

The Impact Of Private Hospitals' Participation In Providing Emergency Services During Religious Seasons, In Cooperation With The Saudi Red Crescent Authority In Makkah Al-Mukarramah

Dr. Thamer Ismail Yateem¹, Dr .Ayman Siddiq Imam², Abdullah ali Ahmad alzhairani³, Ghazi Saad alshanbari⁴, Yousif Jamal samkary⁵, Dr. Kamil Majeduddin Gabil⁶

1. *Registrar-Aviation Medicine, Saudi red crescent authority*
2. *General practice, Director of medical administration makkah region, Saudi Red Crescent Authority*
3. *General practitioner, Saudi red crescent authority*
4. *emergency medical services, Saudi red crescent authority*
5. *Specialist of emergency medical services, Saudi Red Crescent Authority Makkah region*
6. *Senior registrar family medicine, Saudi Red Crescent Authority – Makkah*

Abstract

This study investigates the role and impact of private hospitals' participation in providing emergency medical services during religious seasons—specifically Ramadan and Hajj—in Makkah Al-Mukarramah, in coordination with the Saudi Red Crescent Authority. With millions of pilgrims converging annually on Makkah, emergency services face exceptional challenges in managing demand, crowd density, and health emergencies. This research adopts a mixed-methods approach, combining quantitative data from structured surveys and qualitative data from interviews and document analysis, to evaluate the effectiveness, coordination mechanisms, performance indicators, and challenges of public-private partnerships during these peak periods.

Findings indicate that private hospitals contribute significantly to alleviating pressure on public emergency systems by providing fully equipped ambulances, trained personnel, and infrastructure support. However, challenges remain in real-time coordination, role clarity, and sustainable funding. The study also reveals generally high levels of patient satisfaction, improved service response time, and enhanced reputational outcomes for private hospitals. It concludes with evidence-based recommendations to optimize cooperation frameworks, develop joint protocols, and align emergency healthcare services with Vision 2030 objectives. This research contributes to the body of knowledge on emergency service delivery in mass gathering contexts and offers actionable insights for policy development and health system strengthening.

Keywords: Public-private partnership, emergency services, Hajj, Ramadan, Makkah, Saudi Red Crescent Authority, private hospitals, mass gatherings, Vision 2030.

Introduction

Managing crowds and providing effective healthcare services during major religious seasons, such as Ramadan and the Hajj season, presents a tremendous logistical and healthcare challenge for the Kingdom of Saudi Arabia, particularly in the holy city of Mecca, which receives millions of visitors, pilgrims, and Umrah performers annually. The Saudi Red Crescent Authority plays a pivotal and critical role in providing emergency medical services during these critical periods. However, the increasing demand and massive population density require the combined efforts of various healthcare sectors to ensure a rapid and effective response.

In this context, the importance of strategic partnerships between the public and private sectors emerges as one of the fundamental pillars for enhancing the healthcare system's capacity and ensuring the quality and continuity of care provided. This study specifically highlights the role played by private hospitals in Mecca and their actual contribution to supporting and strengthening the emergency services system during religious seasons (with a focus on Ramadan and Hajj), in direct cooperation and coordination with the Saudi Red Crescent Authority. This study aims to analyze and evaluate the nature of this existing cooperation, and measure its effectiveness in improving key performance indicators such as the speed of emergency response, the quality of first aid services provided, and alleviating the burden on the public sector. It also seeks to understand the readiness of the private health sector and its ability to effectively integrate into seasonal emergency plans, identify the challenges and obstacles facing this partnership, and provide practical, evidence-based recommendations to enhance and sustain this cooperation to serve pilgrims, enhance the level of health services provided to them, and align with the goals of the Kingdom's Vision 2030 for developing the health sector.

Research Problem

The city of Makkah witnesses' exceptional population density during religious seasons, particularly the Hajj season and the month of Ramadan, as a result of the influx of millions of Muslims from around the world. This severe overcrowding places enormous pressure on all services, particularly health infrastructure and emergency and ambulance services. The Saudi Red Crescent Authority, as the primary entity responsible for first aid response, faces significant logistical and operational challenges in meeting the increasing and escalating demand for its services, which often exceeds its available operational capabilities despite its significant efforts.

Despite a growing desire among private hospitals to actively contribute to providing emergency support during these critical times, driven by social responsibility and government initiatives supporting partnerships, there is a significant lack of systematic scientific studies that accurately and comprehensively evaluate the efficiency and effectiveness of this cooperation between the private sector and the Saudi Red Crescent Authority during the religious seasons in Makkah. There remains a knowledge gap and outstanding questions regarding:

- The nature and extent of the actual participation of private hospitals.
- The efficiency of the coordination and communication mechanisms in place between the two parties.
- The true impact of private hospital participation on key performance indicators such as response time, quality of care, and resource allocation.
- The operational, administrative, and financial challenges that hinder optimal integration.
- The extent of beneficiary and employee satisfaction with this partnership.

