation Low-risk event, the plenary meetings were observed whereby the event organiser briefing the emergency agencies about the details of the event and the proposed program for the entire event. Thereafter, emergency agencies then made inputs regarding safety plan and further assist the event organiser to improve the safety plan to comply with the safety measures outlined by Act 2 of 2010. These plenary meetings are similar to Planning “P” process, however does not consist of interval meetings which are meant for monitoring and evaluation of the safety plan that was initiated during the plenary meeting. Even at the end of the event, there was no debriefing meeting to analyse the activities of the event and note the point of improvement for future purposes.

Conclusion from the observation data on low-risk event, planning only happens once before the event and no any other planning meetings during the event. It was the confirmation of the data collected from the participants which revealed that the planning process of low-risk event is not similar to the Planning “P” which is the one of the principles of ICS.

4.3.8.1.2 Medium to high-risk event planning processes in NDM

From the data most the participants revealed that, after the event has been classified as medium and high-risk event authorised member of SAPS will be responsible for the plenary meetings and coordination of the entire operation for the event. In these two types of the categories of events (medium and high-risk) agencies will experience the high level of planning and commitment from other agencies. All the threats will be analysed and SAPS will develop one master operational plan as they call it in SAPS. However, there is no planning meeting during the operation as compared to “Planning “P” principle of ICS. One of the participants made emphasises by saying: 

"During the event we do not have planning meeting during the operation but only briefing at the beginning and after the operation" – Semi-structure interview participant, response official, NDM.

Based from the data of the participants, the conclusion can be made that the planning only happens prior the event and no planning during the operation unless there are challenges then agencies will gather to plan to address the challenge in NDM. However, the
authorised member from SAPS will only brief the agencies during and after the operation. The briefing is based on the master operational plan that was compiled before the start of the operation and all the agencies will then report into their post as per the master operational plan. This is indication that the agencies in NDM do conduct plenary meetings prior the planned but no interval meeting to review objectives of master plan as compared to the Planning “P” principle of ICS.

From the observation data for the planned operation Medium to High-risk, revealed that the medium to high-risk event are having the well-coordinated planning meetings before the event. During the planning meeting, different agencies presented their operational plans which was further be integrated into one master plan for the operation complied by SAPS. The plenary meeting was chaired by the SAPS member and concluded the plenary meeting by presenting a master operational plan to the entire agency members. The master operational plan was made up of all the agencies operational plans which then be a product of SAPS with all the annexure of agencies operational plan. Data from the observation revealed that a senior member from SAPS would brief the agencies about the key points of the master operational plan at the start of the operation. The briefing was performed on the Venue Operation Centre (VOC), whereby all the seniors and immediate seniors were present to receive briefing from the senior member of SAPS. After the briefing all the senior members form different agencies will then report back to their agencies in order to initial their operational activities as the annexure to the master operational plan. The observation data revealed that there is planning during the medium to high-risk planned events except the interval planning meetings to review the plan of the operation as compared to Planning “P” for principle of ICS model (see section 2.3.6, Chapter 2). After the operation, all the seniors and immediate seniors will come together again in the VOC for debriefing. During the debriefing, agencies will report back on the challenges and achievements during the operation in-line with the master operational plan.

From the observation data regarding the medium to high-risk event was the confirmation of the data collected from the participants regarding the well-coordinated planning meetings before the event which are chaired by the senior member of SAPS. However, observation data revealed that the medium to high-risk planned events does not conduct interval planning meetings to review the plan of the operation. The interval planning meeting during the operation is to ensure alignment of the plan and activities throughout the operation. The interval planning meeting is to prevent using the outdated plan on the operation that is changing and it is critical to conduct interval meetings to address new
development which are not covered by the initial plan (see section 2.3.6, Chapter 2). Based on the data from the observation conclusion can be made by saying there is planning processes during the medium to high-risk planned events with the exception of the interval planning meetings for review and monitoring of the operational plan objectives as compared to the Planning “P” for principles of ICS.

4.3.8.2 Planning process for unplanned operation

From the data most participants revealed that agencies in NDM are only having the informal briefing session during the operation and agencies will immediate start the duties with the intention to save lives, infrastructure and environment. The planning will only happens during the operation to outline the plan of action for the task at hand. All the seniors will join their agencies to ensure that tasks are executed accordingly. One of the participants made emphasises by saying:

“That is why most of the senior will leave the VOC and assist in getting the job done” – Semi-structure interview participant, response official, NDM.

To vacate the VOC was eliminating the possibility to conduct planning meetings during the operation as compared to the Planning “P” which is the principle of ICS. One of the participants made emphasises by saying:

“The planning will only take place when there is a challenge during the operation otherwise it will only be work until that task is completed” – Semi-structure interview participant, response official, NDM.

The planning during the operations will only take place if there is challenge that requires seniors of the agencies to gather immediate to formulate strategies to solve the newly presented challenge.

Therefore conclusion can be made from the participants data that the planning processes for unplanned operation only consist of the initial planning which is to brief the agencies in the beginning of the operation. Thereafter, only urgent planning meeting will occur if there is newly presented challenge which requires immediate intervention but without a challenge during the operation, agencies will not bother to convene planning meetings during the operation as compared to the Planning “P” of the principle of ICS.

From the observation data on unplanned operation, it was revealed that there was very minimal planning during the unplanned operation in NDM. The initial planning during the operation was only to brief other agencies, analyse, formulate objectives and the plan of
action. The data collected from the observation revealed that the plan of action will be verbal and nothing written down to refer or for record keeping purposes. After the initial planning meeting to formulate the verbal plan of action, seniors will then brief their agencies to align their activities to the verbal plan of action. The data collected from the observation also revealed that agencies they do not come together to evaluate and revise the plan of action during the operation. Seniors will remain on their respective agencies to work and monitor the task if is being delivered according based on objectives developed from the plan of action. For these reasons, VOC was left alone without anyone to schedule follow-up meetings and coordinate meetings during the operation.

Based from the observations data conclusion can be made that agencies in NDM they do not reconvene during the operation to evaluate the action plan that was formulated during the operation as compared to Planning “P” for principle of ICS (see figure 2.2, Chapter 2). Therefore, the data from the observations confirmed the data collected from the participants regarding the planning processes of unplanned operations in NDM.

