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**Interagency collaboration in mass gatherings:
the case of public health and safety
organizations in the 2012 London Olympic
Games**

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Declaration

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Abstract

Mass gatherings such as the Olympic Games pose unique challenges for interorganizational collaboration. Such events often bring together organizations that collaborate irregularly or have never engaged in joint working. They involve interaction and collaboration among multiple and diverse agencies aiming at delivering a service to a large clientele, which can often prove challenging. This study used the 2012 London Olympic Games as the empirical setting to examine the interagency collaboration among the multiple and diverse public health and safety organizations involved in one of the world's largest mass gatherings.

A single, holistic and exploratory case study design was used and data were collected before, during and after the Games through 39 semi-structured interviews with key informants, direct observations of field exercises and documentary analysis. Data collection commenced in May 2011, 14 months before the actual Games, and was completed in October 2012, two months after the completion of the Games. Template analysis was used to thematically analyze the interviews' transcripts, the fieldnotes from observations and the documents.

Findings discuss interagency collaboration in mass gatherings along three main activity domains: leadership, communication and learning. In each domain, a number of challenges and facilitators emerged influencing interagency collaboration.

Regarding the leadership domain, the lack of engagement of the leading organization and the ambiguous interorganizational decision-making processes negatively influenced collaboration. Shared micro-level leadership and the use of interorganizational linkages enabled collaborative working. Experienced positional leaders of each organization enabled the decision-making process at the interagency operational level by exercising a range of interpersonal leadership capabilities including flexibility and the ability to negotiate. Codified frameworks at the organizational level also provided leaders with common ground to assist them manage the complex interorganizational processes.

Within the second domain, the complex intraorganizational structure of the involved agencies and the high density of information transmitted were associated with a dysfunctional communication experience. Findings revealed that the crafting of boundary-spanning roles and intense face-to-face interaction positively contributed to interagency collaboration. Online information systems and formal intersectoral dissemination of reports were essential in gaining common situational awareness. The implicit cultural rules in the form of communication etiquette shaped how interorganizational collaboration was perceived.

Finally, sharing the acquired knowledge was a necessary step to create an enabling collaborative environment among interacting organizations. Experiential learning was identified as a significant factor which helped promote joint understanding and partnership work. Informal interpersonal exchanges and formal knowledge transfer activities facilitated knowledge sharing across interorganizational boundaries, helping to break down silos.

The study outlines challenges and strategies that shaped interagency collaboration in the context of mass gatherings. Practical implications arising from this study inform the ways organizers of mass gatherings, public health and safety agencies and professionals can engage in effective partnerships and joint working.

List of abbreviations

BMC:	Biomed Central
BMJ:	British Medical Journal
BRC:	British Red Cross
C3:	Command, Coordination, Communication
CBRN:	Chemical, Biological, Radiological and Nuclear
CCA:	Civil Contingencies Act
CDC:	Centre for Disease Control and prevention
CMO:	Chief Medical Officer
COBR:	Cabinet Office Briefing Room
ConOps:	Concept of Operations
DCMS:	Department for Culture, Media and Sport
DfT:	Department for Transport
DH:	Department of Health
EA:	Environment Agency
ECDC:	European Centre for Disease prevention and Control
ERIC:	Education Resources Information Centre
FSA:	Food Standards Agency
GLA:	Greater London Authority
GOE:	Government Olympics Executive
GP:	General Practitioner
HCIDC:	Hellenic Centre for Infectious Diseases Control
HMIC:	Health Management Information Consortium
HO:	Home Office
HPA:	Health Protection Agency
IBSS:	International Bibliography of the Social Sciences
IOC:	International Olympic Committee
IPA:	Interpretive Phenomenological Analysis
LA:	Local Authorities
LAS:	London Ambulance Service
LFB:	London Fire Brigade
JLARS:	Joint Local Authority Regulatory Service
JMC:	Joint Maritime Coordination
LRF:	Local Resilience Forum
LOCOG:	London Organizing Committee of the Olympic Games
MACA:	Military Aid to the Civil Authorities
MCA:	Maritime and Coastguard Agency

MJA:	Medical Journal of Australia
MOC:	Main Operation Centre
MOD:	Ministry of Defense
MPS:	Metropolitan Police Service
MSc:	Master of Science
NHS:	National Health Service
NOC:	National Olympic Committee
NOCC:	National Olympic Coordination Centre
NRE:	National Resilience Extranet
OCC:	Olympic Coordination Centre
OCOG:	Organizing Committee of the Olympic Games
ODA:	Olympic Delivery Authority
ODC:	Olympic Deployment Centre
OECR:	Olympic Event Control Room
OGs:	Olympic Games
OSD:	Olympic Security Directorate
OSSTET:	Olympic Safety and Security Testing and Exercising Team
PCT:	Primary Care Trust
PDM:	Prehospital and Disaster Medicine
PICO:	Population Intervention Context Outcome
SAR:	Search and Rescue
SBC:	Strategic Briefing Cell
SCC:	Strategic Coordination Centre
SitRep:	Situation Report
SOR:	Special Operations Room
SW:	South West
TA:	Template Analysis
TCC:	Transport Coordination Centre
TfL:	Transport for London
VANOC:	Vancouver Organizing Committee
VTC:	Video Teleconferencing
WHO:	World Health Organization

Definitions

For clarity, this thesis employs the following definitions:

1. 'Mass gatherings' (also known as 'planned events') are defined as 'events attended by a sufficient number of people to strain the planning and response resources of a community, state or nation' (WHO, 2008). Mass gathering and mass event are used interchangeably and Olympic Games represent a mass gathering.
2. 'Public health' is a social concept aimed at promoting health, preventing disease and prolonging life through the organized efforts of society (WHO, 1998). The *public health* mission is consistent with the mission of *public safety* and first responder agencies. Public health and public safety share the same broad goals of protecting the community's health and safety (Institute of Medicine, 2002).
3. 'Public health professional' is defined as 'a person educated in public health or a related discipline who is employed to improve health through a population focus'. 'Public health and safety workforce' includes traditional first responders such as law enforcement and fire protection services in addition to local and state public health employees (Institute of Medicine, 2002). In this study, when I refer to public health and safety agencies and professionals, I include Category 1 and 2 responders who, according to the Civil Contingencies Act (2004), are police forces, fire and ambulance services, coastguard, local authorities, NHS (primary care, hospital and foundation trusts), health protection and environment agency, transport and voluntary organizations. I also include the Military service, which has the duty to support Category 1 responders.
4. 'Collaboration' is a mutually beneficial and well-defined relationship between two or more organizations to achieve common goals (Huxham, 2000). It is a process where individuals or services work together to achieve something that neither an individual nor an agency could achieve on their own (Gray, 1985).

Chapter 1

Introduction

1.1 Mass gatherings and public health

Mass gatherings are an increasingly common feature of our society. These events are defined in various ways and there is no agreed definition of what a mass gathering actually is. Rose et al. (1992) describe them as events attended by more than 1,000 people at a specific location for a defined period of time while DeLorenzo (1997) refers to more than 25,000 attendees. In 2008, the World Health Organization (WHO) provided a definition more appropriate to public health and more relevant to this study: 'Mass gatherings are defined as events attended by a sufficient number of people to strain the planning and response resources of a community, state or nation' (WHO, 2008, p.14).

Mass gatherings can be unplanned, spontaneous, for example, the Pope's funeral, or prepared in advance, planned events; the latter can be recurrent events in different locations (Olympics, World Cup) or recurrent events in the same location such as the Hajj annual Islamic pilgrimage to Mecca and the Wimbledon tennis tournament. They can further be divided into the international ones such as the Olympics, the Hajj or the World Youth Day and national ones such as the London Notting Hill Carnival. Other examples of mass gatherings are rock concerts, fairs and festivals, political rallies and conferences (Arbon, 2005).

The decision to host a planned mass gathering is usually made well in advance and the agencies involved have time for planning. Such planning is of paramount importance for the success of the event and preparing the public health and safety systems ranks among its most important aspects. Such events usually represent significant challenges for the public health and safety sector of the host countries (Flabouris et al., 2004; Meehan et al., 1998). The distinctive features of these events that can affect public health and safety services include their wide geographical spread, large levels of attendance, event duration and the security concerns they present (DeLorenzo, 1997). The goal for public health and safety during mass gatherings is to prevent or minimize the risk of injuries or illnesses and maximize the safety for participants, spectators, staff and residents (Grange, 2002).

Major areas of public health responsibility involve the provision of health services to spectators and participants, mass-casualty preparedness, disease

surveillance and outbreak response, environmental health protection, public information, health promotion and preparedness for possible chemical, biological, radiological and nuclear (CBRN) incidents (Meehan et al., 1998). During mass gatherings, potential public health risks include communicable diseases, heat- or cold-related illnesses, foodborne and waterborne illness and mass-casualty incidents (Jorm et al., 2003). For instance, international travel may increase the risk of a communicable disease if many of the visitors attending the event are from areas where there are prevalent diseases that are not normally found in the host country. Furthermore, the huge number of meals served to visitors, staff and athletes increase the opportunity for foodborne disease outbreaks. In addition, due to mass-media coverage and high-profile of some types of these events, they can be targets to CBRN incidents.

Host countries have to strengthen their public health systems to be able to deal with a variety of potential health problems and emergencies. The primary objectives of the public health response system during these events are: a) to detect and respond rapidly to disease outbreaks; b) to prevent foodborne and waterborne infectious diseases; c) to ensure that medical response to individual emergencies and possible mass casualties would be efficient and of high quality; d) to respond to incidents potentially involving the deliberate use of explosives, biological and chemical agents or radionuclear material; e) to take advantage of mass gatherings as an opportunity to promote health prevention messages (Meehan et al., 1998). It is important to note that public health/safety is only one part of an integrated response to preparing for mass gatherings. Successful preparation for a mass gathering requires the participation of a variety of organizations across all sectors. Collaboration between many diverse agencies, even from sectors that do not usually work together, will help to ensure that each organization will respond effectively to a potential emergency, and provide streamlined integration of the responses of all the agencies.

1.2 Interagency collaboration during mass gatherings

Before discussing interagency collaboration in the context of mass gatherings and its importance, I will briefly discuss some of the key concepts related to collaboration. The terms collaboration, cooperation and partnership are often used interchangeably. Therefore, there is a need to examine their definitions in more detail. *Collaboration* is a process where individuals or services work together to achieve something that neither an individual nor an agency could achieve on their

own (Gray, 1985). The same author adds that collaboration is 'a process through which parties who see different aspects of a problem (domain) can constructively explore their differences and search for solutions that go beyond their own limited version of what is possible' (Gray, 1989, p. 5). On the other hand, *cooperation* involves working together with each other to achieve a shared goal while services maintain their independence (Frost, 2005). Gray (1989) notes that a main difference between cooperation and collaboration is the more structured and formalized decision-making process required for the latter. Collaboration can become formalized through partnerships. Frost (2005) defined *partnerships* as joint working arrangements between two or more organizations to achieve common goals. Partnerships may involve various levels of formality from verbal agreements to legally binding contracts.

Consequently, *interagency collaboration*, which is the focus of this study, describes how agencies interact to achieve a common goal that neither agency could achieve on their own. For the purposes of this thesis, I chose the term 'collaboration' in order to capture the full range of activities involved when public health and safety agencies work together towards a mass event in an attempt to achieve a goal (public health and safety) that could not be achieved through independent action by individual actors. These activities include forming partnerships, coordination and communication issues, information sharing and decision-making procedures, leadership and relationships issues and challenges and barriers during these processes.

Mass gatherings often bring together organizations that have never collaborated previously or may not have the experience working within the public health and safety field. Literature has shown that well-organized collaboration between public health and safety agencies is an important factor during mass gatherings. Hiltunen et al. (2007) noted that it is necessary to establish strong collaboration and excellent coordination systems, supported by interagency agreements, to ensure that all the key stakeholders understand their respective roles and responsibilities. They identified that managing diverse public health risks requires the collaboration of many different organizations during the planning stage. One important element of this process is the implementation of an incident command system which provides a clear delineation of roles and responsibilities for those involved in mass gatherings (Grange, 2002). Such systems ensure the coordinated response to potential public health problems and enable the collaboration among

different partners. Furthermore, several authors concluded that public health planning for such events requires the collaboration between local, regional, voluntary and national health-related services as well as with the official organizer, for example, the Organizing Committee of the Olympic Games (OCOG) (Enock & Jacobs, 2008; Grange, 2002; Tsouros & Efstathiou, 2007).

Five literature reviews on mass gatherings and their healthcare response have been published, two in 1997 (DeLorenzo, 1997; Michael & Barbera, 1997), one in 2002 (Milsten et al., 2002), one in 2007 (Arbon, 2007) and one in 2008 (Enock & Jacobs, 2008). Only Enock and Jacobs (2008) discussed the importance of interagency collaboration for managing the risk and impact of potential public health issues. They reviewed the literature relating to public health planning at major sporting events and included collaboration within the ten important areas of public health planning. They recognized that public health during such events requires a central command area to coordinate the key public health issues with clear delineation of roles and responsibilities and minimize harm through the action of collaboration. The authors recommended that interagency collaboration is the key to delivery of an efficient public health system at these events. Tsouros and Efstathiou (2007) published a book to present the experience and the lessons learned from the public health aspects of the preparations and operation of the Athens 2004 Olympic Games. They suggested that strong interagency collaboration is necessary to successfully manage the public health aspects of mass gatherings.

Within the field of mass gatherings, the examination of actors' collaboration is necessary to better understand the management of the events. Nonetheless, there is not enough literature examining how this collaboration happens in practice. The above literature only discusses the significance of interagency collaboration without explicitly describing the process. Most of the literature in the field of mass gatherings focuses on emergency department and hospital admissions, crowd management, risk communication, health surveillance systems and infectious diseases outbreaks and not on interagency collaboration which is also pivotal to ensure public health and safety (Zeitz et al., 2008). I decided to focus exclusively on the Olympic Games as a mass gathering to study the issue of interagency collaboration because they represent probably the largest and most complex international mass gathering (Tsouros & Efstathiou, 2007).

1.3 Olympic Games: a complex mass gathering event

The Olympic Games have become one of the most significant international sporting events (Roche, 2000). The first Olympic Games of the modern era were held in Athens in 1896. This international athletic event is characterized by large numbers of spectators, athletes, mass-media personnel and VIPs in a limited geographical area over a short period of time (Arbon, 2007). From a public health perspective, they represent a challenge for the host country. Athletes, staff and visitors need to receive high standards of hygiene for food, water and accommodation areas (Brennan et al., 1997). Some of the public health responsibilities around this field include assuring adequate venue capacity to inspect activities such as food preparation and service, drinking-water, air quality, monitoring environmental violations and coordinating interagency communication (Parrillo, 2007). Health services are also expected to be of high quality, easily accessible and be able to cope with the potential implications of large numbers of international athletes and visitors that the event attracts (Meehan et al., 1998).

Additionally, Olympic Games athletes can be at risk of contracting communicable diseases such as sexually transmitted infections. For example, at the Atlanta 1996 Olympic Games, public health services implemented a safe-sex campaign to limit the spread of sexually transmitted infections by using posters in multiple languages and distributing 50,000 condoms at the Polyclinic (Brennan et al., 1997). Moreover, in accordance with the International Olympic Committee (IOC) requirements, when candidate cities bid to host the Olympic Games, they need to be able to demonstrate that they have the ability to deal with public health emergencies caused by either natural or human-caused events. Other relevant public health issues during the Olympics include the need to ensure community emergency services capacity (staffing, vehicles and equipment) and adequate contingency capacity and disaster planning among emergency services. Therefore, building partnerships and close collaboration between various agencies is an essential task. Since the Games are scheduled usually around seven years in advance, the public health and safety agencies have time to plan, practice and develop plans on how they will collaborate with one another.

1.3.1 Sydney 2000 Olympic Games

In recent decades, Australia has had extensive experience of planning and hosting major sporting events including the Sydney 2000 Olympics, the Rugby World Cup in 2003 and the 2006 Commonwealth Games in Melbourne. For the 2000

Olympics, the government established the Olympic Coordination Centre in order to enable the collaboration between the public health and safety agencies for the management of incidents and emergencies. The public health preparations for this event relied on strong interagency collaborations, particularly among the Department of Health, other government agencies, health services and local councils. The government also established a comprehensive Olympic Health Surveillance System to effectively manage the public health aspects of the event. The main lesson learned by the Australian experience was that future host countries would benefit most by including all the partners during the planning and delivering stages, by developing ongoing relationships between public health and safety agencies and by forming specific working agreements (Jorm & Visotina, 2000).

1.3.2 Athens 2004 Olympic Games

For the 2004 Olympics in Athens, new legislation and a series of memoranda of understanding between various agencies were developed to support the joint planning and cooperation between them. In April 2004, the Greek government established the Health Coordination Command Centre, under the Ministry of Health, to coordinate all public health agencies and enhance the effectiveness of their response to any possible public health incident (Tsouros & Efsthathiou, 2007). It included an *interagency committee* with representatives from public health and safety organizations and a *command and control centre* for communication with all the relevant partners which was staffed 24 hours per day. More specifically, this centre created a daily public health status report during the Games period, monitored events with possible public health effects, provided public health information to other national and international command centres and managed public health resources.

Reflecting on the Olympic Health Surveillance System that was implemented during the Sydney 2000 Olympic Games, the Hellenic Centre for Infectious Diseases Control (HCIDC) enhanced its collaboration with other public health agencies, during the pre-Olympic period, to prepare their possible response to any public health incident during the Games. More specifically, it appointed at least one surveillance coordinator for each of the hospitals participating in the surveillance system to enable the coordination and information sharing process. Furthermore, daily person-to-person communication and sharing of information with the Hellenic Food Authority led to implementing coordinated and efficient control measures. In 2002, the HCIDC also initiated collaboration with the Health Services Department of the Athens 2004 Organizing Committee. Two health professionals from the HCIDC were present at

the Coordination Centre of the Health Services Department to develop good working relations and build this collaboration. The training that took place during the August 2003 test events also played an important role in developing a good level of collaboration. In order to formalize all the above relationships, the agencies signed a memorandum of understanding, referring to the terms of enhanced collaboration during the Games (Tsouros & Efsthathiou, 2007).

1.3.3 Beijing 2008 Olympic Games

When Beijing won the right to host the 2008 Olympics in 2001, their national public health and emergency response system, especially regarding mass gatherings, was relatively weak. This weakness was revealed with the outbreak of SARS in 2003. More specifically, there was a serious lack of information sharing between the public health and safety services, an absence of unified command and inadequate distribution of human resources. Based on the experiences of the Sydney Olympics in strengthening their communicable disease surveillance and response systems, the Beijing organizers developed new standard operating procedures for effective response to disease outbreaks. The government set up an integrated public health emergency system which included a command structure and related laws, regulations, policies and response plans (Dapeng et al., 2010). This system was intended to guarantee an effective response to any public health incident during the Games. A national public health emergency command centre was established to cover the State, provinces and cities. This command centre, which included services such as health agencies, police, railway and military, was responsible for response to potential serious events and it ensured the full integration and coordination of the human resources.

1.3.4 Vancouver 2010 Olympic Games

Considering the Australian Games which indicated that planning for a mass gathering needs a collaborative approach by the involved organizations, the Vancouver Organizing Committee (VANOC) prioritized collaboration during their planning. During the preparations of the 2010 Olympics, interagency collaboration took place between several partners including various levels of government (e.g. federal, provincial and local) and public health and safety agencies. Even during the bid phase, a multi-agency approach to hosting the Games was paramount within VANOC's strategy and was reflected in a variety of agreements and commitments. For example, the *Multi-Party Agreement for the 2010 Olympic and Paralympic Winter Games* indicates the first time an Olympic Host City has developed multi-agency

statements during the bid phase of the Games (Canada, 2010). VANOC managed to develop strong working relationships among partners including federal, provincial and public health and safety services.

The preparations and the planning for such an event provided an opportunity to enhance cooperation and integration between the above services including an improved understanding of each other's culture and procedures. The government of Canada also implemented an integrated emergency and disaster planning committee which linked to several partners (VANOC, Coastal Health Emergency Management, General Hospital Trauma Centre and the Provincial Emergency Planning Group) and was responsible for the emergency planning of each venue. They conducted a number of table top exercises and test events for full simulations of several scenarios of emergency situations and they provided training for staff in the use of mini-clinics and CBRN equipment (Vancouver, 2010).

1.4 The empirical case in this thesis

My study uses the 2012 London Olympic Games as the empirical context to examine how interagency collaboration took place among the multiple and diverse public health and safety agencies involved in preparation for and during this mass gathering. My research question is: *How was interagency collaboration among public health and safety agencies shaped in preparation for and during the 2012 London Olympic Games?* The aim of this study is to provide a deeper understanding of how interagency collaboration can be facilitated during the public health and safety planning for mass gatherings such as the Olympic Games. The objectives of the study are threefold:

- a) To provide a rich description of the context in which public health agencies collaborated in the lead up and during the 2012 Olympics;
- b) To delineate how professionals from diverse organizational backgrounds interacted as part of the collaborative process;
- c) To identify perceived facilitators or barriers to collaboration as articulated by the professionals involved in the planning process.

In meeting these objectives, this study will contribute to the emerging body of literature which seeks to map and understand the complex terrain of interagency collaboration. The new knowledge generated also has the potential to inform planning for future mass gatherings.

For this study, I adopted a qualitative case study methodology and the research methods comprised semi-structured interviews, direct observations and documentary analysis. My research was conducted from May 2011, 14 months before the actual Games, until October 2012, two months after the completion of the Games. The agencies that participated in the study had to belong to category 1 and 2 responders (plus the Military service) because, according to the UK legislation and specifically the Civil Contingencies Act (CCA, 2004), these services have duties in the event of an emergency and have responsibilities for carrying out the legislation. Category 1 responders are known as core responders and they include the following services: (1) Metropolitan Police Service (MPS), (2) London Fire Brigade (LFB), (3) London Ambulance Service (LAS), (4) Maritime Coastguard Agency (MCA), (5) Local Authorities (LA), (6) National Health Service (NHS), (7) Health Protection Agency (HPA) and (8) Environment Agency (EA). Category 2 responders act in support of Category 1 responders and they are mostly voluntary and transport organizations. I also included the Military service which according to a function called 'Military Aid to the Civil Authorities' (MACA) has the duty to support Category 1 responders (LESLP, 2012).

The above services had specific roles during the Games regarding public health and safety. The MPS had to work together with other agencies and deliver safe Games, prevent crime, maintain public order and provide a coordinated response to emergency incidents. The LFB was committed to deliver operational contingency plans for every venue and event and develop a community safety programme. The Ambulance Service had to ensure that an appropriate level of ambulance service was in place to meet the statutory requirements within the Games venues and any additional workload because of the Games. The MCA was responsible for policing river Thames and assuring its security in order to enhance the safety of the Olympic venues. Local authorities were responsible for a number of resilience plans including mass evacuation and mass casualties to make sure they were sufficient for the Games.

All the NHS organizations were responsible for maintaining robust capacity and business continuity planning and providing assurance on the organization's preparedness. The HPA's main role was to deliver public health information, risk assessment, diagnostic testing and disease control measures throughout the Games. The Environment Agency was committed to respond in case of a flood or another environmental incident during the Games. The Transport service's role was to deliver

a successful and committed transport infrastructure. The British Red Cross (BRC) had to provide first aid support at the capital's major rail stations. Finally, the Military role was to provide the extra capability and manpower support that the police and the Home Office (HO) needed to secure the Games.

The place of my study was London and more specifically each organization's headquarters and operation rooms. My research took place in three stages: a) during the preparations for the Games I interviewed my participants and observed six meetings and four exercises of several agencies, b) during the actual Games I observed four operation rooms of different services, and c) after the completion of the Games I conducted my second set of interviews. I conducted the main interviews during the preparation stage for the Games and some follow-up interviews with the same informants after the Games to complement the main ones and capture the participants' experiences during the actual Games. The purpose of the observational data I collected was to supplement and support (or refute) the findings from the interviews. During my observations, I focused on interagency and personal relationships, collaboration practices, examples of communication flow among the agencies, decision making and information sharing processes and encountered problems and their management.

1.5 Thesis overview

Chapter One provides background and 'scene setting' information for the study. Chapter Two reviews the literature on interagency collaboration during public health preparedness for previous Olympic Games and other mass gatherings and provides the reader with an opportunity to become familiar with previous research undertaken in this area. It also discusses the theoretical frameworks that this study draws on in order to help explain its findings. A description and discussion of the methodology and methods employed in this study is presented in Chapter Three. Chapter Four provides the fieldwork context in which different actors collaborated in the lead up and during the 2012 Games. The next three chapters present the research findings. More specifically, they discuss how the three activity domains of leadership, communication and learning shaped interagency collaboration before and during the London Olympic Games. In chapter Eight the findings of the research are discussed. This final chapter presents an emerging and empirically-informed model of Interagency Collaboration for Mass Gatherings as suggested by the research findings and new insights. It also states the theoretical contribution of this thesis and

includes important implications for practice as well as future direction for research into interagency collaboration in mass gatherings.

Chapter 2

Literature review and theoretical foundation

2.1 Introduction

Having situated the research problem, the purpose of this chapter is to locate my study empirically and theoretically by examining the existing literature. The first section of the chapter reviews the empirical literature on interagency collaboration in mass gatherings and identifies potential gaps in the area. More specifically, a literature review serves two purposes: first, it provides evidence for the significance of the study; and second, it determines the important intellectual concepts that guide the study and contribute to the development of a conceptual framework (Strauss, 1987). The question of my research is: *'How was interagency collaboration among public health and safety agencies shaped in preparation for and during the 2012 London Olympic Games?* Therefore, the purpose of this literature review is to investigate the existing body of literature regarding interagency collaboration among public health and safety services preparing for the Olympic Games and other mass gatherings.

The second section of the chapter discusses how interagency collaboration has been defined in the literature and presents the theoretical frameworks for this study. The aim of the theoretical frameworks used in this study is to facilitate the understanding of the phenomenon under study and direct the process of data collection and analysis. There are many theoretical frameworks that could be used to understand the complex phenomenon of collaboration. In this study, I used the concept of organizational field which helped me to illuminate the context of my case where interorganizational collaboration took place and one theoretical framework from healthcare interprofessional practice literature called the 'Structuration Model of Interprofessional Collaboration' which enabled me to understand the determinants of interagency collaboration and guide my research. It is necessary to provide the above background because it will enable readers to assess the contribution of this study within the larger empirical and theoretical framework.

2.2 Systematic literature review

Evaluating the current knowledge in a field as divergent and broad as collaboration raises a number of issues such as biases and insufficiency. For this reason, the systematic review approach, which has its origins in the medical science for assessing the evidence of the effectiveness of specific interventions, has been

chosen for this research (Aveyard, 2010). Systematic reviews follow explicit and replicable methods in order to ensure transparent, reliable and unbiased outcomes. Therefore, this chapter starts with the method section by presenting the literature review questions. This is followed by identifying the inclusion and exclusion criteria according to the population, intervention, context and outcome (PICO) of the questions. It then describes in detail the data collection process and the search strategies that were followed. The screening of the titles, the abstracts and the full text of the papers are also discussed here. The results section provides a brief description of the included papers and presents the findings of the papers in themes. The discussion part relates the findings from synthesizing the papers with the rationale and the purpose of this study, describes the strengths and the limitations of this review and gives recommendations for future research.

2.2.1 Methods

2.2.1.1 Generating literature review questions

Systematic reviews begin with clear questions which help the researcher decide what literature is relevant to the topic or not (Aveyard & Sharp, 2009). Once the rationale for this review had been identified, the determination of the questions guided the review. In order to investigate interagency collaboration during mass gatherings such as the Olympic Games, this review addressed the following questions:

1. What evidence is there for public health planning for the Olympic Games and other mass gatherings?
2. What evidence is there for collaboration among public health and safety agencies during the Olympic Games and other mass gatherings?

The first question is broader and investigates the wider field of public health planning for mass events in order to explore the factor of collaboration within this planning. The second question clearly examines the knowledge around collaboration during these events. The generation of the above questions was mainly influenced by my MSc studies which focused on 'Civil Emergency Management-Interprofessional Practice' and my professional knowledge and interest around this field. I then proceeded to frame my review questions and determine the criteria for inclusion and exclusion.

2.2.1.2 Framing the review questions

The PICO framework was originally developed for therapy questions and later extended to all types of clinical questions (Armstrong, 1999). Studies have shown that the use of the PICO method leads to more complex search strategies and more precise search results (Booth et al., 2000). This means that it can be flexible as a tool and useful for other types of studies than the clinical ones. I used the PICO framework to guide my literature search because it allowed me to have a more comprehensive and detailed approach when searching databases such as Medline (Heneghan & Badenoch, 2002). After identifying the PICO terms, I then translated them into database vocabulary (e.g. MeSH terms), in order to conduct the searches. The PICO strategy enabled me to conduct more specific searches of databases and create unambiguous criteria for selecting studies (Sackett et al., 1997). The PICO that was used in this literature review was the following:

- Population: 'public health and safety agencies', 'emergency agencies', 'healthcare professionals'.
- Intervention: 'public health planning', 'interagency collaboration'.
- Context: 'Olympic Games', 'mass gatherings'.
- Outcome: 'delivery of healthcare', 'cooperative behaviour'.

2.2.1.3 Inclusion-exclusion criteria

In order to obtain a representative sample of relevant studies, the criteria for inclusion and exclusion were established at this stage (see Table 2.1). The particular criteria were influenced by the review's focus and the questions' framework that was described previously. Regarding the inclusion criteria, the first was that studies needed to discuss the issue of public health planning and the factor of interagency collaboration for the Olympic Games and other mass gatherings and address these topics to organizations and professionals. Secondly, because the scoping review I conducted before the systematic one showed that most of the relevant studies to this review had not used standard study designs but were anecdotal reports, this review included various types of methodologies. Finally, this review included not only studies in peer-reviewed journals, but also papers published as reports, conference abstracts or unpublished papers so as to avoid publication bias. Details concerning publication bias are discussed later in this chapter.

Similar to the inclusion criteria, a number of exclusion criteria were also defined (see Table 2.1). First, studies that referred to populations other than public

health and safety agencies and professionals (e.g. volunteers, athletes) were excluded. This was because the research question focuses on public health and safety agencies working for a mass event and a study referring to other population would be irrelevant with this study's aims. Similarly, a second exclusion criterion was a study focus that was not relevant to public health planning and interagency collaboration. More specifically, a study was excluded if its outcomes did not provide any information about the above issues. Thirdly, a study setting other than Olympic Games and large-scale mass gatherings was excluded from this review.

Table 2.1: Inclusion-exclusion criteria

Inclusion criteria	Exclusion criteria
P: Public health/safety organizations Emergency agencies Healthcare professionals	Volunteers, athletes
I: Public health planning Interagency collaboration	Not relevant to public health and safety and collaboration
C: Olympic Games Mass gatherings	Other settings
O: Delivery of healthcare Cooperative behaviour	Not relevant to healthcare, public health/safety, collaboration
All study designs	-
All publication types	-

2.2.1.4 Publication bias

Publication bias appears whenever the studies that are included in the published literature are unrepresentative of the population of existing studies (Begg & Berlin, 1988). More specifically, a study is more likely to be published if it shows a statistically significant or otherwise a positive result. When studies with negative results are not published, then the evidence of an effect can be overrated if the researcher is based only on published literature (Song et al., 2009). Publication bias is a potential threat in all kinds of research such as quantitative and qualitative studies, narrative reviews and meta-analysis.

In qualitative research, non-publication seems to be related to the quality of the methodological approach of the study (Petticrew et al., 2008). For instance, studies that do not have clear objectives and credible findings are likely to remain unpublished. Consequently, systematic reviews may be biased if they rely only on published papers. In qualitative research, bias can be reduced by locating unpublished studies (grey literature, conference abstracts, contacting experts) and by updating the systematic review (Song et al., 2010). A systematic review is likely to be a biased process; however, the above measures can be taken so as to minimize its impact. In order to minimize bias in my review, I took the following steps:

1. I did not rely only on published papers and I searched for grey literature and conference abstracts.
2. I contacted authors of my key papers in order to provide me extra information (non-published articles, conference proceedings, courses presentations).
3. I hand-searched key journals and scan reference lists.
4. I set database search alerts.

2.2.1.5 Data collection process

I used a number of methods in order to identify relevant documents and publications. Different approaches for locating articles enabled me to minimize bias in the review process and form a literature review that could be reproduced. The approaches that I used were the following: first, searching electronic databases; second, scanning reference lists; third, hand-searching key journals; fourth, contacting authors; and fifth, searching Internet sources for grey literature.

The first database that I used was Medline through EBSCO host because it is more commonly used for healthcare topics (Medline Plus, 2011). During the first approach, I used MeSH searches and Text searches in a very systematic way. However, because the subject is new and the current Mesh and index terms are too medical orientated, indexing these terms (PICO terms) was not very useful, and I considered this first search to be unsuitable for this review because of the irrelevancy of the results. For this reason, I proceeded to a second search strategy. The results of this first approach are described in Appendix 1.

The second strategy included two approaches: first, Boolean searches, and second, free text searches. Influenced by the PICO, the terms that I used for both approaches were: 'public health agencies', 'healthcare professionals', 'community

services', 'public health preparedness', 'public health planning', 'public health management', 'interagency collaboration', 'interagency communication' 'population surveillance', 'Olympic Games', 'mass gatherings' and 'public health'. The Boolean approach uses 'AND', 'OR' and 'NOT' so as not to miss a relevant paper to the topic (Littleton et al., 2004). Appendix 2 describes the terms that were used during the Boolean searches. Within the second approach, I used free text terms and Subject headings which led to a significant number of articles (see Appendix 2).

After searching Medline, I continued searching for articles in other databases such as Cinhal, Bandolier, King's fund, Econlit, Embase, Education Resources Information Centre (ERIC), Health Management Information Consortium (HMIC) and International Bibliography of the Social Sciences (IBSS). These searches were more focused since these databases were deemed as subordinate ones and the Medline was used as the main one because of the health related topic. Therefore, I did two searches in each database as follows: first, I used the keywords 'Olympic Games' and 'mass gatherings' as free text in the abstract field (1st search); second, I did a multi-field search using the terms 'collaboration', 'healthcare professionals' and 'Olympic Games' by using the Boolean 'and' between the terms (2nd search). The results of these searches on each database are described in Appendix 3.

Having searched the above electronic databases, I continued with the remaining 4 approaches. Scanning the reference lists of the articles that I found through the electronic databases provided 244 relevant articles. The journals that I searched were the 'Prehospital and Disaster Medicine' (PDM), 'Public Health', 'Biomed Central' (BMC), 'British Medical Journal' (BMJ), and 'The Medical Journal of Australia' (MJA). I selected these specific journals because most of the relevant articles identified in electronic databases were published in these journals. In each journal, I conducted two searches as those I used in the subordinates databases (see Appendix 3).

I also made a direct contact with 3 authors, whose published studies were focused on mass gatherings, by sending them emails. Two of them replied and sent me not only their papers but also other articles that could be useful to my review. In total they sent me 31 papers, but none of them relevant to my study. Finally, I searched Scopus, BUBL and Google in order to widen the search beyond peer-reviewed publications. In Scopus and in BUBL, I carried out the same two searches as the ones I did in the subordinate databases (see Appendix 3). In Google, I did a

free text search using the terms from the previous searches which did not provide any new and relevant document. All the previous results were exported to RefWorks software which enabled me to create folders, import, export and create references, create a bibliography and place citations and bibliographies into a Word document. Having conducted the previous searches, the total result was 4476 articles. By removing the duplicates (2678), a total of 1798 papers remained. The next step was the study selection. This was conducted in three stages: a) title screening b) abstract screening and c) full-text screening.

2.2.1.6 Screening

During the title screening, I excluded a number of studies because they did not meet the primary inclusion criteria. Consequently, guided by the PICO framework, I divided the excluded studies into four different categories. The first category included 386 articles which referred to volunteers and athletes and not to public health agencies and health care professionals. In the second group, 60 studies focused on issues other than collaboration during public health preparations such as drug testing, vaccines, poisoning, physiotherapy and pharmaceutical services. The third list was comprised of 1048 papers which studied public health preparedness or interagency collaboration but not in the context of Olympic Games and major sporting events. The last category included 45 articles that examined different outcomes such as economic analysis of the Games. As a result, 1539 articles were rejected because of the above reasons and 259 papers remained for the abstracts' screening.

I divided the studies that I excluded during the abstracts screening into similar categories as the previous ones. The first group included 35 articles which referred to athletes and examined the issue of sports injuries. The second group comprised of 37 articles which discussed the history of Olympic Games. The third category included 45 studies which examined public health planning within single day events. The fourth group listed 30 papers whose outcome was not the issue of public health and collaboration but other topics such as ethics and occupational health. As a result, I rejected 147 papers out of 259 because of the above reasons and 112 remained to be obtained in full-text so as to be assessed in detail against the inclusion criteria.

During the procedure of acquiring full-text articles, I used a number of resources. First, I used City University library (plus inter-library loans) and the University of Athens library where I found the majority of the articles. Second, some articles were available on the Internet. Third, I searched NHS Evidence Health

Information Resources by using the Athens account. Fourth, I obtained a number of papers from the UCL library. Finally, I made some direct contacts with two authors who responded and provided me their papers. In conclusion, I found all the 112 articles and I proceeded to read them in full-text. After a thorough reading, only 16 papers out of 112 were deemed relevant to the review questions (Black et al., 2014; Brennan et al., 1997; Dapeng et al., 2010; Dwivedi & Cariappa, 2015; Enock & Jacobs, 2008; Grange, 2002; Hadjichristodoulou et al., 2006; Hiltunen et al., 2007; Klauser, 2015; Kononovas et al., 2014; Meehan et al., 1998; Parent et al., 2009; Parent et al., 2011; Sharp et al., 1998; Thackway et al., 2009; Tsouros & Efstathiou, 2007) (see Table 2.2, Figure 2.1). The last step I took in order to keep up to date with the literature relevant to my field and not to miss important information was to set database search alerts. More specifically, I saved my searches in Medline and Embase as an alert and Ovid and EBSCO re-ran them at regular intervals and emailed me new results. All of these papers referred to collaboration as an important factor for the public health planning of mass gatherings; however, none of them explicitly examined the issue of interagency collaboration or elaborated on its components. Having explained the whole procedure of identifying and selecting relevant documents, I will now discuss the content and the findings of the articles.

Figure 2.1: Systematic review flow diagram

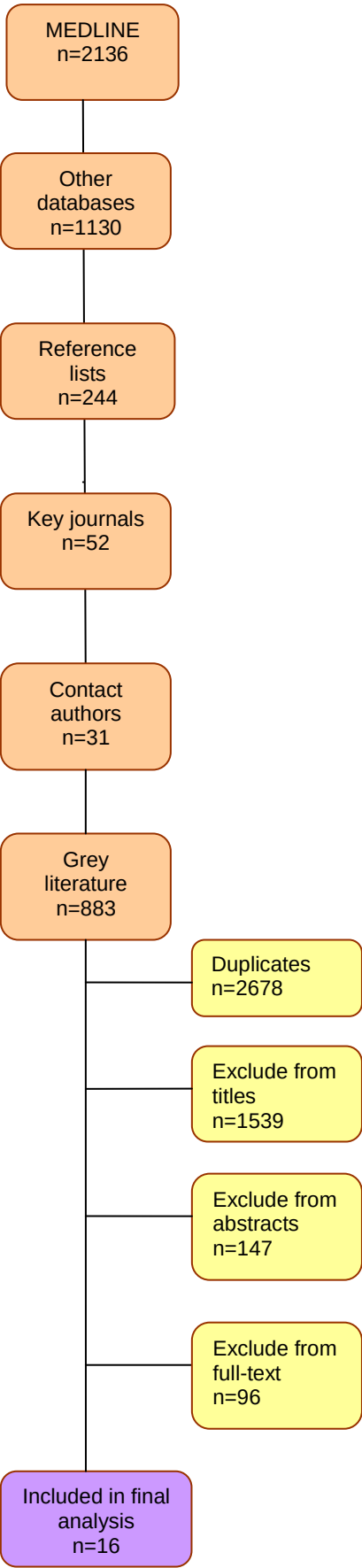


Table 2.2 Included articles

Authors	Date	Design	Setting
Black et al.	2014	Qualitative study	London Olympics
Brennan et al.	1997	Report	Atlanta Olympics
Dapeng et al.	2010	Report	Beijing Olympics
Dwivedi & Cariappa	2015	Report	Kumbh Mela India
Enock & Jacobs	2008	Literature review	Olympics and other Mass Events
Grange	2002	Report	Large Events
Hadjichristodoulou et al.	2006	Report	Athens Olympics
Hiltunen et al.	2007	Prospective observational study	World Championship Games Helsinki
Klauser	2015	Qualitative study	Vancouver Olympics
Kononovas et al.	2014	Qualitative analysis of reports	London Olympics
Meehan et al.	1998	Report	Atlanta Olympics
Parent et al.	2009	Case study	World Aquatics Championships
Parent et al.	2011	Case study	Vancouver Olympics
Sharp et al.	1998	Report	Atlanta Olympics
Thackway et al.	2009	Report	Sydney Mass Gatherings
Tsouros & Efstathiou	2007	Report	Athens Olympics

2.2.2 Results

2.2.2.1 Description of studies

The majority of the articles found in the literature review were descriptive rather than analytical. More specifically, nine out of the 16 articles were anecdotal reports. The rest of the studies were qualitative studies, apart from one literature review and one prospective observational study (Table 2.2). Generally, there was a lack of conceptualization of interagency collaboration in the field of mass gatherings. Most of the studies evaluated the public health planning and preparedness for several mass gatherings and within this evaluation they identified the importance of interagency collaboration. However, even though they did not discuss the issue of collaboration in detail, they identified a number of areas as important for both planning and collaboration.

In order to describe the articles, I grouped them in terms of their design. Every description provides information regarding the subject, the methodology and the findings of each study. Detailed characteristics of the separate studies are

presented in Table 2.3. I will first describe the reports and then the qualitative studies, the literature review and the prospective study. Brennan et al. (1997) overviewed the medical and public health preparations and services provided for the 1996 Atlanta Olympic Games by conducting an anecdotal report. From the Atlanta experience they found that good communication, collaboration and coordination between different providers ensure appropriate and efficient responses. They identified that uniform operational plans and recommendations, communication agreements, protocols for management of illnesses and guidelines for response to mass casualty incidents can facilitate potential poor communication and coordination between the providers. They also noted that there is a room for improvement in the level of communication and cooperation between the involved agencies. They concluded that Olympics pose significant challenges to medical and public health services and collaboration among all the agencies is required so as to meet those challenges.

Meehan et al. (1998) also evaluated the public health preparations, activities and results of the 1996 Atlanta Olympic Games. They recommended that public health agencies should take the lead in managing the public health issues at events such as the Olympics. They reported that the establishment of a central public health command centre is necessary to coordinate response to public health emergencies and that early planning and engagement of the key partners including the organizing committee are key factors of the public health planning for the event. They also noted that a table-top disaster exercise two weeks prior to the start of the Games was a valuable activity of the preparations.

Apart from the two previous reports, other authors also used the Atlanta Olympics as the context of their study. Sharp et al. (1998) examined the complex issues faced during a terrorist incident involving chemical or biological agents during the 1996 Atlanta Games. During their investigation they found that organizations collaborated through daily interactions, formal planning sessions, exercises and conferences in order to develop integrated response plans. In their recommendations they noted that careful planning and exercises involving all the relevant partners are required for an integrated response for terrorism.

Dapeng et al. (2010) wrote an extensive report on the health legacy of the 2008 Beijing Olympic Games. Within one section of the report, which was named '*Public health achievements and lessons for the future*', they suggested that

collaborative partnerships are necessary to strengthen the capacity of the services. More specifically, they noted that the organizers established strong communication networks with various partners and that there is a need to plan well ahead of the Games and establish clear roles of the agencies involved in the partnerships. Similarly, Tsouros and Efsthathiou (2007) published a comprehensive book presenting the experience and the lessons learned from the public health preparations of the Athens 2004 Olympic Games. They argued that one of the most challenging aspects of public health is the need for coordination among several agencies and that unified command, new legislation and memoranda of understandings between various parties support joint planning and collaboration. They also noted that planning should have started earlier to allow enough time to test systems and address problems that hamper teamwork between agencies.

Dwivedi and Cariappa (2015) highlighted in their report the experience of organizing the public health response for the religious festival of Kumbh Mela in India in 2013. They claimed that teamwork and intersectoral coordination under strong administrative leadership are necessary for an efficient public health planning and response. They also identified a number of broad themes necessary for preparedness for mass gatherings; within them they emphasized the significance of leadership commitment from the initial stages of the planning and the need for integrated intersectoral planning.

Grange (2002) developed a report to discuss the key areas of medical planning for mass gatherings. The author identified that efficient communications and the development of a basic operational plan which addresses not only the responsibilities of the medical team but also the relationships of the medical sector with other partners are key factors to successful delivery of medical services in large events. He also noted that a centralized command post should be used to coordinate communication between the agencies and that professionals should not use specialized language to minimize confusion.

Hadjichristodoulou et al. (2006) examined the potential for permanent implementation of an environmental programme which monitored exposure to environmental hazards and was developed for the 2004 Athens Olympic Games. They used an anecdotal report to show how this programme was implemented and examined its results and lessons learned. They noted that timely implementation of communication processes and efficient collaboration and coordination are key factors

ensuring effective responses during mass gatherings and that communication mechanisms should involve the Organizing Committee of the Olympics Games at an early stage.

Finally, the last report included in this literature review reflected on a decade of mass gatherings in Sydney. Thackway et al. (2009) explored the public health response to mass gatherings in Sydney and the utility of public health planning in such events. The authors identified that strong partnerships between all the agencies and specifically with the organizers are critical to public health planning and that an incident control system which assigns a lead role to each agency dependent on the nature of the incident enhances communication and reduces duplication of effort between organizations. They also indicated that the government's disaster plan should clearly identify the roles and responsibilities of each responding agency and that training programmes and experience increase the competence of the agencies. It was also emphasized in their study that public health planning for each event is built on the experience gained from previous mass gatherings.