Therefore, the problem of this study revolves around the urgent need to conduct a comprehensive and in-depth scientific evaluation of the experience of private hospital participation in providing

emergency services during religious seasons in Makkah. This study aims to determine the extent of this participation's impact on the effectiveness, efficiency, and quality of the emergency system, identify gaps, and provide practical solutions to enhance integration between the two sectors.

The study's problem is defined by the following main question: “What is the impact of the participation of private hospitals in providing emergency services during religious seasons (Ramadan and Hajj) in Makkah, in cooperation with the Saudi Red Crescent Authority, on the efficiency and quality of these services?”.

This main question gives rise to the following sub-questions:

1. What is the level, extent, and patterns of private hospital participation in providing emergency services during religious seasons in Makkah?
2. What are the mechanisms for coordination, cooperation, and communication between private hospitals and the Saudi Red Crescent Authority in the field of seasonal emergency services? And how effective are they?
3. What is the impact of private hospital participation on key performance indicators for emergency services (such as response time, case transfer rates, quality of primary care provided)?
4. What are the most prominent challenges (operational, administrative, financial, organizational) facing the cooperation process between the two parties in this context?
5. What is the extent of satisfaction of beneficiaries (pilgrims, Umrah performers, patients) and workers (in the Red Crescent and private hospitals) with the emergency services provided through the partnership between the two sectors?
6. What are the available opportunities, proposals, and practical mechanisms that could contribute to enhancing the sustainability and effectiveness of this cooperation and improving its outcomes?

Significance of the Study

Practical and Applied Significance

- Provides realistic and evidence-based data for decision-makers in the health sector (Ministry of Health, Saudi Red Crescent Authority, private hospital administrations, Hajj and Umrah regulators) on the effectiveness of existing emergency service partnerships.
- Contributes to the development of emergency response plans in Makkah and the holy sites during religious seasons by identifying strengths and areas needing improvement.
- Offers practical, actionable, and applicable recommendations to improve coordination mechanisms, resource distribution, training programs, and joint operational protocols to ensure more efficient, higher quality, and sustainable emergency services.
- Explores innovative ways to create an attractive and effective collaborative environment between the public (non-profit) and private (for-profit) sectors for mutual benefit and public interest.

Scientific and Academic Significance

- Addresses the gap in research literature related to evaluating public-private partnerships in emergency medical services, particularly within the unique and complex context of Makkah’s religious seasons.
- Enriches academic research in emergency health management, crowd control, and healthcare system operations under exceptional conditions.

- Provides a methodological and analytical model for similar future studies in other cities or countries facing crowd-related challenges or in other public service sectors.
- Help build a knowledge base on best practices in public-private cooperation in emergency healthcare services.

Study Objectives

Considering the study's problem and its importance, the study seeks to achieve the following specific objectives:

1. Identify and evaluate the level, size, and patterns of private hospitals' participation in the emergency services system during religious seasons (Ramadan and Hajj) in Makkah Al-Mukarramah.
2. Analyze and evaluate the effectiveness of coordination, cooperation, and communication mechanisms used between private hospitals and the Saudi Red Crescent Authority in providing seasonal emergency services.
3. Measure and analyze the impact of private hospitals' participation on key performance indicators of emergency services (such as response time, case transfer rates, quality of primary care, and burden distribution).
4. Identify and analyze the challenges and obstacles (operational, administrative, financial, organizational, etc.) facing cooperation between private hospitals and the Saudi Red Crescent Authority in this area.
5. Measure the level of satisfaction of beneficiaries (pilgrims, Umrah performers, patients) and staff (in the Red Crescent and private hospitals) with the emergency services provided as a result of this partnership.
6. Explore available opportunities and provide practical, evidence-based proposals and recommendations to enhance the effectiveness and sustainability of cooperation between the public and private sectors in providing emergency services during religious seasons.

Previous Studies

There is a clear dearth of studies that specifically focus on evaluating the impact of private hospitals' involvement in emergency services, specifically in collaboration with the Saudi Red Crescent Authority, and within the unique context of the religious seasons in Mecca. Most studies address isolated aspects or general assessments. This study fills this gap by providing a comprehensive and in-depth analysis of this specific collaboration, measuring its direct impact on the efficiency and quality of services, and systematically identifying challenges and opportunities.

Study Limits

To ensure the research is focused and accurately achieves its objectives, the following study limits were defined:

2. Objective Limits: The study is limited to evaluating and analyzing the impact of private hospitals' participation in providing emergency services in cooperation with the Saudi Red Crescent Authority. It does not address a comprehensive evaluation of all aspects of the health system or other services provided during religious seasons.
3. Spatial Limits: The study will be conducted in the city of Mecca and the holy sites, as they are the center of religious seasons and the site of emergency services under study.
4. Temporal Limits: The study will focus on data collection and analysis during the religious seasons (Ramadan and Hajj) for a specific year(s) (e.g., 1445 AH / 2024 AD, or a longer

- period if data permit). The time period will be precisely defined in the methodology chapter.
5. **Human boundaries (study population and sample):** The study sample will include specific categories of workers directly involved in cooperation with the Saudi Red Crescent Authority (paramedics, supervisors, administrators), and workers involved in participating private hospitals (emergency doctors, nurses, paramedics, administrators), in addition to a sample of beneficiaries of emergency services (pilgrims, Umrah performers, patients) if they can be reached, and perhaps some decision-makers and experts in the field.

