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Title: Leading interagency planning and collaboration in mass gatherings: public health and safety in the 2012 London Olympics.

Abstract

Objectives Planning and implementing public health initiatives in mass gatherings such as the Olympic Games pose unique challenges for interorganizational collaboration which involves interaction among multiple and diverse agencies. Nonetheless, there is limited empirical evidence to support interagency collaboration and public health planning decisions in mass gatherings and how leadership can shape such interactions. We empirically explored these topics in the 2012 London Olympics to identify lessons to inform planning for future mass gatherings.

Study design Qualitative case study.

Methods Data comprised 39 semi-structured interviews with key informants conducted before, during and after the Games; in addition direct observations of field exercises and documentary analysis were also employed. Open coding and thematic analysis was used to analyze the data.

Results We identified two main leadership challenges that influenced interagency collaboration: *organizational public health leadership* and *coordinating collaborative decision making*. Two facilitative conditions helped overcome the previous challenges: *nurturing interorganizational linkages* and *creating shared understanding by activating codified frameworks* at the organizational level.

Conclusions Our study highlights leadership issues in interagency collaboration in mass gatherings. Practical implications arising from this study may inform the ways organizers of mass gatherings, public health and safety agencies and professionals can engage in effective partnerships and joint working.

Introduction

Mass gatherings are an increasingly common feature of our interconnected global world. They often bring together organizations that do not normally interact and the large number of attendees and stakeholders involved represent an enormous planning and logistical challenge. Such events usually represent significant challenges for the public health and safety sector of the host countries.[1,2] 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.[3] 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.[4]

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.[2] During mass gatherings, potential public health risks include communicable diseases, heat- or cold-related illnesses, foodborne and waterborne illness and mass-casualty incidents.[5] Host countries have to strengthen their public health systems to be able to deal with a variety of potential health problems and emergencies. Therefore, public health planning for such events requires the collaboration between local, regional, voluntary and national health-

related services as well as with the official coordinating agency or organizer, for example, the London Organizing Committee of the Olympic Games (LOCOG).[6-10]

Research identified interagency collaboration being crucial to the planning and delivery of public health services in mass gatherings.[7,11] In mass gatherings the diversity of stakeholders involved often have different objectives and sometimes conflicting interests, which may negatively impact interagency collaboration.[12] However, research to date has not yet looked explicitly at how this collaboration unfolds in practice and in the field of public health, while extant studies focus on investigating emergency department hospital admissions, health surveillance systems and infectious disease outbreaks.[5,7,8,13] We focus on the Olympic Games as an exemplar case of a large international mass gathering. We explored leadership issues in interagency collaboration for public health, safety and security preparedness in the London 2012 Olympic Games.

Methods

Study Design

A qualitative single case study design with multiple data sources was used.[14] This methodology allowed us to 'focus on a contemporary phenomenon within a real-life context'.[15] A single case study approach is appropriate when it represents an exemplar case as was our empirical study of the 2012 London Olympics.[16-18] Olympics are a typical case of a mass gathering because they are characterized by large numbers of spectators, athletes, mass-media, in a limited geographical area over a short period of time.[19] The research took place in three stages: a) during the

preparations for the Games, b) during the actual Games and c) after the completion of the Games.

Setting and Selection of Participants

The study population consisted of public health and safety professionals in London who had a key role in London Olympics to safeguard public's health, safety and security. We employed purposive sampling covering diverse types of senior roles.[20] The sample size was 26 professionals (Table 1) who belonged to "Category 1 and 2 Organizations" which, according to the UK legislation, have duties in safeguarding public health, safety and security in the event of an emergency.[21] Category 1 responders are known as core responders and they include the following services: a. emergencies services (police, fire, ambulance, coastguard), b. local authorities, c. health bodies, d. government agencies (environment agency). Category 2 responders act in support of Category 1 responders and they are mostly utilities services, voluntary and transport organizations. We 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.[22]

Table 1. **Participants' characteristics**

#	Interviewee	Gender	Organization	*Category 1 or 2*	Position
1	Adam	M	National Health Service (NHS)	1	Emergency Preparedness
2	Jack	M	London Fire Brigade (LFB)	1	Olympics Project Team Manager
3	Pat	M	London Ambulance Service (LAS)	1	Olympic Planning
4	Tonia	F	Health Protection Agency (HPA)	1	Olympics Program Manager
5	Lyn	F	NHS	1	Olympics Deputy Program Director
6	Sal	M	LAS	1	Liaison Officer
7	Cal	M	Metropolitan Police Service (MPS)	1	Olympics Program Management
8	Jacob	M	LAS	1	Contingency Planning and Resilience Manager
9	Randy	M	Greater London Authority (GLA)	1	Games Operations Resilience