Black et al. (2014) evaluated the strategic health planning programme for the 2012 London Olympic Games. They thematically analyzed data from stakeholder interviews and documents and they identified five key themes important for the above planning. One of the themes that was relevant to interagency collaboration involved the difficult relationships between the health services and London Organizing Committee for the Olympic Games (LOCOG). The authors noted that agencies had difficulties in working with LOCOG because of its position of being a private provider with its own policies, procedures and priorities. This led to delays in establishing an effective structure between the agencies and to duplication in effort especially in exercising scenarios and plans.

Klauser (2015) conducted 11 in-depth interviews with stakeholders from four security actors to explore the role of interests, forms of expertise and sources of authority in security governance at the 2010 Vancouver Olympics. The author found that the organizing committee assumed to have the overall responsibility for all the venues and this implied a close relationship between the VANOC and the security partners. This relationship was regulated in a memorandum of understanding; however, relationships had to be further adjusted through negotiation of the parties in order to collaborate. The study also showed that multiple forms of collaboration took place between the actors including meetings, training sessions and joint staffing of

teams and that a mega-event context implies a shared authority among the agencies. The author concluded that security in large events is positioned within a complex field of stakeholders with complex relationships and interactions.

Kononovas et al. (2014) conducted a qualitative analysis of reports derived from various Olympics to examine the common healthcare planning issues of Olympic Games. Within the six identified themes, the authors indicated that early planning, relationship building and early clarification of roles of different organizations are vital for the preparedness for the Games. For example, according to their analysis, the report from the London Olympics noted that early planning allowed enough time to test the plans and be prepared for different scenarios. According to the study, host cities need to establish good communication with organizers from previous Games to learn about the health planning of other Games. The findings of this study also showed that multi-agency planning for a range of public health emergencies is important when preparing for the Games.

Parent et al. (2009) conducted a case study of the 2005 World Aquatics Championships to examine the specific leadership qualities identified as important by the involved stakeholders. They collected archival material and conducted 25 interviews with representatives of all major stakeholders groups. One of their findings was related with the issue of interagency collaboration. Networking was suggested to be a key leadership skill for the organizers and the organizing committee should maintain positive relationships with its stakeholders. Parent et al. (2011) also conducted a case study to understand the issues government faced while coordinating their planning efforts and the strategies they used to facilitate that coordination during the 2010 Vancouver Olympic Games. They collected data through archival material, observations and semi-structured interviews with 35 representatives from the three levels of government. Based on their findings, most of the issues they found as critical for the Games' planning had to do with interagency collaboration and included accountability, knowledge management, protocols of communication and relationships. The authors suggested a number of strategies to manage the previous issues which involved formal and informal communication processes, decision-making frameworks, flexibility and formalized agreements.

Enock and Jacobs (2008) reviewed the literature relating to public health planning and interventions at previous Olympic and Paralympic Games and other relevant major sporting events. They used a systematic review approach with a focus

on official publications and peer-reviewed papers. Most of the published articles found in their review were descriptive rather than analytical. They found that public health planning for such events requires the collaboration of many different agencies with clear delineation of responsibilities and authority. They identified a number of crucial factors for the success of public health interventions during the Olympic Games including detailed contingency planning and plans testing prior to the event. They also noted that a central command area to coordinate the public health issues with clear delineation of responsibilities and authority is necessary when planning for the Games. The authors clearly recommended that developing effective communication is the key to delivery of an efficient public health system at these events. Finally, they concluded that relationships, roles and decision making among the agencies are important issues that have not been thoroughly discussed in the existing literature.

Finally, Hiltunen et al. (2007) analyzed the success of medical preparedness and emergency care during the 2005 World Championship Games in Athletics in Helsinki. They collected data from all emergency calls during the Olympics period and data of patient characteristics from voluntary organizations and they compared them with those during the 2000-2004 period. They found that the command structure and the roles of different organizations have to be defined early in the planning process in order to facilitate collaboration and avoid misunderstandings and that planning should be influenced by experiences from previous Games.

Table 2.3: Description of the included articles

Authors	Date	Design	Aim	Findings
Brennan et al.	1997	Report	Review the medical and public health preparations and services provided for the Atlanta Olympics.	1. Good collaboration and communication between the many services ensure efficient responses. 2. Uniform plans, communication agreements and protocols facilitate communication and coordination between different providers. 3. There was room for improvement in the level of cooperation between the providers to ensure appropriate responses.
Meehan et al.	1998	Report	Evaluate the public health preparations, activities and results of the 1996 Atlanta Olympic Games.	1. Public health agencies should take the lead in managing the public health issues. 2. The establishment of a central public health command centre was necessary to coordinate response to public health emergencies. 3. Early planning and engagement of the key partners including the organizing committee were key factors of the public health planning for the event. 4. A table-top disaster exercise two weeks prior to the start of the Games was a valuable activity of the preparations.
Sharp et al.	1998	Report	Examine the complex issues faced during the medical preparedness for a terrorist incident during the 1996 Atlanta Games.	1. Organizations collaborated through daily interactions, formal planning sessions, exercises and conferences in order to develop integrated response plans. 2. Careful planning and exercises involving all the relevant partners are required for an integrated response for terrorism.
Dapeng et al.	2010	Report	Health legacy of the 2008 Beijing Olympic Games.	1. Collaborative partnerships were necessary to strengthen the capacity of the services.

Tsouros & Efstathiou	2007	Report	Experience and lessons learned from the public health preparations of the Athens 2004 Olympic Games.	2. There was a need to plan well ahead of the Games and establish clear roles of the agencies involved in the partnerships. 1. One of the most challenging aspects of public health was the need for coordination among several agencies. 2. Unified command, new legislation and memoranda of understandings between various parties supported joint planning and collaboration. 3. Planning should have started earlier to allow enough time to test systems and address problems that hamper teamwork between agencies.
Dwivedi & Cariappa	2015	Report	Experience of organizing the public health response for the religious festival of Kumbh Mela.	1. Teamwork and intersectoral coordination were necessary for an efficient public health planning and response. 2. Strong administrative leadership from the initial stages of the planning and integrated intersectoral planning are necessary for preparedness for mass gatherings.
Grange	2002	Report	Key areas of medical planning for mass gatherings.	1. Efficient communications and the development of a basic operational plan are key factors to successful delivery of medical services in large events. 2. A centralized command post should be used to coordinate communication between the agencies. 3. Professionals should not use acronyms to minimize confusion.
Hadjichristodoulou et al.	2006	Report	Examine the potential for permanent implementation of an environmental programme developed for the Athens Olympics.	1. Efficient collaboration and coordination are key factors ensuring effective responses. 2. Communication mechanisms should involve the Olympic Games Organizing Committee at an early stage.
Thackway et al.	2009	Report	Public health response to mass gatherings in Sydney.	1. Strong partnerships between all the agencies and specifically with the organizers are critical to the public health planning.

Black et al.	2014	Qualitative study	Evaluate the strategic health planning programme for the 2012 London Olympic Games.	2. Clear lead roles to each agency enhance communication and reduce duplication of effort between organizations. 3. Clear responsibilities of each responding agency, training programmes, exercises and experience increase the competence of the agencies. 4. Public health planning for each event is built on the experience gained from previous mass gatherings.
Klauser	2015	11 in-depth interviews	Explore the role of interests, forms of expertise and sources of authority in security governance at the 2010 Vancouver Olympics.	1. Difficult relationships between the health services and LOCOG led to delays in establishing an effective structure between the agencies and to duplication in effort especially in exercising scenarios and plans. 1. The organizing committee assumed to have the overall responsibility for all the venues and this implied a close relationship between the VANOC and the security partners. 2. The above relationship was regulated in a memorandum of understanding; however, it had to be further adjusted through negotiation of the parties in order to collaborate. 3. Multiple forms of collaboration took place between the actors including meetings, training sessions and joint staffing of teams. 4. A mega-event context implies a shared authority among the agencies.
Kononovas et al.	2014	Qualitative analysis of reports	Common healthcare planning issues of Olympic Games.	1. Early planning, relationship building and early clarification of roles of different organizations are vital for the preparedness for the Games. 2. Host cities need to establish good communication with organizers from previous Games to learn about the health planning of other Games. 3. Multi-agency planning for a range of public health emergencies is important when preparing for the Games.

Parent et al.	2009	Case study	Leadership qualities identified as important by stakeholders of the 2005 World Aquatics Championships.	1. Networking was suggested to be a key leadership skill for the organizers.
Parent et al.	2011	Case study	Issues and strategies concerning government's coordination during the 2010 Vancouver Olympic Games.	2. The organizing committee should maintain positive relationships with its stakeholders.
Enock & Jacobs	2008	Literature review	Review public health planning and interventions at previous Games and other mass gatherings.	1. Accountability, knowledge management, protocols of communication and relationships were critical issues for the Games planning. 2. Formal and informal communication processes, decision-making frameworks, flexibility and formalized agreements were strategies that managed the previous issues.
Hiltunen et al.	2007	Prospective observational study	Analyze the success of medical preparedness and emergency care during the 2005 World Championship Games.	1. Detailed planning and plans testing are crucial factors for the success of public health interventions during the Olympic Games. 2. Public health planning requires the collaboration of many different health-related agencies with clear delineation of responsibilities and authority. 3. Good communication is key to the delivery of an efficient public health system. 4. The hierarchy of relationships, roles and decision-making between the different stakeholders are important issues that have not been discussed in the literature.
				1. The command structure and the roles of the different organizations have to be defined early in the planning process. 2. Planning should be influenced by experiences from previous Games.

2.2.2.2 Synthesis

The aim of the synthesis is to determine how the studies' findings are related to each other and develop descriptive themes which can provide new insights (Miles & Huberman, 1994). Findings from the above empirical literature were compared and four major themes were identified concerning interagency collaboration during mass gatherings: (1) the significance of interagency collaboration; (2) early integrated planning; (3) clear leadership and (4) relationships. These themes were identified on the basis of the highest frequency of appearance in the literature as well as the greatest importance for shaping interagency collaboration in mass events.

The significance of interagency collaboration

Looking across the empirical studies, none of them directly examined the issue of interagency collaboration among public health and safety agencies in mass gatherings. The vast majority of them reflected on the general public health planning of several mass gatherings and provided elements that positively influenced the preparations for events such as the Olympics. However, the findings clearly suggested that developing interagency collaboration was a key factor for delivering an efficient public health system. Numerous studies reported that collaborative partnerships were necessary to ensure efficient responses and strengthen the capacity of the services (Brennan et al., 1997; Dapeng et al., 2010; Dwivedi & Cariappa, 2010; Enock & Jacobs, 2008; Hadjichristodoulou et al., 2006; Kononovas et al., 2014; Tsouros & Efstathiou, 2007). In addition, strong partnerships between all the agencies and specifically with the organizers of the event emerged as critical to the public health planning (Hadjichristodoulou et al., 2006; Meehan et al., 1998; Parent et al., 2009; Thackway et al., 2009).

Early integrated planning

Early integrated planning was described as an enabling factor of interagency collaboration during the public health planning of the involved agencies. Several authors reported that the development of communication agreements and uniform plans well ahead of the Games facilitated communication because agencies managed to establish clear roles and responsibilities between them (Brennan et al., 1997; Dapeng et al., 2010; Enock & Jacobs., 2008; Grange, 2002; Hiltunen et al., 2007; Kononovas et al., 2014; Parent et al., 2011; Thackway et al., 2009; Tsouros & Efstathiou, 2007). In particular, early engagement of the organizing committee proved to be vital for the success of public health interventions during events such as the Olympic Games (Enock & Jacobs, 2008; Hadjichristodoulou et al., 2006;

Kononovas et al., 2014; Meehan et al., 1998; Tsouros & Efstathiou, 2007). Additionally, joint training programmes and exercises enabled the agencies to develop integrated response plans and increase their competence (Enock & Jacobs, 2008; Klauser, 2015; Meehan et al., 1998; Sharp et al., 1998; Thackway et al., 2009).

Clear leadership

The findings of the analysis indicated that clear leadership facilitated a coordinative response to managing public health issues during large-scale events. Many studies reported that the establishment of a central public health command centre and strong administrative leadership from the initial stages of the planning are necessary to coordinate response to public health emergencies (Dwivedi & Cariappa, 2010; Enock & Jacobs, 2008; Grange, 2002; Hiltunen et al., 2007; Meehan et al., 1998; Parent et al., 2011; Thackway et al., 2009; Tsouros & Efstathiou, 2007). Only one study revealed that specifically public health agencies should take the lead in managing the public health issues (Meehan et al., 1998). An interesting finding regarding leadership came through one study which highlighted that the organizing committee *assumed* to have the overall responsibility for all the venues which revealed a lack of clear leadership from the actor (Klauser, 2015). The same study reported that a mega-event context implies a shared authority among the agencies (Klauser, 2015). It is interesting to note that within the last two studies there is a controversial meaning over which actor should practice leadership roles: the public health agencies, the organizers or there is a shared leadership?

Relationships

The findings suggested that the development of positive relationships between the stakeholders was a critical factor for the public health planning of mass events (Enock & Jacobs, 2008; Kononovas et al., 2014; Parent et al., 2009; Parent et al., 2011). In particular, Parent et al. (2009) reported that the organizing committee should maintain positive relationships with its stakeholders and recommended that networking was a key leadership skill for the organizers. Only one study revealed that the difficult relationships which existed between the health services and LOCOG led to delays in establishing an effective structure between the agencies and to duplication in effort especially in exercising scenarios and plans (Black et al., 2014). The authors explained that health services were not able to build good relationships with the organizing committee because of the tension with respect to LOCOG's position, structure and priorities. Another study highlighted that even though there were processes such as the implementation of agreements and memoranda of

understanding which regulated the relationships among the partners, organizations needed to constantly negotiate their relationships in order to collaborate (Klauser, 2015).

2.2.3 Discussion

During the last few years, a number of empirical studies have been published around public health preparations for the Olympic Games and other large-scale events. The aim of this review was to assess whether the included studies provided any evidence concerning interagency collaboration among the different public health and safety providers. This review showed that none of the papers explicitly focused on how interagency collaboration was evolved during such events, even though all of them identified collaboration as a key factor for the success of the Games. Nonetheless, the included studies discussed several aspects related to interagency collaboration.

This systematic literature review made a significant contribution to the literature of mass gatherings by indicating that interagency collaboration among the key stakeholders is a critical factor for the success of the public health and safety systemic response during such large-scale events (Brennan et al., 1997; Dapeng et al., 2010; Dwivedi & Cariappa, 2010; Enock & Jacobs, 2008; Hadjichristodoulou et al., 2006; Kononovas et al., 2014; Tsouros & Efstathiou, 2007). Therefore, in order to be better prepared for the challenges that may arise in these events, the issue of interagency collaboration needs to be further examined by identifying its components and the domains that influence it. One more key outcome of the literature review was the significance of the integration of the planning of different organizations along with the issue of timeliness of the engagement of the organizing committee (Enock & Jacobs, 2008; Hadjichristodoulou et al., 2006; Kononovas et al., 2014; Meehan et al., 1998; Tsouros & Efstathiou, 2007). Little is known about the challenges of developing collaborative partnerships among organizations that do not routinely interact, for example among the local services of the host city and the event's organizer, and how such potential barriers to collaboration can be overcome.

Another issue that this review highlighted was the need for clear leadership among the diversity of the organizations involved in order to achieve integrated responses regarding public health and safety incidents (Dwivedi & Cariappa, 2010; Enock & Jacobs, 2008; Hiltunen et al., 2007; Thackway et al., 2009). It was surprising that even though events such as the Olympics have been running for a

long time, leadership remains a complex issue that needs clarification. Thus, the review emphasizes the need for further research that employs rigorous methodologies to explore the role of leadership within this context. Similarly, the issue of relationships between the organizing committee and other organizations which was deemed as important for the public health planning of the Games has not been empirically explored.

2.2.4 Strengths and limitations

The strength of this review was the strict methodology that I followed. I searched nine databases without design restrictions and I made extensive attempts to identify both published and unpublished studies. Additionally, I searched by hand the reference lists of all the included papers and a number of key journals and I used emails to contact authors and find more relevant studies. I also provided a detailed figure with the results of each source. Finally, I synthesized the results of all the studies by developing four broad themes and I provided clear findings according to the previous results.

This review had one main limitation. The most important limitation was the lack of evidence-based papers studying the interagency collaboration in mass events such as the Olympic Games and the lack of methodological uniformity of the included studies. The literature search identified a small number of relevant papers and different methodologies such as qualitative studies, prospective studies, reports and reviews which none of them directly examined the process of interagency collaboration. Therefore, it was difficult to synthesize the findings from such a small number of different studies and reach firm conclusions. However, this fact indicated that there is a need for further research in this area and justified the purpose of this study.

2.3 Theoretical foundation

2.3.1 Conceptualizing interagency collaboration

The concept of interagency collaboration has been studied for many years, as is evident from the significant body of literature on the subject (Agranoff, 2004; Bryson et al., 2006; Gray, 1985; Keast et al., 2004; Van den Ven, 1976; Van den Ven & Walker, 1984; Weiss, 1987). The body of literature covers a number of areas such as education (Weiss, 1987) and services for child protection (Van den Ven & Walker, 1984). However, little empirical work appears in the mass gatherings field on specific factors affecting interagency collaboration among the involved public health and

safety agencies, the government and the event organizer. This study will provide important insights on how the above partners collaborated as well as how this collaboration was shaped. This section examines the term collaboration and discusses the theoretical frameworks that this study is based on in order to explain its findings.

One way to understand interagency collaboration is to analyze related terms and concepts. The terms collaboration, coordination and cooperation have similar meanings and it is important to distinguish their differences. Coordination and cooperation could be placed in a continuum, whereas collaboration represents a more general term that encompasses coordination and cooperation. The literature indicates that there are several attempts to define and understand collaboration. D'Amour et al. (2005) note that 'there has been significant diversity in the way authors have conceptualized collaboration and the factors affecting collaboration' (p. 116). Gray (1985) defines collaboration as the integration of tangible resources (information, money) by two or more partners to solve a set of problems, which neither can solve individually.

Huxham and Vangen (2000), who have been engaged for the last decades in research in order to develop practice-oriented theory into the management of collaboration, argue that understanding the issues of ambiguity, complexity and dynamics which are inherent in collaborative structures is valuable for conceptualizing collaboration. Having explicit membership, clear hierarchies and accepting the continually changing environment of collaboration are key elements of understanding the phenomenon. The authors also suggest that interorganizational collaboration can be viewed as a partnership between individuals rather than between agencies. Hill and Lynn (2003) define collaboration as taking part in a voluntary interorganizational relationship that offers the responsibilities and benefits of participation.

On the other hand, cooperation involves working together with each other to achieve a shared goal while services maintaining their independence (Frost, 2005). Cooperation is characterized by informal relationships that exist without any commonly defined structure or planning. Coordination is a more interactive process that seeks to achieve joint goals through joint activities and is characterized by more formal relationships. According to Comfort (2007) coordination means aligning one's actions with those of other relevant actors to achieve a shared goal. The author also

notes that coordination depends on effective communication and assumes that the involved agencies align their activities voluntarily.

The concept of collaboration is commonly defined through five underlying concepts which are sharing, partnership, power, interdependency and process (D'Amour et al., 2005). These terms are mentioned repeatedly in the definitions of collaboration in the existing literature. Most authors use the concept of sharing when defining collaboration in different forms. Some authors referred to shared responsibilities (Baggs & Schmitt, 1988; Henneman, 1995; Henneman et al., 1995 and Liedtka & Whitten, 1998), others to shared decision making (Baggs & Schmitt, 1988; Liedtka & Whitten, 1998) and some to shared values (Henneman, 1995) and shared planning and intervention (Baggs & Schmitt, 1988). It conveys the idea of sharing and entails collective action toward a common goal in a spirit of harmony and trust. The willingness of both individuals and organizations to share is also necessary to achieve collaborative advantage (Huxham & Vangen, 2000).

Apart from sharing, the concept of partnership implies that two or more actors join in a collaborative undertaking (Sullivan, 1998). Such a relationship requires open and honest communication and mutual trust and respect (Siegler & Whitney, 1994; Stichler, 1995). In this context, trust is the ability to form expectations about aims and partners' future behaviours in relation to those aims (Vangen & Huxham, 2003). Each partner must also acknowledge and value the contributions and perspectives of the other professionals (Stichler, 1995). Finally, working in partnership entails that the partners seek for common goals or specific outcomes. As Huxham and Vangen (2000) note, difficulties in managing a joint purpose because of the diversity of individual and organizational aims of those involved in the partnership tend to hinder collaboration.

The third concept of power is perceived as shared among the partners and is recognized by all the team members (Stichler, 1995; Sullivan, 1998). In addition, such form of power is based on knowledge and experience rather than on functions and titles and it is a product of the relationship among team members (Henneman, 1995; Henneman et al., 1995; Stichler, 1995). According to Corser (2000), in order to maintain such symmetry in power relationships, collaborative interaction is needed. Difficulties in managing the perceived power imbalances between partners and the accountability among the actors prevent the collaborative work to proceed (Huxham

& Vangen, 2000). Therefore, power cannot be separated from the relationship through which it is exercised.

Interdependency, a term which is also interrelated with collaboration, involves mutual dependence. Professionals in a collaborative relationship depend on one another and this interdependency emanates from the common desire to achieve specific outcomes (Liedtka & Whitten, 1998). The recognition by the actors that their actions are completely linked to the actions of the other partners is a key attribute of collaboration (Gray, 1985). When professionals become aware of such interdependencies, alliance and harmony become apparent, individual contributions are maximized and collective action is eventually derived (Evans, 1994). However, even though the process of collaboration implies dependency between the partners, indeed some actors will be more central to the collaborative process than others (Vangen & Huxham, 2003). This may lead to perceptions about power imbalances between the partners which tend to hamper the process of collaboration.

Finally, collaboration is also recognized as an evolving, dynamic and interactive process (Stichler, 1995; Sullivan, 1998). This process may follow detailed steps such as negotiation, shared planning and intervention (Liedtka & Whitten, 1998). In effective collaborative teams, experts from the same or different backgrounds work together in such a way that they build on each other's strengths and experiences and together develop an integrative approach to solve a problem (Gitlin et al., 1994). Whatever is the purpose, partners aim to achieve collaborative advantage; that is, to achieve outcomes that could not be attained by any of the actors acting alone (Huxham & Vangen, 2000). In conclusion, the definition of concepts such as sharing, partnership, power, interdependency and process which are often related with the concept of collaboration increased my understanding of collaborative processes. They also helped me to identify several determinants of collaboration and factors that have an influence on collaborative processes. In the next section, I discuss the theoretical frameworks of my study which helped me to describe its context, understand the concept of collaboration and explain my findings.

2.3.2 Theoretical frameworks

Theories can provide an explicit understanding of an idea, concept or phenomenon. A theoretical framework is defined as a set of relationships between various concepts. At this stage, in order to develop my understanding of how collaboration processes among the key stakeholders in mass gatherings may be

understood, and better sketch the context for this study, it was necessary to turn to a social theory and a theoretical framework which are relevant to the understanding of organizations and the phenomenon of collaboration. While a theory of collaboration based in mass gatherings could not be found, frameworks from other fields can be used to support interagency collaboration during mass gatherings. These included institutional theory and specifically the concept of organizational fields and one theoretical framework from interprofessional practice literature in healthcare called the 'Structuration Model of Interprofessional Collaboration'.

2.3.2.1 Organizational field

In this study, the use of *institutional theory* helped me frame the context of the study and describe the key stakeholders and their relationships in order to explain interagency collaboration. In organizational studies literature, institutional theory is one of the dominant approaches to analyzing organizations (Washington & Patterson, 2011). Institutionalization is the process by which events and structures become established habits of social behaviour within organizations over time (DiMaggio & Powel, 1983). This results in what is known as institutional isomorphism, where similarities exist in the structures of institutions (DiMaggio & Powel, 1983).

One approach to the concept of fields came from a number of social psychologists who referred to 'groups of actors with shared commitments to certain activities, sharing resources of many kinds to achieve their goals and building shared ideologies about how to go about their business' (Clarke, 1991, p. 131). Particularly eminent is the work of the sociologist Pierre Bourdieu who examined the concept of field. According to Bourdieu (1977), social fields are social arenas governed by distinctive values and approaches. Bourdieu believes that fields are arenas of conflict where all actors seek to advance their interests. Bourdieu's approach of fields provided the basis for DiMaggio and Powel's (1983) founding conception of fields.

DiMaggio and Powel (1983) defined an organizational field as 'those organizations that, in the aggregate, constitute a recognized area of institutional life' and can include suppliers, consumers, regulatory agencies and other relevant actors (p. 148). Pressures from competition lead agencies to look to other organizations that have been successful in their field and adopt their best practices and strategies (DiMaggio & Powel, 1983). Consequently, organizations within a field develop many similarities. The authors recommended that organizational fields in the beginning of their lifecycle display considerable variety in approach to organizational problems.

However, once a field becomes well established, 'there is an inexorable push towards homogenization' (p. 148). Institutional isomorphism results from environmental pressures on organizations that cause them to adopt specific practices in order to survive. DiMaggio and Powel (1983) described three mechanisms that lead to this outcome: coercive (political pressure and legitimacy), mimetic (responses to uncertainty) and normative (impacts of professionalization). In their related work, Scott and Meyer (1983) examined the ways in which field complexity influence organizational structure.

In particular, I conceptualized my empirical case as an *issue-based* type of field (Hoffman, 1999). A number of diverse actors are involved in debating the central issue of the field, which in this case is *public health, safety and security*. Issue-fields are dynamic, being in a constant state of emergence. The notion that an organizational field forms around a central issue introduces the idea that fields become centres of debate in which competing interests negotiate over issue interpretation. The presence of a field structure consists of: 1) increase in interaction, 2) emergence of structures, 3) increase in the information load and 4) development of a mutual awareness (DiMaggio, 1983). DiMaggio and Powel (1983) used the term 'field structuration' to refer to the nature of interactions and organizational structures that emerge within a field. Giddens (1984) first described the concept of structuration to refer to structures and activities that exist because of the actors' engagement in them. In this study, the concept of public health and safety field refers to a specific health and safety social space which includes relationships among various actors. As Scott and Davis (2007) indicate, organizational fields are, by nature, open systems. Therefore, in order to determine their boundaries, researchers need to examine a variety of indicators. These involve the actors (membership), their relationships and the activities that take place within the field.

2.3.2.2 Structuration Model of Interprofessional Collaboration

One framework that helped me understand the process of collaboration is the *Structuration Model of Interprofessional Collaboration*. This model was first developed by D'Amour (1997) and then revised by D'Amour et al. (1999) in order to understand interprofessional and interagency collaboration in healthcare organizations. It helped me to illuminate the collaborative processes among the key stakeholders in this mass event, explore the factors that influenced interagency collaboration and guide my data collection and analysis. The model was developed by D'Amour et al. (1999) following a study of interprofessional collaboration in a

primary healthcare setting. This model was based on the concept of collective action in organizational sociology, where collective action is the outcome of actions and behaviours of the professionals. It was derived from Crozier and Friedberg's (1977) sociological approach to organized action and the organizational analysis of Friedberg (1993). Crozier and Friedberg (1977) argue that a set of actors are dependent to one another when working to solve a common problem. Power is exercised through knowledge, organizational rules and control of information exchange. Consequently, organized action implies a set of actors who govern formal rules and human relationships to achieve a common aim. Friedberg (1993) also considers the organization as a local system of action resulting from the construction of rules and individual relationships. The model is deemed suitable for examining how different actors in complex fields collaborate and it has been tested in a variety of contexts (D'Amour et al., 2008).

This model conceptualizes the process of collaboration according to four components: governance, formalization, finalization and internalization. The first two refer to the organizational structures while the other two dimensions involve the relationships between the individuals. Governance covers leadership activities that guide professionals and organizations during their collaboration. According to the model, the development of collaboration among the actors is enabled by the availability of leaders who motivate professionals into collaborative activities and are able to create an organizational setting that supports collaboration. Moreover, centrality, which refers to the implementation of clear and explicit directions by central actors, plays an important role to the implementation of collaborative processes. Governance also appears in organizational field theory. Governance systems are 'those arrangements which support the regularized control-whether by regimes created by mutual agreement, by legitimate hierarchical authority or by non-legitimate coercive means-of the actions of one set of actors by another' (Scott et al., 2000, p. 21). Each organizational field is characterized by a specific governance system comprised of a variety of actors who exercise regulatory and normative control over activities within the field.

The second component, formalization, includes the rules by which the actions of the actors are governed by strengthening the structures. In particular, collaboration requires appropriate coordination and can be enhanced through the application of standards, interagency policies and protocols and unified documentation. Formalization is a significant method of clarifying the various

partners' responsibilities and negotiating how these responsibilities can be shared. Information exchange reduces uncertainty between partners that do not know each other well and is considered as an important aspect of this dimension. Therefore, organizational determinants play a crucial role in the implementation of collaboration, especially by providing strong leadership and regulating professionals' actions.

The third dimension, which is finalization, refers to the existence of common goals and the recognition of divergent motives and priorities among the actors. The authors suggest that in order to develop a collaborative practice, professionals must be willing to work collaboratively and negotiate the shared goals among them. Lack of understanding and respect of the contribution of other professionals consists of a barrier to collaboration. Finally, internalization refers to the awareness by professionals of their interdependency and the importance of developing trusting relationships. More specifically, the authors consider that managing interdependence among professionals advance collaboration and that trusting relationships, which incorporate a consensus on shared responsibilities and knowing each other personally, are one of the key elements of collaborative practice development. By its very nature, collaboration is an interpersonal process that requires both organizational and relational enablers in order to be developed. This study acknowledges the interconnections of the above dimensions and how they interact to influence collaboration. Therefore, in this study, I am using the assumption that each actor (public health or safety organization), who is a part of an open and complex system (field), interact by engaging in both relational and organizational elements in order to contribute to interagency collaboration.

2.4 Conclusion

Little has been written about the issue of interagency collaboration during the public health preparedness for the Olympic Games and other mass gatherings. Although all the included empirical papers mentioned the significance of interagency collaboration for the success of the Games, none of them elaborated on this factor. Most of the authors just mentioned a number of factors (themes) that may influence collaboration while studying public health preparations for these events, without focusing on this issue or elaborating on the components of collaboration. Deeper knowledge of interagency collaboration might improve the quality of public health services during such events in the future and a theoretical understanding that explains how different services can facilitate their collaboration may optimize each service's plans and actions. The examination of the above themes and how they can

enhance collaboration and the discovery of new features that facilitate collaboration will contribute to the development of a theoretical understanding of interorganizational collaboration which is the purpose of this study. Future researchers in this field should try to provide more knowledge concerning this issue so as to help practitioners to enhance their services.

In addition, the quality of research design has improved in recent years. However, I suggest that future studies on interagency collaboration during mass gatherings use specific methodologies by adopting clear methods so as to produce credible findings which can be tested by other researchers and applied to different populations. Moreover, a study that has followed clear methodology can give confidence to policymakers and practitioners about the quality of such research so as to use it in their practice. It is evident that qualitative research is needed in this field and can have an important and growing role in the study of interagency collaboration in mass gatherings. Mass gatherings such as the Olympic Games provide a thrilling challenge for public health providers and systems. This systematic review of the literature showed that interagency collaboration is a key factor for the success of the Olympic Games from the public health perspective but more research is needed in this area. Therefore, this study will fulfill the above gap and enhance practitioners' and researchers' knowledge in this field. The next chapter will describe the methodological approach of this study.

Chapter 3

Methodological approach

3.1 Introduction

The purpose of this study is to answer the research question: *How was interagency collaboration among public health and safety agencies shaped in preparation for and during the 2012 London Olympic Games?* The main aim of the study is to generate a deeper understanding of interagency collaboration in public health and safety preparedness for mass gatherings such as the Olympic Games. The objectives of the study are:

- a) To provide a rich description of the context in which public health and safety agencies collaborated in the lead up and during the 2012 Olympics
- b) To delineate how professionals from diverse organizational backgrounds interacted as part of the collaborative process and
- c) To identify perceived facilitators and barriers to collaboration as articulated by the professionals involved in the planning process.

In order to achieve the above aim, I designed a case study to examine the interagency collaboration among the public health and safety agencies preparing for the 2012 London Olympic Games, which was conducted from May 2011, 14 months before the actual Games, until October 2012, two months after the completion of the Games. This chapter aims to provide an understanding of the methodological choices of the study and describe the process of the data collection and analysis. The chapter begins with the philosophical grounds upon which this study was designed. In turn, the research strategy is outlined, including the justification for selecting a case study approach and the description of the case. The next two parts present in detail the research methods used in the study and the data analysis approach. Finally, I discuss the ethical considerations for this study, I provide a reflexive account containing my personal beliefs and understandings and I examine the issues of quality while conducting this research.

3.2 Philosophical considerations

The philosophy of science is concerned with questions such as: How can we make a distinction between science and non-science? What procedures should scientists follow? How do we know that a scientific explanation is correct? (Newton-Smith, 2000). Before describing the philosophical approach that I will be taking in this

thesis, I shall consider several factors that influence the chosen approach. First, the philosophical approach has to be consistent with the nature of the research question and aim. Secondly, my philosophical beliefs and biography as a researcher are important. Thirdly, practical issues, such as access to the data, the nature of the information needed and the information which is available influence the approach taken.

Among the most important factors to consider when deciding a research philosophy is the nature of research question. My research question is: *How was interagency collaboration among public health and safety agencies shaped in preparation for and during the 2012 London Olympic Games?* This question is open-ended and the answer will be derived from the constructions from the individual experiences coming from various organizations, according to the information gathered from three different methods (interviews, observations, documentation) combined with the literature review. The question is mainly inductive, where information collected will be used to inform theory.

Researchers approach their studies with a certain *paradigm*, a basic set of assumptions that guide their inquiries (Guba & Lincoln, 2005). Patton (2002) described a paradigm as a worldview, a way of thinking about and making sense of the complexities of the real world. The basic beliefs that define research paradigms can be summarized by the examination of certain assumptions regarding questions of ontology, epistemology and theoretical perspective (Guba & Lincoln, 2005). Because there is an inconsistency in the usage of terms regarding research philosophies, I will divide my discussion into three areas: ontology, epistemology and theoretical perspective. There is a big confusion in the literature on the concepts of ontology and epistemology. For instance, constructionism and objectivism were considered as ontology by Bryman (2008), but as epistemology by Crotty (2003). In turn, Bryman (2008) lists positivism and interpretivism as epistemology, while Crotty (2003) considers them as theoretical perspectives.

To clarify this confusion in definitions, I will describe my research philosophy using the following hierarchy derived by two sources: Crotty (2003) and Miles and Huberman (1994). Under ontology, which refers to 'what is', I include *realism* and *relativism* as ontological beliefs. Ontological assumptions revolve around questions regarding the nature of existence which is the social world. Under epistemology, which refers to 'what it means to know', I include *objectivism*, *constructionism* and

subjectivism. Epistemological assumptions involve questions of knowing and specifically the relationship between the knower and what can be known (Guba & Lincoln, 1998). Here, it is necessary to clarify that constructionism is divided into social constructionism and social constructivism. The first refers to knowledge formed collectively and the second to knowledge formed individually. In my thesis, I follow the social constructionism approach. Finally, under theoretical perspective, I include *positivism* and *interpretivism*. The theoretical perspective influences the methodology used such as ethnography, grounded theory, case study and the methodology will then influence the methods used (interviews, observations, documentary analysis). I will now discuss the ontology, epistemology and theoretical perspective that inform my research.

According to my background as a nurse, my professional experience in the operating theatres for 16 years and my research experience during my Masters degree, I consider myself more as a realist. Therefore, considering my research question and aims and my personal beliefs, my ontological position leans towards realism and more specifically a version of realism which is called *subtle realism*. In the social sciences, the most prominent manifestation of realism is *critical realism* which is usually associated with the work of Roy Bhaskar (1975, 1979). Critical realism is an ontological notion that states that realities exist outside the mind or are independent of our understanding. In contrast, relativism indicates that reality is a product of individual consciousness and cognition (Guba & Lincoln, 1998). A key idea of the critical realist tradition that provides additional insight in my research is that we cannot have any objective or certain knowledge of the world and there is the possibility of alternative valid accounts of any phenomenon (Putnam, 1999).

Hammersley (1995) adopts a specific version of realism and calls it 'subtle realism'. This version of realism emphasizes the fallibility of human knowledge. Hammersley agrees with the realists that there is a reality independent of our knowledge of it, but he also supports that we can only know reality from our own perspective in it. Hammersley (1992) summarizes the key elements of subtle realism as follows: i) there is no knowledge whose validity is known with certainty; nonetheless, we can be reasonably confident of a claim relative to another, ii) there are phenomena independent of our claims about them whose claims may be more or less accurate and iii) the aim of social research is to represent reality and not to reproduce it.

I will now explain my epistemological position which is social constructionism. Even though they retain an ontological realism, realists accept a form of epistemological constructionism that our understanding of this world is a construction from our own perspectives. In this study, constructionism is deemed as epistemology opposed to objectivism (Crotty, 2003). According to constructionism, the meaning is constructed and not discovered (Crotty, 2003). Crotty (2003, p.42) states that 'constructionism is the view that all knowledge, therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context'.

Constructionism assumes that people may construct different meanings in different ways, even in relation to the same phenomenon (Crotty, 1998). On the other hand, objectivism regards knowledge as something which can be acquired, and therefore, the researcher is able to determine a phenomenon without influencing it or being influenced by it while subjectivism considers knowledge as something that has to be personally experienced (Denzin & Lincoln, 1998). As noted earlier, social constructionism believes that meaning is generated collectively where social constructivism understands meaning in the context of individuals (Crotty, 2003). Even though I interviewed individuals, I tried to understand how collaboration was perceived collectively. Moreover, the meanings gathered from the interviewees had been generated from their collective experience. Through information gathered and construction of meaning by all my participants collectively, I seek to understand how interagency collaboration was facilitated and find how existing theory relate with the implemented practice. Crotty (2003) believed that social constructionism is both realist and relativist.

Finally, I will discuss why I chose interpretivism as my theoretical perspective for my research. Theoretical perspective is the 'philosophical stance lying behind the methodology' (Crotty, 2003, p.66) and is informed by both ontology and epistemology. Interpretivism is the theoretical perspective that is compatible with constructionism epistemology. Crotty (2003) explained interpretivism as a stance that seeks for culturally situated interpretations of the social world and focuses on understanding rather than explaining. Furthermore, according to interpretivism, valid meanings can vary from person to person and change within one person according to the circumstances and human beings act towards things on the basis of the meanings that these things have for them. Therefore, since I try to understand how

my participants, coming from different organizational contexts, viewed collaboration, I chose interpretivism as my theoretical perspective.

3.3 Research strategy

3.3.1 Why case study research

In this section, I will explain the methodological approach that I will be taking. I chose case study as my methodology which is compatible with *subtle realism* ontology, *social constructionism* epistemology and the *interpretivism* theoretical perspective. Both Stake (1995) and Yin (2003) base their approach to case study on constructionism. Therefore, the case study methodology recognizes the importance of the subjective human creation of meaning, but does not reject some notion of objectivity. Case study researchers hold the view that reality is a social construction (Husserl, 1965). This is based on the assumption that one better understands perceptions that individuals or organizations have about their activities within their social context. Today, the case study approach is used as a qualitative research methodology within various disciplines such as management, public policy, medicine, education, sociology and psychology (Yin, 1994). In the literature, there are multiple definitions and understandings of the term 'case study' and unfortunately there is a low degree of consensus about what can be understood by a case study among researchers. First, I will present various definitions of case study and how I perceive it, and then, I will explain why I chose this methodology.

There are two key approaches that guide case study methodology: one proposed by Robert Stake (1995, 2000) and the second by Robert Yin (1994, 2003, 2009). In this study, even though I consider several definitions of case studies, I mainly follow Yin's approach. According to Stake (2000), case studies explore the meanings of experience. Creswell (2007, p. 73) argues that 'case study research is a qualitative approach in which the investigator explores a bounded system...through detailed, in-depth data collection involving multiple sources of information'. Furthermore, Gillham (2000, p. 1) believes that case study is a unit of human activity embedded in the real world which can only be understood in context and that it merges with its context so that precise boundaries can be drawn. Hammersley and Gomm (2000, p.3) defined a case study as 'research that investigates a few cases, often just one, in considerable depth'. Robert Yin (1994, p.13), who is a leading supporter of the use of case study, defines the case study as 'an empirical enquiry that investigates phenomena within their real-life context, when the boundaries between the phenomena and the context are not clearly evident and in which multiple

sources of evidence are used'. Yin (1994) also explains that the case study approach is best utilized when a holistic and in-depth investigation is needed, when 'how' or 'why' questions are being posed, when the investigator has little control over events and when the focus is on a contemporary phenomenon within some real-life context. In my view, which is influenced by Yin's (1994) definition, a case study uses a number of methods to examine a particular phenomenon and then integrates the findings of all the methods in order to analyze and interpret this phenomenon, both at individual and wider levels.

Therefore, considering Yin's approach, my research question and the aim of this study, which is to generate a deeper understanding of interagency collaboration, the case study methodology was deemed ideal in order to understand the topic of this study for the following reasons. First, collaboration is a real-life event which cannot be separated from its context which in my study is public health and safety organizations working for the 2012 London Olympic Games. It was in these settings that collaboration was developed and used. Secondly, case study is largely used for exploration and thus, allows flexibility in examining collaboration processes during a mass event in great depth (Yin, 2003). Thirdly, I used multiple sources of information while collecting my data such as semi-structured interviews, direct observations and documentary analysis to produce an overall view of interagency collaboration. Fourthly, case study approach has the ability to provide a holistic perspective of collaboration, which was necessary to be captured in this study. Fifthly, this study requires an understanding of the complex nature of collaboration among different agencies during a mass gathering and case study allows for a relatively full understanding of the complexity of a phenomenon (Yin, 2003). Moreover, since my research question is a 'how' question and given the fact that I did not have the ability to control the collaboration process between the participating agencies, a case study approach seemed to be appropriate for my research (Yin, 1994, 2003). Finally, I bound my case by several factors such as time, place and activity in order to draw precise boundaries between the phenomenon (interagency collaboration) and the context (2012 Olympic Games).

A main advantage of a case study is to bring out processes in certain contexts (Stake, 2000). This can be achieved because case studies place emphasis on an intense examination of a specific setting (Bryman, 2008). Other benefits include the fact that case studies allow us to see the world through the researcher's eyes and take us to a world where most of us would not have the opportunity to go.

Moreover, an important strength of a case study is its ability to deal with a variety of evidence such as interviews, observations and documentation (Yin, 2003). This ensures that the phenomenon is not explored through one lens, but rather a variety of lenses which allows for multiple facets of the issue to be revealed and a holistic understanding of the phenomenon to be reached. This strategy also enhances data credibility and adds strength to the findings (Patton, 2002; Yin, 2003).

Nonetheless, whichever definition of case study is used, this methodology has received frequent criticism. One of the main arguments against case studies are that the findings derived from them cannot be generalized (Bryman, 2008). Lincoln and Guba (2000) identified that the main problem with generalizations from case studies is that they do not apply to particulars. However, according to Yin (2003), in case studies, one generalizes to theoretical propositions (analytical generalization) and not to populations (statistical generalization). The case study does not represent a sample and the researcher's goal is to generalize theories and not to enumerate frequencies. Bowling (2002) argues that by understanding a single case well, one can begin to develop a more widespread comprehension of the issue under examination. Therefore, in my case, by exploring in-depth the issue of interagency collaboration in this particular context, I do not aim to search for generalization, but rather to capture the essence of the particular in a way we all recognize and find ways that my findings may be transferable to other contexts (Simons, 2009).

3.3.2 My case

A case study explores a *bounded system* by using in-depth and comprehensive data collection. In my research, the case under study is the collaboration between the public health and safety agencies in the context of the 2012 London Olympic Games. The most essential element of a case study is the identification of the case itself. This allows a 'bounded system' to be identified with certain features occurring within the boundary of the case and other features outside of it (Denzin & Lincoln, 2000). The manner in which a case is bounded has been discussed a lot in the literature. Creswell (2003) believes that a case should be bound by time and place. Stake (1995) recommends that it should be bound by time and activity. Miles and Huberman (1994) suggest that the boundaries are the context within which the case is situated. Following all the above recommendations, I bounded my case by the definition of interagency collaboration, time, place, activity, context of my research and participating agencies' characteristics.

Interagency collaboration is defined as a process where agencies interact to achieve a common goal that neither agency could achieve on their own (Gray, 1985). Regarding the time boundaries, my research was conducted from May 2011, 14 months before the actual Games, until October 2012, two months after the completion of the Games. The place of my study was London and more specifically each organization's headquarters and operation rooms. Furthermore, my research took place in three stages: a) during the preparations for the Games I interviewed my participants and observed six meetings and four exercises of several agencies; b) during the actual Games I observed four operation rooms of BRC, HPA and Ambulance Service; c) after the completion of the Games I conducted my second set of interviews. Finally, the context of my study was the 2012 London Olympic Games, and the agencies that participated belonged to category 1 and 2 responders (plus the Military service) who, according to the Civil Contingencies Act (2004), have duties in the event of an emergency and have responsibilities for carrying out the legislation. In order to situate the case in its context, an overview of the agencies participating in this study will be provided in the next chapter.

Apart from binding my case, I need to clarify the type of my case study. Yin (1994) suggests that there are two types of case study: a single- and a multiple-case design. The single-case study (as this study) is a suitable design when the case represents an extreme or unique case (Yin, 1994, pp.38-40). Multiple-case studies include two or more cases within the same study. He then categorizes case studies as exploratory, descriptive or explanatory. An exploratory case study attempts to understand the case by looking beyond descriptive features and studying surround context. A descriptive case study presents a complete description of a phenomenon within its context. An explanatory case study produces data that explain how events happened by determining causes and effects (Yin, 2003, p.5).

Yin (2003) also makes a separation according to the unit/units of analysis to be covered to holistic and embedded case studies. Holistic case study refers to the examination of a phenomenon where only the 'global nature' is of interest, while embedded apply to studies where one or more sub-units within the overall unit of analysis are given attention, as is the overall unit. *Unit of analysis* is a concept that is perceived as being especially important within the case study approach (Patton, 2002; Yin, 1994). However, the distinction between the 'unit of analysis' and the 'case' itself is unclear. According to Patton (2002), the case is simply identical with the unit of analysis. Similarly, Miles and Huberman (1994, p.25) argue that 'the case

is, in effect, your unit of analysis'. Yin (2003) is rather imprecise about the concept of the unit of analysis. In his typology (Yin, 2003, p.40), in some situations he argues that there is a distinction between the case and the unit of analysis, whereas in other situations he makes no such distinction.