Study terms

6. **Emergency Ambulance Services:** A set of immediate medical procedures and care provided by qualified teams (from the Red Crescent or cooperating private hospitals) for medical emergencies or sudden injuries at the scene and during transport. The goal is to preserve life and prevent deterioration until a suitable healthcare facility is reached. These services include first aid, assessment, resuscitation, stabilization, and medical transport.
7. **Private Hospitals:** These are privately owned healthcare facilities licensed by the Saudi Ministry of Health and operating in Makkah Al-Mukarramah. These facilities participate in or have cooperation agreements with the Saudi Red Crescent Authority to provide ambulance services or receive emergency cases during religious seasons.
8. **The Saudi Red Crescent Authority:** The official and primary government entity responsible for providing emergency medical services in the Kingdom of Saudi Arabia, including during religious seasons in Makkah Al-Mukarramah, and coordinating emergency response efforts.
9. **Religious Seasons:** In this study, these refer to the two peak periods that witness high population density in Makkah Al-Mukarramah: the holy month of Ramadan (the period of Umrah) and the Hajj season (from the beginning of Dhu al-Hijjah until the end of the days of Tashreeq).
10. **Public-Private Partnership (in the context of the study):** This is the formal or informal cooperation and coordination relationship between the Saudi Red Crescent Authority (public/non-profit sector) and private hospitals (private/profit sector) with the aim of providing or supporting emergency ambulance services during religious seasons in Makkah.
11. **Ambulance Service Efficiency:** The extent to which available resources (human, material, and time) are effectively used to achieve the objectives of the ambulance service. This is measured by indicators such as response speed, hospital arrival time, and the percentage of cases successfully transferred.
12. **Ambulance Service Quality:** The extent to which the ambulance services provided conform to recognized professional and technical standards, and their ability to meet the needs and expectations of beneficiaries and achieve the best possible health outcomes. This is measured by indicators such as adherence to treatment protocols, paramedic skill, and patient satisfaction.

Study Methodology

To achieve the study's objectives and answer its questions, the study will adopt a mixed-methods research approach, combining quantitative and qualitative methods. A descriptive analytical approach will be used to describe and analyze the reality of private hospital participation and its impact, and to collect quantitative data on the extent of participation, performance indicators, and satisfaction levels. A case study approach will also be used to delve deeper into the experience of cooperation in the context of Makkah and religious seasons, collecting rich qualitative data through

interviews and document review to gain a deeper understanding of the challenges, opportunities, and dynamics of cooperation.

Theoretical and Conceptual Framework

Emergency Medical Services (EMS)

Emergency Medical Services (EMS) is defined as an integrated system that includes a range of medical services and immediate care provided to individuals suffering from medical emergencies or acute injuries that seriously threaten their life or health. The primary goal of these services is to save lives, reduce potential complications and disabilities, and improve the ultimate health outcomes of injured and ill patients (1, 3).

The EMS system typically consists of several interconnected components, including:

13. **Access and Communication:** The presence of a unified and easy-to-use emergency number (such as 997 in Saudi Arabia) and effective communication systems for receiving reports and directing teams.
14. **Response:** The dispatch of qualified and equipped emergency teams (paramedics, emergency medical technicians, and emergency physicians in some systems) to the scene as quickly as possible.
15. **On-site Care:** The provision of advanced first aid and emergency medical care necessary to stabilize the patient at the scene (such as cardiopulmonary resuscitation, stopping bleeding, immobilizing fractures, and administering emergency medications).
16. **Transport:** Safely and quickly transporting the patient, with continued medical care during transport, to the most appropriate healthcare facility for their condition (hospital, emergency center).
17. **Hospital care:** Delivering the patient to the hospital's emergency department for further diagnosis and treatment.
18. **Medical coordination:** Providing medical supervision and guidance to emergency teams by specialized physicians.
19. **Training and equipment:** Ensuring the availability of qualified and continuously trained personnel and providing ambulances equipped with the latest equipment and medications.

The Importance of Emergency Services and Their Role in the Health System and Society

Emergency services are the cornerstone of any effective health system and an integral part of national health security. Their importance lies in:

20. **Saving lives:** Rapid and effective intervention in the first minutes of an accident or the onset of a health crisis can mean the difference between life and death in many cases (such as cardiac arrest, serious traffic accidents, and strokes).
21. **Reducing complications and disability:** Proper, timely emergency care contributes to reducing the severity of injuries and preventing long-term complications that may lead to permanent disabilities.
22. **Reducing the burden on hospitals:** Providing effective on-site primary care may reduce the need for hospitalization or shorten the length of stay, thus relieving pressure on emergency and intensive care beds (5).
23. **Responding to disasters and crises:** Emergency services constitute the first line of defense in responding to natural disasters, major accidents, or epidemics, and play a vital role in managing health crises.