10	Eleanor	F	HPA	1	Olympic Surveillance Work Stream
11	Barry	M	MPS	1	Olympics Project Manager
12	Paul	M	MPS	1	Olympics Operational Planning
13	James	M	MPS	1	Olympics Strategic Briefing Cell
14	Georgia	F	NHS	1	Specialist Advisor
15	Sam	M	MPS	1	Specialist Operations
16	Neal	M	MPS	1	Counter-terrorism Security Coordinator
17	Noel	M	TRANSPORT	2	Contingency Planning Manager
18	Jason	M	LFB	1	Deputy Head of Emergency Planning
19	Malcolm	M	MPS	1	Chief Inspector Emergency Planning
20	Ben	M	MILITARY	1	Olympics Lead Planner
21	Samuel	M	British Red Cross (BRC)	2	Emergency Planning
22	Maggie	F	BRC	2	Olympics Program Manager
23	Ralf	M	MARITIME	1	Security and Olympics Projects
24	Berry	M	BRC	2	Emergency Planning Officer
25	Jeff	M	ENVIRONMENT AGENCY	1	Contingency Planning Team
26	Marley	M	MPS	1	Emergency Preparedness Inspector

Data Collection

The study was conducted from May 2011, 14 months before the actual Games, until October 2012, two months after the completion of the Games. Data were collected through: semi-structured interviews, direct observations and documentary analysis. The use of multiple sources of data increased the validity of the study as 'no single source has a complete advantage over all the others'.[15] First, 26 semi-structured in-depth interviews were conducted, from May 2011 until February 2012 and 13 participants provided a second interview after the Games. The interviews occurred in

a place mutually agreed by both the researcher and the participant. They were digitally recorded and fieldnotes were also kept to capture researcher's insights. The average duration of the interviews was 50 minutes.

Second, unstructured naturalistic observations of operation rooms, meetings and interagency exercises were conducted to record interagency leadership activities, which supported the interview data and helped to provide an integrated overview of the context. Observations allowed us to examine the phenomenon of collaboration as it naturally occurred.[23] They were carried out between May 2011 and August 2012 in two phases: during the preparations for the Games and during the actual Games. They included observations of four exercises and six meetings during the preparations and of four Special Operation Rooms during the actual Games resulting in 94 hours of field observation. Finally, a range of documents produced by the agencies such as reports, agendas, minutes from meetings, strategic and procedures manuals were used and analyzed as secondary sources of evidence to complement evidence from other sources.[24]

Data Analysis

All interviews were transcribed verbatim and then the transcribed interview word files were imported into NVivo 7 qualitative data analysis Software (QSR International). Transcriptions of interviews, observations' fieldnotes and documents were coded using thematic analysis.[25] Analysis was open-ended by which we aimed to identify issues as they emerged. After completing the coding phase, we discussed each code separately to better understand their meaning. We also compared the different codes to identify relationships between the categories. The final four

leadership issues were decided through discussion with the whole research team, focusing on findings that were useful for future planners. Trustworthiness was assured through the methods of audit trail, triangulation, member check and peer review of data analysis.[23] More specifically, constant dialogues within the research team during both the formation and development of the codes helped us to reflect on the data and think various alternatives of interpretations. In addition, transcripts were returned to participants for verification.

Results

We identified two leadership challenges that organizations faced during their collaboration before and during the Games: *organizational public health leadership* and *coordinating collaborative decision making*. *Nurturing interorganizational linkages* and *creating shared understanding by activating codified frameworks* at the organizational level helped overcome the previous challenges and enabled collaborative working. These four themes represent those areas participants identified as crucial to influencing interagency collaboration. These leadership challenges and strategies are discussed below in detail accompanied by exemplar data quotations.

Organizational public health leadership

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 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. Participants 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. 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:

> *"I think LOCOG probably will be the challenge here because they are outside the clique, and then there's suddenly this new organization that's growing and growing. So, internally you speak to one person and you speak to another person and they don't know each other"* (Jacob, LAS).

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 the issue of public health and safety. They seemed to be inward looking, focused on their organization and working in isolation rather than being part of a collective, multi-agency environment:

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

Therefore, agencies had to put pressure on them and persuade them in order to start working together and integrate their processes and plans. 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.

Coordinating collaborative decision making

LOCOG's lack of leadership appeared to increase role ambiguity between the 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, during an interagency 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:

> *"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"* (Jeff, Environment Agency).