4.4 Conclusion

This study was undertaken in order to achieve the research objectives which were set out in chapter one. Therefore, data was collected on participants through the use of the semi-structured interviews and by observations as aid to achieve this objective. Chapter four was meant to link the research findings with the research objectives in order to explore the application of ICS in Nkangala District Municipality, Mpumalanga, South Africa.

One of the research objectives was to establish how agencies and disaster management centre in Nkangala District Municipality (NDM) are managing major incidents and events. Findings has revealed that there is no standardised management tool in NDM and agencies are using their organisational SOP’s which are not integrated to one another. Furthermore, there was no evident of the intervention from disaster management centre to ensure there is a standardised management tool to enable the agencies to work in a coordinated manner as it requires by the disaster management act 57 of 2002. The other research objective was to establish how the current system in NDM compares to the ICS model as per international implementation standards. The findings in-line with this research objective has revealed that some of the ICS principles are being implemented as discussed above. However these principles are not implemented as per international standards of ICS model from USA.
Findings revealed gaps which requires interventions in order to ensure effective and efficient management of the operations in NDM. Therefore chapter five will provide general recommendations which are intended to address such gaps.
CHAPTER 5: CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the conclusion and recommendations based on the findings that were discussed in Chapter 4. This is done to present a conclusive picture of practical procedures and recommendations to improve the operations in Nkangala District Municipality, Mpumalanga, South Africa. However, the political will can not be overlooked as the deciding factor in adopting and application of the recommendations to improve operations in NDM. It is the fact that politics control and channel the direction on the service delivery and of the country in general (see section 2.4, Chapter 2).

Chapter 5 firstly presents an overview of the chapters, research objectives, concludes on identified themes and subthemes, and provides recommendations regarding the identified gaps during planned and unplanned operations.

5.2 Overview of the chapters

The academic research exercise is regarded as an organised skill which is being conducted in an orderly and professional manner to achieve the specific objective/s of the focus study area (See section 3.2, Chapter 3). Chapter one presented the layout and projection of how the entire research had been conducted. It presented a comprehensive introduction, the problem statement that had been investigated, research questions and objectives that emanated from the problem statement, the central theoretical statement. Further followed the research methodology followed, ethical consideration, the significance of the study and a provisional chapter layout of the entire research study.

Chapter 2 presented the theoretical review of the Incident Command System model. The theoretical review presented definitions of the ICS model concept, principles of ICS, ICS application globally as well as in South Africa (SA). Chapter 2 aimed to achieve the first research objective of the study namely to explore the relevant literature and theories to define the Incident Command System model and how it is implemented as per international standards.

Chapter 3 presented the research methodology that was followed to achieve the research objectives of the study. As a result the qualitative research design was explained. Chapter 3 also clarified the chosen sampling of participants, data collection methods, the qualitative
data analysis steps, and the model for the interpretation and presentation of findings. The chapter conclude with clarifying the ethical clearance and limitation of the study.

Chapter 4 represented the research findings that were drawn from the data gathered during the data collection phase of the research process as part of the investigation to the application of the ICS in NDM (See section 4.3, Chapter 4). Various principles of the ICS were applied as guidelines to investigate the application of the ICS in NDM. This was done through semi-structured interviews and participatory observations within the jurisdiction of the NDM (See section 2.3, Chapter 3).

5.3 Research objectives

The following section presents a summary of how each research objective, as outlined in Chapter 1, was achieved through this study.

5.3.1 Research objective one: To explore relevant literature and theories to define the Incident Command System and how it is implemented as per international standards.

This research objective was successfully achieved in Chapter 2: Literature review. The objective was achieved by investigating different theoretical sources. Such sources included the government legislation and reports, journals, conference papers and reports, publications, North-West University on-line library; and thesis papers. Literature was able to define the ICS based on its origin in the USA. It further outlined the principles of ICS as per international standards. Literature revealed that after the successful application of ICS in the USA, other countries across the world adopted the ICS as their standardised management tool to manage planned and unplanned operations (See section 2.4, Chapter 2). Lastly, literature review presented the level of application of the ICS in South Africa and the status quo of the policy development with regard to ICS.

5.3.2 Research objective two: To establish how agencies and the disaster management centre in Nkangala District Municipality manage major incidents and events.

This objective was addressed through the development of appropriate research questions and through the collecting of data relating to these questions by using the research method of semi-structured interviews and participatory observations. The research
questions and the collecting of data were measured against the literature of Chapter 2 in this study.

The findings revealed there is no standardised organisational structure or systematic approach like ICS which is being followed to manage planned and unplanned operations across NDM (See section 4.3.1.1, Chapter 4). As a result, each response agency is using its own internal Standard Operation Procedures (SOPs) which are not integrated or linked to any of the agencies; except for SANDF and SAPS. The findings that NDM does not have a standardised management tool such as ICS which is being applied by all agencies to manage planned and unplanned operation; were confirmed during the participatory observations (See section 4.3.1.1, Chapter 4).

5.3.3 Research objective three: To establish how the current system that the Nkangala District Municipality applies, compares to the implementation of the ICS model as per international implementation standards

This objective was addressed through research questions and participatory observations in NDM. The research questions were formulated in-line with the principles of ICS (See Section 2.3, Chapter 2).

The findings revealed that each agency has its own agency’s SOPs which are being applied to manage planned and unplanned operations in NDM. However, these agency’s SOPs consist of ICS principles which are not interlinked (See section 4.3.2.1, Chapter 4). The agency’s SOPs of NDM consist of common terminology, handover of duties, unique names for resources and designation, chain of command and different number of span of control.

However the agency’s SOPs does not consist of the onsite organisational structure as compared to Figure 2.2 (See section 2.2.1, Chapter 2) and planning “P” which was outlined in Figure 2.3 (See section 2.3.6, Chapter 2) as principles of ICS. The participatory observation data also confirmed that agency’s SOPs of NDM have some principles of ICS, but these principles are not interlinked with each other.
5.4 Conclusion and recommendations on identified themes and subthemes

The following section focuses on achieving the final research objective, to recommend the use of ICS and how it can improve the Nkangala District Municipality's management of major incidents and events.