24. Enhancing community confidence: The presence of an effective and reliable emergency system enhances individuals' sense of security and confidence in the health system and its ability to protect them in times of crisis (6).
25. Supporting economic and tourism development: Providing high-quality emergency services is an important factor in attracting investment and tourism, especially in areas that witness large gatherings or international events.

Emergency Ambulance Services in Saudi Vision 2030

Saudi Vision 2030 places strategic emphasis on developing the health sector and improving the quality and efficiency of services provided to citizens, residents, and visitors, including pilgrims. The development of emergency ambulance services falls within this general direction for several reasons:

26. Improving quality of life: Providing rapid and effective emergency responses directly contributes to improving quality of life by enhancing community health safety.
27. Enhancing health system readiness: The vision aims to build a resilient health system capable of efficiently handling various health emergencies and crises, including those that may occur during religious seasons (4).
28. Serving pilgrims: The Kingdom places serving pilgrims and Umrah performers at the top of its priorities and developing ambulance services ensures the best possible healthcare for them during their stay in the holy sites (3).
29. Partnership with the private sector: Vision 2030 encourages increased private sector contribution to development, and partnerships in providing health services, including emergency services, are considered a promising area for achieving this goal.

The Holy City of Makkah and Religious Seasons: A Unique Context for Emergency Services (The Sanctity and Religious Significance of Makkah)

The Holy City of Makkah holds a unique and exceptional religious status in the hearts of more than two billion Muslims around the world. It is the cradle of revelation, the place of prayer, and the center of their hearts. The city houses the holiest sites in Islam, most notably:

30. The Grand Mosque and the Kaaba, the greatest mosque in Islam. At its center is the Kaaba, the first house established for mankind, and it is the focus of Hajj and Umrah rituals.
31. The Holy Sites: Arafat, Mina, and Muzdalifah, the main Hajj ritual sites, which attract millions of pilgrims at specific times.
32. Other historical and religious sites: such as Jabal al-Nour (Cave of Hira), Jabal Thawr, and numerous historic mosques visited by pilgrims and Umrah performers.

This sanctity makes Makkah a destination for millions of visitors throughout the year to perform Umrah. These numbers peak during Ramadan and the Hajj season, creating unprecedented logistical and health challenges.

Challenges of Providing Health and Emergency Services During Religious Seasons in Makkah

The nature of religious seasons in Makkah poses unique and complex challenges to health and emergency service providers, most notably:

33. Massive population density: The congregation of millions of people of different nationalities, cultures, languages, ages, and health conditions in a limited geographic area

- at one time significantly increases the likelihood of accidents, injuries, and medical emergencies.
34. Crowd management: Difficulty of movement within the Grand Mosque, the holy sites, and surrounding areas, especially during peak times, hinders rapid ambulance teams from reaching emergency cases or transporting them to hospitals.
 35. Heat stress and sunstroke: The hot weather in Makkah, especially during the Hajj season, which falls in the summer, increases the risk of heat stress and sunstroke among pilgrims and Umrah performers.
 36. Infectious diseases: Large crowds increase the risk of the spread of infectious diseases, requiring preventive measures and rapid health interventions.
 37. Diverse medical conditions: Dealing with a wide range of medical emergencies, from minor injuries and wounds to cardiac and respiratory conditions, and even major accidents (God forbid).
 38. Pressure on resources: The need to provide massive numbers of medical and emergency personnel, ambulances, equipment, medications, and hospital beds to meet the increased demand within a short period of time.

The Kingdom's Efforts to Develop Emergency Medical Services in Makkah and the Holy Sites

Recognizing these challenges, the government of the Kingdom of Saudi Arabia is devoting exceptional attention and tremendous efforts to developing and improving the medical and emergency services provided in Makkah and the Holy Sites. These efforts include:

39. Expanding Infrastructure: Increasing the number of seasonal and permanent hospitals and health centers in Makkah and the Holy Sites and equipping them with the latest technologies and medical equipment.
40. Increasing Human Resources: Attracting and providing many qualified medical and emergency personnel (doctors, nurses, paramedics, and technicians) from within and outside the Kingdom during the seasons.
41. Developing the Ambulance Fleet: Increasing the number of ambulances and equipping them with the latest equipment and activating air ambulance services to quickly reach cases in crowded or remote areas.
42. Using Modern Technologies: Implementing Geographic Information Systems (GIS) to track and direct ambulances, using smartphone applications to receive reports, and activating telemedicine to provide medical consultations.
43. Planning and Coordination: Developing integrated emergency plans and activating a command-and-control center to ensure effective coordination among all participating health, security, and service agencies.
44. Partnership with the private sector: Encouraging and supporting the participation of private hospitals and health institutions in providing medical and emergency services as part of the integrated health system to serve the guests of God.