Consequently, following Yin's definitions, the present study is designed as a single, holistic and exploratory case study. I chose the single case study as an appropriate design of my research because interagency collaboration during the 2012 London Olympic Games represents a unique case. The nature of my research question (which is a 'how' question), and the fact that very little is known around the issue under study, suggested that an exploratory approach is appropriate for the study. The research attempts to find out how interagency collaboration among public health and safety agencies was shaped before and during the Games, how involved professionals perceived the process of collaboration and what were the facilitators and barriers of this process. Therefore, all these questions are of an exploratory nature. Finally, the holistic design is appropriate as the study concentrates on one phenomenon/case/unit of analysis which is interagency collaboration.

3.4 Research methods

3.4.1 Rationale

Yin (1994) identifies six sources of evidence within case studies which are also supported by Gillham (2005) and Silverman (2001): interviews, direct and participant observation, documentation, archival records and physical artifacts. Table 3.1 summarizes the data collection methods as provided by Yin (2003). The research question, the level of control the researcher has over the events and whether the focus is on contemporary or historical phenomenon influence the decision about which method or combination of methods should be applied (Silverman, 2001; Yin, 2003). I used interviews, direct observations and documentation to collect my data. However, the research focuses primarily on the interviews with direct observation and documentary analysis as complementary methods in order to gain a fuller picture of how different professionals collaborated with each other. In this study, some of the above methods could not be applied. These included archival records, participant observation and physical artifacts. Archival records and physical artifacts could not be used because the context of my research, which is the 2012 London Olympic Games, represented a unique case. Participant observation requires the researcher to be active within the field (Yin, 2003), which was not possible given the circumstances of my research (part-time, distance).

Table 3.1: Sources of evidence: strengths and weaknesses

Source of evidence	Strengths	Weaknesses
Documentation	• Stable-can be reviewed repeatedly • Unobtrusive-not created as a result of the case study • Exact-contains exact names and details of an event • Broad coverage-many events and settings	• Retrievability-can be difficult to find • Biased selectivity • Reporting bias • Access
Archival records	• As documentation • Precise and usually quantitative	• As documentation • Accessibility-privacy reasons
Interviews	• Targeted • Insightful	• Bias-poorly articulated questions • Response bias • Inaccuracies
Direct observations	• Reality-events in real time • Contextual-context of case	• Time-consuming • Selectivity-broad coverage difficult without a team of observers • Reflexivity-event may proceed differently because it is being observed • Cost-hours needed
Participant observation	• As direct observations • Insightful	• As direct observations • Bias-participant/observer's manipulation of events
Physical artifacts	• Insightful-cultural features • Insightful-technical operations	• Selectivity • Availability

(Adapted from Yin, 2009, p. 102)

The most significant advantage gained by using multiple sources of evidence is the development of converging lines of inquiry, i.e. a process of triangulation (Yin, 2009). Triangulation is a research technique in which a researcher compares different methods and perspectives to help produce more comprehensive findings (Yin, 2003). Triangulation has also been described as 'a process of using multiple perceptions to clarify meaning and verifying the repeatability of an observation or interpretation' (Stake, 2000, p. 443). Patton (2002) discusses four types of triangulation: a) of data sources, b) among different investigators, c) of perspectives to the same data (theory triangulation) and d) of methods. The purpose of using multiple sources of evidence is to search for both convergence and divergence in the data by comparing the different kinds of data. Multiple researchers and different theoretical perspectives can also cross-check the findings derived from the data. Finally, different methodologies can also check for any contradictions in the findings.

In this research, the use of triangulation is necessarily limited since my findings are mainly drawn from my interviews. Nonetheless, certain triangulation was achieved through: 1) interviews with professionals from different backgrounds, 2) observing various meetings and exercises, 3) documents from different agencies, 4) cross-checking interviews, observations and documents to find the similarities and differences between them and 5) integrating the findings from all the sources. However, Hammersley and Atkinson (2007) express doubts about the use of triangulation and note that a convergence of findings does not necessarily mean that an analysis is credible. Actually, Richardson (2000) argues that the term 'crystallization' is more suitable than triangulation because it better describes the process of crystallizing the existence of multiple versions of reality.

3.4.2 Sampling-Recruitment

Recruitment in qualitative research seeks to include participants who represent the diversity of the population relevant to the study. In this case study, the choice of the organizations was an important decision. My decision was that these organizations had to belong to category 1 and 2 responders who, according to the Civil Contingencies Act (2004), have duties in the event of an emergency and have responsibilities for carrying out the legislation. Category 1 responders are known as core responders and they include the following services: (1) police forces, (2) fire services, (3) ambulance services, (4) coastguard, (5) local authorities, (6) NHS, (7) health protection agency, (8) environment agency. Category 2 responders act in support of Category 1 responders and they are mostly voluntary and transport organizations. I also included the Military service which according to a function called 'Military Aid to the Civil Authorities' has the duty to support Category 1 responders.

Then, I had to decide how I was going to identify the professionals who would represent the above services. In order to ensure that the sampling covered a wide range of relevant individuals, I included professionals from the above services who had a key role and a function around the Olympic Games and their public health and safety aspect and were willing to take part in the study. For example, the participants I interviewed consisted of Heads of the Olympics Planning, Olympics Programme Managers and Directors, Olympics Lead Planners and Operational Managers. I excluded professionals if their work was not related to the Games, even if they belonged to the above agencies. The starting point was Miles and Huberman's (1994) *snowball* sampling where discussions with those involved with public health and safety during this mass gathering lead to other contacts. Denzin and Lincoln

(2000, p.447) also emphasize that it is significant to choose samples on the basis both of opportunities to learn and of accessibility. This point was echoed by Marshall and Rossman (1999), who indicate that the first priority of sampling is the availability of the participant. The sampling procedure I followed was a combination of purposive and snowball sampling. This method of sampling facilitated detecting the most relevant and knowledgeable participants.

Therefore, the initial choice of possible participants was based on discussions with my MSc supervisor who was a former policeman and with three MSc fellow students who belonged to police, fire and ambulance services. They all suggested a number of possible participants who fulfilled my inclusion criteria. I made a contact with them through email and I sent them the two information sheets and the consent form of my study (Appendix 8, 9, 10) in order to give them the opportunity to understand the purpose of my study and accept my invitation to participate. All the documents assured each participant of complete confidentiality and anonymity. Four potential participants did not participate in the research because of their busy schedules. Those who were interested in participating in the study informed me through email and I replied by asking them to schedule an interview. The interviewees were encouraged to choose the date and the place of the interview at their convenience which was usually their office during workdays. All the professionals agreed to participate on the basis of their anonymity (I replaced their names by pseudonyms). These first participants also suggested a number of personal contacts who would be useful for my study from the same and other agencies and connected me with them via an email. I followed the same steps in order to recruit them, if they met my inclusion criteria, and this process led to my final participants who also invited me to attend a number of exercises and meetings. Additionally, during my observations, I met professionals who became participants in this study. Each of the participants facilitated my access to each organization. All my participants were from England.

The number of participants in each of the organizations described previously had also to be decided. I was aiming to interview at least one professional from each of the eleven organizations depending on their availability. Because of the particularities of each organization and the availability of people, the number of interviews varied from one agency to another. For example, within the most agencies I interviewed one to three professionals, but from the MPS I interviewed eight participants. Nonetheless, because according to most guidelines (e.g. LESLP, 2012),

the MPS is the leading organization in emergencies and big events and because it is a complex organization that is divided in many different departments (especially for the Games), I decided that I would use all the interviews, even though their number exceeded other agencies' interviews. I also decided that I would stop recruitment at the point when no new issues were emerging during my interviews. I eventually interviewed 26 professionals and their details are given in Table 3.2.

Table 3.2 Participants

#	Interviewee	Gender	Organization	Category 1 or 2	2 nd interview
1	Adam	M	NHS	1	NO - no response
2	Jack	M	LFB	1	NO- died
3	Pat	M	LAS	1	YES
4	Tonia	F	HPA	1	YES
5	Lyn	F	NHS	1	YES
6	Sal	M	LAS	1	NO- retired
7	Cal	M	MPS	1	NO- retired
8	Jacob	M	LAS	1	YES
9	Randy	M	GLA	1	NO- no response
10	Eleanor	F	HPA	1	NO- changed job
11	Barry	M	MPS	1	YES
12	Paul	M	MPS	1	NO- retired
13	James	M	MPS	1	YES
14	Georgia	F	NHS	1	NO- no response
15	Sam	M	MPS	1	YES
16	Neal	M	MPS	1	NO- no response
17	Noel	M	TRANSPORT	2	NO- retired
18	Jason	M	LFB	1	NO- no response
19	Malcolm	M	MPS	1	NO- retired
20	Ben	M	MILITARY	1	YES
21	Samuel	M	BRC	2	YES
22	Maggie	F	BRC	2	YES
23	Ralf	M	MARITIME/COAST GUARD	1	NO- no response
24	Berry	M	BRC	2	YES
25	Jeff	M	ENVIRONMENT	1	YES
26	Marley	M	MPS	1	YES

3.4.3 Data collection

3.4.3.1 Interviews

Interviews usually offer the best access for researchers to participants' views and interpretations of actions (Walsham, 1995). Moreover, they are deemed as an efficient way to gather rich and empirical data, especially when the phenomenon

under study is highly episodic and infrequent such as public health and safety services collaborating for the Olympic Games (Eisenhardt & Graebner, 2007). Interviews are classified into three main types: structured, semi-structured and unstructured. Structured interviews focus on a specific issue or set of issues and the interview is guided by specific questions, while semi-structured interviews are more flexible, allowing new questions to be brought up during the interview as a result of what the interviewee says. Unstructured interviews tend to be more open-ended where the questions can be changed to meet the participant's understanding or beliefs.

I chose the semi-structured interview for my research for several reasons. For example, this approach provided the opportunity to discuss new issues brought up by the participants and for interviewees to elaborate on the subject. Furthermore, it allowed an open-ended nature of questions. The lists of the interview questions that I used in the two phases are provided in Table 3.3. Discussions with my supervisors and the empirical and theoretical literature included in this study helped me to determine the specific set of questions. The development of the questions of the first interviews aimed at getting a comprehensive overview of the human interactions within and among organizations as well as individuals' characteristics and organizations' systems that influence collaboration during the planning stage of the event. The questions of the follow-up interviews were intended to capture professionals' experience of collaboration during the actual Games and also to identify specific facilitators and barriers.

Table 3.3 Interview questions

1st Interviews	2nd Interviews
Could you provide a brief history of yourself, your experience and your work in the agency?	What is your overall experience from the Games regarding interagency collaboration?
Could you state what is your and the agency's role and responsibilities regarding the Games?	Could you provide an overview of collaboration, what went wrong or right and give examples?
Do you think you have a clear job description?	What were the unique challenges of the Games regarding interagency collaboration and how did you overcome them?
Could you describe the skills that are necessary for fulfilling your role?	Could you provide an example to describe the decision-making procedure?
How have you acquired the knowledge that is needed, formally or informally?	What would you do differently during the preparations next time?
Is there any specific training within your agency regarding the Games?	Could you give me an example of the information sharing among the agencies, how it was effective and how did you solve

	any problems?
Which one of your prior experience do you think will be most useful during the Games?	Did you have to change the way of interacting with other professionals?
Have you participated in any interagency exercises and what is your feedback?	How leadership influenced collaboration and give examples?
What are the main plans and documents you use and have you developed new ones?	Do you think the plans and the exercises were effective and what would you do differently?
Could you provide an overview of the relationships between staff within and outside of your organization?	Was the structure between the agencies clear?
Could you describe the collaboration, including methods, between yourself and the various parties and staff and how effective it is and how?	Did your job position change after the Games?
Could you provide an example of a communication problem that occurred and how it was resolved?	Did you gain new knowledge and skills?
Could you describe the current process of information sharing among the agencies and give an example?	Is your agency going to provide any learning from the Games and how?
How does command and control structure help or hinder collaboration in practice?	What was the most useful experience for you around collaboration?
Are there network associations between professionals that help collaboration?	What are the main lessons learned regarding interagency collaboration?
How leadership influences collaboration?	Do you have any other comment?
Is the decision making and response structure within and outside your agency clear?	
How terminology affects collaboration?	
Do you have business continuity plans in place and is there any strategy for the outside of the Games demanding?	
Have you learned anything from previous Games?	
How can legislation affect the organizations' ability to act?	
Is there any additional aspect that would be useful for the aim of my study?	

Apart from the face-to-face interviews that were mainly used for this study, there are also other forms such as telephone, Skype or email interviews. I preferred to conduct face-to-face interviews because, as Burton (2000) suggests, they are deemed as a multi-method of data collection as the interviewer is able to strengthen the data analysis by adding visual elements of the interviewee. In addition, Gillham (2005) argues that a significant disadvantage of telephone or email interviews is the absence of face-to face interaction. I conducted the main interviews during the preparation stage for the Games (Phase A) and some follow-up interviews after the

Games (Phase C) to complement the main ones and capture the participants' experiences during the actual Games. Before conducting the second interview of each participant, I reflected on what had been said during the first interview, so that interesting areas could be further probed. Even though all the 26 participants had agreed to give me a second interview after the Games, only half of them (13) were eventually able to provide the second interview. The reasons for missing the rest of the participants are presented in Table 3.2. Nonetheless, because this number covered most of the organizations and these interviews were complementary to the main ones, I considered it as efficient and I proceeded to the second stage of my data collection.

All the interviews took place between May 2011 and October 2012, during the periods I visited London, and were conducted in English. More specifically, the first interviews were conducted in May and September 2011 and in February 2012 and the second interviews in October 2012. Thirty-seven interviews were conducted face-to-face and recorded on a digital recorder; only two interviews (in Phase C) were in written form via email. Two participants during the Phase C of the data collection process chose the email method for geographical reasons as neither worked in my locality. The preparation for these two interviews was similar to face-to-face interviews in terms of information, questions and format. They consisted of online asynchronous interviews conducted via email. More specifically, I sent to the participants a Word document (attached to an email message) including the list of my second interview questions. One difference with the face-to-face interview questions was that I revised the wording of the questions in order to be more self-explanatory to reduce ambiguity and minimize participants' misinterpretations. Both of the respondents replied to my email message within one week. After receiving their responses I asked them for clarifications and additional explanations; I had two follow-up exchanges with the one participant and three exchanges with the other. Both respondents provided me enough information during our follow-up exchanges and I concluded the data collection within approximately one month.

Regarding my face-to-face interviews, I started each interview by writing down on my interview guide (see Appendix 4) some details such as the date and time, the setting and the name of the respondent. Then, I introduced myself and explained the purpose of the study and gave them in hand the two information sheets and the consent form (each participant had received these documents through email). Following this, I asked them if they had any queries and if I had their

permission to record the interview. None of the participants refused being recorded for the interview. At this time, I started asking my questions according to my guide; if the interviewee made an interesting point that was not specified on my guide, I asked them to elaborate. Sometimes, during the interview process, I had to redirect our conversation and bring it back to the interview questions, as respondents digressed at times. At the end of each interview, I asked participants if there was any issue that had been missed or anything they wished to discuss further regarding interagency collaboration. After the end of the interview, I stopped recording and I asked the participants for any scheduled meeting or exercise that I could observe, if they had any relevant documents to give me and if there was a contact that would be useful for my study to interview. Finally, I asked them if they would agree to give me a second interview after the Games.

Due to the semi-structured format of the interview, the length of the interviews differed considerably. For instance, in one interview, the participant kept his answers very short and did not give extra information or allow for follow-up questions. Therefore, the interview was finished within 18 minutes. Other interviewees extended the interview time to one hour and a half. The average duration of the interviews was 50 minutes. Immediately, at the end of each interview, I wrote my observations and reflections on my guide, in order to record as much detail as possible. I also revisited my interview guide after each interview to make any necessary revisions to ensure the questions were on target.

3.4.3.2 Direct observation

According to Yin (1994), observation is one data collection tool which is often used in combination with other methods such as interviews and documentary analysis, and it is useful in providing additional information about the topic being studied. Literature identifies two types of observation: direct (non-participant) and participant observation. Their main difference is the degree the researcher takes part in what is being observed. The 'participant as observer' and the 'observer as participant' roles describe the extent to which the investigator participates in the field of study. In direct observation, which I conducted, the researcher acts as a complete observer and does not participate in what is being observed (Creswell, 1998). However, more recent approaches to observation-based research suggest the need to consider the attributes and activities of the observer (Angrosino & Rosenberg, 2011). This introduces an element of subjectivity combined with the rigour of

'carefully conducted, clearly recorded, and intelligently interpreted observations' (p. 468).

Bryman (2008) identifies various types of direct observation method including structured and unstructured observation. In structured observation the researcher establishes rules to guide the fieldwork and record the observation. On the other hand, in unstructured observation which I followed, the aim is to record as much detail as possible regarding the participants' behaviour and keep fieldnotes about it. Even though there are many problems associated with observation such as interpreting meaning, problems of memory and selectivity of what is being observed (Bryman, 2008), taking fieldnotes is deemed necessary (Silverman, 2006).

The purpose of the observational data I collected was to supplement and support (or refute) the findings from the interviews. For example, where participants made statements regarding personal relationships, observations would provide information about it. Moreover, I had the chance to see what people actually did and not what they said they did and enhance the credibility of my data by using triangulation of data sources. Observations gave me the unique opportunity to meet not only professionals from various public health and safety agencies but also senior managers and commanders whom I could not meet differently. Moreover, I gained the opportunity to participate in round-table discussions, meetings and teleconferences with government representatives and international agencies (e.g. WHO representatives).

During these observations, I encountered a complex variety of interagency relationships and differing views as to how each service should proceed in terms of protecting public health in various circumstances (e.g. in scenarios during the exercises). I also had the ability to observe personal relationships and interactions between various participants. I had the chance to ask people about their experience of collaborating with other agencies during the whole planning stage (which I was not able to observe) as well as how they managed encountered problems and understand their perspective. Furthermore, I was trying to observe indicators of good or bad communication practices, and most of the observations provided examples of communication flow among the agencies.

My direct observations were carried out between May 2011 and August 2012 in two phases: during the preparations for the Games (Phase A) and during the

actual Games (Phase B). During the preparations, I observed four field exercises and six meetings and during the actual Games, I was an observer in the Special Operation Rooms (SOR) of four services. The details of each observation including the time spent are summarized in Appendix 5. In total, the time spent observing professionals was around 93 hours, without including time spent travelling to and from the organizations. I selected the meetings, exercises and SORs according to my interviewees' invitations while I was in London for the interviews and for the actual Games and I scheduled to travel and collect my data when significant exercises were taking place. I decided to observe a sample of the above, since a single part-time researcher living and working abroad cannot cover every meeting or exercise during the whole planning period which actually started 7 years before the operation of the Games. However, according to my participants' opinions, serious planning took place 1 year before the Games (I started my fieldwork in May 2011, 14 months before the Games) and the government had arranged three national exercises from September 2011 until April 2012; I managed to observe one of them (Yellow Fortius exercise) even though the access was restricted. Accepting the above limitation, I attended a number of meetings, exercises and SORs which helped me to verify or refute my interviews' findings and enhance the credibility of my data.

In the beginning of each observation my point of contact, who also negotiated my access to the field, introduced me to the group members. I spent time with my initial contact and other professionals who I met during the observation, throughout the whole day in order to familiarize myself with the environment and the roles of each professional. I followed them in meetings, informal conversations and had coffee breaks and lunch with them. During the fieldwork, I focused on how professionals collaborated with each other, made decisions and shared information and on the most commonly encountered problems and how they were managed. Moreover, my interview questions guided my observations, even though I was also open to new issues as they emerged in exercises and meetings. I recorded all the above information exactly as it occurred. I also asked the professionals for clarifications on the meaning that these interactions had for them. This resulted in collecting different views on the issue of interagency collaboration.

Throughout the observations, I remained quiet in order to focus on gathering observational data. During and after all the observations, I kept fieldnotes and memos. In total, I recorded around 24,000 words based on observations, personal analysis and reflection. Making initial fieldnotes presented a few difficulties including

who and what to pay attention to. To limit this challenge, I started to focusing more on a number of domains involving describing the physical environment and the participants, examining the process of collaboration including decision-making and information-sharing interactions, reporting encountered problems and applied solutions, assessing participants' opinions outside the formal meeting/exercise and reflecting on the general atmosphere of the process. In this way, notes were taken in a much easier basis. According to Flick (2002), observation enables the researcher to learn how something actually works. In this study, interviews could not produce substantial insight regarding interagency collaboration without the use of observation of the actual practices between the services.

3.4.3.3 Documentary analysis

The use of documentary method refers to the analysis of documents that contain information about the phenomenon studied (Bailey, 1994). Jupp and Norris (1993, p.46) point out that documentary analysis enables 'not taking for granted what is said' and the opportunity to examine how a document is placed 'in relation to ideology, power and control'. Documentary sources must be handled scientifically. More specifically, Scott (1990) has developed four quality control criteria for handling documentary data: authenticity, credibility, representativeness and meaning. Authenticity refers to whether the source is genuine, credibility refers to whether the evidence is free from error and distortion, representativeness refers to whether the document is typical of its kind relating to the other relevant documents and meaning refers to whether the document is clear and comprehensive. When researchers use documentary analysis as a method of collecting data, their approach should follow rigorous concordance to research standards and the above criteria can enable them to reach these standards. This is important, especially now when there is too much information particularly on the internet, with people and organizations publishing an overwhelming number of documents online.

As my interviews and observations proceeded, participants provided me with a number of documents being produced by various agencies including government such as reports, letters, legislation and strategic and procedural manuals. This resulted in a range of documents for data collection. These included four government's reports about updates for the preparations for the Games, eight legislative and guidance manuals from several agencies, two letters from DH and HPA and three meetings' proceedings from LAS, MPS and LFB. All the 17 documents fulfilled the four criteria discussed previously. More specifically, I verified

with the respondents the authenticity of the documents by assuring that they consisted of unique versions and their source/author was genuine. Regarding credibility, I confirmed with participants that the messages included were factual statements and not personal opinions. Moreover, the collected documents were representative of the totality of the relevant documents to the extent of being official government documents and coming from various agencies. Finally, all the documents had clear meaning which was verified with a few key respondents who were more familiar with them. Having collected and evaluated the above documents, I proceeded to analyze them by applying the final template (explained later in this chapter) of my analysis to the texts. From the total population of the documents collected, ten strategic documents (see Appendix 6) were more relevant to the research question and chosen for analysis. Therefore, I selected documents based first on convenience (availability/accessibility of sources), second, on fulfilling the four quality criteria and third, on how they answered my research question by applying the final template to the texts. During the analysis, I examined how they contributed to interagency collaboration and the extent to which documents were truly used by the organizations or they were simply cosmetic manuals. Furthermore, documents were used to confirm basic information about the participating organizations and more specifically to verify or deny professionals' perceptions as to what were their organization's responsibilities during this mass event and how different agencies should collaborate in order to protect public health and safety.

3.5 Data analysis

3.5.1 Why template analysis

The process of analyzing the data usually begins during the data collection phase and continues during and after the transcription process. This study generated data in the form of transcripts from the interviews, field notes from observations and texts from the documents. I transcribed all the interviews myself instead of using professional transcription services (also unaffordable) because, even though it is a time-consuming procedure, it produces a more authentic transcript. More specifically, my memories and field-notes of each interview helped me become more familiar with the data in order to begin the process of analysis.

The literature includes methodological and practical discussions and overviews on producing transcripts and on using specific transcription notations (Jefferson, 2004; Nikander, 2008; Ochs, 1999; Silverman, 2005; Ten Have, 2004). Oliver et al. (2005) identified two approaches to transcription: naturalized and

denaturalized approach. In the first one, transcription practices seek to provide as much detail as possible whereas in the second one idiosyncratic elements of speech such as pauses and laughs are removed. In my transcriptions, I included contextual information such as pauses indicated with the symbol '(...)' or laugh. As Poland and Pederson (1998) mention, what is not said is just as important as what is said.

Analyzing the data gathered from the interviews was the main task. Then, I analyzed the observations' and the documents' data and integrated all these findings. At the beginning of the study, I had an idea about how I would analyze my data (i.e. thematic analysis), but I had not decided the detailed analytical approach and how I would integrate the data from three different data collection methods. A restatement of the research question is essential at this stage of the methodology in order to help the researcher deciding which data analysis method will use to achieve his/her aim. The purpose of this study is to collect information about how different organizations collaborated to protect public health and safety during a mass event and what elements influenced their attempt to work together, and this was what I was looking for among all the information gathered.

I have researched grounded theory, interpretive phenomenological analysis (IPA) and narrative analysis but I decided to use template analysis (TA) to analyze my data. TA has been recently developed in organizational research and it has many similarities with grounded theory and IPA. Their main difference is the use of 'a priori' codes in TA and the balance between within and across participants' accounts. TA was first described by Crabtree and Miller (1999) but it was mainly developed by King (1998, 2004) and based in healthcare. King (2004) argues that TA can be used within different epistemological approaches and from a large number of researchers.

I chose template analysis as a strategy to analyze my data for a number of reasons. First, my aim is to focus on meanings about collaboration across the different public health and safety agencies and not on each participant who represents the agency. TA places emphasis on the experiences and meanings of the interview data across participants' accounts where narrative analysis (Chase, 2005; Riessman, 2008) and IPA (Smith et al., 1997) is based on each story. Secondly, I had identified in the existing literature and the theoretical framework a number of issues that would be useful to be further examined in the field of interagency collaboration during mass events and the definition of 'a priori' themes that TA uses helped me in the initial phase of the analysis where grounded theory and IPA do not

use these themes. Thirdly, TA can be applied to any kind of textual data such as interview transcripts, diary entries, email interviews, documents and fieldnotes from observations. Therefore, using TA enabled me to analyze and integrate the data from the three different methods I used during my data collection (interviews, observations and documentation) by applying the template to all the above texts: transcripts, fieldnotes and organizational documents. Fourthly, TA can be applied in different epistemological approaches, including the constructionism position used in this study. Therefore, this technique helped me to consider different interpretations of my data.

Reynolds (2003) compared two approaches to analyzing qualitative data (TA and IPA) within a research project which explored the meanings of artistic occupation for women living with chronic illness. Her project included two studies: the initial study was based on a set of written narratives and the second one upon in-depth transcribed interviews. Having used both techniques, she identified some strengths and limitations of each method. She suggested that TA is fairly straightforward for researchers relatively new to qualitative analysis. Moreover, by using 'a priori' themes, the findings can be readily related to the existing theory. Nonetheless, even though TA proved to be a practical approach to her data analysis, the produced template provided broad rather than fine categories. She mentioned that the template limited the interpretation of the data and tended to fragment the data, destroying its coherent phenomenological quality. However, Crabtree and Miller (1992) claim that this can be overcome by adopting an interpretative phase in the analysis where the themes are linked together to shape a meaningful theory.

Waring and Wainwright (2008) also used TA in two different case studies. The first study explored the diffusion of innovation of clinical and administrative computer systems across general practice within a Primary Care Trust and the second one examined IT project management practice related to the development of integrated pathology computing systems across eight separate laboratories. In the first study, the authors interviewed 17 Trust members, and in the second one they interviewed eight senior managers and conducted participant observation and document collection for over three years. They concluded that TA has little difference from the use of software packages for data analysis such as NVivo and that the software might allow a more comprehensive approach. They also noted that immersion in the data is a necessary part of the interpretive process and the use of technology can be a significant barrier.

I would suggest that TA is a strategy of analyzing qualitative data including particular steps and differs from software packages which can be used as a tool during the analysis procedure. Therefore, in my view, if researchers are reflective and open-minded and have the ability to immerse into the data, technology can be an enabling factor and not a barrier during the analysis. The above authors also found that the set of 'a priori' codes is very useful if there is relevant literature to the issue under study while a grounded theory approach is unsuitable due to the existing knowledge. TA proved to be very informative in identifying relationships between individual codes and provided a rich interpretation of their data.

3.5.2 Process

Template analysis is a particular technique of thematic analysis and involves an iterative process. According to King (2004), I followed a number of steps during the analysis process. First, I identified some themes in advance, usually called 'a priori' themes (Appendix 7). These themes were derived mainly from the empirical and theoretical literature review used in this study. *Themes* are features of participants' accounts describing particular perceptions that are relevant to the research questions and *coding* is the process of distinguishing themes in accounts and attaching codes to classify them (King, 2004). These features usually (not always) occur several times in the data, within and across transcripts. Researchers need to have in mind their research question when deciding whether and how to define themes. As Boyatzis (1998, p.1) mentions, 'a good code is one that captures the qualitative richness of the phenomenon'. Their main benefit is that they enabled me to start the initial coding phase of analysis which is normally a hard and time-consuming process. However, it is crucial to recognize that these themes are provisional and may be removed during the process in order to avoid overlooking information that does not relate to them. Following this, I transcribed the interviews and read them thoroughly in order to comprehend their meaning in their entirety (Pope et al., 2000). As noted earlier, I decided to do a detailed transcription of the interviews and include not only participants' words but also pauses and laughs. This helped me to understand better their experiences and beliefs around the subject.

The next step was the initial coding of the data. I identified the parts of the transcripts that were relevant to my research question and attached them to one or more of my 'a priori' themes. If I had not defined a relevant theme, I modified an existing theme or created a new one. To verify whether a code was appropriately assigned, I compared all the text segments that were included in the same code and

decided whether they reflected the same concept. This constant comparison method enabled me to refine the existing codes and develop new codes (Glaser & Strauss, 1967). Therefore, even though TA is a more deductive approach, which starts with a structure of 'a priori' themes, the coding process also evolved inductively, reflecting the experiences of the participants. TA also allowed for parallel coding, in which the same segment of a text can be allocated into one or more themes. Codes were organized hierarchically so that the highest level codes represented broad themes and the lower levels more focused themes. I used the NVivo 7 software to do the coding and organize my data.

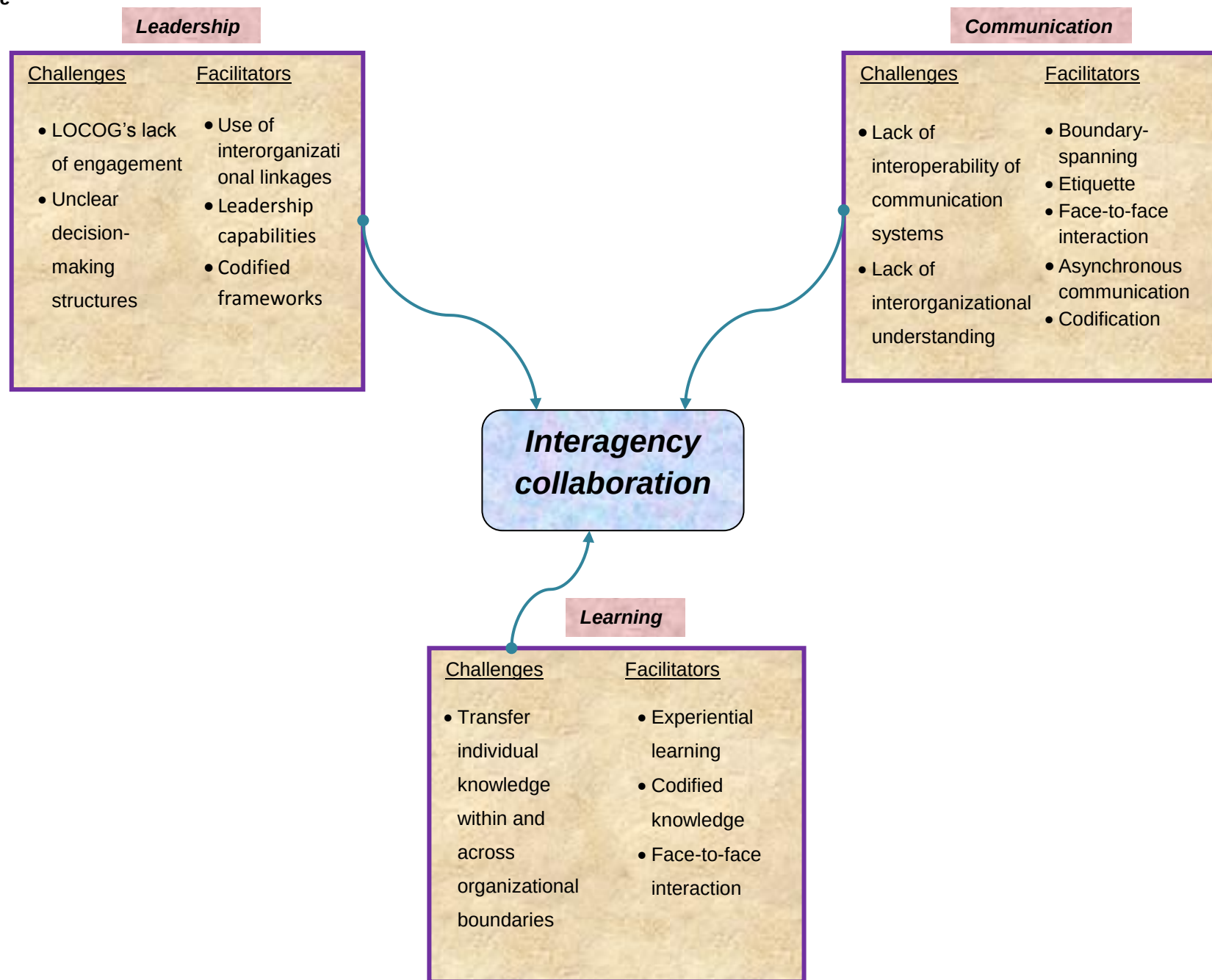
While coding the transcripts, I then produced my initial template by grouping the identified themes into a number of codes which describe broader themes in my data (Appendix 7). A key issue to consider is when to stabilize the initial template. If it is done too early, there is a danger of neglecting information that does not fit into the template. On the other hand, if a researcher waits until finishing all the transcriptions, he/she may lose momentum in repetitious coding. When I reached a point where my coding was no longer producing many new themes, I stabilized my initial template. More specifically, I applied the template to each transcript, coded all relevant parts on it and modified it if there was information relevant to my research question and not covered by the template. Having developed my template, I applied it to my observation's fieldnotes and the documents and followed the same procedure. Although TA seems to be a linear process, it is an iterative one which needs to stop when the revisions of the template do not provide a significant gain in the quality of the analysis. It is important to recognize that the template is not the final product of the analysis but a tool to help researchers interpret their data.

The next stage of template analysis is interpreting the data. The interpretation of the data should be guided by the purpose of the study and the nature of the evidence itself. King (2004) recommends three strategies during this process: listing themes, prioritizing and openness. Listing themes, especially by using computer software, gives an overview of the thematic coding and can reveal combinations that need closer attention. Furthermore, the fact that a theme is common or rare may indicate something that needs a more detailed examination. Prioritizing is a useful strategy because it helps the researchers to evaluate what are the important themes in the study and understand the phenomenon under investigation. In order to prioritize, I examined the themes within and across participants' transcripts and identified those that seemed important for my study. A significant risk during this

process is to focus only on the common themes across the cases and lose the real context of the participants' accounts. It is therefore crucial to immerse into the participant's story and look closely at individual's accounts. Finally, openness is needed to avoid narrowing the focus of the interpretation process. For example, if a theme often appears into the participants' transcripts but does not seem relevant to the research question, it may mean that the researcher has narrowed the focus of the analysis according to his/her assumptions. At this stage openness is needed to be able to recognize strong emerging themes.

The final step of analysis after interpreting the data and before writing-up is integration. Corbin and Strauss (2008) presented a number of analytic techniques which I followed in order to achieve integration of concepts such as writing the story line, use of diagrams and reviewing and sorting of memos. At the stage of the integration, the researcher has already become immersed into the data. Therefore, a useful technique is to reread several interviews or fieldnotes from observations not in detail but in a general sense and write in a few sentences to sum up the main points. Apart from the storytelling, diagrams are also useful for identifying the relationships between categories. Diagrams which are visual representations of the data help the researchers to think carefully about the logic of the relationships before putting the concepts together. Finally, reviewing memos facilitate the integration process. Memos include ideas generated through researcher's interaction with the data. Usually, initial memos are dealing with one concept and as the research continues they begin to link to one or more concepts. Using computer programmes to sort memos by categories and rereading summary memos help the researcher to look for recurrent themes and identify unifying concepts. Figure 3.1 reflects the final template of my data after prioritizing three important themes (leadership, communication and learning) which were deemed significant for understanding the phenomenon of collaboration.

Figure 3.1: Final template



3.5.3 Quality

There are a number of measures that can be taken so as to enhance the quality of a qualitative research. Likewise, there are some quality checks that can be carried out during the template analysis to assure the quality of the data. King (2004) proposes three techniques of quality checking: independent scrutiny of analysis, respondent feedback and creating an audit trail. Independent scrutiny can be used at various stages of the template analysis; for example, during the formation of the initial template or during its development or during the interpretation of the data. Within this technique, other researchers or experts code a sample of transcripts separately and then discuss the similarities and differences with the primary investigator in order to agree with the template and the interpretation of the data. This helps the researcher to reflect on the analysis process by considering other alternatives that might have been overlooked. Constant dialogues with my supervisors during both the formation and development of the template helped me to reflect on my data and think various alternatives of my interpretations.

The second method of assessing the quality of the analyzed data is the respondent feedback. Similarly to independent scrutiny, respondent feedback can be used at several stages of the template analysis. Interviewees can comment on different stages of the analytical process. For instance, they can criticize the initial or final template or they can examine the interpretation of the data that relates to their interview. I presented my findings and more specifically the final template via email to the participants who gave me a second interview to ensure the credibility of my study. All participants understood the meaning of the template and recognized that many aspects of their experiences were reflected within the template. Nonetheless, some authors argue that participants are not the best judges of what is credible during the data analysis because they can be influenced by the researcher's interpretations (Sandelowski, 2002). However, in this study, as interviewees were willing to give feedback on the findings, I discussed with them the final template which, according to their beliefs, reflected their perspectives about interagency collaboration.

Finally, the third strategy for evaluating the quality of analysis that King (2004) suggests is the development of an audit trail. In this study, I kept a detailed record of every step I followed in order to enhance the trustworthiness of the study. Likewise, I documented every step and decision I made from the initial coding of my transcripts to the final interpretation of my data. This method gave me an overview and helped

me reflect on how I produced my findings. Moreover, template analysis as a method enables the creation of an audit trail as the development of the initial template is a necessary step of the whole procedure. All the above techniques elevate the researcher's reflexivity. Nevertheless, a researcher should be aware of his/her role as a 'research instrument' throughout the whole process of the research and not only in the analysis process.

3.6 Ethical considerations

All research needs to be conducted in an ethical way, with attention to protecting the interests of the participants. For the purposes of this research, ethical approval was sought and gained from the School of Community and Health Sciences Research Ethics Committee in May 2011, before performing the first interviews and observations. More specifically, I completed the Research Ethics Application Form and submitted it to the Committee in order to gain their approval. The form included information such as my personal details, a lay summary of my study, my project's details including the background, aim, rationale, methodology and the ethical issues associated with the research. Moreover, it requested information about the participants, the data collection and the confidentiality of the data. The information sheets and the consent form were included in the form. After submitting the Ethics Form, the Committee decided that I needed to make some changes in my application in order to get the approval. The changes involved the design of the study (rewording some statements), the consent and participant information (clarifications about getting the consent) and the confidentiality of the data (clarifications about transmitted data). Finally, after making the requested changes, I gained the approval in May 2011.

Every research has to be consistent with the ethical guidelines of the researcher's professional association, which in this case was the above Committee. Ethical considerations therefore existed to meet the requirements of the above body in accordance with the Data Protection Act (1998). Beauchamp and Childress (2001) discuss four basic principles that health researchers should follow and they are equally significant in social research:

- Respect for autonomy: respecting the independent decision making.
- Non-maleficence: avoiding harm.
- Beneficence: providing benefits and balancing these against risks and costs.

- Justice: distributing benefits and risks fairly.

In order to respect the above principles, none of the participants was forced into participating in the study. Each respondent received information sheets and a consent form which invited them to attend the interview. I interviewed participants only if they explicitly agreed to take part by signing the consent forms. I gave to participants two information sheets which detailed the aim of the research, the key ethical issues and information about the interviews and the observations. The two information sheets and the consent form are included in the Appendices 8, 9 and 10.

The major ethical issues in this research were the confidentiality of the results and the anonymity of the participants in order not to cause harm to the participants. I used the consent form and invitation letter to promise that real names of persons would not be used in the research report. Each semi-structured interview began by assuring the participants that their individual identities as well as responses would remain confidential. Participants were also informed about the nature and the purpose of the study and given the right to withdraw at any stage of the research without having any disadvantage. All the participants returned the signed consent forms and no one withdrew from the study. The interviews (recorded, transcribed) were protected in the computer and in a memory stick (password protected and locked access by the investigator) and they will be destroyed 7 years after the end of the study. All the data that were transmitted were anonymized so that if they were lost no confidentiality would be broken. Furthermore, I asked for a separate consent from the chairs of the meetings and exercises, in order to be able to participate in them. Additionally, another significant ethical issue was that participants may have had difficulties in providing information which could damage their position in their organization. In order to avoid this problem, I verified with the participants, by using the information sheet and evidence in the consent form that they were permitted to answer questions relating to their job.

3.7 Reflexivity

Since qualitative researchers are usually the research instrument in their studies, it is necessary to consider my own background, influences and assumptions (Miles & Huberman, 1994). The role of the researcher in the study has an important influence on how the study proceeds and what findings are formulated. Cunliffe (2003) explains self-reflexivity as recognizing the influence of the researcher's values on the process of the research. Therefore, it is important to consider how my

background or views may contribute to the findings of this case study. Since my background is nursing, I started this research without having any specific experience in collaboration during mass gatherings apart from my knowledge derived from my MSc which focused on Interprofessional Practice and Civil Emergency Management. Consequently, it was the first time that I collaborated with professionals from agencies such as the MPS, fire services, Greater London Authority (GLA), transport and military within the context of a mass gathering and in a foreign country. However, during my Master's (MSc) degree, I had met a number of fellow students who belonged to some of the above services, and I was therefore familiar with their professional culture and was able to understand their work. In addition, throughout the MSc degree, I appreciated the value of collaboration between people from different backgrounds, since I had seen considerable improvements during some team-based learning.

Moreover, I am a female, in contrast to the gender of most of my participants (21 out of 26) and to the majority of the managers within the above agencies. I believe that my gender and the fact that I was coming from a foreign country and a different background enabled my interaction with the respondents. For example, I think that they were open to answer questions related to their job without being afraid that this could have a negative impact on their work because I was not working in the same professional area and not even in the same country. Therefore, these factors may lead to more trustworthy data and minimize bias. Thus, it could be perceived by some participants that since I come from a different country, I would not be able to understand their collaboration practices and I would make assumptions based on my own culture and beliefs. To counteract these speculations, I reminded myself that I was an individual researcher who had little sense of their working practices and I tried not to misinterpret their perceptions and experiences. A reflexive process can increase the credibility of the study and in turn its trustworthiness (Denzin & Lincoln, 2000). For this reason, during the process of my data collection, I kept a reflexive diary, including my prior personal beliefs and understandings. These notes were checked against the findings from the template analysis. This procedure helped me to ensure that the evidence was not biased by my interpretations. Therefore, by acknowledging my personal values, I assured that my conclusions reflected the perspectives of the interviewees.

3.8 Issues of quality

Flick (2002) acknowledges that the evaluation of a qualitative research is a problem which is still unsolved. As Miles and Huberman (1994) indicate, the quality of qualitative research is mainly dependent on the researcher. They suggested that a good researcher as *instrument* should be familiar with the phenomenon and the setting under study, have strong conceptual interests and good 'investigative' skills, and use a multi-disciplinary approach (Miles & Huberman, 1994, p.38). When I started this research as a PhD student, I was quite inexperienced as a researcher. However, I was familiar with the phenomenon of interest (interagency collaboration) and I was able to use a multi-disciplinary approach as a result of conducting my MSc degree within the same area of interest i.e. interprofessional practice and civil emergency management. Therefore, prior to this study, I developed strong conceptual interest in collaboration, organizations, leadership and mass gatherings. Finally, regarding my investigative skills, I believe these improved after the initial interviews and observations and after reading considerable literature about data collection methods.

Since this is a case study, I used Yin's (1994) views on how to build a case study's quality. He points out that four criteria are applied in the establishment of the quality in a social scientific study: construct validity, internal and external validity and reliability. Construct validity is the installation of correct operational measures for the issues being studied. Yin (1994) suggests three steps to gain construct validity. First, multiple sources of evidence have to be used in a case study. In this study, I attempted to fulfill this step by using interviews, observations and documentary analysis as data collection methods. Second, the researcher has to establish a chain of evidence that follows a clear logic. During this study, I presented a detailed account of findings to enable the readers to link the data to the researcher's conclusions. Third, participants should review the case study findings to assure their honesty and clarity. As Patton (2002) notes, the participants' reflections strengthen the credibility of the research. I presented my findings to some of the participants before writing-up my findings and there were no disagreements between us. If there was a disagreement between my interpretations and theirs, I would retain these differences as two alternative explanations. The justification for keeping both opinions is that I follow interpretivism as my theoretical perspective according to which understanding is co-created and there is no objective truth or reality.

Internal validity deals with the consistency of meaning within the subject of the study. Yin (1994) argues that internal validity can be applied to explanatory studies and not to descriptive or exploratory studies such as my case study. Nonetheless, other authors claim that detailed record keeping, ongoing analysis and long-term interaction in the field can enhance internal validity (Barley, 1995; Miles & Huberman, 1994). Miles and Huberman (1994) suggest that internal validity has three forms: descriptive, interpretative and theoretical. Descriptive validity is accomplished by describing what happened in a specific event by providing rich stories. Interpretative validity relates to what extent the study's findings meet the participants' beliefs. Theoretical validity is achieved when the explanations arising from the first two types disclose deeper relationships. This study attempts to meet the above criteria by keeping a detailed record of every step followed, collecting triangulated data and reviewing the findings with the participants.