5.4.1 ICS as generalised management tool

The concept of the generalised management tool such as ICS is considered to be effective for the purposes of sound organisational structure, coordination, integration and resource management during the operations (See section 2.2, Chapter 2). The ICS model was developed in the USA with the intention to ensure effectiveness and efficiency among the agencies of USA emergency service (See section 2.2, Chapter 2). Furthermore, ICS is intended to ensure standardisation of approach and management of resources across the emergency agencies. The application of ICS is of great importance since it consist of onsite organisational structure (See figure 2.2, Chapter 2), effective planning and achievement of tasks, accountability and integration (See section 2.2, Chapter 2).

5.4.1.1 Availability of ICS as a generalised management tool to manage operations in NDM

a) Conclusion

In terms of Nkangala District Municipality, it was discovered that there is no ICS tool to manage both major planned and unplanned operations (See section 4.3.1.1, Chapter 4). In the absenția of ICS, different agencies are using their respective Standard Operation Procedures (SOP's). These SOP's are not integrated or interlinked across all the agencies in NDM (See section 4.3.1.1, Chapter 4). Some principles for the ICS model, namely the command principle, chain of command and span of control are being applied in NDM but they are no integrated to allow everyone involved in the operation to follow them accordingly (See section 4.3.1.1, Chapter 4).

b) Recommendations

All response agencies that are involved in incidents in NDM must apply the ICS in managing operations in NDM. It is evident from literature that the application of ICS will
assist to improve coordination, communication, integration, standardisation, the planning and management of resources (human and equipment) (See section 2.2, Chapter 2). Therefore the application of ICS in NDM will assist the agencies to eliminate some challenges that amount to poor coordination, integration, planning processes, communication and management of equipment (See sections 4.3.2 – 4.3.8, Chapter 4).

The poor coordination and integration was the result of agencies not reporting to one Incident Commander to direct the operation (See section 4.3.1.1, Chapter 4). Reporting to one incident Commander will assist to centralise information for better and efficient decision making regarding the operation. Poor management of equipment was the result of not performing the function of logistics. Thus, all equipment for operation was managed at a central point by setting up a staging area for resources. The logistics function that is settled in ICS assists to properly coordinate, monitor and control all the equipment for efficient execution of the task during operation (See section 2.2.1, Chapter 2). Poor planning causes no standardisation or a divergent planning process for both planned and unplanned operations. Planning processes should include interval planning meetings during the operation with the objective to review and monitor outcome versus the operational plan. ICS consists of the organisational structure which will help the agencies of NDM to better manage and coordinate the functions involved in the operation (See section 2.2.1, Chapter 2).

The NDM Disaster Management Centre can be the best government structure to introduce the application of ICS in view of the Disaster Management Act 57 of 2002 (Act 57 of 2002). The Act 57 of 2002 requires the disaster management centre of the municipality to ensure integration and coordination of policies with the purpose to maintain rapid and effective response within the area of jurisdiction. The research findings presented in Chapter 4 of the study indicated that there is no coordination and integration between the agencies of NDM (See sections 4.3.2 – 4.3.8). Therefore it is the responsibility of the NDM Disaster Management Centre, guided by the Act 57 of 2002, to ensure integration and coordination within the jurisdiction of the municipality area. This mandate has been given under Section 44(1)(b) of the Disaster Management Act 57 of 2002. The application of ICS will ensure the integration among the agencies irrespective of the sphere of government working in NDM.
5.4.2 Standardisation during operation

The concept of standardisation among the agencies, is critical to maintain a common approach and standardisation to achieve specific objectives for operation. The application of common terminology, SOPs, common names for logistics, recourses and positions was to ensure there is standardisation during the operations (See section 2.3.1, Chapter 2).

Standardisation is critical during the response and recovery phases of any type of emergency event (See section 2.3.1, Chapter 2). Standardisation is of utmost importance to any type of the planned and unplanned event to guarantee professionalism during the operation. This is to refute confusion during an operation; and only apply standardised rules and policies which are understood across the agencies (See section 2.3.1, Chapter 2).

5.4.2.1 Standardisation during operations in NDM

a) Conclusion

The agencies of NDM have organisational SOPs which are not interlinked with the agencies of NDM. The agency’s SOPs are not interlinked with each other but are formulated based on its own organisational policies and legislations. Agency’s SOPs of NDM execute principles similar to the principles of ICS; including common terminology, and unique names for resources and designation.

The agency’s standardisation format is similar across NDM, for example a big fire engine for the fire services has a single call sign across NDM and all fire services officials across the NDM understands the call sign for the resource. Despite the unique agency standardisation, all agencies in NDM are using the international terminology, namely the International Radiotelephony Spelling Alphabet (IRSA) and triage codes for patients (P1-red, P2-blue, P3-green and P4-black). These are the only methods being applied to create standardisation among the agencies of NDM during an operation.

b) Recommendation

The agencies of NDM must apply the ICS in managing operations in NDM since there is no similarity regarding the form of standardisation across the agencies of NDM (See section 4.3.2.2, Chapter 4). Therefore the application of ICS will ensure that all agencies in
NDM comply with one management tool, called ICS, for better coordination and integration during operations.

5.4.2.2 Similar standardisation across agencies in NDM

a) Conclusion

In Nkangala District Municipality, it was discovered that there is no similarity within the agencies for standardisation format across agencies in NDM, except for the application of the IRSA and triage codes for patient’s terminology (See section 4.3.2.2, Chapter 4).

b) Recommendation

The application of ICS will ensure there is common terminologies and names of positions to eliminate confusion caused by different formation of spheres of government (See section 4.3.2.2, Chapter 4). Therefore the application of ICS will ensure there is similar standardisation across agencies of NDM. An example is to call on an official that is in charge of the operation as Incident Commander instead of Incident Coordinator based on the ICS organisational structure (See section 4.3.2.2, Chapter 4 and section 2.2.1, Chapter 2).