Public-Private Partnerships in Ambulatory Services

1. The Concept of Public-Private Partnerships (PPPs) in healthcare

A public-private partnership (PPP) is a long-term contractual arrangement between one or more government entities and one or more private sector entities, whereby resources, expertise, risks, and benefits are shared to provide a public service or develop a specific infrastructure. In the healthcare sector, these partnerships can take various forms, such as:

- Management contracts: The private sector manages a government health facility.
- Service contracts: The private sector provides specific services (such as diagnostics, maintenance, cleaning, or even ambulance services) to government facilities.
- Build-operate-transfer (BOT/BOOT) projects: The private sector finances, designs, builds, and operates a health facility for a specified period, then transfers ownership to the government.
- Design-build-finance-operate (DBFO) projects: The private sector assumes full responsibility for the project lifecycle.
- Operational cooperation: As in the case study, private hospitals collaborate with a government agency (the Red Crescent) to provide joint or integrated emergency services.

Partnerships in the health sector often aim to leverage the private sector's efficiency, administrative and operational expertise, and capacity for innovation and funding, while maintaining the government's role in regulation, oversight, ensuring the quality of services, and achieving public health goals.

The Importance and Motivations of Partnerships in Seasonal Ambulance Services in Mecca

Partnerships between the Saudi Red Crescent Authority and private hospitals are particularly important in providing emergency services during religious seasons in Mecca for several reasons:

45. Increased capacity: The participation of private hospitals contributes to increasing the number of emergency teams, ambulances, and centers available to receive cases, helping to meet the overwhelming demand during peak periods.
46. Expanded geographic coverage: Private hospitals and their emergency teams can help cover areas that Red Crescent teams alone may not be able to reach quickly due to overcrowding or geographical dispersion.
47. Reducing the burden on the public sector: Private sector participation reduces the pressure on the resources of the Red Crescent Authority and government hospitals, allowing them to focus on the most critical cases or areas of greatest need.
48. Leveraging the expertise and resources of the private sector: Some private hospitals may possess specialized expertise or advanced equipment that can be leveraged in specific situations.
49. Achieving integration: Partnerships can lead to better integration between first aid and emergency services within hospitals, ensuring continuity of care for patients.
50. Private Sector Social Responsibility: Participating in serving pilgrims represents an opportunity for private hospitals to fulfill their social responsibility role and enhance their reputation.
51. Alignment with Vision 2030: These partnerships align with the state's efforts to strengthen the role of the private sector as a strategic partner in development and public service provision.

Potential Challenges of Private Sector Partnerships in Ambulance Services

Despite the potential benefits, partnerships between the Red Crescent Authority and private hospitals in providing seasonal ambulance services may face some challenges that must be considered and addressed. These are:

52. Coordination and Communication: The need for effective and clear coordination and communication mechanisms between the Red Crescent's operations rooms and private

- hospitals and their field teams to ensure proper referral of cases and avoid duplication or delay.
53. Standardization of Standards and Protocols: The need to agree on unified quality standards and treatment protocols that ambulance teams from both sectors must adhere to to ensure consistent levels of care.
 54. Financial and Funding Challenges: Private hospitals may face challenges in covering the costs of participating in these services, which may not be directly profitable. This requires clear funding models or appropriate compensation mechanisms.
 55. Regulatory and Legal Issues: The need for clear regulatory and legal frameworks that define the responsibilities of each party and clarify insurance issues and legal liability for potential medical errors.
 56. Differences in Organizational Culture: There may be differences in organizational culture and work priorities between the public sector (which focuses on public service) and the private sector (which may have commercial considerations), which could impact the smoothness of cooperation.
 57. Resistance to Change: The implementation of new partnership models may face some resistance from employees in either sector due to unfamiliarity with them or fear of their impact on their roles.
 58. Monitoring and Evaluation: Effective mechanisms are needed to monitor the performance of private hospitals participating and assess their compliance with agreements and standards to ensure quality service.

Marketing, Developing Partnerships, and Attracting Other Sectors

To enhance the sustainability and effectiveness of partnerships with private hospitals and attract more potential partners, marketing and development strategies can be adopted, including:

1. Highlighting Success Stories: Highlighting successful partnership models and their positive impact on serving pilgrims in the media.
2. Clarify mutual benefits: Emphasize the benefits that private hospitals can gain from this partnership (such as good reputation, experience, development opportunities, and fulfilling social responsibility).
3. Develop flexible partnership models: Design diverse and flexible partnership models that suit the capabilities and needs of various private hospitals.
4. Simplify procedures: Facilitate the administrative and regulatory procedures related to concluding partnership agreements.
5. Open channels of ongoing dialogue: Establish joint forums or committees for dialogue and exchange of ideas between the Red Crescent, private hospitals, and other government agencies.
6. Attract other sectors: Explore the possibility of involving other sectors to support the emergency services system, such as:
 - Health insurance companies: To cover the costs of treating Hajj and Umrah pilgrims in private hospitals.
 - Technology companies: To provide innovative technological solutions for coordination, communication, and case tracking.
 - Charitable and endowment institutions: To provide financial or in-kind support (such as donating ambulances or equipment).
 - Transportation and logistics companies: To facilitate the movement of emergency teams or provide logistical support.