External validity is to what extent the research findings can be generalized. Yin (1994) suggests that external validity can only be tested by replicating the study in another situation. Unfortunately, this is not possible with this study. However, the findings of this case study can be compared to other similar case studies' outcomes in the future. Critics of single case studies usually argue that case studies 'offer a poor basis for generalizing' (Yin, 2003, p.37). Thus, Stake (2000) claims that case studies enhance learning on the part of those who use them and this involves 'naturalistic generalization', a different kind of generalization from the one which is characteristic of science. There is an important distinction between empirical and theoretical (or naturalistic) generalization. It is significant to understand that case studies are generalizable to theoretical concepts and not to populations as the researcher's aim is to generalize theories and not to enumerate frequencies. As Yin mentions: 'the investigator is striving to generalize a particular set of results to some broader theory' (Yin, 2003, p.37). Finally, reliability is to what extent the data collection procedures can be repeated with the same results, even by another researcher. Within the context of qualitative research, reliability relates to the methods of conducting the research. Therefore, a qualitative study can be evaluated by assessing to what extent consistent methods and procedures are used. In order to achieve reliability in this study, I wrote down in detail every procedure I followed throughout the whole project.

However, from the perspective of some researchers, the above measures are applicable to quantitative research and not to qualitative research (Glaser & Strauss,

1967; Guba & Lincoln, 1989). This can be explained by the following reasons. Reliability is concerned with the adequacy of measures, internal validity is concerned with causal connections which are characteristics of quantitative studies, and external validity focuses on the sampling procedures that generate a representative sample which is also more applicable to quantitative research. Guba and Lincoln (1989) recommend an alternative set of three criteria for assessing qualitative research: credibility, transferability and dependability. More specifically, the aim of credibility is to demonstrate that the study was conducted in a way that the phenomenon under study was rigorously described. In addition, transferability's purpose is that the findings will be useful to others in similar situations. Finally, dependability shows that the findings are consistent and could be repeated. Table 3.4 presents these criteria comparable to validity and reliability and describes their common goals and tactics.

Table 3.4 Interpretivist/Positivist criteria

Interpretivist criteria	Goal	Tactic	Positivist criteria
Credibility	Establish the match between the constructed realities of respondents	• Fieldwork • Discussion of data and results with fellow researchers and participants	Internal validity
Transferability	Present an efficiently detailed account of the findings to enable the audience to evaluate how they can be transferred to other contexts	• Thick description	External validity
Dependability	Ensure that the methodological choices and interpretive procedures are well documented so that the reader can follow the process and the researcher's decisions	• Explicit research process • Available data • Describe how the researcher moved from data to the final results	Reliability

3.9 Strengths and limitations

At the stage of designing and conducting this study, I tried to follow a number of steps in order to enhance its methodological quality and produce credible findings. First, I decided that I would collect data over a relatively lengthy period of time (18 months) to gain a detailed insight into the collaboration processes before and during a mass event. Indeed, this way of collecting data provided me with different

perspectives of the issue under study by examining, in the later stages of data collection, themes identified during the initial phase, and also strengthened the construct validity of the study. Second, the use of triangulation of methods (interviews, observations and documentation) helped me to provide a more comprehensive and holistic picture of the topic under study. Semi-structured interviews were a reliable tool to gain participants' experiences and beliefs and also flexible to explore new themes that emerged during the interviews. Observations and documents helped in verifying the credibility of interviews' data by examining convergence and divergence between them. Third, participants' feedback on the findings of the study was a significant strength of this study. This methodological technique enhanced the trustworthiness of the study and produced more realistic findings (Patton, 2002).

Nonetheless, even though I tried to conduct a good quality research, this study has a number of limitations. First, because I used snowball sampling to conduct my interviews, I ended up with an imbalance in relation to the informants' organizations and some agencies were more represented than others. Therefore, this imbalance may limit the credibility of the study's findings. However, because within the observations and the documents all the agencies were equally represented, this problem can be overcome by comparing these data. Secondly, because of the fact that the Olympic Games were a fixed event and I had to collect data in a specific time period while being a part-time researcher, I was not able to undertake preliminary analysis while I was collecting data and make use of theoretical sampling. Therefore, I did not use theoretical saturation as a technique to identify conceptual gaps while collecting my data and accordingly extend my sample; in fact, I stopped recruiting participants when no new themes were emerging during my interviews. Finally, the factor that half of the participants did not give the second interview is a limitation of this study and may also influence the credibility of the findings. Nonetheless, the different selection of professionals from various agencies who gave the main interviews and the fact that most of the agencies were represented during the second interviews provided different insights on the issue under study.

3.10 Summary

This chapter described the methodological characteristics of this research. It explained why the selected ontology (subtle realism), epistemology (constructionism), theoretical perspective (interpretivism), methodology (case study)

and methods were appropriate to address the research aim and objectives. The data collection was primarily based on interviews, with observations and documentary analysis used as complementary methods. The data that were generated from the different methods were analyzed by using template analysis framework and a number of techniques such as prioritizing, storytelling, diagrams and reviewing memos were used in order to integrate the findings from all the sources. This section also considered the ethical considerations of this study, issues of quality and the strengths and limitations of the methodological approach that was followed. The next chapter presents a description of the context in which different actors collaborated in the lead up and during the 2012 Games.

Chapter 4

Outlining the field

4.1 Introduction

In the previous chapter, I outlined the methodology designed to address the research question that guided this thesis. The purpose of this study is to provide a deeper understanding of how interagency collaboration among public health and safety agencies is shaped during the planning and operation of mass gatherings such as the Olympic Games. The following chapters will contextualize and analyze the major findings. In order to understand interagency collaboration, one needs to examine the context within which collaboration takes place. Therefore, the first objective of the study was to provide a rich description of the context in which different actors collaborated in the lead up and during the 2012 Games. This chapter addresses the first objective of the study and provides the contextual background outlining the issue-based field of public health and safety (security is included) in the 2012 London Olympics. It also describes the key actors and their main responsibilities and planning actions around this issue as discussed during the interviews with the participants and identified within the collected documents. Understanding these elements is essential in order to determine the field's boundaries and bind the case study itself.

4.2 The field

The field theory and the structuration model of interprofessional collaboration helped me to contextualize the empirical findings of the study in regard to collaboration processes and how they are formed. According to the literature, an organization field is 'a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field' (Scott, 1995, p.56). Multiple types of organizational fields exist including industry-based, issue-based and professional fields. I used Hoffman's (1999) notion that fields form around issues. The idea that an organizational field forms around a central issue, such as the public health and safety, means that fields become centres of debate in which different actors negotiate over issue interpretation.

In this study, the concept of public health and safety field refers to a specific health and safety social space which includes relationships among various actors. This issue brought together various organizations with different purposes to discuss

the issue and share their beliefs. Each actor had a different role and kind of power within the field. As Bourdieu (1998, p.9) puts it, 'to exist within the social space, to occupy a position or to be an individual within a social space is to be different' and this distinction can be recognized by others within the social space. Moreover, relevant actors had different viewpoints and concerns for the particular issue which made interagency collaboration more difficult. As the event was getting closer, more individuals came forward and were involved. Therefore, this field was not static but evolving because of the variation of the interaction and the complexity of the relations among the actors. In addition, the field remained in a constant state of emergence until the work was done and that was until the completion of the Olympic Games.

Public health and public safety are significant components of delivering mass gatherings such as the Olympics. Maintaining the health and safety of the athletes and spectators is also a key objective of the IOC. While generally there is a little interaction between health and safety agencies, in an event such as the Olympics, they are both an integral part of the planning and operation process. Effective public health can be a benefit to safety and vice versa. The public health and safety field for the 2012 Olympics was structurally composed of the following key actors: emergency services, government officials, the event organizer, local authorities, health services and voluntary sector. For this study, actors are classified in the following manner: a) actors responsible for the overall event (organizing committee, government), b) actors involved in the safety side (MPS, LFB, Military, Transport, LA, Maritime, and Environment Agency) and c) actors involved in the health side (NHS, LAS, HPA, BRC).

The actors in the first category are responsible for ensuring that the event is successfully held and they are involved in both the health and safety side of the issue. In the second category, actors are responsible for maximizing the safety for participants, spectators, event staff and local population, for example, ensuring order and preventing terrorist activity. Finally, the actors in the third category are responsible for preventing or minimizing the risk of injury and illness. These actors interacted both formally and informally with each other to protect public health and safety throughout the preparation and operation stage of the Games.

Some of the above actors would not be normally involved in health or safety so they do not understand the risks and normal roles and responsibilities. Others are totally new actors created only for the event (LOCOG) and they cannot understand

normal working practices. Therefore, it is vital that agencies from each category know how to interact with each other and understand each other concerns and issues related to the public health and safety of the population by formulating a structured field to work towards a common objective. I recognized that the above actors formed a structured field in order to protect the public health and safety from the following observations: a) there was an increase in interaction among them, b) an increase in the information load they shared, c) an emergence of structures and d) development of a mutual awareness that they were involved in a common debate (DiMaggio & Powell, 1983).

4.3 The issue

Mass gatherings such as the Olympics pose several significant public health and safety challenges within the host country. The public health and safety response to such an event is analogous to that for public health emergencies or disasters in which the existing healthcare system is inadequate for the demand. Reducing public health and safety risks and ensuring people's health and safety has become a central issue during the planning of the Olympics, particularly since the 9/11 attacks on the United States. In addition, one of the IOC requirements for countries bidding to host the Games is to ensure the health and safety of the participating athletes and spectators. Therefore, it is necessary to identify why public health and safety issue is important, what it entails and what are the risks in each perspective. Public health and public safety share the same broad goals of protecting the community's health and safety (Institute of Medicine, 2002). Public health refers to all organized measures to prevent disease, promote health and prolong life among the population as a whole (WHO, 1998). Public safety involves the prevention and protection of the people from events that could threaten their safety (Institute of Medicine, 2002).

Since the 'Munich massacre' at the 1972 Olympics, where 11 Israeli athletes and coaches were murdered by a group of Palestinian terrorists, the Olympic Games have been an acknowledged target for security threats and major incidents. Another example of such threat was the bombing of a public concert at Centennial Park during the 1996 Atlanta Olympics which killed two people and injured 111. In addition, the high level of global attention to the Games, particularly during the opening and closing ceremonies, implies that the Games are a main target for symbolic attacks. In the bid evaluation report, safety and security are identified as one of the main criteria on which a bid will be assessed.

Host countries need to increase their security measures in order to protect the operation of the Olympic Games (OGs) and at the same time secure the athletes and the spectators. For example, whereas the security budget for the 1992 Barcelona Olympics was US\$66 million, for London it was approximately US\$3 billion. This amount reflected the use of 23,700 security guards, including 13,500 members of the armed forces mobilized for the Games and up to 12,000 police officers on duty each day of the Games, and the implementation of high-tech security technologies. Mass gatherings security risks involve a) terrorist risks (deliberate use of explosives, biological, chemical or radionuclear material), b) spectator violence and c) poverty and urban crime. Risks of injuries and violence are increased because of potentially aggressive crowd.

Apart from the safety and security aspect, focus on public health is also essential, since staging the Games means exposing to health risks such as extreme weather conditions and pandemic outbreaks. Outbreaks of infectious diseases during the Games time are possible due to the movement of large numbers of people over short periods of time, both in terms of domestic and international travel. Preparedness should include the risk of communicable diseases transmission even though in past Games (Atlanta, Sydney) they represented less than 1% of the total number of visits in healthcare settings (Meehan et al., 1998; Thackway et al., 2000). Responding to an outbreak during the Olympics is difficult for a number of reasons such as the number of people in one place, the rapid population movement, the language and cultural barriers and the media interest.

Other public health issues may include heat/cold related illnesses, food poisoning, minor injuries associated with alcohol consumption, vaccine preventable diseases or infectious respiratory illness. For example, in 2010, 82 cases of measles arose in British Columbia following three primary cases that were exposed in Vancouver during the winter Olympics (Canada, 2010). Weather and other environmental conditions, including warm and cold temperatures and pollution, can contribute to illnesses including life-threatening heatstroke, hypothermia and dyspnoea. At the Summer Olympic Games in Atlanta, more than 1000 people received medical care for heat-related illnesses (Wetterhall et al., 1998). Food-borne and water-borne outbreaks of infectious diseases have the potential to spread rapidly on a large scale because of the international travel. Moreover, because of the media and political attention, the outcomes of any negative health incident can be greatly magnified. Diseases related to the deliberate use of biological or chemical agents,

which represent a safety and security challenge at the same time, are also included in the public health aspect.

Consequently, public health planning for the Olympics includes protecting the health and well-being of staff, participants and spectators from infections, illnesses and injuries related to improper management of food, water, waste and infrastructure. Major areas of public health responsibility include healthcare capacity, mass-casualty preparedness, disease surveillance and outbreak response. In order to develop a strong and effective public health system during the Games, it is necessary to start planning in advance, define clear lines of reporting and communication and develop strong interagency collaboration. Host cities begin their planning from the day of the announcement of their successful bid, using all of the country's structures and functions, as well as the knowledge and experience gained from other Olympics and major sporting events. However, each Olympics has specific characteristics that make it unique when compared with other Games and other mass gatherings because of the local geographical features and different governing structures. The need for collaboration between the key actors is essential to the effective management of public health and safety threats.

4.4 The actors

The OGs is a complex undertaking requiring a high variety of actors to plan and host the Games. The IOC owns the OGs until the candidate city is chosen. Once the event is hosted, the OCOGs with the host governments are legally, operationally and financially liable while the IOC maintain the final approval for all the OCOGs decisions for the Games. The bid phase for the OGs can last up to three years and during this period the bid committee has to deal with the IOC, the host country's National Olympic Committee (NOC), national and international sport federations, government and community, the media and the sponsors. If the bid is successful, the bid committee is transformed into the OCOG such as the LOCOG for the 2012 London Games.

LOCOG

The OCOGs change dramatically over the seven-year period of preparations. They usually start as the size of a family business and become significant multinational corporations. OCOGs display a great deal of 'institutional isomorphism' (DiMaggio & Powell, 1983), because of the similarities of organizational practices and functional requirements across Olympics. In London, LOCOG was a private,

temporary, growing organization with the duty of organizing and delivering the 2012 Olympic and Paralympic Games. It started with fewer than 50 people in 2005 and by 2012 was responsible for around 200,000 people. It was established by the Department for Culture, Media and Sport (DCMS) on the 7th October 2005 and its existence terminated in June 2013. It was responsible for many aspects of the Games including venues, sports, security, accommodation and operational services during the Games. LOCOG operated under significant pressures such as constant change, various stakeholders, reputational requirements, task diversity and strict deadlines.

The LOCOG organization consisted of paid staff and volunteers. The staff included short- and long-term employees, contractors, consultants and secondees who were responsible for the day-to-day planning for the Games working with other internal departments called functional areas, as well as with the various stakeholders related to their specific functional area. The 18 functional areas, including security, finance, stakeholders planning, venues and sports were managed by 18 different directors and staffed with highly trained contractors. Most volunteers worked during the Games-time period which started a month before the opening ceremony when the athletes' village becomes operational. Volunteers were the key group to deliver the Games because they were the ones providing the services (planned by the staff) to the various stakeholders. Consequently, the staff planned the Games and the volunteers delivered them supervised by the staff.

LOCOG managed their functional areas through their Main Operation Centre (MOC) in Canary Wharf in London. MOC was equipped with technology that allowed staff to monitor every aspect of the Games and communicate rapidly with any location. Each functional area had a desk which was staffed 24 hours per day by each senior leader with guidance from the managing directors. MOC enabled communication between LOCOG and other services including the IOC, and all the venues had to report to the MOC. The information that passed through the MOC included scheduled reports covering key data referring to the operations of all the venues and functional areas as well as incident reports that identified issues needing critical response. By collecting this information, the MOC resolved problems that could not be solved at the venues or functional command centres. LOCOG had an internal meeting each morning prior to the IOC meeting to address strategic issues affecting the Games and media issues.

In the wake of the 9/11 bombings in New York and July 2005 bombings in London after the announcement of being the host city for the Games, the perceived risk of terrorism was magnified and safety and security became a high priority of the event organizers and host governments. LOCOG belonged to the actors that were responsible for the overall planning of the Games. Regarding the public health and safety issue, LOCOG was not deemed a dominant actor because for LOCOG health and safety was one functional area among many others whereas for the public health and safety agencies it was one of their priorities. The 2012 London Olympic Games posed significant safety and security challenges. LOCOG did not have the appropriate level of knowledge to manage issues concerning security, emergency services, public health and national coordination by itself. For this reason, a large number of different organizations had to be involved in planning for and delivering emergency and health services during the Games. According to my findings, there was no single body having the overall responsibility for public health and safety of the event. It seemed that LOCOG and the government had a shared responsibility for many aspects of the Games' health, safety and security.

LOCOG had a number of responsibilities in terms of public health and safety during the Games including crowd management as their main requirement. Crowd managers worked with the programme organizers to manage people within and between venues and with medical personnel to provide support for anyone who had a medical problem. LOCOG was responsible for the safety of people in the venues and implemented a series of test events one year before the Games to test their operations. LOCOG's security managers provided safety and security measures in accordance with the UK legislation and guidance including the Green Guide (Guide to Safety at Sports Grounds, 2008) and the Purple Guide (The Event Safety Guide, 1999).

Host government

Whereas LOCOG's main responsibility was to deliver the Games, the government's responsibility was to provide assurance around a number of areas including safety and security and health services as agreed with the IOC at the bidding stage. It provided strategic oversight and coordination and ensured integration of health- and safety-related planning within the overall planning. Government coordinated its activities around the Games through the Cabinet Office Briefing Room (COBR) located in Whitehall and produced daily situation reports for key departments and agencies which ensured efficient information flow among all

partners. One of the government's main responsibilities was to ensure public health and safety.

The Department of Health (DH) was responsible to oversee the delivery of healthcare services through partners including the NHS and HPA. The HO was the lead ministry for the Olympic safety and security. The Home Secretary was the lead minister and accountable for the delivery of the Safety and Security Strategy. More specifically, the HO established the Olympic Security Directorate (OSD) to coordinate the security operation for the Games through the police and other key partners. The HO also established the National Olympic Coordination Centre (NOCC) to have a national overview of the interagency safety and security operation during the Games.

The government's roles, including the local, regional and national levels of government, covered funding a large part of the Games and thus it was accountable for these areas. More specifically, local levels contributed more to LOCOG while upper levels provided much in terms of funding. LAs were responsible for a number of resilience plans including mass evacuation, mass casualties, command and control and training and exercising to make sure they were sufficient for the Games and also link them with the national plans. For example, many areas of London experienced disruption due to transport alterations, parking restrictions and official and local cultural events. LAs provided information to the NHS and Primary Care Trusts (PCTs) allowing them to plan in order to minimize potential disruption to their services. They were also responsible for signing arrangements with training camps, licensing events in the borough and promoting the area to attract additional visitors. Moreover, in case of an emergency, local authorities would provide support to the emergency services and the local and wider community to mitigate the effects of the emergency and lead to the recovery stage.

Metropolitan Police Service (MPS)

The MPS was a dominant actor regarding the issue of public safety and security. The MPS's role in preparation for and during the Olympic Games included the following strategic intentions: 1. to work together with LOCOG and other agencies to deliver a safe and secure Games, 2. to provide an appropriate counter terrorism response, 3. to prevent crime and provide a reasonable response if crime is committed, 4. to maintain public order and provide a lawful response to protest, 5. to prioritize deployments against the three threats of crime, disorder and terrorism, 6. to

provide a coordinated response to incidents and 7. to manage all the above while minimizing disruption to those living, working or visiting the area.

The agency adopted a business as usual approach to the planning. First, they identified their command team requirements. Second, they used the existing structure of their SOR to deliver command, control and decision making through one single overview location. Partner agencies were also represented by liaison officers in the SOR and in this way provided a link between the MPS and the other partners' command and control teams. Third, the MPS also developed local control rooms for all competition venues and some non-competition venues. Fourth, the MPS planned a series of interagency exercises, one for every venue, two for every zone and three London wide ones. They conducted a number of table-top exercises with partners to agree who will do what in various scenarios, to share learning and ensure there were no gaps in the plans. Moreover, these tests and exercises provided an opportunity for the command team to work with their partners, get to know the individuals they would work with during the Games and build relationships and trust.

London Fire Brigade (LFB)

The LFB was a main actor around the issue of public safety. They began to develop plans in 2006 to ensure that the biggest sporting event, the 2012 London Olympic Games, would run safely. The agency established an online training system for staff including a range of Olympics-related information and training packs which were mandatory for all firefighters and senior officers to complete. These packs included information on security and faith awareness and cultural celebration. The LFB was also committed to deliver operational contingency plans for every venue and event and develop a community safety programme. Apart from these plans, each site had an individual venue operational plan developed by LOCOG, which was linked with the arrangements of the emergency agencies (including LFB) to ensure a coordinated response in the event of an emergency.

The Olympic Safety and Security Programme, which was developed by the HO to deliver safe and secure Games, appointed a full-time project team within the LFB to manage Olympics-related work, coordinate planning of the whole UK fire service and assure that the agency was collaborating with key external organizations. Professionals from the team also had key roles in other agencies to ensure understanding of the LFB role and what services and support it can provide. Moreover, for the period of the Games, each UK fire service provided daily situation

updates to the NOCC which was a new structure established only for the Games in order to coordinate all the safety and security partners.

Ambulance Service

The Ambulance Service was related in both aspects of health and safety. For the 2012 Games, the Ambulance Service had to ensure that an appropriate level of ambulance service was in place to meet the statutory requirements within the Games venues and any additional workload because of the Games. Its objectives were first, to deliver an appropriate level of care for all the local communities and Olympic and Paralympic related patient populations, and second, to be an active partner in the planning and delivery of a safe and secure Games. Ambulance service worked closely with the LOCOG, DH, NHS and other governmental and non-governmental organizations in order to ensure that business as usual was maintained and identify the extra resource requirement. According to two formalized documents, the Memorandum of Understanding between the DH and LOCOG and the Service Level Agreement between the Ambulance service and LOCOG, the agency was responsible for providing: i. ambulance cover at Olympic and Paralympic venues and at cultural parallel events (also in accordance with the 'Guide to Safety at Sports Grounds' and 'The Event Safety Guide'), ii. athlete ambulance cover at Olympic and Paralympic venues and iii. additional business-as-usual cover across London to meet the expected increase in demand during the Games.

The LAS established a planning team of six people in 2007 in order to work full-time across many partner agencies to adjust to the scale and complexity of the Games. They used relationships that had been developed over many years of mutual planning with other agencies, but they also had to develop relationships with new organizations such as LOCOG. In order to accomplish that, they put a full-time senior operational manager from LAS in LOCOG to enable planning and share experiences. In addition, members of the planning team travelled to Beijing for the 2008 Olympic Games, as well as other major sporting events, in order to gain knowledge and experience. The LAS also participated in the command post, table top and live play exercises that were conducted by the HO. Finally, the service established the Olympic Deployment Centre (ODC) and the Olympic Event Control Room (OECR), which was open 24 hours a day during the Games and managed deployments and responses to emergency calls.

Maritime and Coastguard Agency (MCA)

The MCA was mainly responsible for policing river Thames and assuring its security in order to enhance the safety of the Olympic venues. MCA was also responsible for the coordination of Search and Rescue (SAR) on the river including the activation and deployment of vessels or persons in need of assistance. In order to accomplish the above, they developed an interagency command and control function called the Joint Maritime Coordination (JMC), where colleagues from several services such as the Port of London, Military, LFB, LAS and LOCOG collaborated in order to manage any issues involving the river Thames. The agency also developed a number of presentations and briefings and took part in the national exercises conducted by the government. In this way they were able to familiarize their staff with the equipment and processes of recording and sharing information with other partners and managing a number of potential scenarios at the organizational level. Furthermore, they carried out a number of training weeks with the military and some other partners for getting familiar with other agencies' tactics for dealing with issues on the river and looking into their operational systems.

National Health Service (NHS)

The NHS was a main actor regarding the health aspect of the Games. All the NHS organizations, in preparation for and during the Games, were accountable for the following actions: i. robust capacity planning including additional pressures caused by local events and staff volunteering; ii. business continuity planning to reduce any potential disruption to services due to traffic, transport and security restrictions; iii. preparedness for any additional resilience requirements imposed by hosting the Games; iv. communication and reporting and v. providing assurance on the organization's preparedness.

In order to fulfill the above aims, all the NHS organizations nominated a senior leader to be the point of contact of the agency relating to the Games. In addition, they developed a planning pack to identify the factors which might have an impact on health services during the Games and help the organizations to plan in advance to minimize this impact. The NHS also developed a Programme to support the senior leaders through a series of workshops which provided information regarding the planning for the Games, the information pack and the assurance process, transportation challenges, command, coordination and communication (C3), primary care services and business continuity. These workshops took place quarterly and used speakers from partner agencies in order to network the nominated leads. The

NHS was also responsible for providing free healthcare to Games Family members at the NHS designated hospitals.

Health Protection Agency (HPA)

The main aim of the HPA during the 2012 Olympics was to ensure safe and healthy Games by identifying potential public health threats. The HPA's main role was to deliver public health information, risk assessment, diagnostic testing and disease control measures throughout the Games. The HPA had a commitment to LOCOG to deliver a daily public health Situation Report (SitRep) to their Games Chief Medical Officer (CMO) for the duration of the Games. This report, which was produced at the HPA Olympics Coordinating Centre (OCC), was mainly provided to LOCOG and the DH and included information on public health threats, disease incidents across UK and information on any significant international event that might pose a threat.

The agency worked closely with many partners, including the CMO for the Games, the NHS and security services. The HPA started planning more than seven years prior to the Games, when the agency was involved in London's bid, and they established a Programme for their preparations in February 2009. A formal Board, which included representatives from the HPA, DH, NHS, LOCOG, the Joint Local Authority Regulatory Service (JLARS) of the London Boroughs responsible for the Olympic Park and London venues, and the WHO, was responsible to oversee the Programme and the preparations for the Games. The HPA used several methods to share its activities with other partners, including meetings, provision of documents and contributions to documents produced by other organizations such as the NHS, LA, the Food Standards Agency (FSA) and LOCOG.

The HPA's documents were also shared with international organizations such as the European Centre for Disease prevention and Control (ECDC), the Centre for Disease Control and prevention (CDC) and WHO. In addition, a weekly newsletter was produced with international partners during the Games and posted on the HPA website and several key documents were produced and put on the agency's intranet to ensure everyone across the agency understood the HPA's role for the Games. Early engagement with all the partners was a key to delivery of the agency's role. Many of these organizations had already worked closely with the HPA but there were also some new agencies unfamiliar to this partnership work. Therefore, in order to enable the new working relationships, the HPA apart from developing its own

programme of internal exercises, it took part in the Cabinet Office's exercises which included all the key partners. Additionally, the HPA established a number of steering and working groups to agree working arrangements and signed a number of policies with LOCOG to outline their commitments.

Environment Agency

The environment agency concentrated on four areas during their planning for the Games including safety issues. First, the agency worked with other organizations to make sure the environment in and around the Olympic Park would benefit from the Games and advised the Olympic Delivery Authority (ODA) on how they could achieve their vision for the environmental legacy of the Park. Secondly, they developed good working relationships with a range of organizations including LOCOG, ODA and River Trusts to support the Games and its environmental credentials. Thirdly, the agency was responsible for the navigation of the non-tidal Thames from St John's Lock to Teddington Lock and also keeping river traffic flowing at Eton Dorney where the rowing events took place. Finally, in case of a flood or other environmental incident during the Games, the agency was committed to respond. They had in place emergency contingency plans which they had tested with Local Resilience Forums (LRF) and central government departments including the Cabinet Office.

Transport Service

The strategy of the Transport service for the OGs was to deliver a safe, successful and committed transport infrastructure. A key challenge for the service during the Games was to minimize the impact on Londoners' everyday activities and to ensure that business can continue to operate in London. Therefore, the Transport for London (TfL) worked closely with several partners such as the ODA, Department for Transport (DfT), Network Rail, train operating companies and London boroughs, to assure the delivery of a committed transport infrastructure. The TfL also established the Transport Coordination Centre (TCC) to coordinate the transport's operations. During the Games, the TCC produced twice a daily situation report and shared information about incidents with other partners and control rooms including the NOCC and MOC. The service upgraded several lines including the Northern, Central and Jubilee lines, the DLR and the London Overground, and they also improved the walking and cycling routes.

Furthermore, they developed the Olympic Transport Plan which aimed to ensure a successful and sustainable 2012 Games. The plan focused on three key

groups of people, the Games family, the spectators and the Games workforce to move around the city efficiently during the Games. The plan also aimed to ensure that increased demand for transport services during the Games would have a minimal impact on the existing transport networks and commuters' regular journeys within London. Consequently, in order to achieve this, they established the Olympic TCC which managed all modes of transport.

British Red Cross (BRC)

The BRC was mainly involved in the health aspect of the Games. During the Olympic period, the BRC worked closely with the Network Rail to enable travellers' journeys by providing first aid support at the capital's major rail stations. More specifically, between 27 July and 12 August, a team of 150 expert first aiders worked for 15 hours per day at King's Cross, Paddington, London Bridge, Liverpool Street and Victoria. The agency also developed a unique 'Major Incident Response Multilingual Phrasebook' to help emergency responders communicate with people for whom English was not the first language. Another responsibility of the organization was to support the statutory services such as the police, fire and ambulance services (blue light services) in case of an emergency. One of the agency's priorities was to keep up the emergency and response standards and make sure they were able to manage the increased expectations as well as the business as usual. Even though voluntary organizations such as BRC are not obliged by law to carry out their role, they are expected to be fully integrated by Category 1 responders into the interagency emergency planning and response.

Military

For more than a year before the Olympic Games, the military started planning and preparing to ensure that the Games would be a safe and secure event. The military role was to provide the extra capability and manpower support that the police and the Home Office needed to secure the Games. In order to accomplish that, they established an Olympics team including both military and civilian personnel working at the operational level to link with the tactical and strategic planning done by the Ministry of Defense (MOD). More specifically, the military provided specialist capabilities such as bomb disposal and high risk search, venue security and the normal support that the military give to the police in dealing with emergencies. This support is arranged through a function called 'MACA', which refers to the operational deployment of the military in support of the civilian authorities, government departments and the community as a whole. The military also implemented a series

of exercises to test the capabilities that would be deployed on land, in the air and on the water and to ensure that the response was applied according to their planning.

4.5 Summary

This chapter provided the fieldwork context in which different actors collaborated in the lead up and during the 2012 Games. The presentation of the public health and safety *field* and *issue* along with the main roles and planning actions of the involved organizations around this issue was necessary in order to contextualize and bind the case study before analyzing the main findings and understand better the setting where collaboration took place. The actors' roles described in this chapter were discussed during the interviews with the participants and were also identified within the collected documents. The next chapter will describe the first domain that influenced interagency collaboration before and during the Games according to the study's findings which is leadership.

Chapter 5

Findings: the role of leadership

5.1 Introduction

Data were analyzed to answer the research question: *How was interagency collaboration among public health and safety agencies shaped in preparation for and during the 2012 London Olympic Games?* The purpose of this case study was to explore the participants' perceptions of the activity domains that influenced interagency collaboration in this mass gathering. Data analysis identified three important areas that affected the ability of interagency collaboration to deliver its potential: leadership, communication and learning. This chapter aims at capturing how leadership influenced the collaborative effort of different public health and safety agencies during the planning and implementation stages of the Olympics.

According to the participants in this study, leadership was regarded as an important pillar of interagency collaboration. Two significant issues of leadership in the context of the Olympics is that first, a main leading actor, which was the LOCOG, was a new partner in this temporary collaborative system; and second, that coordination had to take place across diverse and disjointed organizational entities. Therefore, the first section of this chapter investigates the leadership challenges that organizations faced during the planning and implementation phases of the Games. These include first, the lack of engagement of the main leading actor (LOCOG) with regards to the public health and safety issue and second, the ambiguities regarding the final decision making of the leading agencies. The second part discusses a number of facilitative conditions that flattened the previous challenges and improved the value of the collaborative activities; these included a number of interactional and processual determinants.

5.2 Leadership challenges

5.2.1 The lack of engagement of the leading organization

Usually, the organizer of a mass gathering has the primacy of the event and is legally responsible for all the actions taken in order to have a successful event. Similarly, professionals and agencies expected that LOCOG, the agency with the legal duty for organizing and delivering the 2012 Olympic and Paralympic Games, would own the Games and be leading the delivery of the event, including the public health and safety aspects. However, LOCOG did not fulfill the participants' expectations, especially during the planning phase of the Games, regarding their

leadership roles. More specifically, LOCOG's organizational nature being a nascent, transient, fractured and dynamically growing organization was attributed by participants to help explain this lack of engagement.

A major implication of being a private organization was that its operations and reputation were influenced by the existing political environment and vice-versa, and the public health and safety agencies of the host city had to comprehend its nature in order to collaborate with them. Participants also acknowledged that being highly-fractured meant that the public health and safety issue was only one functional area for the organization and not one of their priorities. Moreover, as a growing agency, its staff had not built good relationships with each other, which caused problems in communication both internally and externally. The following excerpts are indicative of these concerns:

'I think LOCOG probably will be the challenge in here because they are outside the clique if you like of people who we work together all the time, and then there's suddenly this all new organization and that's an organization when we started working with them they were a couple hundred people working there; there are now a couple of thousand people working there and every week there is an organization that growing and growing. So, internally you speak to one person and you speak to another person and they don't know each other; whereas in the police I speak to one person and, you know, they may not know really well but they know' (Jacob, LAS).

'LOCOG isn't ad hoc organization set up for one and only purpose, it doesn't have an established culture, a lot of these people have worked on other Olympic Games before but they are not a body that we are used to dealing with. They are transient organization so I think they have a different outlook to us, they want to put on the show and they regard security and policing as just a bit of encumbrance whereas we regard it as the most important thing in the world! So, therefore we are not entirely, we are not entirely working together' (Neal, MPS).

The nascent and transient nature of the organization contributed to the lack of knowledge about other agencies, their organizational priorities, working practices and structures. It was vital for LOCOG to engage in understanding the involved partners in order to coordinate all the agencies' activities. However, the new organizational leader did not realize this necessity at an early stage of the planning phase and was

not able to guide a collaborative partnership with other organizations. As it will be discussed later in the chapter, the time dimension was perceived to be critical because when the organization engaged more with other agencies, a few months before the operation of the Games, there was not enough time to evaluate the outcome of this integrated planning. As a result, other agencies were striving to find efficient ways to collaborate with them. The following interviewee describes this lack of understanding:

'Working with LOCOG who are a new organization as well, cause they basically get set up for the Games and they are disbanded so again you're working with people who don't necessarily understand how you would normally work' (Tonia, HPA).

It was widely reported by the participants that LOCOG did not recognize early the necessity of working with other partners in regard to planning for this issue. They seemed to be inward looking, focused on their organization and working in isolation rather than being part of a collective, multi-agency environment. Therefore, agencies had to put pressure on them and persuade them in order to start working together and integrate their processes and plans. A coordinated response of an incident during the actual Games would not be possible if the leading agency had worked independently without linking their systems with the rest of the agencies. Moreover, LOCOG would not be able to use other organizations' resources if they continued to work on their own and would have difficulties in developing collaborative practices. A quote from a respondent working for the BRC highlights this concern:

'The only gap is that LOCOG aren't linking up so much with the other organizations' (Maggie, BRC).

Similarly, Adam and Berry explained:

'I think they could have done more to engage properly with establishments that are already here' (Adam, NHS).

'I think we were trying to liaise but they don't liaise back so we trying, you know, if we're trying to talk they, mm, there's really no one coming back to us' (Berry, BRC).

The following quotes are also examples of how participants perceived LOCOG and indicate the lack of leadership activity by LOCOG in relationship-building practices:

'And they seem to progress their work in isolation. And then only the last minute do they all come together. And there's lot of tension between them. And we have to deal with that tension' (Pat, LAS).

'I think LOCOG's discussions may be a little bit more localized and it'll be less open [...] but you do always hear about delaying something from LOCOG, or they are not turning up to meetings, or them planning in isolation or them being a little late at certain things' (Paul, MPS).

'It's disappointing because LOCOG have been quite poor at open their arms and welcoming any organization' (Samuel, BRC).

Respondents also suggested that LOCOG did not have the appropriate level of knowledge by itself to lead issues concerning public health and safety. For this reason, participants expected that LOCOG would integrate their planning with other agencies' procedures and that leaders from both parties would work closely together in order to manage public health and safety issues during the Games. However, the majority of the interviewees emphatically stated that LOCOG had not developed their plans around the health and safety issues early in the planning phase and did not engage with other agencies. The following excerpts from participants during our first interviews represent a good illustration of the delay of LOCOG's planning and involvement:

'LOCOG haven't done their incident response planning' (Barry, MPS).

'So we need to work with them and the Police and the Ambulance...And make sure we got a coordinated plan. This is quite difficult at the moment because LOCOG they really haven't got the people in place at present' (Jack, LFB).

Two other respondents also highlighted the fact that even though LOCOG had to develop emergency plans according to the legislation, they did not develop them on time:

'LOCOG haven't produced their plans on time [...] because they have responsibility for the area inside the park, is LOCOGs, yea, they have responsibility in law to write these plans. And we keep telling them, and we keep telling them, and we keep telling them. And still we have no plans' (Marley, MPS).

'LOCOG will write their own safety plan cause they are required under the legislation but then the emergency services have to write an emergency plan in case something goes wrong we have to deal with it. So, LOCOG have to write plans we are still waiting for that to happen and then we will be rewriting our emergency plans because we have to respond together' (Sam, MPS).

This challenge was suggested to play an important role in the collaboration between the LOCOG and the other organizations. Participants highlighted that LOCOG's plans, as the leading organization, regarding how they would respond in a public health and safety issue, would influence the responses of the other agencies and they needed to link their plans in order to provide a coordinated response. The effect of that delay was that the rest of the agencies were not able to develop their plans without knowing LOCOG's intention. This fact was considered to strain their working relationships and reduce the level of trust between them. Further, respondents mentioned that integrated plans were necessary in order to test them during the preparation stage. A number of participants shared their experience:

'We'll need to test our plans with them. [...] We are developing a plan for each venue. So each venue will have a plan. This will feed into the LOCOG plan for the venue. And LOCOG plan should feed into our plan. So, if anything happens in any of the venues, we all should be doing the same thing. [...] That's why is really important everybody works together and LOCOG do join in. (Jack, LFB).

'We have to wait for LOCOG to produce that plans. They've started exercising, but they're exercising without plans! So what are they exercising? The purpose of an exercise is to look at the plan, to test the plan. They have no plan! [...] Because we've been asking and asking and they said on the 23 of December, January, February, now we are in March' (Marley, MPS).

According to my second interviews, the challenge of not testing the integrated plans that were developed remained critical even during the Games, because LOCOG delivered their plans very late. Even though a number of facilitative activities, which will be discussed in the next section, managed to mitigate the consequences of LOCOG's weaknesses in engaging with other agencies, the procrastination of their activities did not assure an adequate level of preparedness. More specifically, professionals seemed to have increased levels of anxiety while working with them

because the procedures that were in place were not guaranteed. As Berry from the BRC explained:

'The effect was the plans were uninformed until the very last minute and a lot of work was getting done very late in the day [...] just one example I've picked up was about venues' safety plans, the agencies, all the agencies are well used to work in that, the O2, the Greenwich arena all the different places. However, because LOCOG were involved, the LOCOG had their own management team, that meant they couldn't use the existing plans they had to use new plans, but the information from LOCOG in terms of stewarding numbers, stewarding possessions, the management structure, communications structures, access, egress, all that sort of information was very-very late in the day, which meant that all these agencies were here ready to fill their plans to exercise and back in April-May with time to change them. Instead, they were, in some cases, days before the start of the event, we still waited for them to do that information. The information came in enough time to fill all the plans but there was no way to change them' (Berry, BRC, 2nd interview).

Marley and Sam from the MPS also shared their experience on how agencies were trying to manage LOCOG's non-involvement:

'At the last minute they came to the party. We put a lot of pressure on them. [...] we said to them: you've got to comply with the law. I think the problem we had was a lot of the LOCOG people didn't understand the English law, the fact that there is a legal requirement to make a plan and test it. Erm, and I think very late on after January maybe even later than January they realized that they had to take our advice otherwise they would be shut down' (Marley, MPS, 2nd interview).

'LOCOG were really last minute.com (laughs). That was the big issue that we had really after Christmas time; so by the February, March, April we were still really pushing LOCOG, cause we needed their plans to develop our plans and come up with something that we were both happy with' (Sam, MPS, 2nd interview).

Similarly, disjointed expectations existed not only regarding the integrated planning but also about the responsibility of managing health and safety incidents. It was frequently mentioned in my interviews that some actors, including the

emergency services and government, expected to have a shared responsibility and mutual authority over the management of incidents around public health and safety with LOCOG. Many participants stated that this expectation was also reinforced by a number of documents they were using during the planning stage. For example, the DCMS, which was the lead government department for the Olympics, was producing a quarterly report for the Games. The February 2012 report included information around the safety and security of the Games. In one of its sections, it was indicated that venue security was a shared responsibility of LOCOG, as the event organizer, and the Government, as the guarantor of security to the IOC.

Nonetheless, this joint leadership was not clarified to the participants during the preparation stage of the event. As a consequence, this ambiguity resulted in a number of problems and conflicts between LOCOG and the rest of the agencies. Professionals could not determine their accountability boundaries and thus, they were not able to develop collaborative behaviours towards LOCOG. Public health and safety agencies in London were used to collaborating towards their common aims, but LOCOG, being a new partner in the multi-agency network did not share the same working norms. The following quotation captures this matter:

'We are extremely fortunate in London in particular and in UK in general because we enjoy these very high level of joint working and I think, as I said earlier, that was the barrier that we have between ourselves and the organizing committee because we are really, really joined up and they couldn't cope with the fact that we are joined up' (Sal, LAS).

Other participants appeared to understand that the safety and security of each venue was LOCOG's responsibility and outside the venue was MPS's responsibility. These interviewees indicated that in a report published by the GLA in October 2010 about London's emergency and health services' preparedness for the Games, it was stated that LOCOG was responsible for safety issues such as the crowd control inside the Olympic venues whereas the MPS was responsible for the crowds moving to and from the venues. The following quotations illustrate this expectation:

'LOCOG are responsible really for everything that happens in the sporting events. There are LOCOG medical services, and they're responsible for what happens in sporting venues' (Lyn, NHS).

'So inside venues it's the responsibility of LOCOG to provide all the medical care. All we do is we provide them with the stuff and the vehicles' (Pat, LAS).

However, in case of an incident or emergency near both places, participants were not clear about which organization would have authority and leadership role on the response procedures that should be followed. This lack of knowledge was thought to increase the level of stress of professionals who were worried about the decision making in case of an emergency. Concerns were raised by some participants in regard to this issue:

'Where does the control of that queue belongs to the police officer who is responsible for the Olympics or he hands over to the police officer that looks after that borough of London or does it falls in the responsibility of the local authority or LOCOG? (Paul, MPS).

'...the tricky bit, if you take a map and let's say this is Stratford on the Games area, on every single, erm, location who owns what and I don't know if you have heard of, there is a thing called last mile, a last mile is one of the headaches because [...] between that side of the station and the stadium there isn't the same clarity as to the responsibility for that, for crowds in that area' (Noel, Transport).

The timeliness of LOCOG's response and their lack of engagement did not concern only the absence of building meaningful relationships and working closely with other agencies, but also their strategic plan about their key personnel. More specifically, LOCOG employed key professionals regarding the public health and safety issue only a few weeks before the Games. The vast majority of the respondents described this fact as absolutely challenging because this new personnel was not able to adjust to the negotiations of the last years and that caused confusion and strained relationships. The quotation below is from a second interview with a Resilience Manager of LAS and it is a good illustration of how he experienced this challenge:

'Two weeks before the Games, the medical managers for the venues come to play. We've spend two, three years negotiating, agreeing with person A, we've got happy with it, and then person B comes in, completely new, fresh perspective erm, and picks that, that piece of work says: Oh, I've got this really good idea, and how about doing like this? And we were having, erm, the road cycling was on the Saturday so the first day of the Games, on the

Friday afternoon we were still having meetings with the new medical managers and the kind of the planning team and then the ambulance service and St. John about almost reinventing things that have been agreed for years' (Jacob, LAS, 2nd interview).

5.2.2 Unclear decision making

As stated in the previous section, most of the participants suggested that there was a lack of leadership action from LOCOG regarding the issue of public health and safety. As a consequence of this problem, respondents highlighted a second challenge which involved the question of which organization had to take the lead in the final decision making regarding public health and safety issues. Such accountability refers to the formal obligation of responsibility for actions and decision making by an individual or an organization encompassing the requirement to report and explain the followed practices and their consequences (Jones, 1996). LOCOG's lack of leadership appeared to increase role ambiguity between the leading agencies and it was widely reported by the participants in this study that it was a great challenge to know the exact decision-making process. Unclear responsibilities and fluid participation in decision making seemed to create uncertainty which hindered interorganizational understanding and collaboration.

For example, while I was observing the LFB's exercise that took place five months before the Games and whose aim was to test the interagency response to emergency incidents through Games-focused scenarios, in one of the four scenarios, it became apparent that participants did not know whose responsibility it was to divert the torch relay in case of a fire in the area. It was evident that awareness of accountability and coordination issues was not consistent among the participants and particularly knowledge of which actors were responsible for different aspects of the potential incidents. Hence, professionals were concerned that they would not be able to respond appropriately to an emergent incident and anticipated possible barriers to collaborating with other agencies without having clarified the decision-making process; potential barriers included uncertainty of the decisions' efficiency and unclear information flow.

Moreover, during the national multi-agency exercise 'YF' that occurred in September 2011, all the participants reported that it was not clear which organization navigated the decision-making process across agencies. This exercise was a national Games-wide Olympics exercise, centrally coordinated by the Olympic Safety

and Security Testing and Exercising Team (OSSTET) and the Government Olympics Executive (GOE). It took place at the SOR of the police service (MPS) and its aim was to provide assurance and confidence before the Games that the operational arrangements across interacting organizations will be effective in a range of potential scenarios. In fact, one of the key recommendations of the exercise was that the team responsible for planning the exercises should shift their emphasis towards leadership issues. It was suggested that only by exercising and defining the exact decision-making procedure, professionals' assumptions would be limited and preparedness would be maximized. The following quotes also reflect the general sentiment shared by the participants before the Games about the issues of accountability and decision-making roles:

'But who will take responsibility for, for what, mmm, I'm not entirely sure like who would make the definite decision like you need to close this or that venue for instance, who would do that will be (...)' (Eleanor, HPA).