5.4.3 Authority to direct operation

The first responder from any emergency agency assume the responsibility to direct the operation with the intention to save lives, infrastructure and the environment during the operation. The first responder may be referred to as the Incident Commander or Incident Coordinator (IC). It is very important that the official performing the function of the IC be identifiable by wearing the visible item (for example reflective vest or helmet) with the inscription “Incident Commander”. This is to indicate the point of authority and function to direct the operation. However, a singular IC must transfer the authority to direct the operations to the most senior/superior official that arrives and enters into the operation. All functions in the ICS, whether it is liaison or safety, remains the responsibility of the IC. This means that the IC will perform those functions if there are no people performing the functions.

The ICS tool is established under the command principle. Thus the command function has the full authority to command all the ICS functions to deliver their duties to save lives, the environment and infrastructure (See section 2.3.2, Chapter 2). Therefore, the official that performs the function of IC has the authority to command all the ICS functions to deliver
their set objectives. Both planned and unplanned operations in other countries are being managed through the application of ICS tool.

5.4.3.1 Authorised official to direct operations in NDM

a) Conclusion

The most senior/superior first responder has the authority and the responsibility to direct the unplanned operations in NDM. The fact that the first responder on scene assume the responsibility to direct the operations in NDM, is the same principle as the principles of the ICS tool. However, this official in NDM cannot be referred to as the incident Commander because there is no ICS tool which define the terminology of the official performing the function of command. The official who assumes the responsibility to direct the operation in NDM does not have the authority to command all the officials during the operation as compared to the function of the IC from the ICS tool (See section 2.3.2, Chapter 2).

The onus to direct the operations in NDM is upon the agency legislative mandate and nature of the incident. An example in a fire related incident is that the Chief Fire Officer will have to assume the function to coordinate all activities and resources in the fire incident. However, there is no policy which guides how agencies in NDM should manage an operation that includes multi-agencies. Thus, such operations are being executed as per mutual agreement on scene.

The ICS tool will make undertakings easier in the formation of the authorised structure to direct the operation. The ICS tool will spell out when to formulate the singular Incident Commander or Unified Command structure to direct the operations (See section 2.3.2, Chapter 2). Currently it is a challenge in NDM as there is no ICS tool to specify functions and structure to direct the operations in NDM.

The planned events in NDM are being managed as per Act 2 of 2010. An event organiser directs the low-risk events, whereas a member of the South African Police Services (SAPS) directs the medium to high-risk events directed by the (See section 2.5.1, Chapter 2). Based on the legislation, both the event organiser and the member of SAPS are given the authority to direct the operations of the event to achieve the objections of the Act 2 of 2010 (See section 2.5.1, Chapter 2). Therefore, both the event organiser and the member of SAPS are regarded as the event coordinator to oversee all the activities that should achieve the positive outcome of the operation.

b) Recommendation
The agencies of NDM can apply the ICS in managing both planned and unplanned operations in NDM. The application of ICS will assist the agencies of NDM to clarify the role and responsibilities of the first responder in the unplanned operation. Furthermore, ICS will authorise the first responder to command all the functions involved in the operation. It will further result in the first responder to being officially called the Incident Commander as he/she will take up the command function. The application of the term Incident Commander will eliminate the confusion and barrier caused by wrong title reference (See section 4.3.3.1, Chapter 4). The application of ICS will further assist to eliminate a first responder’s problems of not having the authority to command other agencies to perform their tasks to achieve a positive outcome of the operation (See section 4.3.2.2, Chapter 4). The application of ICS will also assist the agencies of NDM to understand when to establish the unified command. The ICS will stipulate an agency’s expected setup in order to take the lead in directing the operations in the event of the multi-agency operation based on the ICS principles. The application of ICS in NDM will further assist the agencies to better manage, coordinate and direct planned events where there is involvement of the emergency services agencies in an operation. Therefore the application of ICS in NDM will eliminate the challenges of poor coordination, planning and direction during the planned events (See section 4.3.2.2, Chapter 4). The application of ICS in NDM will further assist the agencies of NDM to adhere to only one SOP of ICS and abandon their respective agency’s SOPs, as it does not promote the integration between agency SOPs of NDM (See section 4.3.2.2, Chapter 4).

5.4.3.2 Form of complying with directive in NDM

a) Conclusion

Each agency in NDM is using the command principle as the tool to direct subordinates to comply with the directives from their superiors within the agency’s hierarchy. However, the authority to command one official from another agency is not applicable in NDM (See section 4.3.2.2, Chapter 4). The seniors/superiors from each agency have the authority to issue the instruction and all the subordinates of their particular agency to comply with the instruction. The internal policies of a specific agency guides that failure to comply with the instruction from the senior/superior equals chargeable offence; for example the internal disciplinary policy of the Mpumalanga provincial traffic police. Responders follow an informal command principle rule which state “you comply and complain later”. Therefore, it can be said that agencies and operations in NDM apply the command principle aimed at respective juniors to perform particular tasks.
The act of command within the ICS tool is important to ensure that all functions comply with the directives in order to achieve positive results on the objectives to save lives, the environment and infrastructure (See 2.3.2, Chapter 2). The function of Incident Commander has the authority to command all the functions within the ICS (See 2.3.2, Chapter 2). In contrast, the first responder in NDM does not have the authority to command all the agencies involved in one operation.

b) Recommendation

The agencies of NDM must apply the ICS in managing their planned and unplanned operations in NDM. ICS has the function of the Incident Commander that has the full authority to command every official involved in an operation to act in a professional manner to achieve positive objectives of the operation (See section 2.3.2, Chapter 2). The operation objectives involve saving lives, the environment and infrastructure. Therefore it is the responsibility of the Incident Commander to instruct all officials with a good intention to achieve positive results on these operation objectives. Since the agencies of NDM are already applying the command principle in the form of officials to comply with the instruction given, it will be easier to apply and improve the status quo of the operation management in NDM through the application of ICS.

5.4.4 Transfer of command

The principle of transfer of command during the operation is very important to ensure continuity and efficiency during the operation (see section 2.3.3, Chapter 2). Literature has indicated that the transfer of command is important to assure a positive outcome in saving the lives, environment and infrastructure during the operation (See section 2.3.3, Chapter 2). The act of the transferring of command is done through the junior official handing over the operation to the most qualified official to resume the function to direct the operation. Otherwise, the transferring of command is executed by one agency completing a specific task during the operation. Transfer of command is the act of reporting the initial state of the operation, strategies deployed to address challenges, available and pending resources (See section 2.3.3, Chapter 2).