Similarly, during a national multi-agency exercise that occurred in September 2011, the majority of the participants reported that it was not clear which organization navigated the decision-making process across agencies. 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 quote reflects 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 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 (...)" (Eleanor, Health Protection Agency).

Nurturing interorganizational linkages

Participants stressed the importance of breaking down the barriers of organizational boundaries by creating interorganizational linkages. Two kinds of linkages proved to be valuable for interagency collaboration: formal linkages with formal roles such as boundary-spanners and informal links including acquaintances or ex colleagues. For example, approximately six months before the Games LOCOG employed one professional from the Local Authorities 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 clarify the expectations that organizations had from LOCOG as a leading agency. 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:

"They have taken I think about a half-dozen including 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 our people understand how we work" (Barry, MPS).

Apart from LOCOG's effort to engage more with the other agencies, some of the London's emergency services initiated early in the planning stage a close collaboration with LOCOG. For example, the London Fire Brigade 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. Interorganizational linkages not only enabled organizations to build relationships with LOCOG but also facilitated the development of integrated plans.

Creating shared understanding by activating codified frameworks

Codified frameworks including guidance books and written agreements played an important role in overcoming the two previous leadership challenges. Documentary data and more specifically the *National Operational Guidance* document, whose aim was to support the fire and rescue service in delivering safe incident command during emergencies, 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[26] and the Purple Guide[27] which are UK government-funded guidance books on spectator safety at sports grounds. 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:

"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, 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 and that's how it works" (Sal, Ambulance Service).

In addition, in a number of 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. For example, during an 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. 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.

Discussion

Collaboration between diverse organizations is a critical factor during mass gatherings.[6-11] We sought to identify the key components of the collaborative organizing of public health and safety agencies in the 2012 London Olympic Games. Consistent with the literature, leadership was identified as an important element of interagency collaboration in the Olympic Games.[7,11] Also early engagement of the organizers is vital for the success of public health interventions.[7,11,28-30] However, in our study, the involvement of LOCOG in working together with other organizations

during the seven years of the planning stage was perceived to be weak. Participants suggested a number of reasons that explained this lack of commitment e.g. the nascent and transient nature of the organization and the low prioritization of the public health and safety issue. The delay of LOCOG's collaborative activities resulted in an inadequate level of preparedness as the integrated plans were developed very late. This is consistent with literature since health organizations had difficulties in working with LOCOG because of its position of being a private provider with its own policies, procedures and priorities.[31]

Another leadership challenge that also influenced interagency collaboration included the inexplicit decision-making process across agencies. 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. The literature has also recognized the importance of clear accountability and command structure among the agencies in their collaboration.[6,32] Decision making among the agencies is an important issue that has not been explicitly discussed in the literature.[7] According to our study, one of the difficulties associated with the above lack of clarity was the unclear distribution of information among the organizations and which organization was leading the decision making strategically.

We found that the use of linkages between LOCOG and other organizations was a 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 literature. Only one author has suggested that joint staffing among organizations positively influences the development of interagency collaboration.[33] These liaison roles managed to create shared meanings among organizations while maintaining interoperable communication systems among them.

We found that codification was a significant mechanism that aided organizations to overcome many challenges. Explicit codified knowledge allowed professionals to understand external (to their organization) knowledge, facilitated the decision-making process by building a shared understanding and enabled them to adapt to the interagency environment of the Games. The use of united codified principles and procedures among different agencies made the roles and responsibilities of the leading organizations more explicit and facilitated interagency collaboration.

We used established approaches to enhance the validity of our findings.[24, 34-36] Nonetheless, our study has limitations which need to be recognized. First, 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. Also, even though we managed to reach out the key actors involved in the public health and safety aspect of the Games, we 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. In addition, even though the London Olympics had a wider geographical remit than just London itself, the study population comprised professionals based in London. The research setting is another limitation

since we capture 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 is required. 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 other organizations.

In conclusion, this study extends our understanding of how leadership shapes interagency collaboration in the context of a mass gathering and enables us to generate a novel understanding of leadership elements that can be used to understand collaboration in complex environments. Our study suggests that leadership plays a strong role in interagency collaboration in mass gatherings and by examining its role, the phenomenon of collaboration can be much more clearly conceptualized.

Ethical Approval

Ethical approval was granted from City University Research Ethics Committee in May 2011. All participants provided written informed consent on the basis of their anonymity and facilitated our access to each organization.

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Competing interests

None declared.

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