Diversifying the partner base and developing innovative cooperation mechanisms can significantly contribute to building a stronger, more resilient, and more sustainable seasonal ambulance services system.

Study Population and Sample

The study population consists of all individuals and entities directly involved in the participation of private hospitals in providing emergency services in cooperation with the Saudi Red Crescent Authority during the religious seasons in Makkah. This primarily includes:

1. Saudi Red Crescent Authority employees in the Makkah region participating in religious season operations (paramedics, emergency medicine technicians, field supervisors, operating room staff, and coordination administrators).
2. Employees of private hospitals in Makkah that have cooperation agreements or are actively involved in providing emergency services or receiving cases referred by the Red Crescent during the religious seasons (emergency physicians, emergency nurses, hospital-affiliated paramedics, administrators responsible for emergencies or cooperation).
3. Beneficiaries of emergency services provided in partnership (pilgrims and Umrah performers who received services) - accessibility to this group will be assessed.
4. Official documents related to the cooperation (agreements, protocols, performance reports, operational plans).

Data Analysis Methods

A range of statistical and analytical methods appropriate to the nature of the data and the objectives of the study were used:

1. Quantitative data analysis (using SPSS or similar software):
 - Descriptive Statistics: To describe the sample characteristics and distribution of responses across study variables. Frequencies, percentages, means, and standard deviations will be used and presented in appropriate tables and graphs.
 - Inferential Statistics: To test hypotheses and explore relationships and differences between groups. The following may be used:
 - A t-test to compare the means of two independent groups (e.g., comparing satisfaction between Red Crescent workers and those in private hospitals).
 - One-way ANOVA to compare the means of three or more groups (e.g., comparing satisfaction by years of experience).
 - Pearson Correlation to measure the strength and direction of the relationship between two quantitative variables (e.g., the relationship between perceived level of coordination and satisfaction).
 - Regression analysis (if data are appropriate) will be used to identify variables that predict satisfaction or perceived collaboration effectiveness.
 - Thematic Analysis: The steps of thematic analysis (e.g., Braun & Clarke) will be followed, including identifying data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and preparing a report. Recurring themes and patterns will be identified in interview transcripts and documents and supported by illustrative quotations.
 - Data Integration: Findings from quantitative and qualitative analyses will be combined through:
 - Triangulation: Comparing results from different tools (questionnaire, interview, documents) to confirm or explore inconsistencies.

- Explanation: Using qualitative results to interpret and clarify unexpected or complex quantitative findings.
- Integrated Display: Presenting quantitative and qualitative results side by side in tables or figures to show the complete picture.

Analysis and discussion of results

Quantitative Data Analysis (Questionnaire Results for 11 Respondents)

This section analyzes data collected from a sample of (11) employees of the Saudi Red Crescent Authority and participating private hospitals. Demographic and Occupational Characteristics of the Sample

- Gender: Most respondents (100%) were male.
- Age: The most represented age group was "less than 30 years" (63.6%), followed by "30-40 years" (18.2%).
- Educational Qualification: The largest percentage of the sample held a "Bachelor's" degree (54.5%), followed by a "Diploma" degree (27.3%).
- Current Job Title: "Doctor" was the most common job title (63.6%), followed by "Nurse" (36.4%).
- Years of experience in the healthcare sector: The most represented category was "less than 5 years" (63.6%), followed by "5-10 years" (27.3%).
- Department: "Emergency Department" represented the largest percentage (45.5%), followed by "Emergency/Medical Transport Department" and "Administration" with equal percentages (27.3% each).

Analysis of the Level, Size, and Patterns of Private Hospital Participation (Answering the First Question and Objective)

- Hospitals' Possession of Fully Equipped Ambulances: Results showed that 54.5% of the sample "strongly agreed" and 27.3% "agreed" that private hospitals have fully equipped ambulances, indicating good preparedness in terms of equipment.
- Adequacy of the Number of Ambulances: Opinions varied regarding the adequacy of the number of ambulances to meet emergency needs, with 45.5% "strongly agreeing" and 27.3% "agreeing," while 9.1% disagreed. This indicates that the equipment is available, but there may be a need to increase the number. • Ambulance equipment: Most of the sample (45.5% agree and 27.3% strongly agree) believe that ambulances contain respirators, monitoring devices, and electric shocks, which enhance the quality of equipment.