'If the smoke problem is approaching the torch relay (...) I at the moment, and this is a worry to me, I don't know who needs to know that and who's the decision maker about moving the torch relay, I don't know who has the final call on whether to move in, whether to cancel it, whether to, you know, I'm not clear, it came up in the exercise earlier this week and it wasn't very clear to anyone I think' (Jeff, Environment Agency).

In addition, the interviewees indicated that the importance of delineating and codifying the leadership roles and responsibilities of various agencies during the planning phase was overlooked by the leading agencies including the government and LOCOG. Two more respondents shared their perspective:

'Mmm. (...) It hasn't been easy to say who's leading the Games from my perspective. I don't know (...) I know kind of who's in charge of each bit, I think, but then I still don't know, I'm not clear in my mind about who makes decisions about certain things, yea' (James, MPS).

'I would also say that one of the failings of not taking the time originally to really sit down and talk it through was that roles and responsibilities were not clearly defined and who does what, who is accountable for what, what are the expectations of each side' (Cal, MPS).

It is interesting to observe that even after the completion of the Games, there was uncertainty among the interviewees about who was leading the decision making. The following quotes highlight this concern:

'It wasn't always clear where the decision making came from. Fortunately, there were no major issues as a result of this' (Lyn, NHS, 2nd interview).

'Multi-agency wise I don't really know, I didn't see any evidence of leadership. Erm, we never really knew who was in charge, on a multi-agency point of view that wasn't communicated' (Berry, BRC, 2nd interview).

'It was so many different departments, was the prime minister leading all of us, was the minister of culture, was LOCOG, was Chris from the MPS? It faded a little' (James, MPS, 2nd interview).

One of the difficulties associated with the above lack of clarity was the unclear distribution of information among the organizations. During preparations, most respondents did not know to whom they should refer to in case there was an incident that could influence the health and safety of the event as it was not clear which organization was leading the decision making strategically. This created doubts between the agencies about their responsibilities and influenced collaboration in a negative way. For example, agencies had to provide the same information to the national levels of management of different organizations as it was not clear who was responsible for specific aspects of the Games. This fact seemed not only to undermine the government's credibility but also reveal the lack of sufficient preparation, specifically by the leading organizations. Therefore, the absence of a common framework suggested that organizations strived to collaborate with leading agencies. As one respondent from the Ambulance service reported:

'Because it's not owned by anybody, it is owned by a lot of different organizations and different departments were collecting information, there was no common picture so we provide information to the cabinet office, to the home office erm, and to the department of health. They all asked the same information at different times of the day, inside different formats' (Jacob, Ambulance service).

Similarly, participants were not sure which organization would have primacy over a number of incidents which appeared to cause confusion in interagency collaboration. Since the responsibility across agencies about decision making was

not clear, the potential conflict between them was reported to be an issue that concerned many respondents during the planning phase. The following excerpt from a specialist advisor of the NHS represents a good illustration of this concern. Georgia reflects on how collaboration was delayed during the riots in London because none of the organizations took primacy of the incident and she was worried that a similar problem could emerge during the Games:

'Whether something should be declared... mention it or not. The debrief from the recent riots that we had in London one of the things that came out of that was that they were late setting up a partnership meeting and the reason for that was that the riots weren't declared a major incident because the police don't declare riots' (Georgia, NHS).

Further data analysis unveiled that London as a city was a complex environment to manage and lead an event such as the Olympics because of the large numbers of organizations that needed to respond to incidents or emergencies. It was stated by several respondents within the interviews that in routine operations this complexity usually had a negative effect on interagency collaboration; added to this complexity, the different venues and areas that were included in the Games and the new partner as a leader indicated a greater risk of uncertainty in making decisions that were critical to the public health and safety of people. The Games placed higher emphasis on the decision-making processes among the organizations and required enhanced leadership action on this issue. A Resilience Manager for the Games Operations describes this challenge in the following way:

'I think it's generally a problem in London anyway, that we have so many different organizations to respond or plan for erm, emergencies. It's too complicated to manage in one place. That's the challenge our team has is to trying make everything consistent but also everything needs to be applicable to Wembley or any other area, so as to bring consistency. And we're trying to bring together groups of people towards that problem' (Randy, LA).

More respondents also highlight this complexity:

'We've got too many different groups and a lot of question marks and a lot of passing responsibility to and through different levels' (Berry, BRC).

'I think that the leadership (...) (...) I don't know, too many people again [...] the cabinet office and other lead government departments get involved and each have their own specific responsibilities, cause the Olympics is so big,

everyone has got responsibility for various bits of that, and it's kind too complicated (Jeff, Environment Agency).

5.3 Facilitative conditions to advance leadership as practice

Participants suggested a number of *interactional* and *processual* determinants as facilitative conditions for achieving a more collaborative leadership among the agencies specifically at the micro-level. These conditions contributed to interagency collaboration in a meaningful way, even though some of the leadership challenges remained critical even throughout the Games and specifically at the strategic level.

5.3.1 Interactional determinants

5.3.1.1 Linkages

In the previous section, it was stated that whereas LOCOG was the leading organization for the operation of the Games, it did not realize early the necessity to work collaboratively with the other agencies on the issue of public health and safety. This fact seemed to strain the relationships between LOCOG and other organizations and limit the amount of trust. Most of the organizations recognized this challenge and put pressure on LOCOG that it was absolutely necessary to develop integrated plans and enhance structured communication across the organizational boundaries. These efforts managed to break down the barriers between LOCOG and the rest of the agencies and approximately six months before the Games LOCOG employed one professional from the LA who was well-known to all the emergency services in London. This link was perceived to improve LOCOG's understanding about the other agencies' roles and structures and clarify the expectations that organizations had from LOCOG as a leading agency. As three respondents explained:

'One of my kind of colleagues in the fields, I've known him quite long he is in emergency planning, [...] he will be in charge of the emergency management for the LOCOG which is quite great and all the emergency services and TFL and everyone in London knows him and so at last there is a direct link into LOCOG [...] I know it is one person, it is no good for business continuity but he is really good, he knows so many people in London, in the organizations that, erm, that I think there will be a lot more of joined up the process now, between LOCOG and the other organizations as far as emergency plan goes' (Maggie, BRC).

'But it's only fairly recent that I feel as though we've got a good link with LOCOG [...] now Randy is a really good link. This is all very recent. So, if you

asked me the same question three months ago, I would have said that I had struggled to liaise with LOCOG. [...] I haven't had very good one to one relationship with them until really quite recently, yea' (Jeff, EA).

'They've start getting some now, because they've realized erm, Randy, he was working for the GLA he' is now gone to LOCOG, hopefully, things will probably change' (Marley, MPS)

Similarly, one respondent from the MPS during our second interview after the Games emphasized how this linkage managed ambiguity between both parties:

'Luckily for us, one of the London Resilience Managers, who worked quite closely with us, just after Christmas time left London Resilience to work with the LOCOG. Randy pushed a lot of stuff there, he knew where the issues were and he knew exactly what we were looking for and Randy was able to move stuff along' (Sam, MPS, 2nd interview).

According to many respondents, LOCOG recognized the positive outcomes of having such linkages with the other agencies and proceeded to employ a number of police-officers who were near retirement and had experience in managing mass gatherings. These linkages were considered to encourage LOCOG to work in partnership with other organizations and improve the relationships between them. In addition, they managed to promote the importance of the public health and safety issue and the necessity of clarifying the responsibilities of each agency on the issue. This mechanism also assisted to create a shared understanding across the organizational boundaries regarding organizations' goals and practices. Two participants from the MPS stated during our first interview:

'They have taken I think about a half-dozen including our silver, our first silver commander that we had, who's retired and gone with the LOCOG [...] if it's controlled I think it's a good thing because of the fact that means that our people who understand how we work in LOCOG they build certain relationships' (Barry, MPS).

'There's quite a lot ex-senior police officers employed within the LOCOG team so there are still good contacts there and we can speak to people and say that's what I try to sort out and try to see who I can speak to and that's useful to have contacts' (Sam, MPS).

Another interviewee from the BRC also highlighted LOCOG's initiative to employ police-officers in order to create a more collaborative environment. These micro-activities by LOCOG which focused on relationship-building practices entail a source of leadership activity which was absent in the previous years of the planning phase. Samuel mentioned during our interview:

'Things have improved slightly because in the last year quite a lot of my ex-colleagues from Scotland Yard have been approached by LOCOG to come and work for them. So, the relationships are getting better because they've suffered in a way like I have suffered from the lack of contact and now is changing slightly, [...] we always thought in the last year things will improve because they have to' (Samuel, BRC).

Similarly, during the second interviews after the Games, Sam from the MPS stressed the importance of breaking down the barriers of organizational boundaries by using the above mechanism. From the perspective of leadership as practice, employing these individuals was an instance of a leadership activity to achieve a coordinated effort among the variety of organizations. In line with the previous quotes, he mentioned:

'They recruited quite a number of ex-police officers who were for retirement, [...] so they got the feeling of who is required and how was required, I mean the partnership working much better, because when you speak to somebody like for instance Thomas, who is ex chief superintendent who I know, all that dialogue was much better. Rather than to speak with T who was very senior [...] people like us, the dialogue with them was much easier cause you can say I've got a problem with this, we need that sorted can you get it sorted. If there is somebody who you don't know, the partnership then was not built' (Sam, MPS, 2nd interview).

Apart from LOCOG's effort to engage more with the other agencies, some of London's emergency services recognized that leadership is a collective responsibility and initiated early in the planning stage a close collaboration with LOCOG. It is interesting to note that some organizations such as the LFB not only acknowledged early the fact that the new leading agency, LOCOG, was working in isolation but also managed to have one professional from their staff working full-time in this organization in order to build the relationship, enable the information sharing flow and improve the understanding of the LOCOG's processes about the public health and safety issue. This action was initiated by a number of individuals (specifically

operational leaders) from the organizations who approached LOCOG, explained to them the benefits of having such linkages and since there was not any financial burden, they agreed to have such links. In this instance, leadership emanated from the activities of specific individuals who acknowledge the necessity of clarifying leadership roles. A quote from an Olympics Project Team Manager of the LFB illustrates the importance of such linkages:

'We got somebody working in LOCOG, the organizing committee, full time, to break down that barrier and...make sure we know what they want and we get the information back. It worked really well for us. Because, yeah, they do work in isolation, they don't necessary tell us what's going on. So yeah, we here, we thought the only way we could find this information is to be there. But we made the effort to have someone working there, so that person manages their demands on us. And then our demands on them effectively, We gave him to them for nothing. We didn't ask for any money or, we just said can we, we... we, yeah, we think somebody should be here working in LOCOG from the Fire Brigade. There are the benefits of it to you, there are the benefits of it to us and they agreed. Yeah, I think the Police is just moving in there now' (Jack, LFB).

Similarly, a Resilience Manager of the LAS describes the benefit of using such linkages in relationship-building activities:

"We work through the liaison staff so we have three, four equal now who purely, purely work as liaison officers with LOCOG. So, for the London aspects and for the LOCOG aspects we do a lot of our work through them because they have the time they build those relationships and they know people' (Jacob, LAS).

Apart from the previous participants who reported their perspective regarding the benefits of having linkages with the leading organization, another respondent from the MPS indicated that this mechanism not only enabled his organization to build relationships with LOCOG but also facilitated the development of integrated plans. In the first section of the chapter, it was stated that LOCOG delayed to develop their plans around public health and safety because they did not have the appropriate staff in place. Individuals from the MPS who acted as linkages with LOCOG and had experience in developing such plans collaborated with them and encouraged them to recognize the significance of planning together. Below one operational leader from the MPS describes this influence:

'The officers within our team liaise with the LOCOG venue managers and the LOCOG planners and together is just not just writing a plan with all the different agencies fire brigade, ambulance and LOCOG but also formalize those plans' (Sam, MPS)

As a result, the relationships between LOCOG and other organizations may have been improved because of particular individuals from both parties who adopted an active stance on working closely together and were able to practice a more collaborative leadership at the operational (venue) level. Some respondents shared their experience during our second interview:

'I think the relationship was fixed by some good people working well locally. So, therefore it went well at the venue level [...] so you've got all of your functionality on the one control room at the venue level' (Barry, MPS, 2nd interview).

'When we actually started working with the people doing the work for them [...] once they had their medical teams in place the truth was that the people they employed understood what our role was; and therefore from that point on everything was fine [...] we had a command and control structure, they included zone commanders and venue commanders and once they've started working with the venue erm, venue medical managers and the venue general managers, erm, what we actually found was there was greater, erm, greater understanding of each others' role' (Pat, LAS, 2nd interview).

5.3.1.2 Leaders' qualities

The respondents in this study pointed out a number of individual qualities of the positional leaders of each agency which enabled the decision-making process at the operational level and encouraged the collaborative activities of the agencies. These qualities included experience, physical presence, flexibility, ability to negotiate and trust. According to the findings, leaders' experience of participating and managing similar mass gatherings such as the Royal wedding, the Jubilee and the Notting Hill Carnival influenced positively interagency collaboration and mitigated the leadership challenges at the micro-level. More specifically, leaders with such experience communicated easier across organizational boundaries because they understood better other organizations environments.

Previous experience in such events emerged as a necessary qualification of professionals for being effective leaders and enabled the decision-making process at the operational level. For example, it was particularly evident among the respondents that most police officers were good at decision making because they spend their life dealing with emergencies and making quick decisions. The following quote describes one interviewee's perception of how past experience helped his organization in identifying their authority in decision making. More specifically, it refers to a dialogue between an operational leader from the MPS towards a leader from the LOCOG on how the MPS would reassure the safety of the venues.

***MPS:** What I had to do is to use my experience to say: "ok, if we are, whether we deploy officers inside your venue is that your decision or our decision?"*

***LOCOG:** "Of course it's your decision."*

***MPS:** I say: "Right, we, we agree on that and then what tactics we employ inside the venue, who's decision is that?"*

***LOCOG:** "Of course it's your decision."*

***MPS:** "Right, so we can put horses inside your park" (Barry, MPS).*

The same interviewee describes another situation where an operational leader of the MPS persuaded LOCOG's representative who was responsible for the venues' safety that LOCOG needed to have a boundary-spanner in the MPS's operation room. Specifically, he noted in our first interview:

***'We've managed to persuade the LOCOG security that they need to put liaison person into our operation room and in a very simple way we did that we discussed our experiences, all the time they said no we don't need that and then we had a quick conversation and said ok'** (Barry, MPS).*

Work experience also enabled the information sharing procedure among the organizations. For example, most agencies were sending daily reports to government's departments including information and incidents that were taking place during the Games. Even though some respondents argued in the previous section that they had to provide the same information to different departments of the national level, it was critical what information to include in such reports in order to provide the necessary information without omitting details that another agency or the media could share and at the same time acknowledging only the important aspects that would interest the ministerial level. As many interviewees explained, working in the same organization for many years facilitated the flow of information both within and across agencies, because there was an increased knowledge of the roles and

expectations of each agency. Some participants emphasized the importance of professional experience during the interagency collaboration in the following quotes:

'So in terms of skills, erm, I think to be able to decide what is important and what is not and to be able to dare and make that decision. I think as well. Not to be afraid not to include something if you think that's not important. And of course include something (laughs) if you think it is important, but we need people to dare from their expertise to make that decision, I think' (Eleanor, HPA).

'Experience is very important, erm, erm, (...) being around the organization long enough to know what people are doing, what might be issues coming up etc' (Pat, LAS).

Experience appeared to break down organizational barriers and encouraged collaboration by increasing the shared understanding and recognizing each other expectations. Two more respondents mentioned:

'And that makes a world difference, it's a whole thing having someone with that experience to do, knows how things work and knows all the key players, but also allows people to go and do their job' (Tonia, HPA).

'I think two bits of experiences are quite useful; one is having worked on major events. I was last in this team when it was in another building in 2008 and I left that team thinking I need to get involved in major event planning. So, I have a good background for the Olympics and that's very useful because you have credibility with your peers, because they've seen you at events and they know you are competent and also my recent experience in a national programme working with representatives for Wales, Scotland and England means that I'm better in communicating with different levels of different stakeholders. And I think that's quite a key for the Olympics' (Randy, LA).

As stated by participants, the physical presence of the positional leaders of each organization at the interagency operational level was a way of clarifying authority and responsibility for the decision-making process which was complex because of the large numbers of agencies involved. As it was revealed in the previous section, fluid participation in decision making created ambiguity and hindered collaboration. The physical presence of such leaders in the control rooms of the agencies, where all the important decisions were taking place, was considered to

be a great enabling factor during the interagency collaboration because it helped aligning differences in opinions and operational priorities. Moreover, this condition enabled interactions and communication between individuals and agencies from different backgrounds and overcame the obstacles of decision making at the micro-level. One participant from the MPS during our second interview after the Games noted:

'The two the most experienced public order commanders in, in the world probably! Erm, and they were both on all day from 7 a.m. to midnight, we had them in the room as well. So, if you had a problem, knock on the door, had a meeting, we had two hour meetings if something was going wrong, just to keep an eye on the state of things. Erm [...] so we'd have a two-hour meeting if everything came up straightaway: boss need a meeting, and we had the, the meeting we need. So, the communications was good. Again, because everybody was together' (Marley, MPS, 2nd interview).

However, because the continuous physical presence of the leaders was not possible for the 12 weeks of the Games, rotation and the use of deputies was another way of keeping the leadership action of an organization unstoppable. In addition, in my observation at HPA's Coordination Centre during the Games, professionals told me that after leaving the room, they diverted the phones to their mobiles in order to keep non-stop information sharing and decision making. One participant from the HPA commented:

'He had two deputies who, cause obviously he couldn't work 12 weeks non-stop, so two deputies came in and rotated and it worked really-really well' (Tonia, HPA).

Flexibility in action-taking and in using different leadership behaviours was also vital when an important decision had to be made. Olympic venues were an example where many decisions had to be made every day during the Games and, as stated earlier, it was a challenge to identify who was responsible for the final decision. For example, for every Olympic venue (basketball, swimming, hockey, football), there was one command and control room which managed all the aspects of the venue including security, safety, health, athletes and spectators. Many agencies were participating in that room such as representatives from the LOCOG, MPS, the Ambulance Service and LFB. Flexibility was perceived to be a necessary attribute of the positional leaders of the agencies in order to run the control room more effectively and efficiently. More specifically, with flexibility leaders were able to

empower the efficiency of their decisions because of the constant and open dialogue with other agencies and the construction of different ideas and strategies.

LOCOG was the agency that was mainly accountable for the venue and was in charge of making many decisions in the room. More exactly, from a LOCOG perspective, three people were leading this control room: the venue general manager, sports manager and security manager. However, depending on the issue that had to be dealt with, they collaborated with professionals from other agencies in order to reach a joint decision rather than make that decision by themselves. It is interesting to note that during an interagency exercise of the LFB that took place five months before the Games with the aim to test the interagency response to emergency incidents through Games-focused scenarios, it was identified that around 97% of the decisions would take place at this ground/operational/venue level. Similarly, one of the main principles of the UK legislation (CCA, 2004) regarding leadership in case of an emergency is that decisions should be taken at the lowest appropriate level and coordination at the highest necessary level. The need for flexibility in decision making at that level is shown in the following quote:

'There is no right or wrong. It's dynamic, it's fluid. (...) LOCOG would probably take the first decision but it will be a joint discussion between LOCOG and when we talk about LOCOG we are also talking about not the high ranks, we are talking about a venue as a venue general manager, the venue sports manager and the venue security manager. Those three people will talk to our bronze commander. And between them they would sort out who's in charge; who makes that final decisions to do A, B and C. But first and foremost LOCOG, yes, because is on them' (Paul, MPS).

Apart from flexibility in action-taking, the ability to behave differently under dissimilar circumstances or accepting different behaviours played an important role in the operational collaborative network. Participants suggested that the ability to use a broad range of leadership behaviours benefited more collaboration rather than use a specific behaviour. For example, in case of an emergency during the Olympics, where a wrong decision may have a huge impact on people's life, an authoritarian style of leadership would be appropriate. Therefore, positional leaders had to focus on the positive outcomes of such behaviour on their performance and be able either to use it or accept it by another leader. Some respondents during our interviews described this style's benefits:

'When he is working in a control room very busy, very brisk, very decisive. And that works very well. It's a style (...) it has to be. Because decision is very erm, very important decisions save lives. So, he has to be thinking this decision that will save the most lives' (Marley, MPS).

'Coming to the actual Games, if something goes wrong that's the usual: do this, do this, do this. Because if something happens, an emergency, it needs to be done five minutes ago and that's the traditional style of leadership the police are really good at' (James, MPS).

On the other hand, during routine operations, respondents noted that leaders needed to be able to use a variety of leadership behaviours including facilitative, situational and transformational style. Through these different techniques, leaders were able to create a constructive milieu where collaboration was promoted. The findings in this study revealed how these different leadership behaviours influenced decision making and collaboration. Facilitative leadership, where the leader involves team members in the decision-making process, advanced the process of collaboration because members were more confident of the organization's decisions. According to many interviewees, facilitative behaviour encouraged professionals to work in partnership and cultivated a collaborative environment. One participant reported his perspective:

'In the preparations I think people like Brian, who is the chief of stuff and very collaborative so ok we need to sort this out, what do you think, what do you think and getting everybody's input and try to ensure everything works out and sort of doing leadership by listening to other people in getting that kind of input. So, I think is very effective that's the best way to do that' (James, MPS).

Situational leadership, which implies that different situations demand different kinds of leadership, also supported interagency collaboration. Within this style, the leader adapts his style to the demands of different situations which means that both directive and supportive behaviours can be used according to the circumstances. Moreover, the task and the history of the group and the abilities and characteristics of the members are factors that need to be considered when deciding which style to use. In addition, according to this style, leaders choose their own leadership style according to their culture, beliefs, values and personality. Situational style supported interagency collaboration by recognizing the different capabilities of different

professionals and the objectives of various levels of management. Some participants during our interviews recommended:

'A mixture of both is productive in some ways, erm, but too much of one and not enough of the other is unproductive, I think it depends on the level of involvement, to be honest, if it's something of the higher levels involving directors it does need to be a little more open because chief execs, heads of emergency planning that sort of thing, need some of the extra information and need to get some guidance on how they'll deal with, I think the more you come down, the more needs to be restrictive in the bottom level just becoming this has been decided just get on with it because that's your priorities, do it, if you leave it too flexible, too open the further down you get, the actual work is not getting done' (Berry, BRC).

'It depends on the individual as to what style works for them, I can work for someone who is quite authoritarian [...] and sometimes that's the best for them, because that's how they get people to respond and everybody says: I like that because I know where I stand. My style is far more, erm, ok here's the problem what we should do, that's we need to do, do we all agree? So, I can get everybody's opinion in very quickly and then say: Right, my decision is we're gonna do that. Is everybody happy with that, can we go out and do it? So, I think I'm far more, erm, I engage far more I involve people. But it depends on what works for you' (Barry, MPS).

The above respondents emphasized the fact that people are different and that this has to be taken into consideration when deciding on what leadership style to use. A number of documents among those I collected during my fieldwork also agreed with the fact that situational style of leadership contributed to interagency collaboration. For example, in the *National Operational Guidance*, whose aim was to support the fire and rescue service in delivering safe incident command during emergencies, it was proposed that no single leadership style is right for all situations and leaders should adapt their style according to the situation they have to manage. Some situations would require a more authoritative style of leadership, whereas others may allow a style with greater interaction. The document suggested a number of factors that leaders need to consider including the level of risk, the type of the incident and the skills and experience of the team members.

However, situational leadership can create problems in communication and decision making within an organization which can impact negatively collaboration with other agencies. For example, when there are two individuals who lead different departments within an agency and their leadership style is different because of their personality, they may have difficulties in reaching an agreement on how they will collaborate with other agencies. One respondent representing the marine unit described such a situation:

'The leadership here on the marine policing unit is, (...) I don't know how to politely say dysfunctional (laughs). Yea, it's slowly dysfunctional. It doesn't appear to be any coherent strategies, erm, although our Olympics planning has brought us together, and we all are sort of focused on delivering one thing in the same way. But, erm, it's (...) the leadership here on this unit is very diverse in terms of their characters. We've got completely opposing characters here. Sometimes they clash which causes a few problems' (Ralf, Maritime).

Finally, the transformational leadership style, which focuses more on the charismatic elements of the leaders, increased the motivation of professionals and agencies to collaborate. This style implies a process that changes and transforms people and involves emotions, values, ethics and long-term goals. Transformational leaders enabled collaboration by moving followers to accomplish more than what was expected of them. These leaders were close to the needs of their employees and helped them reach their best potential. The following quotations capture this style's advantages:

'In the arm force here, there is a very transformational leadership style. So is always driving towards change and making change happen. And that is obviously very, very efficient; it tends to energize a lot of people, makes people very focused on achieving the goals. I think that's quite effective, that strong leadership giving a clear path as to what people trying to get to' (Malcolm, MPS).

'I think we need an inspirational character who can be the one who takes the lead and who says, you know, on behalf of London we'll make this Games a success and I can intervene with clear conscience' (Noel, Transport).

Apart from experience, physical presence and flexibility, participants acknowledged that the ability to negotiate and persuade people was a strong

capability of a collaborative leader. A leader who has an increased understanding of the interorganizational dynamics and recognizes the importance of having a shared purpose among the interacting agencies is able to develop productive dialogues not only with his/her followers but also with professionals from diverse backgrounds. Hence, this ability may strengthen relationships and foster the decision-making process by encouraging honest communication. The quotation below is from my interview with one professional who described his bosses' capabilities:

'That comes down to one person for me and that is gold, erm, he is always calm, he is always effective, he doesn't need to, he doesn't get excited, he just tells people what he needs, very quiet and calmly and persuades people and I come back to the phrase: leaders need followers, he's got followers therefore it, you know, it works the style in which he does that, he can persuade and negotiate with all the agencies, he does that very well, so it comes down to that individual's ability to bring people, you know, along and get people to do...' (Barry, MPS).

Finally, another characteristic of the positional leaders that was thought by the participants to foster interagency collaboration was the trust between the followers and the leaders within and across agencies. Displaying confidence in leaders within and across agencies reduced anxiety and increased individuals' capability of processing information. All of the respondents believed that when trust and respect existed between the leaders of the agencies and their followers, the aims and objectives of the agencies were accomplished more effectively. Each time leaders built and encouraged trust among the members of the group, employees were more willing, motivated and committed to accomplish the objectives of the group. For example, I was an observer in an interagency meeting that took place during the national exercise 'YF' before the Games. The chair of the meeting was an experienced police officer whose position was the Gold (Strategic) Commander of the service. It was very interesting to observe that very senior leaders from other organizations followed his decisions and accepted him as their leader. He was remarkably experienced in the area of public order and hugely respected by many different disciplines. He was the Gold Commander for significant events including the Pope's visit, Obama's visit and the G20 protests. Consequently, other organizations' leaders had worked with him before and his credibility has been established a long time ago. From my discussions with several professionals during this exercise it became apparent that people appreciated and respected this leader. Other respondents also emphasized the importance of trust during our interviews:

'Actually the leadership; well one of the key things is I get very well with my boss and there is a lot of trust and respect there' (Tonia, HPA).

'The people were well-known, well-respected, well-tested within the London environment to deal with it and that was excellent' (Sam, MPS).

'So, I think you saw a lot of these training exercises obviously Bob knew the fire brigade commander and do a lot of work together and know each other and that's useful they trust each other and they know each other' (James, MPS).

'You trust people, you get to know people and you can rely on them and if you asked them for a favour it will get delivered' (Jacob, LAS).

5.3.2 Processual determinants

The second condition that played an important role in overcoming the two previous leadership challenges and minimizing their negative impact on interagency collaboration was the use of some processual factors including the use of codified principles, written agreements and legislation. Participants' interviews suggested that codified procedures that were shared among different agencies made roles and responsibilities among the organizations more explicit and enabled the decision-making process by building a shared understanding. For example, in the UK, there is the Green (Guide to Safety at Sports Grounds, 2008) and the Purple guide (The Event Safety Guide, 1999), which are UK government-funded guidance books on spectator safety at sports grounds. These books provide detailed procedures on how to safely manage the crowds during sports events. They do not have statutory force but the use of their recommendations have power in a court as they are regarded as guidelines towards a proper standard.

According to many respondents, the existence and the use of such documents enabled the identification of the professionals and services that were accountable for making decisions and therefore facilitated interagency collaboration in complex situations. They also provided the basis for who is going to do what in a number of situations. As stated earlier, respondents acknowledged the ambiguity regarding the shared responsibilities between their agencies and LOCOG and hence, they used such principles to handle and minimize their uncertainty. One participant gave an example of how such guidelines helped collaboration:

'So, if you, for example, fall over in a venue and, and break a leg, LOCOG medical services will deal with you and we will send an ambulance to take you to the hospital or where else you think you need to go. In an event of a mass casualty incident, very large scale incident, major incident the emergency services take primacy so there will be a build up that says the LOCOG do this, do that, we essentially can't cope any more so we as emergency services we come and will take over, we will use your resources, we will still use your resources, we have command and control of that venue until the incident is finished. Then we handed back. And that principle applies across the UK, that's normal business for us; because venues are controlled by two police's guidance, the green guide and the purple guide. So, those principles are being applied to LOCOG venues. Yea? And that's how it works' (Sal, Ambulance Service).

Another protocol that was regarded to facilitate interagency collaboration by identifying the hierarchical structure that must be followed in case of an incident was the *gold, silver and bronze* (strategic, tactical and operational) protocol which was first used by the police service and then all the emergency services implemented it. A considerable number of respondents perceived this framework as an essential element of interagency collaboration because it assigned specific leadership roles into three levels. According to this protocol, there were three layers of leadership and each one had a specific role. This hierarchical system, which was nationally agreed, provided individuals with specific authority over others for the duration of an incident or event and produced clear direction for intra- and interorganizational processes.

More specifically, strategic (*gold*) leaders formulated the organization's strategy, had the overall command of the resources and delegated tactical decisions to the *silver* level. Tactical leaders were responsible for developing the tactics that were adopted by the organization to achieve the *gold's* strategy. Finally, operational leaders controlled and deployed the resources of the organization and implemented the tactics formulated by the *silver*. It is interesting though that apart from the emergency services, other agencies borrowed this framework, including transport and voluntary agencies. It was evident within the data that instead of developing a new system only for the Olympics, the use of this existing system of leadership which agencies knew well because they used it for their normal work outside of the Games was reported to be successful. As the *National Operational Guidance* document noted, this framework helped the integration of plans and procedures between the

agencies and ensured that people understood their roles and responsibilities. The following quotes show how the use of this codified structure was perceived by different professionals:

'The reason we did it many years ago was we were finding confusion at incidents where our senior representative was not always recognizable to the emergency services and therefore precious time was lost to us. They tried to assess what each other's role was, whereas now we all have gold, silver, bronze, we have gold to gold, silver to silver, I think it works much better' (Noel, Transport).

'I think it is a relatively flat structure with only three levels in it and I think having one gold set the strategy, one silver with a planning team effectively plans what's going on and then underneath them the bronze elements that deliver the various components of silver's tactical plan. I think that is the way to go' (Neal, MPS).

'...cause we do everything as we normally do it. Our gold will be in charge, erm, and we got 2 gold nominated, so I would know who, anybody would know who gold is. So, the leadership will really come from there, so there will be, yeah there'll be nothing different. So, yeah, if gold needs to know, gold will make the decision of what's happening. So, when LOCOG leaders lead the venues, yeah, their people will know we have somebody within the venues all of the time' (Jack, LFB).

This framework contributed to interagency collaboration because it preserved the same level of understanding across organizational boundaries since professionals were familiar with its purpose and content. The following quotations also describe three interviewees' perceptions of the benefits of this protocol:

'The existing style of leadership we have is in terms of command and control we have: the golds, the silvers, the bronzes, we'll be following that through the Games, we are using the same sorts of procedures and methods and processes for all sorts of things during the Games we would normally do, we aren't reinventing things, because if we start coming up with different ways to dealing with things nobody will be familiar with it when things happen. So, we are using our normal methods and adapting them slightly to fit in the Olympics. So, it will be very much business as normal but on a bigger scale, I would say' (Sam, MPS).

'I think that the gold, silver, bronze structure helps, so the decision making would have been made there (Samuel, BRC).

'The gold-silver-bronze system is very simple, it worked very well' (Marley, MPS, 2nd interview).

In addition, in a number of my observations during the Games, it was evident that agencies utilized written agreements in order to clarify the role of each agency in several situations and who would be accountable for the final decisions. During the most of the planning phase, the role of the leading agencies (including LOCOG) was not straightforward. Organizations realized this obstacle before the operation of the Games and used such codification procedures in order to limit its impact. As stated earlier, LOCOG did not understand other agencies' roles and practices which hindered their collaboration with other organizations. A number of agencies recognized this problem and signed written agreements with LOCOG in order to clarify how they were going to work together during the Games.

For example, during my observation at the HPA's Headquarters Coordination Centre one day during the Games, the agency produced a daily document called '*HPA Update*' which included the working agreements between the HPA and LOCOG and the role of the specialist consultant and the public health nurse who was located from the HPA at the Stratford polyclinic in the athletes village. It also clarified that in the event of a significant public health incident, HPA staff would work with LOCOG to respond to the incident and provide information. The professionals working in that room perceived this document as a great advantage for collaboration as it identified the role of each agency in case of an incident. The efficiency of written agreements was also noticeable during my observation of the BRC's Operation Room during the Games. The room manager told me that one year before the Games, the agency made an agreement with the Transport service about the number of volunteers that would be needed during the Games in big train stations. Consequently, the role of the BRC and its volunteers at the train stations was defined and there was a shared understanding of the process that would be followed in case of incidents/patients at the stations.

Finally, legislation was thought to be a significant facilitator of interagency collaboration by clarifying the responsibilities of the leading agencies in specific circumstances. Many participants noted that the use of legislation was essential to

making progress in collaboration. As mentioned in the previous section, decision making across organizations was not clear during the Games. However, participants reported that in case of an emergency they would use the UK legislation which identified that the emergency services would take the leading role in managing the incident. For instance, in case of a multi-agency incident that would need the contribution of many services in order to be managed (e.g. venue collapse), a control room called 'Strategic Coordination Centre' (SCC) would be activated and according to the legislation the police service and specifically the Strategic Commander (Gold) would be the leader of the emergency. The SCC's task would be to coordinate the response to the emergency and to take a role in the initial stages of the recovery. This is declared in the CCA (2004) which establishes a clear set of roles and responsibilities for the organizations involved in emergency planning and response. According to all the interviewees, UK legislation such as the CCA played a key role in identifying the responsibilities of the leading agencies in case of an emergency. The following quotes support this finding:

'But the beauty of our system for London is that we have a system which says, actually if it comes to a process, if there is a threat to life incident issue here then basically the police are in command' (Jack, LFB)

'We can take control of it, cause that's the authority we've been given in the UK legislation, we are the coordinators of the emergency' (Barry, MPS).

5.4 Conclusion

In summary, this chapter described how leadership affected interagency collaboration before and during the Olympic Games. In making this attempt, I examined how two leadership challenges influenced interagency collaboration including the lack of engagement of the leading organization (LOCOG) and the unclear decision-making processes across organizations. LOCOG, which was the main organization responsible for the Olympic Games, was expected to play a more robust role for the issue of public health and safety. Unfortunately, LOCOG did not meet the participants' expectations, especially during the planning phase of the Games, regarding their leadership roles and this unresponsiveness was perceived to be critical to interagency collaboration. Further, respondents were uncertain about which organization had to take the lead in the final decision-making process during the Games. This issue reinforced the misunderstandings among the agencies about their roles and it was difficult for them to work together towards the same goal and coordinate their activities.

Since, according to the participants, these challenges did not support interagency collaboration, I discussed two facilitative conditions that moderated the effect of the above challenges on collaboration and included a number of interactional and processual determinants. The use of linkages between LOCOG and other organizations was an interactional mechanism that encouraged LOCOG to work in partnership with other organizations and improved the relationships between them. Moreover, a variety of leaders' qualities such as flexibility, experience, physical presence, the ability to negotiate and trust enabled the decision-making process at the operational level and encouraged the collaborative activities among interacting agencies. A number of processual determinants including codified protocols, written agreements and legislation were also perceived as fundamental to collaboration by making the roles of the leading agencies more explicit. The description and analysis of the data presented in this chapter have provided insights into the leadership components that influenced the interagency collaboration. Recognizing and understanding the above leadership characteristics is an important step towards the support of the collaborative endeavours. The next chapter will describe the role of communication in shaping the collaborative efforts of the public health and safety agencies before and during the Olympic Games.

Chapter 6

Findings: the role of communication

6.1 Introduction

The previous chapter captured how leadership influenced the collaborative effort of different public health and safety agencies during the planning and implementation stage of the Olympics. This chapter will examine the role of communication in interagency collaboration of the above services before and during the Games. In this study, communication includes the ability to generate shared meanings among professionals and organizations. Communication was deemed a requisite factor for the interagency collaboration during the preparations and the actual Games. One participant stated its importance during our interview:

'If there is an incident and communication isn't as strong as it could be someone will die because of that, erm because we don't get informed in advance' (Berry, BRC).

Overcoming the obstacles of communication that hindered interagency collaboration was a challenge for all the actors involved in the Games. The challenge of interagency communication is unveiled when one considers the thousands of emails, meetings, reports and phone-calls among the many hundreds of professionals during the seven years of the planning stage and during the Games. The first section of this chapter describes the main communication challenges that organizations faced during the planning and implementation phase including the lack of interoperability of communication systems and lack of interorganizational understanding. The second section presents the facilitative mechanisms that professionals and agencies followed in order to overcome the previous difficulties. These mechanisms were focused on people, technology and processes and included the implementation of boundary-spanning roles, the role of communication etiquette, a number of interactional determinants and the use of asynchronous communication systems and codification procedures.

6.2 Communication challenges

6.2.1 Lack of interoperability of communication systems

Fundamental to interagency collaboration was the shared and adequate situational awareness of the professionals about the public health and safety issues during the event. Situational awareness is individuals' perception and understanding of the situation they face. It is influenced not only by the information received but also

by the person's assumptions based on their experience of similar situations, their knowledge and their professional background. The capability of the agencies to ensure interoperable communications during the event was considered to be a cornerstone for reaching collective awareness. Organizations that normally worked independently had to integrate their communication systems in order to achieve a joint situational awareness of the event throughout its duration. Ensuring interoperable communication systems across the agencies was deemed as a key element essential in facilitating interagency collaboration. Interoperability involves the interaction between various agencies and includes the ability to share accurate and timely information and provide a common operating picture and situational awareness. There are two forms of interoperability: technical (or hard) interoperability refers to the technological factors for the exchange of information whereas soft interoperability involves the human factors (Way & Yuan, 2013).

According to participants' accounts, shared situational awareness among the agencies was important for making appropriate decisions and delivering coordinated responses. Achieving an adequate situational awareness regarding every incident that could harm public health and safety during the Games was a challenge because information was gathered by many agencies and by different people without having a focal point or agency which could provide all the information collected. Moreover, the informal links and personal relationships that existed between the professionals may have accelerated the uncontrolled spread of information which maximized the risk of losing useful information. Without a clear understanding of the situation and integration of information, there would be frustrations during the interagency collaboration. As Paul from the MPS reported:

'So, channels of communication, and I suppose the best example for that was phone calls coming directly from one venue or an individual to another individual in short-circuits in the actual system. And that will happen at the Games, and when that happens in the Games will have a break down because information will get lost, people hear rumors or get the wrong end of the message and there will be consequences' (Paul, MPS).

Further, during both the preparations and the actual Games, many agencies worked together in the same operation rooms in order to provide integrated services regarding the public health and safety issues. For instance, the MPS used their existing structure of their SOR to deliver command, control and decision making on safety and security through one single overview location. Partner agencies were also

represented by boundary-spanners in the SOR and in this way provided a link between the MPS and the other partners' command and control teams. However, some participants noted during our interviews that during the planning phase some professionals from other agencies did not consider what IT equipment they would use in the control room in order to communicate with all the agencies and they were not trained in the police's equipment. Therefore, they were not able to share information with other people. This unfamiliarity led to dysfunctional information sharing among the agencies and inability to receive timely information. The following quotation vividly captures such a situation:

'I picked on the fact that you know, in the special operation's room some of the other agencies were without any of their own IT equipment so they had no ability, and they hadn't been trained on the police equipment so there is a limited ability at that level, or in some areas to talk, to communicate with the police' (Ben, Military).

The significance of having reliable technology was also eminent during my observation at Ambulance Service's Operation Room on the day of the *Cycle Event* of the Games. Professionals working in that room indicated that the airwave system was the only way to communicate with the police, fire and coastguard service and in case of a technical problem they would not be able to share information. Therefore, agencies needed to find supplementary forms of communication to maintain interagency collaboration. Even after the completion of the Games, professionals noted that one of the lessons learned was that familiarity with the agencies' communication strategies was necessary.

An important consideration of the professionals involved was to ensure that they would receive the information needed. However, too often the information was lost somewhere between the different levels of management within and across the agencies because of the multiple professionals and actors involved. A variety of actors, including new ones, in a variety of locations, shared information through a variety of ways. Therefore, there was a risk of receiving inaccurate or incomplete information. Both the complexity of the social space and the diverse composition of people and agencies which acquired different structures, procedures and cultures slowed down the information flow. One participant from the MPS commented:

'Everybody is gonna need the information but I know that in those big operations it takes time to get the information through' (Malcolm, MPS).

The complex structure of each agency made technical interoperability more difficult and restrained collaboration because professionals were not familiar with other organizations' structures and therefore, did not know how to elicit information from each agency. A quote from a respondent working for the BRC highlights this concern:

'Try to get hold of an agency sometimes was difficult because it has perhaps three different control rooms' methods running at the same time and knowing which one to ring is half the time you get to the wrong, when they send you across and then they would say they would ring you back and there were always delays' (Berry, BRC, 2nd interview).

Regarding soft interoperability, the analysis suggested that big (in time and staff) and formal interagency meetings were sometimes unproductive because agencies' representatives may have hesitated to express their possible doubts or be honest because of the formality of the meeting or time constraints. The striking observation of the findings was that while agencies invested their time and effort to conduct a high number of interagency meetings, the vast majority of the respondents perceived them as inadequate. Participants stated that they often hesitated to reveal their potential problems and were reluctant to share possible misunderstandings because of the formation of the meeting. One participant reported his perspective regarding this issue in the following quote:

'Barriers are possibly that we are often all in quite big meetings that are relatively formal sometimes. Not that formal but still too big to just casually raise questions with partners. So, sometimes you might want, it's really good just to get that time to just casually have a, have a chat, or have a conversation with a partner about a particular issue. And sometimes I find that, I'm in a meeting and there's about five different people there I wanted to speak to, it's not worth raising in front of the whole meeting cause there's 25 people there and I don't want to waste everyone else's time and so it's about, and then at the end of the meeting everyone disappears quite quickly and I maybe managed to speak to two of them. So, I think there's a bit of a barrier there' (Jeff, EA).

Furthermore, as stated by participants, a critical component of interagency collaboration was the communication among individuals regarding the public health and safety risks to which the community was exposed. However, some information around these risks was confidential and available only to the authorized individuals and agencies which negatively influenced interagency collaboration. More

specifically, participants had difficulties in acquiring information essential for coordination of actions among the different organizations. The absence of this information may have created difficulties during the collective action of the partner agencies because their decision making took place under conditions of uncertainty. One participant from the Environment Agency noted during our first interview:

'Because a lot of documents around the Olympics have a very high-security marking which means you can't actually look at them, unless you've sat in a room together. That's been, I've forgot about that, but it's a really big barrier' (Jeff, EA).

Communication overload because of the high-density of information was also regarded a major challenge during the Games as large amounts of information were exchanged between multiple sources. In this study, density refers to the high number of organizations exchanging information as well as the high number of potential informational links among them. For example, the EA had approximately 50 different people talking to 50 different people in GLA regarding different issues around public health and safety such as planning for flood or resilience procedures. Interagency communication did not take place only among the executives of the organizations but also among the staff in the lower levels. As stated earlier, this complex network environment which included not only the formal organizational structures but also a high number of informal connections among individuals influenced negatively interagency collaboration because it was difficult to determine a clear path of receiving and disseminating information. As an Olympics Programme Manager of the BRC explained:

'In normal time there are the local authorities, there's TFL, there's the voluntary services, ambulances it's quite simple actually how that works. But with the Games there's like a thousand role, different units that you need to interact with [...] So, the things that are like barriers to an extend are all the extra units that we have to engage with. Erm, and linking with to ensure that coordinated response' (Maggie, BRC).

Participants also acknowledged that it was difficult to establish adequate links with all the agencies due to their small available resources comparing to the large number of partners and that hindered the 'soft' (human) interoperability among the agencies. Organizations communicated with other partners using not only a variety of professionals but also a variety of methods such as phone calls, teleconferences, websites, emails, meetings, and personal contacts. Thus, it was a major challenge

for each agency's staff to manage this sheer volume of information. This dimension was suggested to hinder communication practices because professionals needed longer time to find the relevant information. As Berry from the BRC noted:

There are 33 meetings for 33 local authorities, every three or four months, and there are six regional meetings every three months and there are various other panels and things as well. So, there are a lot of meetings for our small team to go through. This again means we can't get to all of them, especially if they are running on the same day, which means we drop a loop of communication (Berry, BRC).

6.2.2 Lack of interorganizational understanding

All the involved organizations had their own operating environment based on their knowledge, tasks, training and organizational structure. The relationships between the participating agencies varied depending on their history of interaction. For example, the blue light services which normally respond together in emergencies had good and established relationships. Therefore, they were familiar with each other's roles and policies making collaboration easier. However, many participating stakeholders did not have a history of working together and thus, they did not understand other agencies' roles, requirements and type of language. These differences also involved information sharing procedures and communication structures. This unfamiliarity may have led to misunderstandings during their collaboration and increased the level of uncertainty of the agencies about partners' responsibilities. Participants indicated that sometimes it was difficult to work with agencies that prioritized only their own goals without trying to understand other organizations. As one respondent from the military reported:

'Some of the other partners perhaps know us less well, [...] I think that they (...) they don't understand' (Ben, Military).