Transfer of command is critical to guarantee effective and efficient management of the operation. The exercise to perform transfer of command is critical to point out any weaknesses and challenges to the income command structure for better management of the operations (See section 2.3.3, Chapter 2). The transfer of command exercise in ICS will assist and make sure that the operation activities are better managed to achieve
positive operation outcomes. Therefore, the transfer of command within the ICS tool is principle and compulsory for the efficiency and effectiveness of operation management (See section 2.3.3, Chapter 2).

5.4.4.1 Transfer of command during the operations in NDM

a) Conclusion

It was found that agencies in NDM do perform the transfer of command during operations. The transfer of command occurs during the senior/superior official taking up the authority to direct the operation or after one agency completed a specific task during the operation. An example is firefighters extinguishing the fire and Emergency Medical Services (EMS) treating the patients involved in during an incident. Transfer of command was done for incoming official/s to take the full responsibility and accountability of the entire operation. Furthermore, key details of the handover were recorded on the Occurrence Book (OB) and the responsible official had to sign after the transfer of command process. Recording the activities on the OB is useful to track any challenges that occurred during the operation. Findings also revealed that, participants in the operation can request their respective communication centre, via two-way radio communication, to record the details of the transfer of command under the command of the senior/superior official. An example is the EMS official reporting to the EMS communication centre situated in Middelburg. This means that the key transfer of command information can be recorded both on OB and on the communication centre for back-up purposes. Therefore, it can be concluded that NDM agencies execute the transfer of command and record key information for any type of operation in line with the ICS principle. Furthermore, the transfer of command is done according to the chain of command as per principle of ICS. The transfer of command, following the chain of command is essential to instil order and professionalism during the operation (See section 2.3.4, Chapter 2).

b) Recommendation

The agencies of NDM must apply the ICS in managing their planned and unplanned operations in NDM. The principles of ICS involve the transfer of command as a practise to ensure continuous and effective performance of tasks during the operation (See section 2.3.3, Chapter 2). Since the agencies of NDM are already doing the transfer of command during the operations, it will be easier for NDM agencies to adapt to the ICS tool for better and improved management of operations in NDM. Therefore, the application of ICS in
NDM will improve the already established transfer of command and further provide clear
guidelines of executing proper handover of duties in NDM.

5.4.5 Organisational structure directing operations

The organisational structure according to the ICS consists of five major functions which
are command, planning, operations, logistics and finance/ administration (see section 2.2,
Chapter 2). These functions of the ICS ensure order and professionalism in managing both
planned and unplanned operations. The command structure is made up of the Incident
Commander for a single agency or Unified Command for the multi-agency which is
assisted by the Information, Liaison and Safety Officer. The singular IC is only
recommended for small operations that last for a short period of time and consist of one
agency managing the operation (See section 2.3.2, Chapter 2). Unified Command (UC),
however, is the structure formulated when two or more agencies are involved in a complex
operation. This structure accommodate all the seniors/superiors of the agencies involved
for managing the operation (See section 2.3.2, Chapter 2). The main purpose to establish
the UC structure is to avoid division among agencies and enable agencies towards
collective decision making (See section 2.3.2, Chapter 2). Furthermore, the overall benefit
of UC is to allow agencies to use one comprehensive operational plan which is intended to
eliminate duplication activities and chaos. The importance of command structure (simple
Incident or Unified Commander) is to formulate the operational plan, manage and direct
the operations to save lives, infrastructure and the environment (see section 2.2.1,
Chapter 2). The benefits of the organisational structure is to ensure that all the activities
and functions of the operations are justified. Therefore, there is no function in the operation
that is not managed accordingly for example, the Chief planning section leads the planning
sections, which is represented in the planning function. The most important function of the
command structure (simple Incident or Unified Commander) is to formulate the operational
plan, manage and direct the operations to save lives, infrastructure and the environment
(see section 2.2.1, Chapter 2).

The benefits of the organisational structure is to ensure that all the activities and functions
of the operations are managed accordingly (See section 2.2, Chapter 2). The ICS
organisational structure will maintain professionalism and the proper management of
different functions to achieve positive results during an operation.
5.4.5.1 Organisational structure directing operation in NDM

a) Conclusion

There are few benefits for establishing the onsite authorised structure to direct operations in NDM as there is no application of the ICS tool to provide the organisational structure similar to Figure 2.2 (See section 2.2, Chapter 2). The only familiar authorised structure to direct operations in NDM include the Joint Operation Centre (JOC), and the Venue Operation Centre (VOC). However, these structures are not well defined and organised. Furthermore, neither JOC nor VOC consists of the organisational structure to instil order and professionalism (See section 2.2, Chapter 2). JOC and VOC also do not specify that every operation should have the function of the safety, liaison and information officer.

The formation of JOC and VOC is not really beneficial as it does not provide a guiding policy for exactly how to be established Furthermore, it does not have a fully and well defined onsite organisational structure to direct the operations. Therefore, there are not many benefits in establishing the JOC and VOC as these structures are just formed on general knowledge, and not according to policy such as ICS (See section 4.3.5.1, Chapter 4).

b) Recommendation

The agencies of NDM must apply the ICS in managing their planned and unplanned operations in NDM. The application of ICS will assist the agencies of NDM to utilise the organisational structure and deployment of the officials to perform functions such as the liaison officer and safety officer during the operations of NDM. Neither the JOC, nor the VOC consists of an organisational structure (See section 4.3.5.1, Chapter 4). Therefore the application of ICS will be useful to instil order and professionalism during the operations of NDM as the ICS tool consist of organisational structure (See section 4.3.5.1, Chapter 4).

5.4.6 Information management and reporting during operation

Information management and reporting during an operation are very important to ensure there is no disorder during the operation. This is achieved by following three major aspects; namely liaison among the officials, information management circulating in or out the operation, and principle of chain of command. Liaison officer is being appointed to ensure there is a smooth flow of information among the officials during the operation (See section 2.2.1, Chapter 2). In the absence of the liaison officer, the incident commander have the responsibility to execute the duties making sure the agencies that are involved in
the operation, are connected with each other. The information officer is responsible for the second aspect of information management. This is to ensure there is coordinated information flowing from the operation. This can be in the form, and through media briefing or by updating external stakeholders (See section 2.2.1, Chapter 2). Lastly, the chain of command principle is executed through following the hierarchy of the organisation and information flows from top to bottom or vice versa (See section 2.3.2, Chapter 2). This principle is regarded as the best format to ensure discipline, flow of information according to the hierarchy and the respect of the authority.