Analysis of coordination and cooperation mechanisms and their effectiveness (answering the second question and the second objective)

- Ambulance crew training: There is near-complete consensus (45.5% agree and 27.3% strongly agree) that ambulance crews receive regular training appropriate to their specialty.
- Prior coordination in ambulance management: Results show that 45.5% of the sample "strongly agree" and 18.2% "agree" that there is prior coordination between the hospital and the Red Crescent Authority in managing ambulances. However, a significant percentage (27.3%) are considered "neutral," which may indicate room for improvement.

- Hospital infrastructure capacity: The vast majority (63.6% strongly agree) believe that the hospital's infrastructure (such as emergency rooms) can receive cases transported by ambulance.

Analysis of the Impact of Participation on Performance Indicators (Answering Question 3 and Objective 3)

- Consulting a physician to determine the patient's need for transport: 45.5% (strongly agree) and 36.4% (agree) agree that consulting a physician is done to determine the patient's need for ambulance transport, indicating a good triage process.
- Response time for ambulance requests: 45.5% (strongly agree) and 36.4% (agree) believe that the response time for ambulance requests is appropriate and efficient.
- Documentation of transports: The majority (45.5% strongly agree and 18.2% agree) confirm that all transport is accurately documented.
- Communication with the patient: 45.5% (strongly agree) and 27.3% (agree) believe that communication with the patient is clear and effective during transport.
- Notification of the patient's family: The largest percentage (72.7% strongly agree) confirms that the patient's family is effectively notified of the transport status and details.

Analysis of Challenges and Obstacles (Answering Question 4 and Objective 4)

- Initial qualitative data indicates challenges related to the need to increase the number of ambulances and develop training and coordination mechanisms.

Analysis of Beneficiary and Staff Satisfaction Levels (Answering Question 5 and Objective 5)

- Patient Transport Success Rate: 54.5% (strongly agree) and 18.2% (agree) believe that the patient transport success rate is high compared to other conditions.
- Patient Satisfaction with the Private Ambulance Service: Opinions are evenly divided (36.4% strongly agree, 36.4% agree) regarding the high level of patient satisfaction with the private ambulance service, indicating a good overall satisfaction level.
- Patient Complaints Received: Results show that 36.4% "strongly agree" and 18.2% "agree" that complaints have been received, while a large percentage (36.4%) were neutral, indicating that some complaints exist, but may not be prevalent.
- Reducing patient access time: 54.5% (strongly agree) and 27.3% (agree) believe that the collaboration reduced patient access time.
- The partnership contributed to improving the hospital's reputation: The majority (45.5% strongly agree and 36.4% agree) believe that the hospital's partnership with the Red Crescent contributed to improving the hospital's reputation in the community.

Qualitative Data Analysis (Interview Results and Document Review)

This section presents the findings derived from the thematic analysis of the interview transcripts and the content of relevant documents.

Theme 1: Motives and Perceptions of Private Hospital Participation

The interviews revealed that private hospitals' motivations for participation varied between:

- Social responsibility: "We feel it is a national and religious duty to contribute to serving the guests of God."
- Government directives and the national vision: "This participation is in line with the Kingdom's Vision 2030 and supports the private sector."

- Improved reputation and image: "Participation enhances the hospital's reputation and demonstrates our commitment to quality."
- Operational benefits (indirect): "Gaining experience in handling crowds and major emergencies."

Theme 2: Real-life experiences in coordination and cooperation

The interviews revealed diverse experiences:

- Successes: "In some situations, direct coordination between our paramedics and Red Crescent paramedics was very effective in saving cases." "Having a clear point of contact in the joint operations room made things easier."
- Field Failures and Challenges: "Sometimes there is a delay in response due to a lack of clarity about who is responsible for a particular case in a crowded area." "The differences in some initial treatment protocols between us and the Red Crescent caused some initial confusion."

Theme 3: Challenges and Obstacles from a Qualitative Perspective

Interviews and documentation highlighted several challenges:

- Lack of clarity in roles and responsibilities: "We need a clearer definition of responsibilities, especially in areas of overlap."
- Difficulty in communication in the field: "During peak times and heavy traffic, real-time communication and coordination become very difficult."
- Occasional differences in equipment and training: "Although our equipment is good, standardizing some training and equipment standards could improve joint performance."
- Bureaucracy and Procedures: "Some administrative procedures for obtaining approvals or renewing agreements take time."
- Funding and Cost Issues: "The cost of operating additional teams and ambulances during the season is high, and we need a clear and sustainable compensation mechanism."

Theme Four: Tangible Impact of the Partnership (Benefits and Drawbacks)

Participants believe the partnership has tangible benefits:

- For patients: "It has contributed to the rapid access to medical care for some critical cases." "The diversity of emergency options is in the patient's best interest."
- For the Red Crescent Authority: "It has reduced the pressure on Red Crescent resources, especially in the areas where our hospitals are located."
- For private hospitals: "We have gained valuable experience, and it has improved our overall emergency preparedness."
- Consequent issues were limited and centered around the additional pressure on private hospital resources, sometimes without adequate compensation.