Similarly, another two respondents commented:

'I think the sort of barriers are people who, erm, I think they are used to working against their own priorities, they struggle sometimes to take onboard others' (Noel, Transport)

'Messaging had to be agreed by the Home Office, Department for Culture Media and Sport, and the Ministry of Defence, often with competing objectives or different requirements. This often slowed down the passage of information' (Jacob, LAS, 2nd interview).

Organizations that were familiar with one another and had good relationships acquired more understanding of what agencies needed in order to perform their tasks. Unfamiliar stakeholders needed to expand their personal network with key personnel from other organizations in order to share relevant information. For instance, closed silos of information existed because of the entrance of new actors in the field, such as the LOCOG, which hindered the transfer of information across agency boundaries. It was frequently mentioned in my interviews that LOCOG was delaying in providing information, did not turn up to meetings and they were planning in isolation. Many of the LOCOG's personnel were not involved in the planning process during the seven years before the Games and had not enough contacts with other agencies. Hence, they did not have easy access to information needed for assisting an integrated response around public health and safety issues during the Games. As one respondent from the MPS reported:

'When you bring other outside people, the LOCOG they didn't really understand our working practices and we didn't understand theirs, erm, so that didn't work well' (Mark, MPS, 2nd interview).

Furthermore, lack of common language across the agencies may have led to misunderstandings in information sharing and confusion during their collaboration. Transparency of the information received was needed in order to understand other agencies' actions and align all activities. Agencies needed to ensure that the transferred messages were clear and avoid language that can be misconceived by other disciplines, particularly by agencies that did not usually interact. The use of specialized language that some professionals cannot understand or may assign wrong meaning to it had a negative impact on collaboration because of the limited understanding of other agencies' needs and functions. One interviewee from the MPS gave such an example:

'Barriers are just acronyms, and everybody has their own different language and the police are terrible, the police has got 3 letter acronyms for everything or has got a term for everything that's got to be different from the everybody else's and people need to make sure, [...] I think they need to make sure that everybody understands what they need, and people have to ask...' (James, MPS).

Marley from the MPS added:

'I think within the police, fire, ambulance we work together a lot. So we understand, and the local authorities, tend to work like this as well, but outside

of that it's interesting. It's a lot of foreign language. It may as well be Greek'
(Marley, MPS).

In sum, organizations needed to coordinate their communication systems to prevent duplication and overload of information. Participants suggested that it was essential for them to find mechanisms to manage the high volume of information, achieve a streamlined information flow and develop shared meanings during their communication. The findings in this study indicated the following mechanisms as enablers for achieving a shared situational awareness and a more consistent information flow among the organizations which in turn supported interagency collaboration.

6.3 Mechanisms for improving communication

6.3.1 Boundary-spanning

Boundary-spanning allowed stakeholders to collect timely information from other agencies every day during the Games and gain situational awareness of all the events and incidents each day of the Games. Using boundary-spanners was perceived by respondents as being a critical component to the interagency collaboration during the preparations and the actual Games because it was an efficient way for the agencies to receive information relevant to them very quickly. Boundary-spanning was a significant mechanism linking an organization to other organizations and mainly involved the sharing and exchange of information. According to Williams (2002), boundary-spanners are organizational members who link their organization with the external environment such as other agencies. Therefore, the fundamental task of boundary-spanners was to make decisions only regarding the information received. Their role during the Games was formal and their purpose was to filter information that was not relevant to their agency, prevent the information overload and ensure timely and accurate information sharing across the agencies.

For instance, according to my observations, the MPS had spanners (called liaisons) from the ambulance, fire and transport service in their SOR. In this way, they were able to discuss upcoming issues face-to-face instantly and provide the feedback across the agencies using the communication system of each agency provided by each liaison person. An important point to mention is that the MPS had provided a short training package to the spanners including their roles and responsibilities, information about the technical equipment and the available

communication systems. In this way, there was a common platform including specific procedures of how these organizational linkages would exchange information from one organization to another. Consequently, interagency collaboration was enabled because boundary-spanners managed to create shared meanings among organizations while maintaining interoperable communication systems among them.

The advantage of using organizational members as boundary-spanners was also highlighted in documents. For example, the overarching C3 Concept of Operations (ConOps), which was a government document with the aim to provide a framework to the key stakeholders on how to formulate their collaboration, indicated a network of liaison officers as a necessary mechanism to ensure shared situational awareness among the different agencies. These boundary-spanners, who were formally located in each agency's operation room since their agencies had signed written agreements on their role, fostered interagency communication and collaboration because they accelerated the information flow across the agencies. For example, during my observation at the Ambulance Service's Operation Room on the day of the *Cycle Event* of the Games, there was a call for an ambulance near an area where St John Ambulances had resources and the agency responded quickly because there was a St John representative in the room. One participant from the MPS also stated during our second interview:

'The way we overcame that was by having liaison officers from particular agencies in each others' control room; so, for example, with the organizing committee we had our liaison officer in their control room and they had their liaison officer in our control room. [...] that person's job is to get me the information I needed and to tell me if there are things that emerging that I need to know about. Because they think the way I do, they don't think the other people. [...] It worked really well in terms of the flow of information between the agencies (Barry, MPS, 2nd interview).

My findings expanded the positive role of boundary-spanning on collaboration by assigning a number of useful skills to these individuals. Being explicit, straightforward and honest was thought to be a necessary communication skill to foster the collaborative engagement of the agencies. One of the challenges that was noted earlier was the unfamiliarity among different agencies. Boundary-spanners needed to be accurate while interacting with other organizations in order to foster shared meanings amongst individuals. For example, during the interagency meetings that took place before and during the Games, the professionals who represented

their agencies, needed to be clear and comprehensive about their organizations' expectations for the Games so as all the agencies have a shared understanding of each other's capabilities. A quote from an Emergency Planning Officer of the BRC illustrates the importance of being explicit:

'When I got to the multi-agency meetings which involve local authority, involve the police, involve the fire brigade I've been putting the message out. Speak to us, involve us. I'm trying to get the message clearly illustrated that the sooner they ask us the more likely they will get support; if you ask at the Games it will be too late' (Berry, BRC).

The importance of being explicit when communicating with another professional or agency and making sure of the accuracy of the message to avoid confusion, was also emphasized during my observation at the BRC's Operation Room during the Games. More specifically, there was a patient in one train station one day during the Games, and the train station manager asked the LAS to send an ambulance without clarifying that the BRC was asking for it. Then, the LAS asked the BRC to send an ambulance because they did not know that there was a BRC presence at the specific station. Consequently, there was a delay in the information flow and a miscommunication which could have had a serious impact on people's lives.

Furthermore, in line with the above skill, it was reported that boundary-spanners had to avoid using technical language and acronyms in order to be comprehended by other professionals. As noted earlier, the different language and terminology that each agency used because of the different culture and norms, may have caused confusion and minimized the understanding of the information. A number of my observations highlighted the importance of not using acronyms during the interagency collaboration. For instance, during a table-top exercise that was conducted by the military in the army Headquarters in February 2012 and whose aim was to train the army staff for the Olympics and validate the military's Olympics plan, one of the leaders clarified in the beginning of the exercise that participants should not use acronyms during the exercise in order to maintain a shared situational awareness and ensure the consistency of the exchanged information. Similarly, during a monthly Olympic meeting of the MPS that took place in February 2012, police officers noted that the large number of acronyms that were used by their service could lead to information breakdown across the interacting agencies and to misinterpretation of the actual situation. Using commonly understood terms and

acknowledging the fact that some terms may have different meanings across organizations was identified as necessary in order to communicate effectively. Creating and sustaining a common operating picture by exchanging clear and explicit messages reduced the risk of misunderstandings among the agencies.

Documentary analysis also proposed that field terminology and acronyms should be avoided because they hinder interagency communication and collaboration. According to the *National Ambulance Service Command and Control Guidance*, which was updated in May 2012 for the Games and whose aim was to assist the interagency partnership in responding to a major incident, it was noted that emergency services should write their strategy in plain English without using technical terms to ensure it can be understood by all the relevant people both internally and externally. Moreover, the *Purple Guide* (The Event Safety Guide, 1999), which is a UK government-funded guidance book on spectator safety at sports grounds, recommended that unambiguous use of language is crucial in providing clear and reliable communication. It also highlighted the fact that acronyms should be avoided and agencies' planning documents need to include a glossary of terms within their main document. The issue of language clarity in communication was also discussed in the high-level strategic document produced by the UK government, the overarching C3 ConOps. The document emphasized that the information flow among the agencies should be transparent in order to achieve shared meanings among individuals, groups and organizations.

Apart from clarity and honesty, some participants suggested that empathy, which means that people can understand others' viewpoints even if they do not know them personally, was a significant enabler to interagency collaboration. Boundary-spanners needed to assure that partners gave the same meaning to the message transmitted as them and minimize potential assumptions during their communication. Understanding others' perspectives increased the level of closeness between individuals and created mutually beneficial relationships which may have led to a greater commitment to collaboration. As some respondents reported:

'And everybody sees things from different perspectives and you have to understand, erm, understanding other people's view points, you know, based on their professional knowledge and their experience and their responsibilities. You have to understand, you know, what's in their head in order to be able to communicate effectively' (Ralf, MCA).

'I think the main lesson I would pass on is understand why people want to know what they want to know' (Pat, LAS, 2nd interview).

The following respondent describes how LOCOG's limited empathy about HPA's roles restricted the functioning of their collaboration and emphasizes the need of developing mutual understanding:

'One of the big exercises was a large fire incident near the Olympic Games park and one of the things that we provided there was issues around air quality, so people inhaling chemicals, or smoke or something. Erm, and the, the LOCOG people wanted the information now about the air quality assessment, [...] and it was really difficult getting that understanding that we can only give you what we can give you [...] it was a learning curve for them, cause they just want everything now (laughs)' (Tonia, HPA, 2nd interview).

In addition, knowing which form of communication to choose according to the circumstances and the other person or agency enhanced the likelihood of reaching a common understanding. Many respondents shared the same view that boundary-spanners had to acknowledge the different perspectives among the organizations and be aware of the different objectives while working with them in order to find an appropriate way to communicate with them. This was particularly important with the new actors in the field. The underlying mechanism here was that by communicating in a suitable way, responsibilities and procedures were well-understood by everyone and collaboration worked smoothly. The following quotes reflect this suggestion:

'You have the right people with the ability to communicate well and in my opinion you've got people know how to talk to people in the right way cause in the wrong way you don't get people to work in the right way' (Paul, MPS).

'I think good communication skills really because we've been dealing with lots of, erm, partner agencies some of them we normally do business with and have many, many years, and others who are less familiar with like LOCOG...and I think it will be actually communicating with them in the same way that we do with our regular partners' (Sam, MPS).

'How to talk to people, communicate to people, that's my main thing (laughs). I found that you have to be, yea, really careful with how you say things cause you don't want people to take things the wrong way' (Maggie, BRC, 2nd interview).

6.3.2 The role of communication etiquette

The findings in this study revealed that the existence of implicit behavioural expectations that individuals had from other individuals, namely 'communication etiquette', influenced how professionals perceived their collaboration with other agencies. Personal relationships seemed to win over the formal structures and standardized mechanisms because they minimized professionals' uncertainty about working with other disciplines as they were more open to exchanging information. When organizations invested in their existing relationships, information sharing and collaboration appeared to be more efficient as trust was expected by both parties. For example, the military had very good relationships with the MPS, both at the higher and lower levels of management of the services because they were used to work together in routine operations such as ceremonial parades and they knew each other very well. These trusting relationships reinforced the professionals' perceptions of others' behaviours as supportive which contributed to a smooth collaborative endeavour. On the other hand, some agencies involved in the Games, such as the HPA, knew the military less as an agency because they did not have either normal arrangements or personal contacts and thus, they might have not understood its role during the Games and the potential need to work with them as a team.

According to many respondents, knowing people personally enabled both communication and collaboration because of the shared understanding and respect between them. Professionals acknowledged that building relationships were very helpful because it provided them with knowledge about useful meetings and exercises that otherwise would not be able to know. They knew who to speak to in each agency and were able to receive necessary information more quickly than using the official arrangements. Respondents emphatically indicated that the three blue light services had excellent relationships with each other and a good flow of information between them because they were used to work together and they shared the same end objective which was responding to an emergency and protect public's health and safety. Consequently, they understood each other's role very well, trusted each other and knew when and how to communicate. Some participants gave some examples of how personal relationships helped collaboration:

'Especially knowing people personally is very important in, in communication. In a major incident, [...] If I say to the fire brigade erm, I want 50 fire engines moving from here to there, they know me, I know them, I say fine, is done. If I say to (...) erm, trying to think, to a scientist I want a scientist from here to there, I don't know them, they don't know me, [...] it's very, is very important

to know people personally, know how they communicate. Very important!
(Marley, MPS).

'We know that if we need the information quickly, we can ring a certain person, because we know them on more than just official work level' (Neal, MPS).

During my second interviews after the Games, two respondents reflected on how trusting relationships contributed to an open information exchange:

'There were points where we didn't know the info that we should have, which is always a case but we managed to get it through our existing relationships'
(Berry, BRC, 2nd interview).

'We actually worked really well together and shared information with an openly, [...] so having a point of contact within the agency, erm, and having, having the trust I suppose it is really key' (Tonia, HPA, 2nd interview).

On the other hand, as an outside observer of a number of meetings and exercises, I can affirm that professionals were worried about their communication with LOCOG, since they had not any personal contacts with them. LOCOG was a new, growing organization outside of the emergency services clique which started with fewer than 50 people in 2005 and by 2012 was responsible for around 200,000 people. As stated in the first section of the chapter, it was very difficult to build relationships and develop a shared interorganizational understanding with them since internally they did not know each other very well.

It was not until a few months before the Games, when a professional from the local authorities who was well-known to all the agencies joined the LOCOG, that a direct contact was created between most of the agencies and LOCOG, which facilitated their collaboration. Hence, the combination of the use of linkages with the aim of building stronger relationships with an agency, which was perceived as isolated, was a mechanism that created a more trusting environment where individuals anticipated positive behaviours from the other party. This benefit was recognized by LOCOG which afterwards approached many police officers to work for them in order to improve their relationships with other services. Furthermore, a number of documents identified the establishment of personal relationships as a critical component to the development of interagency collaboration. For instance, the

planning pack that was produced by NHS London to assist NHS organizations with their planning encouraged the organizations to build their relationships with local authorities to ensure they receive the latest information relevant to their area and that both agencies' planning would be integrated.

6.3.3 Interactional determinants

Interactional determinants include a number of processes that enabled professionals to achieve shared meanings through interaction and develop their collaborative practices. These elements are based on face-to-face interaction, electronically mediated synchronous communication methods and training processes. When interviewees were asked about which communication method contributed better to the viability of interagency collaboration, the vast majority of them believed face-to-face communication. This method was perceived to create familiarity among people who had not known each other well prior to the Games and improve personal relationships and the building of trust. Participants' accounts suggested that it facilitated the information sharing among professionals from different services and enabled the immediate resolution of potential conflicts and assumptions. It may also have helped professionals understand better other agencies' roles, practices and priorities by giving the opportunity to clarify questions at the same time. Frequent face-to-face interaction increased trust and shared understanding between the involved stakeholders and enabled the implementation of their actions. A number of respondents mentioned the importance of this method of communication during our interviews:

'Face-to-face communication wins every time. If we are there physically at a meeting, we will find out about things that we wouldn't via e-mail or by telephone' (Cal, MPS).

'Speaking face-to-face and understanding people's issues it's fine, one to one communication can be really-really good, not necessarily for your own group decision on anything, but for building relationships. That made a big difference, it did help a lot' (Jeff, Environment agency).

'At a more local level, the stations where we had personnel out, we had quite good information directly from the station manager to the teams that were there, so that was kind of face-to-face type link' (Berry, BRC, 2nd interview).

Face-to-face interaction also occurred at meetings within and across organizations. During meetings, people were able to clarify issues, understand each other's roles and scrutinize assumptions. For example, during the preparations for the Games, many interagency meetings took place where professionals discussed each agency's role in case of specific scenarios. After this scenario testing, organizations developed their plans and then conducted exercises in order to test the efficacy of the plan. Therefore, meetings seemed to be an effective way for the agencies to collaborate in order to develop their plans. Several respondents during our interviews supported the use of intra- and interagency meetings in order to develop their plans and engage better in the collaborative environment:

'They are useful because, erm, I get to speak to colleagues from all over the place. And we get updated each other, and we get to motivate each other on what's going on, yea, they are positive in a fact that we get actions done, we get plans to be completed. They are needed definitely. Definitely needed, yea!' (Maggie, BRC).

'We all go to these planning meetings which at times are very tedious but you have the opportunity to talk to people to the fire brigade, to talk to people in the ambulance service, talk to people who are in the road, you know, and make sure you've got an integrated planning structure that says if something goes wrong somewhere we are all going to work, we are not going to say the fact that you got water in your Control Centre because the windows are leaking is your problem. If we can help with that we will because your failures will become my failures' (Noel, Transport).

'There are series of meetings coming together, where venue managers and emergency services and others will sit at a table and say: what's the venue plan? What have you done? What have you agreed? Where's this? Where's that? Ok fine and then we sort out a common plan' (Sal, LAS).

Participants also acknowledged that regular small meetings with stakeholders proved to be an effective way of sharing information and also gave the opportunity to professionals and agencies to clarify their aims and objectives. The regularity of the meetings enabled the provision of sufficient information necessary for implementing collective actions. Moreover, the small number of participants limited the risk of miscommunication and created stronger relationships which may have led to a better

understanding of each agency's contribution. In the following excerpts, respondents reflect on these benefits:

'Probably the best way that can be improved is communication erm, we're often very active, we'll be there as part of the regular multi-agency meetings, we'll tell them what information we've got, what resources we can provide and get all the information from them' (Randy, LA).

'Most meetings, specifically those including a few partners, I was going (...) I was happen to say this is what HPA does, this is what we normally do and (laughs) and this is what we are going to do, so don't worry this is what we do. Erm, so, it's kind getting people to understand what we do and how we do it and how we work, recognizing that we are not trying to change it (laughs)' (Tonia, HPA).

Centralized structures and physical co-location with the use of control/operation rooms by the agencies facilitated the information flow by using face-to-face interaction as the main communication method. Many interviewees indicated that when agencies used one single location/room in order to communicate with other services and a named individual with the specific role of receiving and providing information and with a particular contact number and all these well-known by all the partners, then interagency collaboration was enabled. Participants' accounts suggest that physical co-location of the agencies may have benefited collaboration because participants had the opportunity to solve upcoming problems instantly. In the following excerpts, a number of respondents reflected on the advantages of centralization:

'There's similar approach to, to the river Thames, erm, and the joint marine coordination cell, which is a single location, we will be located with all our partners, working to a common objective which reduces the timescale involving and responding to things, de-conflicts any issues and you can do that face-to-face in live time rather than on the phone or anything other' (Ralf, MCA).

'Another good example, we had a communications' room at Enfield and we had good communication with London ambulance service, so they'd regularly contact us and say that someone in station who needs help and could we get there ahead of them, [...] it all went well' (Maggie, BRC, 2nd interview).

Several respondents during our second interviews indicated how important it was to establish a structure where agencies were co-located in order to create a climate of reassurance that all the agencies' activities would be integrated and coordinated. The following interviewees shared their experience:

'We didn't need that room, upstairs, we didn't need it, you could do that from our desk! But why is it important? Because [...] it's there, something tangible for them to see and this is part of communication! And they can feel reassured by that' (Samuel, BRC, 2nd interview).

'Co-location is so key to interagency stuff, makes such a huge difference' (James, MPS, 2nd interview).

'I think the flow (...) on event days was very good. Erm, because we've co-located lots of people, there was almost all happening in the room, (...) and on those days it was structured, [...] So, I think that worked really well in the room' (Jacob, LAS, 2nd interview).

Another interactional determinant that facilitated interagency collaboration was the electronically mediated synchronous communication methods such as teleconferences. This element offered an open access to information to all the agencies while eliminating time and place constraints. By using this computer-supported communication, professionals were able to share information instantly without being at the same place. Many respondents believed that the implementation of Video Teleconferencing (VTC) among all the partner agencies was necessary in order to share information easily.

During my observation at the HPA's Headquarters OCC one day during the Games, I observed a teleconference which involved all the departments of the agency and took place in a small room near the OCC of the HPA. The room included only a small table with a telephone on it and a few chairs around it. The HPA's manager used the 'dial in' number and codes written in their Agenda, she logged in and the teleconference started. The representative of each department, using the Agenda sequence, reported their incidents. Most of them used the phrase 'nothing to report'. Only the *SW (South West) Region* reported a few cases of diarrhea and vomiting and *London Region* reported one case of diarrhea and vomiting of a person who ate in a venue. The professionals working in the OCC perceived this teleconference as a great advantage for collaboration as it was an efficient way of

sharing information quickly. The use of interagency teleconferences was also deemed a requisite factor for collaboration in a number of documents. For instance, the high-level strategic document produced by the UK government (the overarching C3 ConOps) identified the requirement of the UK government to conduct daily teleconferences or VTC in order to share real-time information, maintain situational awareness and coordinate the actions taken. As several respondents explained during our interviews:

'So, we need to establish a video-teleconference and telephone links with every single organization' (James, MPS).

'We had regular teleconferences with partners – this was also a very good way of collaborating and sharing information' (Jeff, EA, 2nd interview).

'We had set up a daily teleconference, cross-health teleconference in the morning, erm, the DH with ourselves, NHS involved, London Ambulance involved and any kind of issues will get raised there, if anything reported the day before, discuss what was going on with them. Generally worked quite well' (Tonia, HPA, 2nd interview).

Finally, training on the IT equipment of each service and the methods of communication that different agencies used was identified as another interactional determinant that improved the collaborative effort of the partners. As mentioned in the first section, it was difficult to have interoperable communication systems among organizations because many professionals were not familiar with other agencies' procedures. Training, such as workshops, provided an environment where participants were able to exchange information efficiently. However, there were also some situations where training had not served its purpose and professionals did not know how to use their own agency's equipment. For example, during my observation of the BRC's Operation Room during the Games, there was an incident where the volunteers of the agency in one train station were new and did not know how to use the radio. This example indicated that agencies needed to broaden the scope of their training and exercising programmes to address the technology component more overtly. The following quotes represent good examples of the necessity of training on the IT in order to share interorganizational information:

'We had a, erm, a training week with the military and with some other partners just to, to identify how we would, erm operate, looking around into our

operability, erm, how we would communicate, how we could, erm, erm, how we, really just to familiarization' (Ralf, MCA).

'We could have been engaged more with LAS, London Ambulance Service, so maybe look more at the operation people on the day to day basis in the other organizations and see how we can link in more to them to improve our processes, so look up for events-wise where they were going to be and know the communication processes between us' (Maggie, BRC, 2nd interview).

'If there was an area which could be improved, it would be the familiarity with each other's method and style of communication which posed minor challenges early on but which was worked out before the Games started' (Ben, Military, 2nd interview).

6.3.4 Asynchronous communication

Asynchronous communication systems played a strong role during interagency collaboration because they assisted the information flow among the involved actors. For example, one-way communication systems such as websites were a good way of sharing information regarding agencies' roles and procedures while giving time to reflect and understand other organizations. Simplicity was recognized as a facilitator of interagency collaboration when one-way communication systems were used because it minimized possible misinterpretations and necessary information was more accessible. The quotation below is from an interview with a Head of Emergency Planning of the BRC who explains the importance of being simple in communication:

'So, make less clicks to get to the relevant pages because a senior police officer, how many times they're gonna click, click, click, they want to know now: what can the Red Cross do for us? Bringing nearer the front page' (Samuel, BRC).

It was also evident throughout the data that an online data-sharing tool that agencies used in order to share information before the Games called National Resilience Extranet (NRE) facilitated interagency collaboration during the preparations for the Games because it overcame the challenge of accessing confidential information. The UK government used technology to develop and implement this secure web-based system to enable the public health and safety services to share information including restricted and confidential data. Organizations

in local, regional and national level were able to share information directly with each other including the government. This information involved contingency plans, testing and exercising programmes, meetings and events, SitReps and ConOps of different agencies. The NRE seemed to provide a common platform for achieving situational awareness and distributing national SitReps during the Games. The following quotes give examples of the benefits of this information tool:

'It's an online data sharing tool basically. So, rather than email documents, they can put up at this but it's fairly highly restricted, very secure so people can't hack to it. It is open to all emergency planning organizations; it's from the Cabinet Office. Erm, the fire brigade is using that quite a bit' (Malcolm, MPS).

'Have you heard of the Government Protective Marking scheme when you have like protect, restricted, confidential, yea, anything restricted or above can't be e-mailed, but restricted can be stored on the National Resilience Extranet so that it helps' (Jeff, EA).

However, there was a lack of consensus among the respondents regarding the usefulness of this tool. Most of the respondents mentioned that it was unsuccessful for a number of reasons. First, the NRE was deemed complicated and it could not provide real-time information so only a few people who were familiar with it used it. Second, in order to use the NRE, agencies had to purchase licenses and therefore, because of the cost, agencies refused to use it. Third, it was not controlled and too many people could put information on it. Below several participants describe the drawbacks of the NRE tool:

'The issue is the police is not on it, the ambulance service don't have much access and council some do it some don't. The reason is that you have to buy licenses. [...] and a lot of them are saying we're not paying for it. The issue is the Greater London authority, the Cabinet Office, Central Government all that sort of thing are putting documents up on this, some agencies can use it from there. A lot of agencies can't. [...] Personally, I think the Cabinet Office should just say everyone has to be on it. If you are Cat-1 or Cat-2 you have to be on it. Erm, and these are the roles that have to have access. [...] The issue is there is no central government department to say it there. So, therefore, each service chooses their own thing' (Berry, BRC).

'A lots of people, too many people who can put information into the system. It's no controlled, it's not command and control' (Marley, MPS).

Eventually, for all the above reasons, the agencies used another system called CLIO to share restricted information in real time during the actual Games. Professionals preferred this system because it was easily accessible on devices and it was very easy to use. By using this system, information flow across the agencies was more efficient and professionals were able to keep track of all the stored data in order to retrieve information about past incidents. Three respondents shared their perspective about the use of this online tool during the Games and how it helped interagency collaboration:

'We've had an incident log running just a simple excel incident log [...] strategic briefings, sort of reports, were completed every two or three hours and they would cover a lot of updates [...] to our partners now, so they A. know what's happening, they know what we did, but B. we managed government level concerns about, you know, this high level of interference about that if you don't tell them what's going on and reassure them that you've got the grip of it. [...]. So, it was a way of tearing and managing the information flow. And it worked very well' (Barry, MPS, 2nd interview).

'The information flow was very effective because we used a computer system called CLIO. It's a bit like eeee, a group chat on Microsoft Messenger. [...] And that constant feed and all the messages could be linked back to each other. [...] So, we had this fantastic system where everything you can go back for the whole Games. [...] So, if you search for a word, it will come up every time the word was used, so it was a very, very good system, very good way of keeping track of information, erm [mumbles] [...] that was a fantastic piece of communication!' (James, MPS, 2nd interview).

'We used a system called CLIO, which is basic the message sending system and it is designed by the kidnappers actually, for fast time decisions. Erm, and that worked quite well. [...] The NRE is kind of being replaced by CLIO. CLIO superseded it because is much easier to use. NRE is expensive so CLIO is much simpler to use. Once you've got the basic training you don't really need to be retrained. Where NRE you've got to use it and then use it and then keep using it' (Marley, MPS, 2nd interview).

During my second interviews with the participants after the Games, some of them recommended that the combination of using one central body distributing information to all the relevant partners and an online messaging system would enable collaboration across organizations by ensuring that each agency's issues would be discussed and resolved. The use of this asynchronous system would give time to the agencies to understand each organization's issues and be better prepared for their collaboration afterwards. The quotation below describes the benefit of this combination:

'I think as technology develops or as organizations start to use that technology that is there, there are different ways you get online things, goals and things if you can, be able to submit little bits of information through an online forum, through a messaging system of any type e-mail or some of the more sophisticated ways into some central part and then it means that before having a teleconference or before a meeting, the central partner be in London Resilience, or someone else can then say actually we've got 40 issues raised by these organizations, let's group them together and make sure they are discussed' (Berry, BRC, 2nd interview).

6.3.5 Codification

Most respondents proposed that the use of codification procedures by each organization facilitated communication and interagency collaboration. More specifically, the formation of SitReps which was a reporting mechanism used during the Games, was deemed as a primary source of information across all the stakeholders. Most of the organizations involved in the public health and safety aspect of the Games produced and disseminated daily SitReps to the upper level of their hierarchy and to other actors. These SitReps included information regarding the incidents that the agency had managed during the day and potential concerns around the issue of public health and safety. The development of SitReps was regarded as an effective mechanism for improving collaboration because first, it was a formal procedure so everyone knew and expected this kind of information and second, because of its formality, the included messages were selected carefully and thus, it was difficult to receive unclear information. One respondent stated:

'Additionally, most organizations and hubs were producing daily situation reports. This enabled a good common understanding of the situation' (Jeff, EA, 2nd interview).

Apart from the interviewees, a number of documents also suggested the development and distribution of SitReps as a necessary component for the agencies to collaborate. For example, the strategic document produced by the UK government which I have mentioned earlier, called the overarching C3 ConOps, presented a detailed daily reporting schedule which required all the stakeholders to provide daily SitReps to the ministerial level. The obligation of the agencies to produce and share daily SitReps with the ministries and the regularity of this process may have improved collaboration because people engaged more in the process as it was required from the government. Professionals worked close with each other in order to ensure timely and accurate information sharing. Similarly, the DH sent a letter to all the NHS organizations in May 2012 identifying the reporting and information sharing arrangements for the duration of the Games. It indicated that the government would produce two daily SitReps which would depict the operational position of the NHS during the Games. The letter clarified that the production of these SitReps was mandatory and it would commence around three weeks ahead of the Games in order to test and overcome potential problems. The letter also stated that this method of information sharing would be supplemented by other forms of communication such as phone calls in case an organization had significant operational problems to resolve. In line with this suggestion, organizations had to provide a specific daily contact which could be used in case additional communication was necessary. This was particularly important in case organizations faced difficulties after the dissemination of the SitReps which was once or twice per day. Therefore, other methods of communication and well-known contact details eased the distribution of information that was not included in the SitReps.

More specifically, all the partner agencies used a specific location and a number of professionals whose role was to collect information from the operational level of the agency and form the daily SitRep. This was disseminated to the upper levels of the agency's management and to other stakeholders. For example, the MPS used a Strategic Briefing Cell (SBC) within their SOR where professionals gathered information on the number of the daily arrests and other incidents and formed a report which was sent to various partner agencies, including the strategic level of the MPS and the government. Moreover, the Ambulance Service used a management information system to collect data including how many calls they received per hour and from which areas of London, and then this information was condensed into one report which was sent to the government. In addition, one participant from the HPA explained to me during my observation at the HPA OCC that the agency had an

agreement with LOCOG and the DH to provide them with daily public health SitReps containing information about all the public health threats and incidents across the country as well as significant international events that might pose a threat. This report also included data on possible outbreaks and infectious diseases. This information came from various sources such as GPs, Health Protection Units, local authorities and environment health professionals.

I observed the procedure of developing and sharing this SitRep while I was at the HPA's OCC one day during the Games. The *Task Manager* of the room supported the *OCC Manager* and collected all the SitReps from the above sources until 16.00pm so as to form the main SitRep until 17.45pm. Both of them highlighted the fact that the sensitivity of the received information was increased which means that there was an overload of information including irrelevant messages. However, both of them claimed that they preferred a large amount of information even if there was duplication, rather than feeling uncertain about missing information. This was particularly interesting because even though the high density of information proved to be a significant communication challenge, respondents seemed to overlook that probably because of the media and political pressure.

Then, the main report would go to the DH, COBR, LOCOG and within the HPA and back to the regions. The manager noted (and I also realized) that the busiest time of the day was from 16.00 until 17.45 because of the SitRep preparation. The OCC Director, who was in charge of the OCC, was signing the main SitRep. Most of the professionals in the room reported that the production of this SitRep enabled the communication among the different agencies and helped the information flow between them. In the book that was published by HPA after the Games named '*Learning from London 2012, a practical guide to public health and mass gatherings*', the agency mentioned that it produced 73 daily public health SitReps during the Games which had the title 'nothing significant to report' on the front summary page.

Formalizing the production and sharing of the above reports and implementing mutual agreements between the agencies was another factor identified within the data that influenced positively interagency collaboration. For example, while I was observing the SOR of the HPA during the Games, all the participants reported that the existing working agreements between the HPA and LOCOG on how they would communicate and share information during the Games enabled their collaboration because they clarified each agency's role. This formalization helped

interagency collaboration because responsibilities and procedures were well-understood by both parties and relationships were strengthened. The following quotes describe interviewees' perceptions of the use of formalizing the information sharing process among the partners:

'That will be formalized, so, the, where the data will go, or who will produce what part of the SitRep will go there and put stick it together and who will, in the end signed it of and then send it' (Eleanor, HPA).

'We've agreed during the Games time that LOCOG will report to us anything that is coming through from the public health perspective. So, we've agreed in a number of syndromes with them that, that, that, they will notify us about. Erm, they have a, what's called a medical encounter form and they got syndromic surveillance on that for us. Erm, and also (...) well, yea, they've got two systems one of which, they have to, all the team doctors they have to do a daily report' (Tonia, HPA).

Another example of codification was the development of intra- and interagency plans and protocols which established clear communication lines between the agencies. The development and implementation of communication plans by the agencies contributed to the interagency collaboration. They were successful in bringing together the agencies' strategic, tactical and operational plans to improve communication. These plans, including agencies' ConOps, provided information on the frequency, format and audience of the agencies' SitReps. In this way, organizations were able to clarify what information they needed to share and with whom they had to communicate it. Therefore, there were no doubts among the professionals about the process of the information flow they had to follow. The organizations' focus on these plans enabled them to establish a more consistent intra-and interagency communication in case of an incident during the Games and led to a more effective interagency response. One respondent from the LFB stated:

'Internally we just started a communication plan. It's just, who we need to tell, what we need to tell them when we need to tell them. So, it's really breaking down who, yeah who, needs to be told so. What and what they need to be told when they need to be told. Cause there's no point giving everything to everybody. And it's also timing, if it's too early, they would have forgotten by the time Games comes around' (Jack, LFB).

Similarly, the HPA developed a 20-pages Olympic surveillance work-stream project plan which included the specific *objectives* that the agency had to cover in order to detect and respond to public health incidents as effectively as possible during the Games. Each *objective* included the specific people from other departments and agencies who should send reports and share data with the HPA, the frequency of the reporting and particular processes and technologies that had to be installed in a number of agencies in order to communicate effectively with HPA. The necessity of the development of such communication plans which would identify who, when and how an agency needed to communicate either on a daily basis during the Games or in case of an emergency was also noticeable during my observation of an interagency exercise of the LFB that took place five months before the Games. It was interesting to observe that in all the scenarios tested, group members did not know who to communicate to receive information, whose responsibility within the agency was to initiate the communication and what communication structure should be followed.

6.4 Conclusion

In summary, this chapter described the role of communication in interagency collaboration before and during the Olympic Games. The main challenges of interagency communication that organizations had to manage included the lack of interoperability of the communication systems and the lack of interorganizational understanding. This study suggested that the complex structure of the multiple agencies that were involved in public health and safety issues and the high density of information that was transmitted among them were associated with a dysfunctional collaboration. The findings revealed a number of facilitative mechanisms that managed the previous difficulties. Boundary-spanning improved the technical and soft interoperability of the communication systems between different agencies. The role of communication etiquette was deemed important in how participants perceived their collaboration with other agencies. Interactional determinants including face-to-face interaction, electronically mediated synchronous communication methods and training processes promoted information sharing and collaboration by increasing the connectedness among organizations and building stronger relationships. Finally, the implementation of asynchronous communication and codification procedures by the agencies contributed to interagency collaboration because they clarified each agency's role. The above insights offered a number of perspectives of the communication challenges that organizations faced before and during the Games and highlighted the importance of the previous mechanisms in order to maintain a

beneficial collaboration. The next chapter will discuss the role of learning in shaping the collaborative efforts of the public health and safety organizations before and during the Olympic Games.

Chapter 7

Findings: the role of learning

7.1 Introduction

The previous two chapters examined how leadership and communication influenced the collaborative effort of different public health and safety agencies during the planning and implementation stage of the Olympics. This chapter will explore the role of learning in interagency collaboration of the above services before and during the Games. In this study, I focus on organizational learning with the assumption that, even though individual and organizational learning are different (Weick, 1991), organizations learn through their individual members. Simon (1991) claims that intra-organizational learning depends on what is already known by the individuals within the agency and interorganizational learning on the information that is available in the external environment. The first part of this chapter describes one main challenge that influenced interagency collaboration before and during the Games which is how to acquire and share knowledge within and across organizations in order to create a joint understanding. The second part analyzes a number of mechanisms that individuals and organizations used in order to overcome the previous challenge including a) experiential learning, b) codified knowledge and c) face-to-face interaction.

7.2 Challenge: How to acquire and share knowledge

This study identified one main challenge that played an important role in the formation of interagency collaboration which entailed how to acquire and share knowledge within and across the agencies and how to create a joint understanding among them regarding their roles, objectives and practices. An important consideration of the professionals who participated in my study was to ensure that they would be aware of the roles and working practices of other agencies during an incident and how the actions of different services would be integrated in order to collaborate. As noted at the beginning of this chapter, individual learning is the foundation of organizational learning. The knowledge that was acquired by individuals using a variety of methods needed to be shared with other individuals or groups of people within and across agencies in order to be applicable and useful during their collaboration rather than remain just personal knowledge. A quote from Barry highlights this concern:

'There are other people into the party and so you need to make sure that they understand [...], you can't just rely on the individual cause as I've said the individual can go' (Barry, MPS).

Organizations had to rely on knowledge acquired by their staff in order to be able to develop the capabilities needed for such an event. Even though many agencies had sent their personnel to other Olympics in order to gain both tacit and explicit knowledge, in some cases their learning was not shared. Their experience and constructive feedback would be useful for the professionals and organizations participating in the Games in order to reflect on the collaborative skills and processes that actors used in past Olympics. Some respondents in my study suggested that it was a great challenge to integrate the individual learning into shared learning. One participant from the Local Authorities noted during our first interview:

'London is gonna be so different next year, I think we should be more mindful from lessons from other Games and the fact that we haven't, or maybe some colleagues have visited Beijing they visited other countries but haven't shared the learning that's a failure in my view, is that we haven't shared this experience' (Randy, LA).

Similarly, Berry from BRC mentioned:

'We sent a team to Beijing, we send about eight people to go and see what the Red Cross's doing there, seeing the Beijing Games there and sort of stuff, but we have no idea what happened because they haven't told us anything from there' (Berry, BRC).

Jeff from the EA raised the same concern:

'Where's the information about previous Olympic Games and what was learned from them [...] I have not seen anything. When I first got involved in the Olympics planning one of the first things I've focused: well, let's see how things happened in the other countries; but there is a bit vacuum as far as I'm concerned' (Jeff, EA).

It was also widely reported by many participants in this study that the LOCOG worked mainly in isolation and did not share information or plan together with other agencies during the preparations for the Games and that hindered their collaboration. All respondents agreed that it was essential for all the partner agencies to cooperate with LOCOG and develop joint plans in order to provide integrated services during

the Games. However, LOCOG did not realize this necessity at an early stage of the planning period and that caused problems in their collaboration with other organizations since professionals could not acquire knowledge from this organization.

More specifically, professionals felt discouraged because LOCOG did not provide them with necessary information in order to be prepared to manage public health and safety issues during the Games and this problem narrowed down the options of having fruitful conversations with them. During a monthly Olympic meeting of the MPS that took place in February 2012, participants emphatically suggested to the LOCOG's representatives that their organization needed to start planning together with the other agencies and exchange information more frequently. The following quotation is from the second interview with an Emergency Planning Officer of the BRC and illustrates the outcome of not planning together:

'Just one example I've picked up was about venues' safety plans, [...] the information from LOCOG in terms of stewarding numbers, stewarding possessions, the management structure, communications structures, access, egress, all that sort of information was very, very late in the day, which meant that all these agencies were here ready to fill their plans to exercise and back in April-May with time to change them. Instead, they were, in some cases, days before the start of the event, we still waited for them to do that information [...] had an incident happened, had there been something that had gone wrong, yes there would have been some challenges we wouldn't have done it as smooth as possible; because there was no chance to testing and exercising the information that have been given' (Berry, BRC, 2nd interview).

Similarly, another two respondents noted during our interviews:

'So, we asked a question we've said: what are you doing about that and they say we haven't got there yet, oooh, can't do that, we need to know because we are on the next stage planning. So there is a friction, a conflict about the pace of planning' (Sal, LAS).

'I would have brought LOCOG to the table much earlier, probably a year earlier, we needed to get all the plans done a year before so we can test them and retest them and change things that didn't meet the test or they were wrong, you know look at things, we left that too late really. We should have done that a year or much, much earlier' (Marley, MPS, 2nd interview).

At the same time, as stated in the previous chapter, unfamiliarity with other agencies' practices and structures was regarded as a crucial element in acquiring information and reaching a joint understanding among the agencies. Organizations that did not know each other well lacked an understanding of others' roles and objectives which made collaboration more difficult. Moreover, some respondents mentioned that some organizations could not absorb the information received from agencies that did not know well, which resulted in misinterpretations of roles and conflicts during their collaboration. Therefore, unfamiliarity among organizations may have hindered the transfer of their tacit understandings which was critical to the development of their relationship. Tonia from HPA shared her perspective concerning the relationship and the level of understanding between the HPA and the government:

'So, the group in the government which oversees the Olympics planning has never done anything like this and also most of them are also new in government and so they don't know how we would normally work. So, that's an adding complication it's, it's probably one of the most challenging things cause you are working with people who don't understand your business as usual' (Tonia, HPA).

Consequently, organizations needed to find mechanisms so that individuals who occupied knowledge that was relevant to the interagency planning and working for the Games, would be able to share it within and across agencies. In addition, agencies had to find ways to improve their understanding of other agencies' roles and practices including LOCOG. The findings in this study revealed the following mechanisms as enablers for knowledge sharing and creating a joint understanding among the agencies which in turn supported their collaboration.

7.3 Mechanisms for knowledge acquisition and sharing

7.3.1 Experiential learning

Experiential learning in which participants learned through experience helped professionals to understand other agencies' roles and practices. It was widely reported by the participants in this study that conducting interagency exercises during the preparations for the Games was a useful interactive way of accessing new knowledge by other partners. One advantage was that professionals from different organizations had increased opportunities to meet individuals from other agencies and explore their knowledge regarding their planning for the Games. According to many respondents, having the opportunity to meet people from other organizations,

understand their views and build relationships with them enabled them to share their experiences and expand their tacit knowledge. Creating new contacts from other organizations and building a strong information exchange network enabled participants to learn other agencies' roles and how they would work together. The underlying mechanism through which learning and collaboration was enabled was that professionals created both formal and informal relations which increased the number of interactions across organizational boundaries and knowledge was transferred more frequently. As an Olympic Programme Manager of the BRC mentioned:

'The positives were that I was able to get some more contacts' (Maggie, BRC).

Similarly, other respondents commented:

'Because we are involved in the emergency planning erm, in meetings and exercises we get new, in every exercise generally a new of information will come, a new contact will be made. And that's something we can use then to build on that ones' (Berry, BRC).

'There is always good to come out of the exercises even if it's making a new friend, making new contact, understanding somebody's role' (Ralf, MCA).

'I think [mumbles] the biggest benefit we get is we get to sit with other agencies that we work with and get to understand how they operate' (Sam, MPS).

Such joint exercises were also useful because they gave the opportunity to various professionals to adjust to the interagency control rooms (such as the MPS' SOR), where they would be based during the Games, and explore the procedures and the roles of each individual in the room. During these exercises, which lasted from several hours to several days, people interacted with each other by being in a physical contact and had constant dialogues about how they would operate during the Games. In this way, individuals were able to absorb others' viewpoints and learned to 'speak' others' language. Having all the individuals gathered in one place with the specific goal of learning from each other contributed positively to interagency collaboration. More specifically, the physical co-location helped professionals to establish a clearer sense of the connectivity and interactivity that would take place

among them during the Games and create a more collaborative environment. The following quotes describe interviewees' perceptions of the use of exercises:

'Something that came out from these exercises was one way clearer about making sure that people are properly familiarized with how SOR works' (Jason, LFB).

'So, through these exercises, erm, through consultation we're looking at refining those roles and making those better and [...] we'll take advantage of to make it easier to define what that role is, to make it better' (Pat, LAS).

'I think again, that through the testing and exercising we have quite clear roles and responsibilities so all of us know what we do, I think it's quite clear' (Barry, MPS).

Apart from creating new contacts and learning each other roles, interagency exercises were an interactive way of learning useful basic knowledge necessary for collaborating with other agencies. For instance, during exercises professionals had the opportunity to learn communication methods and know-how processes of other partners and therefore improve interagency collaboration. Experiencing actively other organizations' working practices, having the opportunity to ask probing questions and sharing constructive feedback about the communication practices produced useful learning for their collaboration. As some respondents reported:

'That was good the basic IT things, things are plugged in, people are gonna to plug in and print, where we are gonna just sit just the basic staff you need to know before you start the actual event' (James, MPS).

'Some of the training and exercising that's been taking place recently has helped me develop a much better knowledge of communication' (Jeff, EA).

Furthermore, many participants highlighted the importance of understanding their own organization's environment and structure before learning the practices of other agencies. Internal (intraorganizational) exercises had the ability to examine whether individuals had transferred the knowledge their agency had provided through formal training and workshops to tacit knowledge which was used within professionals' work practices. For example, HPA had provided training to its staff on how they would manage a disease outbreak during the Games accompanied by one written plan; a few months before the Games, the agency conducted an exercise to

test if this explicit knowledge provided by the agency had converted into tacit knowledge. As an observer of this exercise, it was interesting to note that many participants were not familiar with their responsibilities according to the plan and had not absorbed their agency's guidelines.