These three aspects are essential for sound information management and reporting during the operation. ICS was developed based on the premise of top-down bureaucracy design. The follow of the information from top to bottom is also very important to ensure professionalism during the operation (See section 2.2.1, Chapter 2). Therefore, chain of command is one of the principles of ICS that ensures there is no interruption of information from top to bottom of the ICS organisational structure (See section 2.3.4, Chapter 2). Within the ICS organisational structure, the function of the Information Officer is to manage and coordinate all the information that should be send to the media platforms (See section 2.2.1, Chapter 2). Furthermore, the function of the liaison officer as part of the command staff is to maintain free flow of communication within the different agencies during the operation (See section 2.2.1, Chapter 2). All these three aspects of the ICS are crucial for the proper management of information during the operation.

5.4.6.1 Liaison officer in NDM

a) Conclusion

The study findings revealed that, operations in NDM do not prioritise the designation of the liaison officer or the responsibility to liaise during the planned and unplanned operations. Even the first responder does not take the responsibility to liaise the information between the agencies involved in the operation. This is due to no guiding policy that inform the agencies to perform such an activity (See section 4.3.6.1, Chapter 4). Therefore agencies will be communicating among themselves without any aid or assistance. As a result, there is no proper flow of information among the agencies (See section 4.3.6.1, Chapter 4). This means there is no single official who assume the responsibility to liaise with agencies during the operation with the intention to address challenges that requires urgent attention for operation to be successful. The absence of the liaison officer’s function in NDM operations creates challenges, because the two-way communication radios between agencies are not interlinked (See section 4.3.6.1, Chapter 4).
b) Recommendation

The agencies of NDM must apply the ICS in managing planned and unplanned operations in NDM. ICS organisational structure provides for the function and responsibilities of the liaison officer to eliminate the challenges raised during the data collection in NDM (See section 4.3.6.1, Chapter 4). The application of the ICS in NDM will promote the adherence and compliance to the function of the liaison officer according to the ICS tool. One on the challenges that was discovered during the data collection was the poor interaction among the different agencies regarding to the progress, challenges, intervention strategies and update on the outcome of the operation (See section 4.3.6.1, Chapter 4). Therefore the application of the ICS will ensure that the role and responsibilities of the liaison officer are performed during every operation in NDM.

5.4.6.2 Information officer in NDM

a) Conclusion

The study findings revealed that, operations in NDM do not prioritise the appointment or authorisation of one official to update the external stakeholders and community regarding the matters of interest emanating from the operation. The lack of the information officer's function means that in all the operations in NDM there is no authorised official to brief the media about any operation; for example the occurrence of a major incident and nobody to inform or brief the media about the road closure as result of the incident. Furthermore, the organisation communication policy prohibits all senior/superior officials from respective agencies to brief the external stakeholders regarding the operation. However, agencies in NDM have their own organisational information officers who are authorised to address the external stakeholders (See section 4.3.6.2, Chapter 4). Most of these organisational information officers are not experts in the field of emergency. As a result they should be briefed by the experts about any terminology used in the emergency field (See section 4.3.6.2, Chapter 4). Secondly, these information officers cannot attend any unplanned operation due to the fact they are not emergency information officers. In the absence of the information officer, councillors are authorised to brief the external stakeholders and media platform, after they received a brief from the expert in the emergency field (See section 4.3.6.2, Chapter 4).

Even the NDM Disaster Management Centre is not authorised to brief the external stakeholders through the media but this can be done through the organisational information officer who is not an expert in the emergency field.
b) Recommendation

The agencies of NDM must apply the ICS in managing planned and unplanned operations in NDM. ICS organisational structure provides for the function and responsibilities of the information officer in order to eliminate the challenges raised during the data collection in NDM (See section 4.3.6.2, Chapter 4). Since the senior/superior officials are prohibited to address the media; and organisational information officials are not having the emergency experience to explain every emergency terminology, it is important that NDM applies the ICS as the authorised management tool to manage operations within the jurisdiction of NDM (See section 4.3.6.2, Chapter 4). Therefore the application of the ICS will allow operations to have the information officer’s function and the media community will be addressed accurately by an expert emergency information officer. The application of ICS with the information officer’s function will eliminate the problems that arise through the continuous questioning of amateur journalist as officials will be distributed during the operation providing updates regarding the operation (See section 4.3.6.2, Chapter 4). Therefore the information officer’s will address all the media queries and matters so that all agency officials can do their tasks without any harassment from journalists requesting operation updates.

5.4.6.3 Chain of command in NDM

a) Conclusion

The study findings revealed that the agencies in NDM apply the principle of chain of command. The junior officials collect information, which is verified and then reported to the immediate supervisor. The chain of command is well understood in NDM; to the extent that no junior official will overlook the immediate supervisor to report to another agency’s senior without following the agency’s chain of command (See section 4.3.6.3, Chapter 4). All the agencies’ officials understand that failure to adhere to the agency’s chain of command equals insubordination and will be addressed as per organisational disciplinary procedure.

b) Recommendation

The agencies of NDM must apply the ICS in managing both planned and unplanned operations in NDM. Chain of command is one of the principles which makes the ICS effective and efficient (See section 2.3.4, Chapter 2). The agencies in NDM will easily adapt to this principle of ICS, as the agencies of NDM already apply it.
5.4.7 Management of resources during the operation

The systematic and orderly management of resources (human and tools) during the operation is considered to be a critical aspect to ensure that objectives of the operation are achieved. Positive achievement of the objectives for the operation is based on how you best manage the resources of the task. Therefore the ICS comprises of the systematic and orderly format to manage resources. The management of the human resources and equipment in the ICS are managed by the span of control. The span of control of the ICS is the determined number of officials that a supervisor can effectively manage for the duration of the operation. The ICS principle calls for a minimum of three and maximum of seven (five being an optimal number) people reporting to one supervisor (see section 2.3.5, Chapter 2). The minimum of three to seven span of control is to ensure the effective monitoring and mentoring as compared to a large number of subordinates for a supervisor. The responders are responsible to manage all the resources assigned to them during the start of the operation. This is to ensure that equipment are managed in a responsible manner for the benefit of the operation.

ICS developed the span of control with a minimum of three and maximum of seven (five being an optimal number) for the purposes to better manage people assigned to one supervisor (See section 2.3.5, Chapter 2). The determined minimum and maximum span of control by ICS is to ensure effectiveness and efficiency management to the responders during any type of the operation (See section 2.3.5, Chapter 2). The supervisor of the minimal span of control by ICS will enhance the ability to effectively monitor and mentor the responders for the span of control during the operation (See section 2.3.5, Chapter 2).

5.4.7.1 Supervision of responders and equipment in NDM

a) Conclusion

The study findings revealed that agencies in NDM have no specified policy prescribing the minimum and maximum number that a supervisor/s can manage during the operation. However, the different agencies in NDM are using the span of control, through which agency’s SOPs informed that a supervisor is to manage between three to ten members. However each responder, for the span of control in NDM, is operating under the supervisor that is meant to mentor and monitor them during the operation. These responders for the span of control, are having the responsibility to manage and take responsibility of equipment assigned to them during the operation. However, there is no systematic
approach to manage equipment during the operation. Agencies in NDM do not assign a specific official like a logistic officer to manage resources during an operation. Therefore, each agency manages their equipment in an uncoordinated manner without establishing the staging area for the equipment management.

It can be concluded that responders, for the span of control in NDM, are working under the supervision of one senior official as a leader. However, there is no specific minimum and maximum number of officials which one supervisor can manage in one set of responders in NDM. Yet, agencies in NDM are using span of control that varies from three to ten members per set of responders. Furthermore, equipment are not properly managed and coordinated in NDM as there is no establishment of a staging area during the operation.

b) Recommendation

The agencies of NDM must apply the ICS in managing both planned and unplanned operations in NDM. ICS is very useful because it specifies the accepted span of control that one supervisor can monitor and mentor during an operation (See section 2.3.5, Chapter 2). The ICS tool only allow a minimum of three and maximum of seven (five being an optimal number) responders that a supervisor can effectively and efficiently manage during the operation (See section 2.3.5, Chapter 2). The application of ICS in NDM will assist the agencies to have one common span of control and eliminate an inconsistence in the number of responders informed by different organisations' SOPs (See section 4.3.7.1, Chapter 4). The agencies in NDM will easily integrate into the ICS span of control as agencies in NDM are already working under the span of control principle. Currently, the only lack is a specified and common tool to manage operations. Furthermore, the application of ICS will improve the management of equipment, with the ICS organisational structure providing the function for logistics management.

5.4.8 Planning process for both planned and unplanned operation

Planning is a critical aspect of the operation to ensure that objectives of the operation are achieved. Therefore it is the responsibility of the first responder to ensure that planning processes are initiated promptly for the benefits to save lives, infrastructure and the environment. The command structure and section chiefs have the responsibility to participate in the planning processes throughout the duration of the operation. The ICS consists of the unique principle of planning which is called the “Planning P” process. The planning process of the ICS consists of nine consecutive steps to ensure effective planning and management of the operation (See section 2.3.6, Chapter 2). These nine
consecutive steps involve meetings that are grouped into five phases with specific objectives to achieve during the planning process. The end result of these planning meetings is to develop the Incident Action Plan (IAP) which must be adopted as a guiding plan for operation. It is therefore recommended that all members of the command structure, as well as the section chiefs should participate in the Planning “P” process.

The “Planning P” process from the ICS tool calls for continuous planning throughout the operation to assure that objectives and IAP are aligned throughout the operation (See section 2.3.6, Chapter 2). Therefore the planning “P process of the ICS reinforce the efficiency and effectiveness of the duties that are executed for the positive outcome of the operation (See section 2.3.6, Chapter 2).

5.4.8.1 Planning process for planned operation

a) Conclusion

The study findings revealed that the planning process of planned and unplanned operations in NDM are being management differently. The planned operations are management through the application of the Safety at Sports and Recreational Events Act 2 of 2010 (Act 2 of 2010) (See section 2.5.1, Chapter 2 and section 4.3.8, Chapter 4). This requires the event organiser to apply for risk categorisation of the event to the South African Police Services (SAPS) according the Act 2 of 2010 (See section 4.3.8, Chapter 4 and section 2.5.1, Chapter 2). The event will then be categorised either as low-risk, medium-risk or high-risk. Therefore different categorisation will require different planning prior and during the operation. The following section presents the planning processes of the low-risk separately; and medium to high-risk combined.

5.4.8.1.1 Low-risk event planning processes in NDM

a) Conclusion

The study findings revealed that the event organiser, as guided by the section 15(2) of Act 2 of 2010, manages all low-risk operations in NDM (See section 4.3.8.1.1, Chapter 4). Therefore the event organiser has the responsibility to arrange and coordinate plenary meetings prior to the operation (See section 2.5.1, Chapter 2 and section 4.3.8, Chapter 4). The main objective of the plenary meeting is to brief all the emergency agencies about the plan and logistics of the event (See section 4.3.8.1, Chapter 4). It is the responsibility of the event organiser to brief the agencies regarding the risk assessment of the operation.
so that the emergency agencies can advise the event organiser regarding the appropriate measures that can be taken to ensure the safety of the lives, infrastructure and the environment (See section 4.3.8.1.1, Chapter 4).

After the plenary meetings that are done prior to the event, there is no planning meetings during the event to monitor and evaluate activities of the operation (See section 4.3.8.1, Chapter 4). Therefore, the planning only occurs before the start of the event and no planning during the low-risk events in NDM.

b) Recommendation

The agencies of NDM must apply the ICS in managing low-risk event (planned operation) in NDM. The application of the ICS in NDM will ensure proper management and coordination of the low-risk events. Therefore the application of ICS will provide the standardisation of how the low-risk events should be managed within the jurisdiction of NDM. Furthermore the application of ICS will centralise the management of low-risk events through emergency agencies as the current arrangement by Act 2 of 2010 that allows any organiser to coordinate the low-risk event (See section 4.3.8.1.1, Chapter 4). The application of ICS will allow the proper application of the planning “P” process to effectively and efficiently plan for low-risk events in NDM. The research data has revealed that a low-risk event in NDM does not plan correspondingly during the event or evaluate the progress during the operation (See section 4.3.5.1.1, Chapter 4). Therefore the application of ICS in NDM will introduce the planning habit which should occur throughout the operation to ensure that the operational plan is aligned with the operations for the duration of the event.