This absence of internal knowledge could create some difficulties in collaboration with other partners. Most of the respondents mentioned that in order to collaborate with other agencies, professionals needed to know their internal way of working and internal exercises were considered to be a great enabler in this process. Such learning was deemed as a major component in interagency collaboration by reinforcing the performance of each organization and reducing uncertainties. Moreover, new employees had the opportunity to learn key organizational knowledge which enabled them to understand how their agency would operate during the Games. Therefore, internal exercising appeared to be necessary to ensure that individuals had the relevant knowledge and capabilities in order to achieve timely decision making with different agencies during a public health or safety incident in the Games. The following quote illustrates the importance of exercises in internalizing the explicit knowledge provided:

'We did exercises afterwards to make sure the training had worked [...] testing all of the command and control procedures for the Olympics. [...] testing their Olympic plans, Olympic preparedness [...] absolutely necessary' (Jack, LFB).

Participants also acknowledged that during the interagency exercises that took place before the Games, professionals from different agencies had the chance to work as a group and learn how they would manage collectively a number of scenarios. By communicating their roles and practices during possible incidents, participants developed trust and built relationships with each other which encouraged their collaboration. For example, during my observation of the interagency exercise of the LFB that took place five months before the Games, group members clarified their roles in the management of the torch relay in case of an emergency. These exercises provided a powerful interorganizational learning opportunity where learning was an explicit objective of each agency. Professionals from various disciplines were able to share their individual knowledge, integrate it, learn from each other and provide feedback to one another. As several respondents noted:

'They set clearly, there are particular scenarios, erm, you follow through the day and there is a scenario and there is something else that happens, you

have to work out as a group from your own organization what you do. So, it's really good practice' (Maggie, BRC).

'We will do multi-agency exercising so that when we start to say this is what we do in response to this incident, does that fit with what you're gonna do and everybody gets a common understanding of what their role and responsibility and how each other are gonna react to a scenario' (Barry, MPS).

'And the value and the benefit of running some of those testing and exercising were that this is what I do in the situation, this is what you do in the situation, and on that day we work together and that building a relationship, invaluable. So, when decisions were being made there was a confidence about whose decision, and there was also confidence in that person's ability' (Barry, MPS, 2nd interview).

More participants commented on how joint exercises facilitated knowledge sharing and collaboration among the agencies:

'And exercises as well, joint training and exercising is always a good enabling factor to help people share info' (Jeff, EA).

'That's why we'll do the testing and exercising, it doesn't only test structures; it tests everyone's ability knowing everyone's doing' (Paul, MPS).

'The exercises were effective in increasing knowledge of organizational accountabilities, capabilities and structures' (Jeff, EA, 2nd interview).

Data analysis suggested that during exercises and scenarios testing, agencies also realized what each agency could offer and what the logical expectations from each service were. Therefore, organizations recognized the different structures and procedures of each agency and integrated this knowledge into their shared beliefs. These insights were reported to be necessary for their collaboration in order to avoid possible conflicts and minimize frustrations during the Games. Tonia from HPA reported her perspective on how an exercise helped LOCOG understand the role of the HPA:

'One of the big exercises was a large fire incident near the Olympic Games park and one of the things that we provided there was issues around air quality, so people inhaling chemicals, or smoke or something. Erm, and the,

the LOCOG people wanted the information now about the air quality assessment, it's like you know what it takes four hours to get the equipment out there, do the test, analyze it and then we can give you advice, specific advice and that really didn't go down well but is like well, that's life. We can't do anything differently, but we will give you this precautionary advice beforehand and it was really difficult getting that understanding that we can only give you what we can give you. Erm, if we haven't got the evidence then we can't give it to you, we can give you information to the best of our ability; but it was a learning curve for them, cause they just want everything now' (Tonia, HPA, 2nd interview).

Moreover, after the end of the exercises, professionals had the opportunity to reflect both on their internal plans and on other organizations' perspectives, and improve and integrate their plans and actions to enhance their collaborative activities. More specifically, individual learning from an exercise was transferred from group to group within an organization in an informal basis and resulted in institutionalized learning with the form of new revised plans and structures. For instance, during a table-top exercise that was conducted by the military in the army Headquarters in February 2012 and whose aim was to train the army staff for the Olympics and validate the military's Olympics plan, one of the main outcomes was that participants identified areas within the plan requiring further development and clarity. Two interviewees gave similar examples:

'In terms of my perspective it has no major benefit other than the assurance work in that, if we are right to the arrangements, if we think there is something missing in a plan, those exercises either will confirm what we're doing is working or give us more information' (Berry, BRC).

'I think the most important thing to get from them is, it's understanding where the gaps are, what we need to do to improve processes, either to the planning phase or response phase and the other really important thing that we get from the exercise is finding out, is understanding where are the people fitting into system and getting faces to names, erm, and getting to know people and network with people' (Georgia, NHS).

Ben from the Military added:

'So that was very good that for the first time on a big exercise right in front, people thinking about how the military can be fit into their plans' (Ben, Military).

It is interesting to note that some scenarios that were tested during the exercises before the Games came true during the Olympics. For example, during a national exercise that was conducted by the government approximately one year before the Games, agencies had tested how they would manage a flooding in the MPS's SOR. Such a flooding came true one day during the Games and agencies managed to transfer their resources to another room in another area following the procedures they had exercised during the training. Therefore, the command and control process was not interrupted and the shared learning from the exercise seemed to be useful for the interagency collaboration during that incident. In the following excerpt, Sam reflects on the incident:

'It's the flood inside the SOR. You looked to that I would have never thought that one up. [...] I think it was 45 minutes after the flood happened in SOR, we were able to open the second control room, we were able to have helicopters landing to take the silver commanders, the traffic police escorted the staff and within two hours after the flood happened we were total up and running in the new command centre (Sam, MPS, 2nd interview).

However, some professionals indicated that sometimes the learning produced from one exercise was not transferred to the other. Respondents noted that it would be more beneficial to participate in fewer exercises that would be connected with each other in order to provide continual learning rather than having many separate ones. Participants acknowledged that a coordinated programme of exercising with a central team managing the whole process would be a more effective way of sharing the learning and improving collaboration. The quotation below is from the second interview with an Emergency Planning Officer of the BRC who explains the importance of sharing the learning:

'Too many and too disjointed. But there was, there were hundreds of exercises going on. And often it was overwhelming; [...] we were just going exercise after exercise and what then to do with them. Erm, I think they needed to be a lot more joined up. But, there were never really lessons learned from one that were then shared to other ones. Every exercise seemed to be starting fresh; or is only relevant to one specific area, one

specific agency, and everyone else just doing their own bit by being there' (Berry, BRC, 2nd interview).

Similarly, Barry and James explained during our second interview:

'So many people were involved that they were running their own sort of testing and exercising programmes rather than being a coordinated programme' (Barry, MPS, 2nd interview).

'So, I think in future you will need one central person doing the testing and evaluating, anybody asks the questions, these are the answers' (James, MPS, 2nd interview).

Jeff, during our second interview added:

'I think it would be more effective to have slightly less exercises and go for better quality, better planned exercises. As it was, we had so many exercises that it was very hard to learn anything from them or share that learning before the next one' (Jeff, EA, 2nd interview).

Another component that emerged as a significant aspect of how this experiential learning could enable interagency collaboration had also to do with the structure and the process of exercising. For instance, exercises could take place for consecutive days including all the individuals that would have a role during the Games instead of having half or one-day exercises with a number of representatives participating in them. For example, many participants reported that a number of LOCOG's key managers came two or three weeks before the Games without having the opportunity to share the learning of the exercises that had taken place the years before. Therefore, LOCOG had to find ways to provide the learning of the last years to the key personnel who arrived late. One respondent during our interview gave some examples about how learning and collaboration could be improved through the exercising:

'I would recommend more demanding training i.e. not just a one day exercise at the end of which everyone goes home. Training should have reflected the intensity and pressure of Games time. I would suggest that there were sufficient planning exercises but that they could have been made much more demanding by extending the duration of them and/or by ensuring that all players were engaged on them continuously for a number of days. This

would have assured greater resilience in some of the civilian partners' (Ben, Military, 2nd interview).

Apart from exercises, experiencing past Olympic Games or similar events was perceived to be a great opportunity to learn how different agencies can collaborate in order to protect public health and safety. Some participants from blue light services highlighted the importance of gaining such experience. Many organizations sent their personnel to other Olympic Games such as Beijing and Vancouver Olympics to learn the systems, structures and procedures that agencies used in order to interact and provide their services. In this way, professionals were able to see how their role was executed in other Games and develop useful capabilities. Therefore, some professionals managed to absorb their new knowledge and apply it in their environment. Moreover, participating in the planning of similar events may have led to a greater understanding of what interagency collaboration constitutes because professionals had the opportunity to communicate directly with other agencies and acknowledge their perspectives. The following quotes highlight this active method of exploiting knowledge from similar contexts:

'The key thing for me was erm, I've been to Beijing and I've learned lots about command and control' (Barry, MPS).

'I went to the Pan-American Games in Rio de Janeiro in 2007 [...] And I came back with such a great understanding of what my role was. [...] and was really useful. I came back with knowledge. I didn't have before I went' (Pat, LAS).

'I was involved in the planning for our, erm, Millennium events erm, which then was going to be the largest event, you know, the country had seen. Erm, and I suppose the planning for that be the, the diversity of organizations we had to deal with, erm and then on the day, erm, to actually be in obviously erm, special operations' room on the day. Erm and, I think that is probably, in terms of drawing a parallel, that's probably the one event that you can draw a parallel with' (Ralf, MCA).

Professionals who had participated in events such as the Notting Hill Carnival or the Marathon were able to share their experience with other individuals or even organizations and indicate the public health and safety challenges of such events, which facilitated the interagency planning before the Games. This was helpful in creating particular collaborative skills which seemed to be beneficial for

understanding other organizations. In the following excerpts, two respondents reflected on the advantages of experiencing similar contexts:

'There is not many people in our team, there's very few people in our team that's got experiences of super-size events, so I quite often get asked for my advice or my experience on that and that's probably the biggest thing' (Berry, BRC).

'I think the, the, the knowledge and understanding of working in a multi-agency environment because it's (...) you can sit in an office working with lot of people from other agencies but if you don't understand their process, if you don't understand their role, it can be very difficult to contribute effectively' (Sal, LAS).

Participants in this study highlighted that they were able to gain more knowledge from systems and organizations that were more similar to theirs rather than from totally different structures. For instance, many interviewees explained that they learned a lot from the Vancouver Winter Olympic Games because the Canadian public health and safety system had many similarities with the UK's system. Many professionals from various organizations visited the Vancouver's Games and gained new knowledge. The following quote underlines the above claim:

'I learned so much from Vancouver because the Canadian system is very similar to ours. The Canadians are very open people, who were willing to share and let us see what was working well and what wasn't working well, very open' (Adam, NHS).

On the other hand, it was very interesting to note that agencies had difficulties in acquiring useful learning coming from totally different cultures. As it was stated by one respondent within our interview:

'We went to China, we spent a week in China for the games, we got some data from there but not anything of great value because of their culture they don't want to share' (Sal, LAS).

Similarly, experiencing other situations which demanded intensive collaboration among public health and safety agencies such as the pandemic flu assisted professionals in understanding agencies that were unfamiliar to them and learning other organizations' activities. It was frequently mentioned in my interviews that during the pandemic flu agencies developed new communication systems and

improved their relationships, which was thought to be a very valuable learning for their collaboration for the Games. The advantage of gaining experiential learning from other situations was also highlighted in my observations. For example, during my observation of an HPA's Olympics Surveillance meeting at Colindale Headquarters, the chair of the meeting stated that the agency would use the same procedures as the ones used during the pandemic flu regarding the confidentiality of the documents they would produce. Exploiting the knowledge gained from the pandemic flu experience was valuable because it was based on tacit knowledge of the involved individuals. As two respondents from the HPA and LAS reported:

'The pandemic flu, I think that it has been a major training for a lot of people around this department and everywhere in the whole country' (Eleanor, HPA).

'The response to the swine flu which was a project for hundred people on very short notice and we had to do training and briefing with staff that never worked in that environment before, was a major learning' (Jacob, LAS).

Participants also acknowledged that it was difficult to have the same level of trust and respect with all the agencies participating in the Games. Apart from the agencies that were working together in normal times such as the blue light services, one factor that increased the level of trust among individuals from different agencies and enhanced their collaborative efforts was the shared experience of similar major events. This experience helped them to know each other's' roles and responsibilities and share information more efficiently. As one respondent from the Local Authorities commented:

'I think two bits of experiences are quite useful; one is having worked on major events [...] and that's very useful because you have credibility with your peers, because they've seen you at events and [...]I'm better in communicating with different levels of different stakeholders. And I think that's quite a key for the Olympics' (Randy, LA).

In addition, all of the participants appeared to emphasize the value of working experience in learning from each other and knowing how to collaborate with other agencies. Formal training accompanied by years of experience in an environment where many organizations worked together to achieve a common aim was suggested to be a great facilitator because professionals had already developed teamwork skills and knew how to collaborate with other disciplines. Experience also appeared to be

important because individuals had more insights into the possible outcomes of different working practices and were able to better understand other partners' perspectives. Therefore, in order to collaborate, individuals used their knowledge according to their personal experiences and shared this knowledge with other professionals who also used knowledge drawn from their experience and therefore they were able to exploit each other's knowledge. In the following excerpts, respondents reflected on the benefit of years of experience:

'I do my erm, public order training, my CBRN training, erm, and I've done crowd dynamic training, I've got several courses and things like that and in event planning training but on the top of that I now have 30 years of experience [...] in the commanding events I understand what it works and what doesn't. So, is just literally, you need that blend, you need the training and you need the experience, cause you learn what works and what doesn't work and you learn from every event' (Barry, MPS).

'Experience is very important, erm, erm, (...) being around the organization long enough to know what people are doing, what might be issues coming up etc, etc. and, yea (Eleanor, HPA).

'I think the experience that I've gained over the past six years in multi-agency planning and response, will be the most valuable' (Georgia, NHS).

'Primarily experience from doing this job for a long, long time, a lot of what I do on day to day basis is born out of 15 years of training and testing and teaching and adapting those skills into what I actually do' (Paul, MPS).

7.3.2 Codified knowledge

Codified knowledge, including workshops, was deemed as a useful mechanism by which respondents acquired explicit knowledge including the structures and procedures of other services in order to be able to collaborate with them. This method allowed participants to understand external (to their organization) knowledge and enabled them to adapt to the interagency environment of the Games. This was identified as a key suggestion of the national exercise named 'YF' that I observed approximately one year before the Games. More specifically, one of the exercise's key recommendations was that the MPS would produce a short training package to familiarize different professionals with key knowledge including the roles

and responsibilities of personnel working in MPS's operation room, technical information about the computer systems used in the room and information sharing procedures that would be followed. Consequently, professionals would develop a shared understanding of each agency's position and feel part of an integrated collaborative network. One participant from the BRC noted during our first interview:

'At an operational level for our volunteers [...] it is huge and beneficial to do a training course, get a lot of feel of what to do, [...] that's a good test for them to see actually how can we fit into emergency services and the local authority, during a large major incident' (Berry, BRC).

In line with the previous interviewee, Randy from the LA noted:

'Formal education is quite good to give you that background of understanding and the skills and the judgment that you need for your role when you come to the meetings and the relationships and that activities with other colleagues' (Randy, LA).

Workshops organized by various agencies comprised of an effective mechanism for sharing information that fostered joint understanding and collaboration between the different partners. This method may have forced the communication of knowledge among the different agencies, concentrated the attention on possible assumptions of the professionals and elucidated the interorganizational relationships. The mechanism through which collaboration was positively influenced had also to do with the creation of connections between individuals who were able to achieve a shared understanding of each other roles. For example, the London Resilience Team, which is a government's structure created in 2002 and includes various agencies such as emergency services and local authorities with the aim of preparing and responding to emergencies, implemented a number of interagency workshops during the preparations for the Games which increased the shared learning among the agencies. The following quotes illustrate the importance of this process:

'They run (the LRT) what I called 'informed events' which have a different theme and I think they've run about three in the last year and that brings together a lot of different people, to hear presentations from different organizations about their roles. So helps build up experience and knowledge of, of, of what other organizations do and also gives you a chance to talk to others who are there. So, that's quite good' (Jeff, EA).

'So we are trying to make sure that training material is shared more widely erm, and also that we brief better [...] on the Olympic structures and the Olympic differences is quite key' (Randy, LA).

'In 400 days before the Olympics, I ran a big event I had a training school, the intension was to get everyone in the room at the same time so they all start to understand and have the knowledge the same as everyone else. And that included the person at the lowest level. And that worked. And they will do that again, and that's important' (Paul, MPS).

It was also evident throughout the data that such joint training facilitated the externalization of knowledge among the agencies during the preparations for the Games. Externalization is the process of transforming tacit knowledge into explicit knowledge. During such training, the combination of experts who shared their tacit knowledge along with the provision of documentation which included more explicit information enabled the development of integrated plans by the agencies which in turn facilitated their collaboration. During joint training, the experiences and technical knowledge of experts were transferred with ease to all the organizations, which strengthened their integrated approach to the Games. The following quote gives an example of the benefits of joint training:

'We have recently set up a project where we brought in some expertise [...] to make sure that all the organizations have business continuity plans in place for 2012. So, there will be four training dates in the next six weeks and we have invited every organization in London to take this training course and we are providing a training pack with follow up expertise to help to develop these plans' (Georgia, NHS).

Apart from workshops, participants increased their knowledge about the process of interagency collaboration during such events by reflecting on the explicit knowledge provided by other host cities including reports and published books. As Jack from LFB noted:

'We've got stuff from Athens, eh, sorry Sidney in 2000. We've got a debrief report from them and we got stuff from the Commonwealth Games in Manchester 2002, we got some, some information from Athens in 2004, [...] We went to Beijing in 2008. So we learned from there and from Vancouver in the Winter Olympic Games 2010 [...] we learned a lot of them' (Jack, LFB).

Adding to the previous codified knowledge, each organization acquired static stocks of knowledge derived from its institutional processes including the rules, norms, procedures and structures that have been followed for all the years of their existence. According to many respondents, exploiting the existing knowledge of their organization enabled interagency collaboration because by knowing the current technical and managerial processes of their own agency, they were able to better respond to their partners' needs. Comprehending this basic knowledge also allowed them to recognize the assumptions that shaped the operations of their organization and therefore be in a better position to apply it to the interagency environment of the Games. Furthermore, using the same procedures instead of developing new ones increased professionals' confidence in their activities and, in turn, supported better the interagency collaboration. Some participants gave some examples:

'We have to be based on what knowledge we got' (Maggie, BRC).

'A lot of it is coming through knowledge of the Red Cross, [...] using existing knowledge and existing training and just make it specific to the new demands that the Olympics will bring' (Berry, BRC).

'Those documents already exist but of course, we are looking through those as well to say: ok during the Olympics what might be different and how we can add to those. So, [...] making sure that those documents are relevant to the Olympics as well' (Jason, LFB).

'We spent years and years get our plans right. So, what we don't want to is change it before... 3 months before the Olympics. Then go back to the old ones so...so we'll, yeah, we'll use the same plans, will use the same procedures' (Jack, LFB).

'There are existing plans [...] we won't be rewriting for the Olympics because a heat wave is a heat wave whether it is during the Olympics or not but we have to make sure that it will be suitable for the crowds we get during the Olympics. The same with mass fatalities plans we look at that and see, review it and decide whether we need to update it, upgrade it or whether is sufficient as it is' (Sam, MPS).

Documentary analysis also highlighted the benefit of exploiting the existing knowledge of organizations in order to facilitate interagency collaboration. For

instance, the NHS London produced a planning pack in October 2010 which provided validated information to assist NHS organizations in their planning for the Games. In its third section, it pointed out that organizations must plan based on the local information and knowledge, and use their usual arrangements and structures to ensure safe and efficient operations during the Games. This strategy seemed to play a strong role in interagency collaboration because professionals were more productive as they knew well the processes that needed to follow and they were more confident to participate in an interagency group.

In addition, it has been reported that organizations also exploited other organizations' existing knowledge in order to compare their knowledge, reflect on the differences and learn from each other. For example, a number of agencies during the preparations for the Games reviewed other agencies' similar plans (e.g. contingency plans) in order to understand their perspective, assess potential gaps of their own planning and thus improve their procedures. This method may have increased the overall knowledge level of organizations and reduced knowledge discrepancy among the agencies. One participant gave an example of how combining explicit knowledge helped collaboration:

'The benefit of that for me was understanding erm, the HPA plan so that I could use the information from that to support the plan that I was writing and also getting to know people and making sure they understand my side' (Georgia, NHS).

Whereas many respondents noted in the first section of this chapter that LOCOG did not share their information with other organizations early in the planning phase, some participants reported that the OCOGs have been codifying the knowledge gained from each city by developing and implementing transfer knowledge programmes to share information between host cities. According to the participants, the drawback was that this information was focused only on running the Games inside the venues in the previous country and had the form of a conference with speakers from the previous host city. Nonetheless, professionals had a chance to assimilate this type of knowledge during their practice and transfer it to other individuals at the organizational level. As Sal from the LAS explained during our first interview:

'We had a number of presentations from LOCOG medical services, so we know how they are going to operate, broadly speaking and how our plans turn into those and what their requirements are of us [...] So, we all started to learn

and understand how the Games are run, what the particular requirements of the Games were, [...] So, that was the first bit of knowledge sharing' (Sal, LAS).

Organizations took advantage of the codified knowledge that was developed by several agencies including the LOCOG and MPS specifically for the Games in order to reach a joint understanding with other stakeholders and ensure integrated operation during the Games. In this way, organizations expanded their knowledge base and enhanced their understanding of their partners' practices and thus improved their collaboration. When interviewees were asked about the sources of information which helped them understand better their responsibilities and other agencies' roles, practices and priorities, the vast majority of them referred to such documentation. This process may have mediated professionals' frustration about other agencies' objectives and contributed to a more mature collaboration among them. One participant from the MPS noted during our interview:

'Have you seen all the Games' documents? There is huge, huge things that [...] people have produced massive reports and there is a plan for everything, everything to the eventualities has been planned right from tiny things to major-major incidents. So, we'll be based on all those of these documents' (James, MPS).

The combinative capability of each agency to integrate and use acquired knowledge in the new environment of the Games improved the chances to generate new knowledge that would be beneficial for the interagency environment. More specifically, some organizations recognized explicit knowledge from other situations and applied it to the environment of the Games. Integrating both tacit and explicit forms of knowledge derived from other contexts was perceived to be an important facilitator of interagency learning. For example, the quotation below describes the benefit of using advisory groups for the public safety of the Games comprised of professionals from multiple agencies. This recommendation was derived from the debriefing reports of past football disasters where advisory groups were used so that agencies can communicate more effectively:

'It largely becomes out from the football disasters, so, when we had Hillsborough and things like that the report recommended the safety advisory groups and it's kind of move on to that's a good way actually we are dealing all the events not just football so, is a, is where we all talk to each other and we all understand the plan' (Barry, MPS).

However, it is important to note that sometimes codified knowledge could hinder interagency collaboration because the information was often not clear enough and professionals may have made false assumptions about other agencies' roles. These high levels of ambiguity threatened interagency collaboration because individuals did not understand or assumed they understood other organizations' approaches. Some respondents acknowledged that formal briefing on this documentation was necessary in order to create collective knowledge, eliminate misinterpretations and align the perspectives of professionals from different agencies. One respondent during our interview supported the role of briefing:

'It would be helpful, or have been helpful to have some kind of training or briefing package on C3 ConOps document because at the moment is just being a document [...] that can be interpreted differently by different people' (Jeff, EA).

Apart from exploiting existing organizational knowledge, organizations developed documents at an early stage of the planning phase in order to provide information to their staff regarding the organization's roles and activities. Therefore, professionals had the opportunity to gain this explicit knowledge and understand better their agency's structure and responsibilities. Such codification provided important insights into the organization's processes and enabled professionals to combine their tacit knowledge with the explicit provided. My interpretation is that when professionals were able to respond to their own organizations' requirements, they certainly contributed better to the collaborative environment of the Games. As two respondents noted during our first interview:

'We have really produced an information pack for NHS organizations, giving them a heads up to, erm, some of the challenges and the issues and other things that are going on' (Adam, NHS).

'There is a document called the programme definition document, which I wrote some of it, [...] and that does lay down roles and responsibilities and who do what' (Cal, MPS).

By documenting every process that professionals followed while collaborating with partner agencies to protect public health and safety, agencies were able not only to transfer valuable information needed from other stakeholders or future host cities and increase the collective knowledge but also improve their own processes. The

importance of documenting every action that agencies followed was also emphasized during my observation at the HPA's Colindale Operation Room during the Games. More specifically, one professional of the agency was keeping a tight audit of the interagency conferences that took place during the Games. Transforming experiences into explicit knowledge that can be communicated seemed to improve the collaborative endeavour of the agencies. As one respondent explained:

'We are certainly documenting everything so that we can produce good documented, documentary evidence; [...] we are committed to doing that' (Adam, NHS).

Further, in one of my observations during the Games and specifically in HPA's SOR, it was evident that professionals developed a number of documents such as the *HPA*, *WHO* and *ECDC Update* in order to achieve a shared understanding about the role of their agency and of specific professionals within and across organizations during the Games. For instance, these three documents explained the working agreements between the HPA and LOCOG, the role of boundary-spanners from the WHO and ECDC in HPA and the aim and objectives of the HPA for the Games. This mechanism of sharing knowledge influenced positively interagency collaboration by maintaining the same level of awareness among professionals. Having tangible evidence of the responsibilities of each agency allowed participants to accomplish a more integrated response during the Games.

Documentary analysis also revealed that codification was an efficient mechanism to communicate the planning and the commitments of an agency to its partners. For instance, in the document that was published by HPA after the Games named *'Learning from London 2012, a practical guide to public health and mass gatherings'*, the agency reported that apart from discussions and meetings, they used a number of documents to share information including a quarterly newsletter for key stakeholders, a background document on public health in the UK and a weekly web-based newsletter during the Games produced with international partners. This method helped the agency to ensure that there was not contradictory information provided to the partners and that there was consistency of knowledge among the organizations.

Furthermore, formalization of the codified knowledge by signing mutual agreements between the agencies was frequently mentioned as a key factor contributing positively to interagency collaboration. For example, the HPA had signed

a formal agreement with LOCOG regarding the frequency, format and content of their communication which minimized the assumptions of both agencies and created an unambiguous environment for their interaction. They indicated that this method created continuity in the information flow and stability during the interagency collaboration because it enhanced clarity about respective roles and provided insights into how different agencies would respond together. The following excerpt is indicative of the benefit of formalization:

'What we do is something like ConOps sign up from DH and the other health services as well so we've all formally agreed that, they can't really challenge me how the things work within the organization so everybody knows what we are doing. So, there is a lot of signed-up agreements going across the different bodies' (Tonia, HPA).

7.3.3 Face-to-face interaction

Face-to-face communication was another mechanism that organizations used in order to acquire and share existing knowledge. Sometimes individuals had difficulties in understanding other agencies' objectives and priorities. Many interviewees indicated that organizations acknowledged this gap and focused their learning efforts on explicit information transferred from other actors. For example, sharing a single location with other agencies and face-to-face interaction during an exercise or sharing information about an incident that was managed by more than one agency during the preparations for the Games led to a shared learning of the processes used by each agency. When organizations exchanged information regarding their aims and practices, agencies boundaries could be clarified and interagency collaboration could be strengthened because partners knew each other better. As one respondent from the LFB reported:

'We don't always understand what an organization is, what an organization may be do, [...] but as long as is communicated to us what that priorities are, then that helps us to say well ok, you know, this is what they're doing and therefore, you know, it helps us to work, to respond to that and make sure that we don't tell them what they are doing' (Jason, LFB).

Another respondent also underlined:

'Most meetings I was going I happened to say this is what HPA does, this is what we normally do and (laughs) and this is what we are going to do, so don't worry this is what we do. Erm, so, it's kind getting people to understand

what we do and how we do it and how we work, recognizing that we are not trying to change it. (laughs)' (Tonia, HPA).

Specifically, many participants argued that regular informal communication between them in the planning phase helped them to build stronger relationships and exchange useful information around the tacit components of their knowledge. It was thought to be a useful method to access the partner's experience and specialized knowledge in order to consider it during their collaboration. Frequent informal interaction allowed individuals to exchange complementary knowledge of a similar domain (public health and safety) and minimize both parties' assumptions regarding their roles. In this way, they learned how to collaborate even though they had different backgrounds and experiences. The following quotes highlight this benefit:

'You can find quite a bit on the Internet etc but to know exactly what it is that people are doing here on a daily, on a normal routine job it was much better to just speak to them informally, yea [...] the most useful to know what everyone is doing and, erm, and how or when etc, that will be definitely the most useful' (Eleanor, HPA).

'But that's where we all learned each other's abilities, capabilities, capacities, that's we used to do a huge amount of networking as well as normal day to day business' (Sal, LAS).

'I've met with the medical manager from Brazil and I had some kind of conversations with him, erm, (...) and I think that was the better way to convey some of the informal learning' (Jacob, LAS, 2nd interview).

Face-to-face interaction and intra- and interagency meetings were also significant enablers of converting tacit knowledge to explicit and transform individual knowledge to collective learning. For example, the use of possible scenarios during a meeting where professionals provided their perspective about how they would manage (as an agency) each incident facilitated the creation of new knowledge that was transferred to written plans after the meetings. This claim was also verified during a monthly Ambulance Service Olympic meeting I observed which reviewed the plans and the actions of the service for the Games. Participants in this meeting suggested that working together face-to-face and sharing their beliefs led to the creation of new knowledge that was necessary for providing integrated services. As the learning moved from the individual interpretation to the group's integration during

this interaction, new insights were developed which were then transferred into explicit knowledge. Externalization of knowledge may have minimized potential assumptions of individuals about the roles of their agency and of other organizations and influenced positively their collaboration. The following quote reflects this approach:

'We'll be having lots of meetings I guess where both internally and interagency we'll sit round a table with some flipchart and say: ok, during that event if x happens, what will the police do, what will the fire do, what'll the ambulance do ? flow diagram and we write the plan from the scenario testing' (Jacob, LAS).

Participants also acknowledged that developing plans with other agencies seemed to be an effective way of learning and gave the opportunity to professionals and agencies to clarify their roles, aims and objectives around the issue of public health and safety for the Games. Learning to collaborate while planning together fostered the development of a number of useful skills for the professionals including communication and empathy which promoted collective learning and collaboration. The mutual understanding of the respective plans that was accomplished during this procedure increased the possibilities of knowledge assimilation by both parties. It allowed professionals from different agencies to meet and talk around the issue of public health and safety and discover the perspectives of other backgrounds. The following quotes describe interviewees' perception about integrated planning:

'We're developing them because again the contingency plans as always are relying on other agencies and what we are doing is working in partnership with those agencies to say from a transport perspective against that particular incident arising what is the contingency, which works for us, what are the implications for you and we are ready getting people say: we would have additional things to worry about depending on where the incident was' (Noel, Transport).

'In terms of planning, we tend to plan together, so there is good communication there, [...] we are used to working very, very close together and exchange information and [...] is all pretty regular business for us' (Sam, MPS).

Furthermore, when the Games started and professionals commenced to carry out their role according to their agency's structure and worked together with other individuals, at that point they began to share more intensively their tacit knowledge

and therefore, improved their collaborative effort. This process of sharing tacit learning resulted in the creation of new knowledge which after being absorbed by the different parties it was applied in order to help them work together. Sharing their knowledge and overcoming the boundaries of their disciplines helped them to manage arising problems and adapt easier to the interagency environment. As one respondent explained during our interview:

'Once they've started working with the venue erm, venue medical managers and the venue general managers, erm, what we actually found was there was greater, erm, greater understanding of each other's' role' (Pat, LAS).

Trust was considered to be an important facilitator of interagency learning through face-to-face interaction before and during the Games. More specifically, it enabled the voluntary transfer of tacit knowledge among the agencies. Professionals from agencies who trusted each other had effortless access to external knowledge and increased opportunities to share and create knowledge. Therefore, trust not only helped the building of close relationships between the agencies and the learning processes among them but also minimized anxiety and uncertainty during the collaborative activities. For example, even though emergency services had their unique responsibilities based on their knowledge, tasks, training and organizational structure, they were able to learn from each other because of the trusting relationships they had over the years of working together. As one respondent from the MCA commented:

'There's huge culture difference between the emergency services. Erm, but we do work to common objectives and we operate together, we exercise together, we, you know, live, work and play together, so the barriers, interagency barriers are, don't exist too much' (Ralf, MCA).

7.4 Conclusion

In summary, this chapter described the role of learning in interagency collaboration before and during the Olympic Games. One main learning challenge was found to influence interagency collaboration before and during the Games: how to acquire and share knowledge within and across organizations. Sharing the acquired knowledge was a necessary step to achieve joint understanding and create an environment where interaction among agencies would be more productive. Organizations used three mechanisms in order to achieve this knowledge transfer: experiential learning, codification and face-to-face interaction. All mechanisms enabled them to acquire and share tacit and explicit knowledge necessary for the

interagency collaboration. During these strategies, experience, similarity, trust and combinative capability seemed to facilitate the receptivity of organizations to learning and in turn their ability to work with other agencies. In the next chapter, I present the emerging model of Interagency Collaboration for Mass Gatherings as suggested by the new insights of the study. I also discuss the theoretical contribution of this thesis and important implications for practice as well as future direction for research into interagency collaboration during mass gatherings.

Chapter 8

Discussion and conclusions

8.1 Introduction

The purpose of this study was to examine how interagency collaboration among public health and safety agencies was shaped in preparation for and during the 2012 London Olympic Games from the perspectives of the participants working in these agencies. The aim was to better understand the domains that influence interagency collaboration among organizations in a mass gathering such as the Olympics. This was accomplished through 39 semi-structured interviews with professionals who had senior positions within a variety of organizations involved in the public health and safety aspect of the event and were willing to give an interview before and after the Games. A number of direct observations of field exercises and meetings and an overview of certain strategic documents helped to provide a more holistic understanding of interagency collaboration before and during this mass gathering.

Ideally, according to the subtle realist approach and case study methodology, findings could be corroborated from different sources. Nonetheless, in this study, this triangulation has happened only to a certain extent, since my findings were derived predominantly from the interviews. The study focuses on the process of interagency collaboration, an area that has not been examined in detail within the existing empirical literature. The subtle realist approach shaped the data analysis by highlighting the subjective perceptions of different professionals and indicating that there is no absolute certainty regarding the study's findings. Taking this ontological position means that the findings that are constructed can be plausible instead of accurate aiming to reproduce reality. This final chapter first presents a summary of the research findings and introduces an emerging and empirically-informed conceptual model of Interagency Collaboration for Mass Gatherings based on the novel aspects of the study. The chapter then discusses the theoretical contribution, implications for practice and the limitations of the study. Finally, recommendations for future research are presented.

8.2 Summary of the findings

The findings suggest that interagency collaboration in mass gatherings is shaped by three main domains of collective action: leadership, communication and learning. The findings confirm some empirical observations in the literature, but also

provide new, empirical insight on interagency collaboration. These three main components are inter-linked and recurrently interact to shape interagency collaboration during mass gatherings. If one component is missing, then interagency collaboration cannot be fully understood and formed. The emerging model, which is presented in the next section, depicts the interconnections among *Leadership*, *Communication* and *Learning* in the collaborative endeavour of the agencies involved and the elements of these three domains which emerged to be supportive of interagency collaboration according to the novel insights of this study.

A significant feature of this empirically-informed model is that *learning* is suggested to be given equal weighting with the other two constructs in understanding interagency collaboration. Leadership and communication are generally identified in the literature as determinants of interagency collaboration in mass gatherings (Brennan et al., 1997; Dwivedi & Cariappa, 2010; Enock & Jacobs, 2008; Grange, 2002; Hadjichristodoulou et al., 2006; Klauser, 2015; Kononovas et al., 2014; Meehan et al., 1998; Parent et al., 2011; Thackway et al., 2009). Nonetheless, the empirical studies that have explicitly discussed the influence of learning on interagency collaboration are few. More specifically, only three studies proposed that the implementation of exercises increased the agencies' competencies and helped them to develop more integrated responses (Meehan et al., 1998; Sharp et al., 1998; Thackway et al., 2009), and one study identified the positive role of memoranda of understanding in collaboration (Tsouros & Efstathiou, 2007). The three main components of the model will be discussed in sequence.

Consistent with the empirical literature, leadership was identified as an important element of interagency collaboration in the Olympic Games. The role of the organizing committee (LOCOG) as the main leading organization and the expectations of the remaining organizations about the leadership activities of LOCOG were found to play a key role in the operation of interagency collaboration. The empirical literature has identified that early engagement of the organizers is vital for the success of public health interventions (Enock & Jacobs, 2008; Hadjichristodoulou et al., 2006; Kononovas et al., 2014; Meehan et al., 1998; Tsouros & Efstathiou, 2007). However, as demonstrated in this study, the involvement of LOCOG in working together with other organizations during the seven years of the planning stage was almost universally perceived to be weak and needed to be improved.

Participants suggested a number of reasons that explained this lack of commitment. These included the nascent and transient nature of the organization, the lack of knowledge about other agencies' structures and the low prioritization of the public health and safety issue. This challenge negatively influenced interagency collaboration as it strained the working relationships between organizations and LOCOG and reduced the level of trust between them. The delay of LOCOG's collaborative activities resulted in an inadequate level of preparedness as the integrated plans were developed very late and in increased levels of anxiety of the professionals because the procedures that were in place were not guaranteed. This is consistent with findings by Black et al. (2014) who suggested that health organizations had difficulties in working with LOCOG because of its position of being a private provider with its own policies, procedures and priorities. According to the authors, these difficult relationships led to delays in establishing an effective structure between the agencies and to duplication of effort especially in exercising scenarios and plans. However, my findings contradict Kononovas et al. (2014) study which argues that in London Olympics early planning allowed enough time to test the plans and be prepared for different scenarios. Adding to the above factors, my study highlighted a new feature that seemed to play an important role in this lack of engagement of the organizers which involves their strategy of employing their key personnel. Participants indicated that LOCOG employed key professionals regarding the public health and safety issue only a few weeks before the Games which was regarded as challenging for their collaboration because this new personnel was not able to adjust to the planning of the last years.

Another leadership challenge that also influenced interagency collaboration included the inexplicit decision-making process across agencies. The findings in this study revealed that unclear responsibilities across the organizations and fluid participation in decision making may have hindered interorganizational understanding and collaboration. The existing literature has also recognized the importance of clear accountability and command structure among the agencies in their collaboration (Hiltunen et al., 2007; Parent et al., 2011). Enock and Jacobs (2008) also found that decision making among the agencies is an important issue that has not been explicitly discussed in the existing literature.

Based on the findings of this study, the use of linkages between LOCOG and other organizations was an interactional mechanism that appeared to break down the barriers between the two parties, improved LOCOG's understanding about the other

agencies' roles and clarified the expectations that organizations had from LOCOG as a leading agency. This mechanism was considered to be more fundamental for interagency collaboration than it was perceived by the existing literature. Only one author suggested that joint staffing among organizations positively influenced the development of interagency collaboration (Klauser, 2015). My study also added that a variety of leaders' qualities such as flexibility, experience, physical presence, the ability to negotiate and trust enabled the decision-making process at the operational level and encouraged the collaborative activities of the agencies. These leaders' features are also underestimated and have not been discussed in the published literature on mass gatherings.

Communication was the second component of the model that emerged as having a significant influence on interagency collaboration. Even though the literature suggested that good communication is key to the delivery of an efficient public health system during mass gatherings (Brennan et al., 1997; Enock & Jacobs, 2008; Grange, 2002; Hadjichristodoulou et al., 2006; Kononovas et al., 2014; Parent et al., 2011), none of studies elaborated on this factor. In this research, I have expanded the concept of communication and its role in interagency collaboration by including a number of communication challenges that organizations faced during the planning and implementation phase of the Games. These included the lack of interoperability of communication systems and lack of interorganizational understanding.

Participants in this study reported that ensuring interoperable communication systems across the agencies was a key element which is essential in gaining accurate situational awareness and facilitating interagency collaboration. However, the complex structure of the multiple agencies that were involved in the public health and safety issues and the high density of information that was transmitted among them were associated with a dysfunctional information sharing and collaboration among the agencies. With regard to the lack of interorganizational understanding, this study's findings showed that unfamiliarity between agencies may have led to misunderstandings during their collaboration and increased the level of uncertainty about their roles. Therefore, professionals engaging in mass events need to acknowledge the role of these communication challenges in interagency collaboration in order to interact with other disciplines.

Another area that is relevant to communication and has not been thoroughly examined in the empirical literature was the implementation of facilitative

mechanisms that managed the communication challenges and enabled interagency collaboration. Based on my analysis, I found five mechanisms that improved both communication and collaboration among the agencies. Participants revealed that the establishment of boundary-spanners between the agencies was a critical component to the interagency collaboration during the preparations and the actual Games because it was an efficient way for the agencies to receive information relevant to them very quickly. My findings also expanded the positive role of boundary-spanners on collaboration by assigning a number of useful skills to these individuals, which have not been discussed in the existing literature.

Secondly, this study determined the role of 'communication etiquette' and how it influenced professionals' perceptions about their collaboration with other agencies. Respondents in this study emphatically suggested that trusting relationships reinforced the professionals' perceptions of others' behaviours as supportive which contributed to a smooth collaborative endeavour. A number of studies included in the literature review also found that the development of positive relationships between the stakeholders was a critical factor for the public health planning of mass gatherings (Enock & Jacobs, 2008; Kononovas et al., 2014; Parent et al., 2009; Parent et al., 2011).

Interactional determinants including face-to-face interaction, electronically mediated synchronous communication methods and training processes were perceived to be a third mechanism that promoted information sharing and collaboration among organizations by increasing the connectedness among organizations and building stronger relationships. Frequent face-to-face interaction was suggested to increase trust and shared understanding between the involved stakeholders and enables the implementation of their actions. Moreover, teleconferences and training sessions provided an environment where participants were able to exchange information efficiently and facilitated collaboration. Only a few studies in the literature identified that co-location (Grange, 2002; Meehan et al., 1998; Tsouros & Efstathiou, 2007) and training programmes (Klauser, 2015; Thackway et al., 2009) influenced positively interagency collaboration.

Finally, the last mechanisms that influenced interagency collaboration in this study included asynchronous communication methods in the format of online messaging systems and the adoption of codification procedures such as the development of SitReps, agreements and communication plans. Little research has

discussed these aspects of communication and their influence in collaboration. More specifically, only Brennan et al. (1997) found that communication agreements were important for organizations to overcome barriers for collaboration. In general, these mechanisms facilitated interagency collaboration because they assisted the information flow among the involved actors and overcame the challenge of accessing confidential information. Only in one situation these activities interfered with collaboration and it involved a specific online data-sharing tool. Respondents expressed their concerns that the implementation of this tool called NRE negatively influenced collaboration because of its complexity and absence of information management. However, organizations recognized early its drawbacks and replaced it with another online messaging system which promoted information flow across the agencies and enabled collaboration.

The last component of the suggested conceptual model of interagency collaboration incorporates the learning element. As it was noted at the beginning of this section, the area of learning has not been acknowledged by the existing literature as an essential element of developing collaborative activities, with the exception of some references for the benefits of conducting exercises in achieving integrated responses (Meehan et al., 1998; Sharp et al., 1998; Thackway et al., 2009). This study identified one main challenge that played an important role in the formation of interagency collaboration which entailed how to acquire and share knowledge within and across the agencies in order to create a joint understanding among them regarding their roles, objectives and practices. Participants suggested that it was a great challenge to integrate the individual learning into shared learning. They also recognized that unfamiliarity among organizations hindered the transfer of their tacit understandings which seemed to be critical to the development of collaborative relationships. Professionals and agencies need to be aware of this learning challenge that emerged as an influential factor of collaboration in this study and understand how it affects the collaborative activities between the agencies.

The findings in this study revealed a number of mechanisms as enablers for knowledge sharing and creating a joint understanding among the agencies which in turn supported their collaboration. My research not only identified that experiential learning including interagency exercises was a mechanism that influenced positively interagency collaboration but also provided a detailed description of the participants' perspectives on how it fostered collaboration. For example, having the opportunity to meet people from other organizations during such exercises and build a strong

information exchange network enabled participants to learn other agencies' roles and develop collaborative partnerships.

In addition, being physically in the place where all the agencies operated during the Games, helped professionals to establish a clearer sense of the connectivity and interactivity that took place among the agencies and create a more collaborative environment. In contrast to the benefits of this kind of learning, the analysis also suggested that on some occasions the learning produced from one exercise was not transferred to the other. Participants recommended that a coordinated programme of exercising with a central team managing the whole process would be a more effective way of sharing the learning and improving collaboration.

Another mechanism that was found to improve both learning and collaboration was the provision of codified knowledge. Findings showed that training programmes including workshops allowed participants to understand external (to their organization) knowledge and enabled them to adapt to the interagency environment of the Games. However, it is also suggested by the findings that it was not only the explicit knowledge provided that fostered collaboration but also the creation of connections between individuals participating in the training who were able to achieve a shared understanding of each other roles. Participants also revealed that exploiting the existing knowledge of their organization enabled interagency collaboration because by knowing the existing technical and managerial processes of their own agency, they were able to better respond to their partners' needs.

An interesting and important point to mention is that respondents noted that sometimes codified knowledge hindered interagency collaboration because the information was not clear enough and professionals made false assumptions about other agencies' roles. This ambiguity threatened interagency collaboration because individuals assumed they understood other organizations' approaches. Some respondents acknowledged that formal briefing on codified knowledge was necessary in order to create collective knowledge, eliminate misinterpretations and align the perspectives of professionals from different agencies.

Finally, participants reported that regular informal communication between them in the planning phase helped them to build stronger relationships and exchange

useful information around the tacit components of their knowledge. Frequent informal interaction allowed individuals to exchange complementary knowledge of a similar domain (public health and safety) and learn how to collaborate even though they had different backgrounds and experiences. Face-to-face interaction through conducting meetings was recognized to be helpful during the progress of collaborative activities. Adding to this, this study found that developing plans with professionals from other agencies was thought to be another effective way of interacting and exchanging information and gave the opportunity to professionals and agencies to clarify their roles, aims and objectives around the issue of public health and safety for the Games. Learning to collaborate while planning together fostered the development of a number of useful skills for the professionals including communication and empathy which promoted collective learning and collaboration.