5.4.8.1.2 Medium and high-risk event planning processes in NDM

a) Conclusion

It has been established that the authorised member of SAPS, as it is outlined by section 15(2) of Act 2 of 2010, manages the medium and high-risk planning processes in NDM (See section 4.3.8.1.2, Chapter 4). The planning processes happens prior the event and as the process develops, one master operational plan is drawn up and all agencies give input as per their respective contingency plans. However, it was discovered that no planning processes exist during the operation to review, monitor and evaluate activities of the master plan (See section 4.3.8.1.2, Chapter 4). The planning during the operation will only happens when a specific challenge or incident arise during the operation (See section 4.3.8.1.2, Chapter 4). The authorised member from SAPS will only brief the agencies about the objectives of the master plan before and after the operation.
Therefore, the planning processes of all planned events in NDM do not occur as outlined in Figure 2.2 through the literature review (See section 2.3.6, Chapter 2).

b) Recommendation

The agencies of NDM must apply the ICS in managing medium and high-risk events (planned operation) in NDM. The application of the ICS in NDM will ensure proper management and coordination of the medium and high-risk events. The application of ICS will allow the proper application of the planning “P” process to effectively and efficiently plan for medium and high-risk events in NDM. The Planning “P” include a series of planning meetings with very specific outcomes throughout the operation which also include review meetings during the operation to evaluate the outcomes versus the operational plan (See 2.3.6 Chapter 2).

Therefore, the application of ICS in NDM will eliminate the bad habit of planning during the operation only when challenges arise (See section 4.3.5.1.2, Chapter 4; see section 2.3.6, chapter 2). Therefore the application of ICS in NDM will maintain the proper monitoring and evaluation of the master plan versus the activities during the operation through the application of the planning “P”.

5.4.8.2 Planning process for unplanned operation in NDM

a) Conclusion

The study findings revealed that quick planning only occurs in the beginning of the operation, immediately after receiving the brief from the first responder in NDM. This quick planning is to outline the proposed plan of action to save lives, infrastructure and the environment (See section 4.3.8.2, Chapter 4). Beyond the quick planning at the beginning, the agencies in NDM do not hold any planning meetings during the operation to evaluate the plan of action that was formulated at the beginning of the operation (See section 4.3.8.2, Chapter 4). However, the planning during the operation only occurs when a challenge or incident arise during the operation.

The planning processes during the unplanned operation is not taking place according to Figure 2.2 of the literature review (See section 2.3.6, Chapter 2).

b) Recommendation

The agencies of NDM must apply the ICS in managing both unplanned and planned operations in NDM. The application of the ICS in NDM will ensure proper management and coordination of any type of operation when there is involvement of emergency
services agencies. The benefits of application of ICS in NDM will improve the planning processes during the operation. The data collected from the research has revealed that there is no planning during the operation hence the planning “P” encourage the continuous planning when ICS is implemented (See section 4.3.8.2, Chapter 4). Furthermore, the application of ICS will destroy the habit of planning during the operation only if there are challenges during the operation but install the culture of planning throughout the operation for the purposes of monitoring and evaluation (See section 4.3.8.2, Chapter 4 and section 2.3.6, Chapter 2).

5.5 Conclusion

The application of the ICS tool in NDM will integrate and standardise the management of planned and unplanned operations within the jurisdiction of NDM.

The generalised management tool in the USA called Incident Command System was used to improve the management of operations throughout the country. This is the same purpose that the recommendations are aiming to achieve with regard to NDM. Section 44(1)(b) of the Disaster Management Act 57 of 2002 empowers the NDM Disaster Management Centre to ensure there is integration among the agencies irrespective of the sphere of government. Based on this legislation provision, it is paramount for NDM Disaster Management Centre to formulate clear responsibilities and authority level of the IC to eliminate confusion around the function of the IC. Therefore, the integration between the agencies can be achieved through the application of the ICS for better management of operations in NDM.

The findings from Chapter 4 confirm that some of the principles of the ICS are being applied in NDM. Thus, the application of some principles of ICS in NDM provides a great opportunity for the positive application of the entire ICS tool in order to improve the management of operations in NDM.

The study to explore the application of the ICS in the Nkangala District Municipality, Mpumalanga has been done to contribute to the new body of knowledge regarding the management of the operations in NDM. Therefore, the findings and recommendations can be used to improve the management of operations in NDM concerning the application of the ICS.


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ANNEXURE B: RESEARCH QUESTIONS –

Guidelines for semi-structured interviews

The data was collected by asking these questions:
1. When working on the incidents and planned events operation within NDM is there a generalised management tool that is being used?
   
a) If yes, can you explain to me how this management tool works?
   
b) If no, how the operations are being management in NDM?
2. How does your agency ensure there is unity and uniform during the operation?
   
a) How does the standardization in your agency compare with other agencies what are the similarities, what are the differences?
3. Who is having the authority to direct the operations within the NDM and why?
   
a) How this authorised person is ensuring that fellow personnel comply to his/her directives during the operation?
4. Do you establish the authorised structure to direct the operations in NDM?
   
a) If yes, how is being done and the significance of it?
   
b) If no, how the operation is being managed?
5. Does the agencies in NDM do hand over of the duties into the incoming person to direct the operation?
   
a) if yes, what is the significance?
   
b) if no, what is the cause not to do it?
6. How does your organisation/agency manage the incident or planned event where there are more than one agency involved?
7. What are the benefits of establishing the authorised structure with more than one agency in one operation?
8. How does your agency manage information and reporting during the operation?
9. How are resources (human and tools) are being managed during the operation?
10. Please explain how the planning process for operations are done in NDM?
11. What do you think can be done to better manage the incidents and planned events in Nkangala District Municipality?