8.3 Novel aspects of the study: a model of interagency collaboration

In this section, I discuss the original contribution of the study which includes a number of novel aspects concerning the understanding and the development of interagency collaboration in mass gatherings. The emerging conceptual model allows us to elaborate on the issue of interagency collaboration by reflecting on the three domains and their interconnections.

8.3.1 Timely engagement of the central agency

The first contribution of this study is in the area of the organizing committee's strategic planning for managing public health and safety issues for the Games. More specifically, based on the findings from my interviews with the participants in this study, it was revealed that LOCOG employed key professionals regarding public health and safety only a few weeks before the Games because this was only one functional area for the organization and not one of their priorities. This was perceived to be extremely challenging for their collaboration with other agencies because the new personnel were not able to adjust to the planning of the last years which in turn caused confusion and strained interorganizational relationships. Therefore, the OCOGs need to reflect on their strategy in preparing for public health and safety issues for the Games, understand the respective strategy of the host city and adapt their structural planning according to the needs of the community where the Games take place.

The lack of engagement of LOCOG in working together with other organizations during the seven years of the planning stage and its negative

consequences for interagency collaboration was a recurrent theme mentioned during my interviews. The lack of knowledge of the organizers about several aspects including other agencies' structures and roles, the public health and safety issue and the legislation of the host city was a main reported reason (absent in the existing literature) why LOCOG did not recognize early the necessity of working collaboratively with other organizations. For example, several participants reported that LOCOG did not acknowledge early in the planning phase the UK legislation's requirements to develop emergency plans for the venues. The delay of LOCOG's engagement resulted in inadequate level of preparedness as the integrated plans were developed very late without having the time to be tested. This fact may have also strained their working relationships with other agencies and reduced the level of trust between them. Therefore, organizers need to be mindful of the new knowledge provided by each Olympic Games and use their experience to improve their operations through interagency collaboration.

8.3.2 Shared micro-level leadership

The second contribution of this research study is about the element of interorganizational leadership activities during the event. The findings from the literature review showed that there is a lack of consensus regarding which agency should lead the public health and safety issues during the Games. One study revealed that public health agencies should take the lead in managing the public health issues during the Games (Meehan et al., 1998). In another study, Klauser (2015) stated that the organizing committee 'assumed' to have the overall responsibility for the health and safety of the venues. This ambiguity was also reflected in my study which revealed that unclear responsibilities across the organizations and fluid participation in decision making hindered interorganizational understanding and collaboration.

However, the unexpected finding of my research is mainly derived from my second interviews which revealed that it does not matter if there is unclear leadership at the strategic level as long as clear micro-level interagency leadership action is established. During the interviews after the Games, participants reported that operational leaders from different organizations including LOCOG, who worked at the same operational room during the Games, had a great understanding of each other roles and managed to practice strong collaborative leadership. They also indicated that the continuous physical presence of the operational leaders of each organization at the interagency micro-level space of a venue control room was a way of clarifying

authority for the decision-making process, overcoming the obstacles of decision making and encouraging the individuals to work well together within a diverse environment. Finally, flexibility of the operational leaders in action taking was considered to be another factor with positive consequences in interagency collaboration. More specifically, with flexibility leaders were able to empower the efficiency of their decisions because of the constant and open dialogue with other agencies and the construction of different ideas and strategies.

8.3.3 Formal and informal linkages at an early stage

The third contribution of this study is the demonstration of the importance of the role of linkages related to the leadership and communication challenges. The analysis showed that there are two kinds of linkages that need to be used at an early stage of the planning phase including formal (boundary-spanners) and informal linkages. This is an important finding because existing literature review has only reported that joint staffing between organizations is a form of collaboration that can be used during mass events such as the Olympics (Klauser, 2015). However, my study revealed that formal linkages with formal roles such as boundary-spanners and informal links including acquaintances or ex colleagues are both necessary for collaboration from the beginning of the planning stage. The findings also presented the details of how these mechanisms facilitated interagency collaboration.

More specifically, participants reported that the positive impacts of informal linkages across organizations were mainly unfolded approximately six months before the Games when LOCOG employed one professional from the LA who was well-known to all the emergency services in London. As noted earlier, agencies expected that LOCOG would be the leading organization regarding the public health and safety aspects of the event. However, LOCOG did not fulfill the participants' expectations regarding their leadership roles from the beginning of the planning stage. Nonetheless, by employing this professional six months before the Games, in order to lead the emergency planning sector, LOCOG managed to create instantly direct links with all the involved organizations and integrate their emergency planning processes. Respondents stated that strengthening the collaborative relationships with other organizations by using this link was the first useful leadership activity by LOCOG concerning the issue of public health and safety for the Games.

The research findings also showed that LOCOG, having employed that person, recognized the importance of investing in relationship-building practices as a

leading organization and employed an additional number of ex-police officers to manage the area of public safety. Therefore, this study indicated that a significant leadership activity that organizers need to undertake from the beginning of the planning phase is establishing links with other organizations either by employing a number of individuals (e.g. near retirement) from them or by benefiting of other agencies' staff who are provided as boundary-spanners. In this way, they will be able to build a shared understanding across the organizational boundaries regarding organizations' goals and practices and create a more collaborative environment.

The usage of informal linkages among organizations is not the only mechanism that had positive outcomes for interagency collaboration. Participants reported that a number of organizations acknowledged the weakness of LOCOG to lead the issue of public health and safety very early in the planning process and implemented boundary-spanners in order to build the relationship and improve the understanding of the LOCOG's processes about the issue. It is interesting though that, at that time, one of the main reasons why these individuals were well-accepted by the organizers was not the benefits of these relationships but the fact that there was not any financial burden for them. Therefore, according to the research findings, professionals in public health and safety agencies of the host city who recognize the importance of working collaboratively with the leading organization need to construct this partnership by establishing formal boundary-spanners between them. Recognizing a leadership weakness and taking an active stance to overcome this challenge was thought to be a very important element of interagency collaboration.

Boundary-spanning was a facilitative mechanism for interagency collaboration which was used not only with the leading organization but also across the public health and safety agencies themselves. This study revealed that boundary-spanning allowed stakeholders to collect timely information from other agencies every day during the Games and gain situational awareness of all the events and incidents each day of the Games. For example, the data derived from the observations showed that the MPS had spanners from the ambulance, fire and transport service in their SOR and in this way they were able to discuss upcoming issues face-to-face instantly and provide the feedback across the agencies using the communication system of each agency provided by each liaison person.

These formalized liaison roles managed to create shared meanings among organizations while maintaining interoperable communication systems among them.

An interesting insight that this study provided is that a significant factor related to the role of boundary-spanners was their training. Participants described how necessary it was for the boundary-spanners to be trained in several areas including their roles and responsibilities, the available technical equipment and communication systems and the existing information sharing procedures. In view of these findings, there is a need for establishing formal and informal linkages among organizations from the beginning of the planning stage to promote interagency collaboration. This adds to the existing literature review which suggests that early integrated planning is necessary during the collaborative effort of the agencies involved.

8.3.4 Technical versus soft interoperability: a dynamic relationship

The fourth major contribution examines the communication challenges that organizations faced during the planning and implementation phase of the Games. Two challenges that influenced interagency collaboration became apparent through the analysis of the findings: the lack of interoperability of communication systems and the lack of interorganizational understanding. The literature review suggested that communication inefficiencies influence the coordination effort of organizations (Parent et al., 2011), but it does not elaborate on the details of this obstacle. This study manages to fill this gap by discussing how the above challenges shaped collaboration. While analyzing these issues, the study proposed a new perspective on understanding the communication barriers between the various organizations which involves the two components of interoperability of communication systems: technical and soft interoperability. Technical (or hard) interoperability refers to the technological factors for the exchange of information whereas soft interoperability involves the human factors.

Communication inefficacy is not only a matter of the IT equipment; it is also about the understanding and beliefs of individuals about the utility of information technology. The findings highlighted that the human factor influences the potential of technology to support collaboration and similarly the (in)adequacy of technology contributes to the individuals' ability to work collaboratively with other agencies within the complex environment of a mass event. For instance, concerning the human factor, the findings from the interviews indicated that during the planning phase some professionals did not consider what IT equipment they would use in an interagency control room in order to communicate with other agencies and therefore they were not able to share information with other people. This negligence led to dysfunctional information sharing among the agencies and inability to receive timely information.

On the other hand, an online data-sharing tool which was used by agencies in order to share information before the Games did not support interagency collaboration because it was deemed complicated and it could not provide real-time information. This new perspective necessitates the consideration of organizations participating in mass gatherings about how these two components interrelate in order to develop the best practices for interorganizational collaboration.

8.3.5 Form of interaction: frequent, mandatory and small-scale

The fifth contribution addresses the form of interaction among organizations that supports interagency collaboration. This research suggests that regular, requisite and small-scale interactions between professionals from different agencies helped them to exchange information, resolve conflicts and reach mutual agreements. Only one of these three features of interaction has been discussed by Sharp et al. (1998) who suggested that daily interactions helped organizations to collaborate and develop integrated response plans. My study showed that frequent face-to-face interaction increased trust and shared understanding between the involved stakeholders and enabled the implementation of their actions. Moreover, in an environment of a mass event which is constantly and rapidly changing, regular interaction is necessary to address new upcoming issues related to interagency collaboration.

In addition, many participants argued that regular informal communication between them in the planning phase helped to build stronger relationships and exchange useful information around the tacit components of their knowledge. It was a useful method to access the partner's experience and specialized knowledge in order to consider it during their collaboration. Frequent informal interaction allowed individuals to exchange complementary knowledge and minimize both parties' assumptions regarding their roles. In this way, they learned how to collaborate even though they had different backgrounds and experiences.

During both the interviews and the documentary analysis, the statutory commitment of the agencies to interact was also raised as an enabling factor of interagency collaboration. More specifically, the use of interagency teleconferences was deemed a requisite factor for collaboration in a number of documents. For instance, one high-level strategic document produced by the UK government (the overarching C3 ConOps) identified the requirement of the UK government to conduct daily teleconferences or video teleconferencing in order to share real-time

information, maintain situational awareness and coordinate the actions taken. Therefore, in the dynamic environment of a mass event where actors' responsibilities are not well-defined, the obligation of the agencies to conduct teleconferences among them facilitated their communication and the integration of their activities.

The last characteristic of interagency interactions that was suggested by the participants as a facilitator for creating a productive collaborative environment was the small-scale type of interaction. Participants recommended that the small number of individuals participating in interagency meetings may have limited the risk of miscommunication and created stronger relationships which led to a better understanding of each agency's contribution. The findings showed that during such meetings, professionals were able to clarify issues, understand each other's responsibilities and scrutinize assumptions. Additionally, they had the opportunity to examine each agency's role in case of specific scenarios and afterwards develop their organization's plans for responding to these scenarios. Participants noted that working together face-to-face and sharing their beliefs led to the creation of new knowledge that was necessary for providing integrated services. Consequently, small-scale interaction was regarded as a relatively easy mechanism that helped professionals to engage better in the collaborative environment of the event.

8.3.6 Situation reports: the primary source of information

The sixth contribution of this study concerns the collection of appropriate information in order to take suitable and integrated actions. As noted in the findings chapters, achieving an adequate situational awareness regarding every incident that could harm public health and safety during the Games was a challenge because information was gathered by many agencies and by different people without having a focal point or agency which could provide all the information collected. Moreover, the informal links and personal relationships that existed between the professionals may have accelerated the uncontrolled spread of information which maximized the risk of losing necessary information. Without a clear understanding of the situation and integration of information, there would be frustrations during the interagency collaboration.

The findings propose that the formation of SitReps was deemed as a primary source of information across all the stakeholders. This reporting mechanism, which was used during the Games, included information regarding the incidents that each agency had managed during the day and potential concerns around the issue of

public health and safety. Most of the organizations involved in the public health and safety aspect of the Games produced and disseminated daily SitReps to the upper level of their hierarchy and to other partner agencies. Respondents argued that the sensitivity of the information included in the SitReps was increased which led to an overload of information because of possible irrelevant messages. However, it is interesting that participants preferred a large amount of information even if there was duplication rather than feeling uncertain about missing information. Therefore, the formation and distribution of SitReps managed to aggregate and process information collected by each actor and improved the response processes of the agencies by creating a shared understanding among them.

8.3.7 Prioritizing learning

Finally, this study contributed to the current knowledge of mass gatherings and interagency collaboration by examining the role of learning. As discussed at the beginning of this chapter, learning is suggested to have equal weight with the other two components of the proposed conceptual framework including the leadership and communication component. This factor has not been elaborated in the existing literature. The present study revealed that acquiring and sharing knowledge within and across the agencies in order to create a joint understanding among them regarding their roles, objectives and practices played an important role in the formation of interagency collaboration. Based on the research findings, it was a difficult challenge to integrate the individual learning into shared learning. For instance, many agencies had sent their personnel to other Olympics in order to gain both tacit and explicit knowledge of respective agencies regarding collaboration and in some cases their learning was not shared within the organization. In this respect, the findings suggest that organizations should be more mindful of lessons from other Games in order to address the complex collaborative conditions of a mass event.

The study also showed that unfamiliarity among agencies was perceived as a crucial element in absorbing information and reaching a joint understanding. Organizations that did not know each other well lacked an understanding of others' roles and objectives which made collaboration more difficult. Therefore, unfamiliarity among organizations may have hindered the transfer of their tacit understandings which appeared to be critical to the development of their relationship. For example, participants reported during our interviews that people at government level who were responsible for the Olympic planning were new and did not understand how organizations operated. Thus, it was difficult to work together and manage their

working relationships. Therefore, what is proposed is the development of learning activities among all the stakeholders early in the planning stage in order to break down the organizational barriers and improve the collaborative processes.

8.4 Theoretical contribution

The findings of the study showed that organization field theory provided a useful framework to unpack the complexity of the context where interagency collaboration was constructed by clarifying the boundaries of the case including which actors were involved around the issue of public health and safety and their relationships with the issue. The study identified a number of common elements between the field theory and the context of a mass gathering. First, they both constitute an open and dynamic system which is in a constant state of emergence. Second, the four determinants of a structured field which include the increase in interaction and information load, the emergence of structures and the development of a mutual awareness (DiMaggio, 1983) are also present in the mass gathering context. Third, the acknowledgement of the significance of the public health and safety *issue* and its prioritization during both the planning and operation stage of the event was an essential factor associated with more integrative and collaborative interactions among the actors.

One main characteristic of organizational fields is that they become centres of debate where all actors seek to advance their interests. This study further articulates how the nature and structure of the new leading actor in the field contributed to a dysfunctional interagency collaboration and how the norms of the local organizations managed to create various channels of interactions between them and facilitate both parties' participation in collaborative activities. The findings identified that the use of both formal and informal linkages among the involved actors enabled their collaborative engagement by building relationships and facilitated the adjustment of individuals among different institutional logics. Furthermore, the development and implementation of clear micro-level interagency leadership action encouraged professionals to work collaboratively within a diverse environment and helped them to overcome issues associated with the decision-making process.

The *Structuration Model of Interprofessional Collaboration* (D'Amour et al., (1999) was a useful theoretical framework that guided the data collection and analysis and enabled the understanding of the factors that influenced interagency collaboration before and during this mass gathering event. The findings of this study

are consistent with some of the model's concepts but also provide novel insights about how collaboration can be conceptualized. This study's findings propose three dimensions of collective action to conceptualize interagency collaboration (leadership, communication and learning) instead of the four dimensions of the model including governance, formalization, finalization and internalization. As described in Chapter Two, the first two dimensions of the model refer to the organizational structures while the other two involve the relationships between the individuals. This study also highlights that both structures and relationships have a significant influence on collaboration and this is evident within each of the three domains where both elements are manifested. For example, the communication challenges which were perceived to hinder interagency collaboration were associated with the lack of interoperability of communication systems (structural element) along with the lack of interorganizational understanding (relational element).

Even though D'Amour's model was a helpful framework for understanding the structural and relational aspects of collaboration, it did not consider various components that according to my findings played an important role in the operation of interagency collaboration. These include the two levels of leadership action, the use of linkages, aspects of structured communication and the role of learning. D'Amour et al. (1999) explain that leadership activities support the collaborative activities of the professionals. Their model indicates that the implementation of clear and explicit directions by central actors plays an important role to the implementation of collaborative processes. My findings suggest that leadership plays a more complex and nuanced role in interagency collaboration and its significance is associated with leadership action at two levels of engagement: micro-level (operational and interpersonal) and strategic. This study argues that clear micro-level interagency leadership was the key mechanism facilitating the decision-making process among different professionals. Such leadership action at the interpersonal level helped overcome issues around work dynamics among staff from different agencies, including resolving trust issues and helping align differences in opinions and operational priorities.

Strategic leadership also played a significant role in the collaborative effort among the interacting agencies. I identified three factors that enabled the implementation of leadership at that level: timely engagement of senior leadership teams across organizations, organizational adaptation and forging improved knowledge of partnering agencies. Early engagement of the organizing committee of

the event in working together with other organizations around the issue of public health and safety was suggested to be a critical component of collaboration. At the same time, the organizers needed to adapt their strategic planning according to the needs of the health services' community where the event took place and build relationships with the involved organizations. Finally, the third element that influenced the leadership effort at the strategic level was knowledge of other agencies. When organizers are aware of other agencies' structures, practices and roles and understand how the public health and safety issue is managed by the host city, interagency collaboration is easier initiated.

The emerging conceptual model also considers the creation of *linkages* as an inter-link between leadership and communication activities because it influenced both domains. First, the organizing committee established linkages with other organizations, either by employing a number of individuals from them or by benefiting from other agencies' staff who enacted boundary-spanning roles. Using such mechanisms resulted in enhanced integration of the emergency planning processes among the organizational partners and the growth of collaborative relationships among them. Second, the creation of bespoke boundary-spanning roles among the agencies allowed stakeholders to collect timely information from other agencies every day during the Games and gain situational awareness of all the events and incidents. At an interpersonal level such structured interactions also boosted trust among key staff from the partnering agencies. Therefore, the emerging model emphasizes the necessity of establishing formal and informal linkages among organizations from the beginning of the planning stage to promote interagency collaboration. Thus, this study extends the theoretical framework of D'Amour's et al. (1999) by adding to organizational leadership considerations also elements of structured communication and exchange in the collaborative process among actors participating in mass gatherings.

Hence, aspects of structured and ongoing communication comprised the second domain that influenced interagency collaboration. The findings of this research study complement the existing theoretical framework by looking explicitly at how communication shaped collaboration during the event. In the empirical model, three characteristics of interaction emerged as having a positive influence on collaboration: frequent, mandatory and small-scale exchanges. Frequent face-to-face interaction increased trust and shared understanding among the involved partners and facilitated the implementation of their actions. Moreover, the obligation of the

agencies to conduct daily interagency teleconferences facilitated their communication and the integration of their activities. Finally, small-scale interaction created stronger relationships and led to a better understanding of each agency's contribution. With hindsight, this domain overlaps the two relational dimensions of D'Amour's model; finalization and internalization refer to the importance of developing trusting relationships and recognizing the common goals, likewise communication increases trust and shared understanding among the organizations. The emerging model further suggests that in order to increase the level of understanding about how communication influences collaboration, individuals need to consider aspects of interoperability among communication systems, including both technical and 'soft' interpersonal interoperability. The findings emphasized that both the human and the technological factors influence the potential of communication systems to support collaboration.

The second inter-link, which involves two forms of interaction, face-to-face interaction and the development of SitReps, is suggested to connect the two domains of communication and learning. This study revealed that these two elements supported both communication and learning and, in turn, interagency collaboration before and during the event. Face-to-face interaction not only enabled the communication among the partners by exchanging instant information but also led to the creation of new knowledge that was necessary for providing integrated services. Further, the formation and distribution of SitReps managed to aggregate and process information collected by each organization and improved the response processes of the agencies by creating a shared understanding among them. This latter element links with the formalization dimension of D'Amour's model which suggests that interagency protocols and unified documentation is a significant method of clarifying the various partners' responsibilities.

The third domain that was identified in this study to reinforce interagency collaboration was learning. The theoretical framework presented in Chapter Two has not explicitly discussed the significance of learning in collaboration. The emerging model revealed that transforming individual knowledge to collective was a great challenge and played an important role in achieving a joint understanding within and across the agencies. Significant to the role of learning was the familiarity among the organizations to absorb information and understand others' roles and objectives. The development of learning activities among all the stakeholders early in the planning

stage was deemed to be necessary to break down the organizational barriers and improve the collaborative processes.

The conceptual model suggests a third inter-link between the three activity domains which is codification. This link can also be deemed as an overlapping theme with the formalization dimension of D'Amour's model. The analysis revealed that codification was a significant mechanism that aided organizations to overcome many challenges inherent to the above domains. Explicit codified knowledge allowed professionals to understand external (to their organization) knowledge and enabled them to adapt to the interagency environment of the Games. Formal briefing on codified knowledge was also suggested to be necessary in order to create collective knowledge, eliminate misinterpretations and align the perspectives of professionals from different agencies. The use of united codified principles and procedures among different agencies also made the roles and responsibilities of the leading organizations more explicit and enabled the decision-making process by building a shared understanding. In sum, the emerging conceptual model enables both professionals and researchers to take a holistic approach to understanding the dynamic interrelationships among leadership, communication and learning and provides new insights into the issue of interagency collaboration in mass gatherings.

8.5 Implications for practice

8.5.1 For the organizers of mass gatherings

This study emphasizes the need to achieve a shared approach to preparing for the public health and safety of a host city during Olympic Games or other mass events. This requires the early engagement of the organizers with the relevant agencies of the community where the event takes place. This thesis proposes that irrespective of the nature and the structure of the organizing agency, organizers need to build relationships and establish structured communication channels with the public health and safety agencies of the city from the beginning of their planning operations. They also need to advance their knowledge regarding the issue of public health and safety and how it is managed by the local services and become aware of the practices and structures of all the partner agencies. Organizers must integrate their planning with the rest of the organizations involved and assure that there is enough time before the operation of the event to test its efficacy. In addition, clear boundaries of responsibility and authority between the organizers, the government and the local agencies need to be determined to optimize their collaboration.

8.5.2 For both the organizers and the local services

This thesis suggests that the establishment of linkages between the organizers of the event and the local partners, as well as among the local services, improves actors' understanding about other each others' roles and structures and encourages professionals to work in partnership with other disciplines. In particular, the findings indicate that public health and safety agencies of the community need to appoint at least one individual from their staff to a full-time post within the organizing agency in order to build relationships, enable the information sharing flow and facilitate the development of integrated plans. Moreover, it was found that local organizations should use boundary-spanners among them in order to be able to collect timely information every day during the event and gain situational awareness of all the incidents that may have an impact on the public health and safety issue. It is important to note that their role needs to be formally agreed and their task clearly indicated. Boundary-spanning manages to create shared meanings among organizations while maintaining interoperable communication systems among them.

Findings also suggest that all stakeholders need to sign written agreements in order to clarify how they are going to communicate and work together during the event. This factor facilitates interagency collaboration because it clarifies the role of each agency in several situations and who will be accountable for the final decisions in a variety of incidents specified in the agreement. By using this formalization, responsibilities and procedures are well-understood by both parties and relationships are strengthened. Formal agreements among organizations regarding the frequency, format and content of their communication minimize their assumptions and create an unambiguous environment for their interaction. Along with the written agreements, the development of interagency plans and protocols is also suggested by this study to foster collaboration. Organizations can bring together their strategic, tactical and operational plans to improve their communication and clarify what information they need to share and with whom they have to communicate.

Furthermore, the value of face-to-face interaction in interagency collaboration was acknowledged in this study. This method creates familiarity among people who do not know each other well prior to the event and improves personal relationships. It facilitates the information sharing among professionals from different services and enables the immediate resolution of potential conflicts and assumptions. It also helps professionals understand better other agencies' roles, practices and priorities by giving the opportunity to clarify questions. Meetings are an effective way for the

agencies to interact and collaborate in order to develop their plans. More specifically, this study suggests that regular small interagency meetings enable the provision of sufficient information necessary for implementing collective actions and create strong relationships which lead to a better understanding of each agency's contribution. Apart from meetings, physical co-location during both the preparation and the operation of the event by using control/operation rooms benefits collaboration because participants have the opportunity to solve upcoming problems instantly. Another method to communicate face-to-face suggested by this study is video teleconferencing. This mechanism offers an open access to information to all the agencies while eliminating time and place constraints.

Finally, both organizers and agencies need to conduct interagency exercises during the preparations for the event to access new knowledge by other partners and build both tacit and explicit knowledge. During the exercises, professionals have the opportunity to create new contacts from other organizations and build a strong information exchange network. This fact enables participants to learn other agencies' roles and determine how they can work collaboratively. Moreover, being physically in the place where all the agencies will operate during the event helps professionals to establish a clearer sense of the connectivity and interactivity that will take place among the agencies and create a more collaborative environment. However, some participants in this study raised concerns about the structure and the implementation of the exercises. For example, professionals indicated that sometimes the learning produced from one exercise was not transferred to the other. Thus, organizations need to pay more attention to the development of these exercises. According to the public health and safety requirements of the event, a coordinated programme of exercising with a central team managing the whole process is a more appropriate way of sharing the learning and improving collaboration.

8.5.3 For the individuals who act as leaders and linkages

Another element that has a significant influence on the interagency collaboration in a mass gathering context is a number of individual qualities which are required for the positional leaders and the boundary-spanners of each agency. Professionals assigned in leading positions need to consider the following characteristics which were deemed as important from the participants' perspectives in this study. First of all, leaders need to have experience of participating and managing similar mass gatherings because in this way they will be able to communicate easier across organizational boundaries because of the prior

experience. Second, positional leaders need to be physically present at the intra- and interagency operational level in order to clarify authority and responsibility for the decision-making process. Third, professionals should maintain flexibility in action-taking and in using different leadership behaviours in order to reach joint decisions at the interagency level and create a constructive environment where collaboration is a priority. Fourth, another strong quality of a collaborative leader is the ability to negotiate and persuade people. This ability strengthens relationships between organizations and fosters the decision-making process by encouraging honest communication. Finally, displaying trust and respect in both followers and leaders fosters interagency collaboration because individuals are more willing, motivated and committed to accomplish the objectives of the group.

Apart from the positional leaders, boundary-spanners need to acquire a number of qualities in order to foster interagency collaboration. They need to be accurate while interacting with other organizations in order to foster understanding amongst individuals. Boundary-spanners have to avoid using technical language and acronyms in order to be comprehended by other professionals and ensure the consistency of the exchanged information. Showing empathy and understanding others' perspectives is another quality that increases the level of closeness between individuals and creates mutually beneficial relationships which lead to a greater commitment to collaboration.

8.6 Limitations of the study

Regardless of the amount of thought and effort dedicated to designing a research study, there are always limitations. This study has several limitations which need to be recognized. The main limitations of the present research relate to the research methodology used and are included in the methodology chapter, but are also highlighted in this section. The selection of the snowball sampling process, the time constraints that did not allow the conduct of a preliminary analysis while collecting the data and the fact that half of the participants did not give a second interview can have an influence on the quality of the findings. As described in the methodology chapter, I selected participants mainly based on their convenience. Therefore, some organizations were underrepresented in the data collection and the generalizability of the study can be limited (Yin, 2009). In addition, even though I managed to reach out the key actors involved in the public health and safety aspect of the Games, this study did not include representatives from LOCOG. Their view

probably could have provided another aspect on the issue of collaboration and contribute to a broader understanding of the phenomenon under study.

The main research method that I used to collect my primary data was the semi-structured interview. Two inherent limitations not only to this method but to qualitative research in general are the recall and the response bias. In recall bias, participants may not have accurately remembered the circumstances surrounding their experiences or the reasons for particular actions. In response bias, participants may have felt obligated to give responses that are expected of them, particularly on important security and public health issues (Patton, 2002). I acknowledged both biases and I tried to build rapport with the interviewees in order to mitigate the response bias; however, the fact that I was a stranger might have influenced the participants' responses (Denzin & Lincoln, 2000). This was revealed in the study as it was sometimes requested by the respondents not to include some of the things they said in my findings. Concerning the recall bias, I arranged the second interviews shortly after the event and I conducted the first interviews concurrently with the planning phase of the event.

The research setting is another limitation of this study. This study captures the perspectives and experiences of professionals coming from a variety of public health and safety organizations in the specific setting of the 2012 London Olympic Games. The Olympic Games represent a typical mass gathering but other types of mass events also exist such as the World Cup and religious festivals. Hence, to fully comprehend the issue of interagency collaboration in mass gatherings, an exploration of other settings, including other countries, is required. For example, not all countries manage the issue of public health and safety in similar ways. Studying the unique setting of the London Olympics limits the transferability of the findings, and hence, the data should be transmitted with great caution to organizations in other countries. Nonetheless, I agree with Bowling's (2002) proposition that by understanding a single case well, one can begin to develop a more widespread comprehension of the issue under examination.

Another weakness of the study is that the primary instrument of the data collection and analysis is the researcher and therefore, there is a possibility for subjective interpretation of the data. As noted in the reflexivity section in the methodology chapter, the fact that I am not a British citizen can represent a potential limitation. The fact that I have not lived in the country for a long period of time means

I am not embedded in the local, national and organizational cultures. However, this could also be considered as an advantage. Since I was new to the informants and the context, I looked at the field without preconceptions or constructing a priori assumptions about them. A further problem can also be that the researcher may build stronger relationships with particular participants. Despite the efforts that have been made to minimize the researcher's bias, including conversations with the supervisors, it cannot be ruled out that other researchers might have interpreted the data differently. However, triangulation was used during the data collection to strengthen the credibility of the study as well as mitigate biases. This method also allowed for a broader understanding of the phenomenon under study (Yin, 2009).

8.7 Recommendations for further research

The limitations of the study indicate the recommendations for further research. Because of the difficulty of generalizing from a single case study, additional research is needed to explore the issue of interagency collaboration in mass gatherings. Similar studies could be conducted for other Olympic Games or other large-scale events in order to test the transferability of the findings in other countries and events, provide new insights concerning the development of interagency collaboration and extend the conceptual model of this study. It is suggested that the sample in future studies should include professionals from the organizing agency, when an external organizer is present, in order to have a comprehensive understanding of the process of collaboration. Similar case studies could also be conducted in different contexts of inter-institutional partnerships to determine differences and similarities about the process of interagency collaboration. Such comparative studies may provide insights into whether there are patterns relevant to interagency collaboration across different arenas.

Future research can also consider different research designs such as video-ethnography. This methodology, which involves recording the activities of the key actors and key events where collective decisions would be made, would allow the description of the complexity of the field by recording details that could not be captured by direct observations used in this study. The video data derived from the actors' settings would permit the researcher to reanalyze the data by examining more details in a larger group of individuals. Video-based research also offers the opportunity to the researcher to be reflective on the collected data even after a long period of time of the fieldwork. The method of participant observation would also allow the researcher to immerse within the social context for an extended period of

time and collect more detailed information. The researcher, who acts as a participant-observer, experiences the field setting as an insider and has the opportunity to gain a deeper understanding of the phenomenon under study. Furthermore, by using this method, the observation does not obstruct the process of interaction between individuals in the context being studied (Hammersley & Atkinson, 1995).

8.8 Conclusion

This study was the first qualitative case study to focus on the issue of interagency collaboration among public health and safety providers in a mass gathering context. Improving collaboration in complex environments such as large-scale events requires the involved actors being aware of the areas that influence their attempt to work together. In this thesis, I have argued that the practice of interagency collaboration before and during a mass gathering is fundamentally shaped by the interplay of the three domains of leadership, communication and learning. Hence, to fully understand the dynamics of collaboration, it is essential to consider the inherent challenges and facilitative conditions of the above domains. Importantly, I have argued that the leading actor of the event needs to be timely involved in the development of interorganizational activities and shape the decision-making processes within the public health and safety field of the event. This thesis recognizes the complex structure of the involved agencies and the high density of information transmitted as critical aspects of the communication processes across organizations. The study also points to the importance of creating a joint understanding among organizations regarding their roles, objectives and practices.

The conceptual model I have developed indicates the significant role of a number of facilitative mechanisms in strengthening the domains of leadership, communication and learning, and consequently in developing interorganizational collaboration. The establishment of boundary-spanning roles is proposed as an effective strategy to overcome the inherent leadership and communication challenges of mass gatherings. Furthermore, ongoing, binding face-to-face interaction empowers interagency collaboration by creating joint knowledge, enabling transparent communication and building trust among partners. Finally, I have demonstrated that the use of codified frameworks augments synergies in the three activity domains and helps support stronger collaborative partnerships. By suggesting a model of working together, this study has also practical implications by addressing elements that can inform policies across organizational boundaries. Undoubtedly, challenges will continue to permeate interagency collaboration in the

field of mass gatherings; nonetheless, it is my hope that the findings of this study will aid organizations to climb the rocky hill of fruitful collaboration.

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Appendices

Appendix 1

First MeSH search

MeSH searches & Text searches

Delivery of healthcare	Public health practice	Sports	Public health	Olympic Games
Health personnel	Health planning		Population surveillance	Mass gatherings
	Community health planning		Emergency medical services	Public health preparedness
	Health plan implementation		Emergencies	Public health planning
	Interinstitutional relations			Interagency collaboration
	Cooperative behaviour			

Search History Results

1 AB delivery of healthcare OR AB health personnel/5221

2 AB public health practice OR AB health planning OR AB community health planning OR AB health plan implementation AND AB interinstitutional relations OR AB cooperative behaviour/5779

3 AB sports/13300

4 AB public health OR AB population surveillance OR AB emergency medical services OR AB emergencies/75632

5 1 or 2 or 3 or 4/96403

6 AB Olympic games/340

7 AB mass gatherings/96

8 AB public health preparedness/333

9 AB public health planning/611

10 AB interagency collaboration/81

11 6 or 7/425

12 8 or 9/915

13 10 or 11 or 12/141

Appendix 2

Boolean and Free text Search

First Boolean Search

	And	And	And
Public health agencies	Public health preparedness	Olympic games	Public health
or Healthcare professionals	Public health planning	Mass gatherings	
or Community services	Public health management		
or	Interagency collaboration		
or	Interagency communication		
or	Population surveillance		

Free text Search

1. Olympic games (OG) map term to Subject headings › sports, sports medicine, emergency medical services (focus, or) ([17858 hits](#)) › limit to humans, 1990-2011 (explode) ([14179 hits](#)) › limit to English, full text, not sports ([7155 hits](#)) › not sports medicine, subheadings: methods, organization ([1517 hits](#)) › limit to health administration journals ([17 hits](#))

2. OG, abstract ([338 hits](#))

3. OG, title ([217 hits](#))

4. Mass gatherings (mg), abstract (abs), map › disaster planning and public health (focus) ([130 hits](#))

5. mg, abs ([99 hits](#))

6. mg, title ([50 hits](#))

7. Public health preparedness (php), abs, map › public health administration (focus) and public health practice (explode) ([558 hits](#))

8. php, abs ([167 hits](#))

9. php, title ([92 hits](#))

10. Interagency collaboration (ic), abs, map › interinstitutional relations (focus)
› Subheadings: organization, administration (1 hit)
 11. ic, abs (79 hits)
 12. ic, title (27 hits)
 13. Public health planning (phpl), abs, map › health planning (explode) and
public health (focus) and population surveillance (explode) (70 hits)
 14. phpl, abs (174 hits)
 15. phpl, title (85 hits)

Appendix 3

Other Searches

Other databases

Searches	CINHAL	BANDOLIER	KING'S FUND	ECONLIT	EMBASE	ERIC	HMIC	IBSS
1 st	129 hits	30 hits	13 hits	91 hits	398 hits	0 hit	20hits	449hits
2 nd	0 hit	0 hit	0 hit	0 hit	0 hit	0 hit	0 hit	0 hit

Hand search key journals

Searches	PDM	PUBLIC HEALTH	BMC	BMJ	MJA
1 st	28 hits	2 hits	11 hits	10 hits	1 hit
2 nd	0 hit	0 hit	0 hit	0 hit	0 hit

Grey literature

Searches	SCOPUS	BUBL
1 st	875 hits	8 hits
2 nd	0 hit	0 hit

Appendix 4

Interview Guide

Date/time.....

Setting.....

Respondent.....

Observations.....

Introduce self

Give documents

Purpose of study

Permission to record

1. Background
2. Role, responsibilities (individual, service), clear job description
3. Knowledge, training, prior experience, skills (formal/informal learning)
4. Exercises, plans, documents
5. Relationships, communication, collaboration, information sharing, network associations (barriers/enabling factors) (criteria judging outcomes of effective collaboration and what look like)
6. Leadership (effect), hierarchical decision making, response structure, command centre, changes
7. Terminology-shared understanding
8. Business continuity, outside demanding, impact
9. Additional important aspect that is relevant and would benefit future planning

Stop record

Planned meetings/exercises

(Meetings) documents

Ask additional contacts

Ask for a second interview

Appendix 5

Direct Observations

Phase A Exercises Observations

Date	Exercise	Time	Location	Hours
19/5/11	Exercise Delphi	9.00-12.30	HPA Victoria	3.30
21-23/9/11	Exercise Yellow	1 st day:11.00-20.00	MPS Special	24
	Fortius (National)	2 nd day:8.00-19.00	Operation	
		3 rd day: 8.00-12.00	Room	
23/2/12	Central Sub Regional Resilience Forum Exercise	10.00-14.00	LFB Head Quarters	4
29/2/12	Exercise London Coroebus	9.00-17.00	Military Head Quarters	8

Phase A Meetings Observations

Date	Meeting	Time	Location	Hours
20/5/11	Olympic and Events Working Group Meeting	11.00-13.00	LAS	2
26/5/11	Olympics Surveillance Work-Stream Meeting	10.00-12.00	HPA Colindale	2
13/2/12	Olympic Implementation Group Meeting	13.00-16.00	BRC	3
23/2/12	Central Sub Regional Resilience Forum Meeting	14.00-16.00	LFB Head Quarters	2
24/2/12	Olympic and Events Working Group Meeting	14.00-16.00	LAS	2
28/2/12	Olympic Group Meeting	12.00-14.00	MPS New Scotland Yard	2

Phase B Special Operation Rooms (SOR) Observations

Date	Room	Time	Location	Hours
30/7/12	BRC SOR	9.00-18.00	BRC Brimsdown	9
1/8/12	Ambulance SOR	7.00-18.00	Cycle Event Banstead	11
7/8/12	HPA SOR	8.00-18.00	HPA Colindale	10
9/8/12	HPA SOR	8.00-18.00	HPA Victoria	10

Appendix 6

Documents

#	Document	Source	Aim
1	February 2012 quarterly report	DCMS	Updates about the preparations for the Games
2	October 2010 report	GLA	London's emergency and health services' preparedness for the Games
3	CCA 2004 (legislation)	Cabinet Office	Emergency Planning Arrangements
4	National Operational Guidance	Government	Support the fire and rescue service in delivering safe incident command during emergencies
5	C3 ConOps	Government	Provide a framework to the key stakeholders on how to formulate their collaboration
6	National Ambulance Service Command and Control Guidance	NHS	Assist the interagency partnership in responding to a major incident
7	Event Safety Guide	Government	Guidance book on spectator safety at sports grounds
8	NHS 2012 Games Planning Pack	NHS	Assist NHS organizations in their planning for the Games
9	Learning from London 2012	HPA	Lessons learned in planning for and delivering public health services for London
10	Letter	DH	Identifying the reporting and information sharing arrangements

Appendix 7

A priori Themes

1. Command and control
2. Common goals, priorities
3. Communication
4. Decision making
5. Information sharing
6. Exercises
7. Experience
8. Training
9. Leadership
10. OCOG (Organizing Committee of the Olympic Games)
11. Plans, policies, protocols
12. Relationships
13. Roles, responsibilities
14. Terminology, shared understanding

Initial Template

1. Communication
1.1 Liaison
1.2 Meetings
2. Knowledge
2.1 Exercises
2.2 Experience
2.3 Information sharing
2.4 Skills
2.5 Training
3. Leadership
3.1 Command and control
3.1.1 Coordination
3.1.2 Decision making
4. Legislation
5. OCOG
6. Plans and documents
7. Power
8. Relationships
9.1 Trust
9. Roles, responsibilities
10. Terminology

Appendix 8

Information sheet (A)



School of Community and
Health Sciences

INFORMATION SHEET (A)

Date: 06/05/11

Project title: 'Interagency collaboration in mass gatherings: the case of public health and safety organizations in the 2012 London Olympic Games'.

This statement is for participants who agree to participate in the above research project.

It is to be read in conjunction with information sheet (b) and the attached consent form.

My name is Angeliki Bistaraki and I am conducting research as part of my PhD degree in Health Services Research and Management at City University London.

The aim of this research is to identify and understand collaboration among different agencies during the public health planning for London Olympics. I hope that it will add to the field of knowledge in the area of public health preparedness for mass gatherings. This is important because other cities, countries or organizations can learn from this experience and use it for their planning for similar events.

I am seeking professionals who work in services, which are responsible for protecting public health and safety during Olympic Games, and are willing to participate in the study by giving an interview and/or being observed during their work. The interview will last about one hour and it will focus on roles, responsibilities and partnership when preparing for Olympics. More information about the interviews is given in Information Sheet (B). The observation will take place at an agreed place and time by both the participant and the researcher.

If the observation includes meetings, additional consent will be sought from the person chairing the meeting as well from those taking part. Furthermore, if during a meeting participants do not want me to observe certain parts, they can ask me to leave the meeting. Additionally, after the end of the meeting, participants can hear my records and remove any parts they do not want me to keep.

No findings, which could identify any individual participant, will be published. The anonymity of your participation is assured by our procedures, in which names are removed and replaced by pseudonyms. Only the researcher (who is based in London and Athens) and two supervisors (in London) will have access to this data which will be stored for 7 years after the end of the project and then will be destroyed.

Participation in this study is completely voluntary. If you agree to participate you may withdraw your consent at any time by notifying me by phone or in writing. If you withdraw your consent, your data will be deleted. Not participating in the research will not disadvantage you in any way.

If you have any queries or would like to be informed of the research finding, please contact:

Principal investigator: Angeliki Bistaraki

Telephone: 00302107288000

Email: abcv444@city.ac.uk

Address: NIMTS Hospital, 10 Monis Petraki, Kolonaki, Athens

If there is an aspect of the study which concerns you, you may make a complaint. City University London has established a complaints procedure via the Secretary to the Research Ethics Committee. To complain about the study, you need to phone 020 7040 3040. You can then ask to speak to the Secretary of the Ethics Committee and inform them that the name of the project is: 'Interagency collaboration in mass gatherings: the case of public health and safety organizations in the 2012 London Olympic Games'.

You could also write to the Secretary at:

Anna Ramberg

Secretary to Senate Research Ethics Committee

CRIDO

City University London

Northampton Square

London EC1V 0HB

Email: anna.ramberg.1@city.ac.uk

Appendix 9

Information sheet (B)

INFORMATION SHEET (B)

Date: 06/05/11

Project title: 'Interagency collaboration in mass gatherings: the case of public health and safety organizations in the 2012 London Olympic Games'.

This statement is for participants who agree to participate in the above research project.

As noted in the Information Sheet (A), I am going to use interviews and direct observations in order to collect data for the above project. There will be three data collection periods i.e. before, during and after the Olympic Games. My intention is to use four different ways of interviewing: face to face, telephone, Skype, email. The reason for this decision is that first, each participant will have the opportunity to choose which method prefers, second, it will save significant time as I am a part-time researcher and third, it will facilitate the follow-up process.

The interview will take part in an agreed time and place by both the participant and the investigator and it will last about one hour. If the respondent chooses one of the first three methods, then the interview will be digitally recorded and transcribed by the principal investigator (PI). If the email method is used, the researcher will use the email text to analyze the data. Participants will be asked if they agree to answer follow-up questions via email or have a second interview after the Olympics.

Apart from the PI, two supervisors, Eamonn McKeown and Yiannis Kyratsis will have access to the data in order to facilitate their analysis. Data will be analyzed using Template Analysis which means that the researcher will identify common themes in the texts provided for analysis. The transcripts will be returned to the respondents in order to give feedback on their meaning and agree on which extracts can be published. The data and the participants' contact details will be kept by the PI until the end of the study.

If you have any queries please contact:

Principal investigator: Angeliki Bistaraki

Telephone: 00302107288000

Email: abcv444@city.ac.uk

Address: NIMTS Hospital, 10 Monis Petraki, Kolonaki, Athens

If there is an aspect of the study which concerns you, you may make a complaint. City University London has established a complaints procedure via the Secretary to the Research Ethics Committee. To complain about the study, you need to phone 020 7040 3040. You can then ask to speak to the Secretary of the Ethics Committee and inform them that the name of the project is: 'Interagency collaboration in mass gatherings: the case of public health and safety organizations in the 2012 London Olympic Games'.

You could also write to the Secretary at:

Anna Ramberg

Secretary to Senate Research Ethics Committee

CRIDO

City University London

Northampton Square

London EC1V 0HB

Email: anna.ramberg.1@city.ac.uk

Appendix 10

Consent form

Informed Consent Form for Project Participants

Project title: 'Interagency collaboration in mass gatherings: the case of public health and safety organizations in the 2012 London Olympic Games'.

I agree to take part in the above City University London research project. I have had the project explained to me, and I have read the Information Sheets which I may keep for my records. I understand that agreeing to take part means that I am willing to:

- be interviewed by the researcher
- answer questions related to my job
- speak on behalf of my organization
- allow the interview to be digitally recorded
- be observed during my work
- allow the researcher to have access to my personal records for 7 years after the end of the study

Data Protection

I understand that a number of measures will be taken to protect my identity from being made public. I apprehend that if any publication arises from the research, names will be removed and replaced by pseudonyms.

I accept that the researcher (who is based in London and Athens) and two supervisors (in London) will have access to my data and contact details which will be stored for 7 years after the end of the project and then will be destroyed. The scripts will be stored in a locked drawer in Greece and the records in a computer file and a memory stick available by password only. All the data that will be transmitted will be anonymized.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that there is no intention to reuse my data in the future or to be shared as part of a different research project. If I withdraw my consent, my data will be deleted.

Withdrawal from study

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.

Name.....

Signature..... Date.....

Name..... (Investigator)

Signature.....Date.....

Address.....