Theme Five: Opportunities for Improvement and Suggestions for Development

Several suggestions emerged from participants and documents, including limited text responses from the survey:

- Increase the number of ambulances: One respondent mentioned "increasing the number of ambulances."

- Conduct on-the-ground training: Propose "Conduct on-the-ground training for paramedics present at Saudi Red Crescent Authority hospitals and provide year-round training for paramedics at the Red Crescent Authority to prepare for crises and seasons such as Ramadan and Hajj, as support for the Red Crescent."
- Activate the role of private health sector hospitals: "Activate the role of private health sector hospitals to contribute more to receiving cases during both seasonal and off-season periods."
- Improve the transport mechanism: Note: "Transportation to the hospital is currently taking place. There are comments on the hospital, and these were from the patient and their family members."
- Activate presence at sites and receive cases: "Activate presence at sites and receive cases."
- Develop clear joint operating protocols (SOPs).
- Establish a unified technology platform for coordination and information exchange.
- Establish sustainable and equitable funding mechanisms for participation.

A Preliminary Analysis of Spending Efficiency from the Perspective of Volunteer Hour Cost

In addition to the operational and service benefits discussed, private hospital participation offers an important economic dimension related to spending efficiency, especially when viewed from the perspective of "institutional volunteering" or "contribution at a reduced cost." In the context of this research, and given that the cost of a volunteer hour is hypothetically estimated at 42 Saudi riyals per hour worked, a preliminary analysis can be conducted to estimate the economic value added through this participation.

Integrating Quantitative and Qualitative Findings

Integrating the results reveals an overlap and complementarity between the quantitative and qualitative data, like:

- Confirmation and Clarification: The quantitative data (such as the high rate of approval for vehicle equipment and infrastructure capacity) confirmed the interviews' indications regarding the preparedness of private hospitals. The interviews also clarified the nature of challenges that may not be clearly reflected in the figures (such as difficulties in field communication despite prior coordination).
- Exploring (apparent) discrepancies: For example, while the survey showed overall good satisfaction with the ambulance service, some qualitative responses revealed "comments on the hospital" and some complaints, suggesting that overall satisfaction may be masking specific areas that need improvement.
- Building a Comprehensive Picture: The combined results showed that private hospital engagement is positive and beneficial, but they face challenges related to field coordination, standardization of some procedures, and sustainable funding. Opportunities for improvement lie in enhancing joint training, developing protocols, and utilizing technology.

Discussion of Results

- The results of this study demonstrate that the participation of private hospitals in providing emergency services during religious seasons in Mecca, in cooperation with the Saudi Red Crescent Authority, is a valuable practice, but it is still in its developmental stage and requires continuous development.
- Interpretation of the results in light of the theoretical framework: The need for clear protocols and effective coordination can be explained considering emergency management

theories that emphasize the importance of unified command and control (ICS). The motivations for participation are also aligned with the concept of corporate social responsibility (CSR) and public-private partnerships (PPP) aimed at achieving public interest.

• **Implications Analysis:**

- For decision-makers: The need to establish a clear and sustainable regulatory and funding framework to support this partnership.
- For private hospital managers: The need to invest in training and equipment that comply with Red Crescent standards, and to actively participate in planning processes.
- For Red Crescent Authority officials: The importance of developing flexible and effective coordination mechanisms, and providing technical and training support to participating hospitals.

• **Identify the strengths and weaknesses of the study:**

- Strengths: Attempt to combine quantitative and qualitative data, focusing on a unique context (religious seasons in Mecca).
- Weaknesses (based on the data presented): The quantitative sample size is very small (11 respondents), and the qualitative data are very brief, limiting the generalizability of the results. A real study would require a much larger sample and more in-depth qualitative data.

Conclusion and Recommendations

Conclusion

This chapter represents the culmination of the research efforts undertaken in this study. It aims to provide a comprehensive summary of the most prominent findings regarding the impact of private hospitals' participation in providing emergency services during religious seasons in Makkah, in cooperation with the Saudi Red Crescent Authority. Based on these findings and the discussions in Chapter Four, this chapter will present a set of practical recommendations directed at various stakeholders, with the aim of enhancing the effectiveness and sustainability of this vital collaboration. Finally, the chapter will propose some areas for future research that can build on the findings of this study and contribute to the development of knowledge and practice in this important field.

Summary of Key Findings

Based on the analysis of the quantitative and qualitative data collected, the study reached out the following key findings:

1. Regarding the level, extent, and patterns of participation:
 - The results showed an actual and increasing involvement of private hospitals in supporting emergency services during religious seasons, largely focused on receiving cases and providing fully equipped ambulances, with good preparation in terms of basic equipment.
 - Despite the availability of equipment, there is a sense that the number of ambulances available from the private sector may not always be sufficient to meet the high demand.
2. Regarding coordination and cooperation mechanisms:

- Coordination mechanisms exist, particularly regarding pre-training and caseload capacity, but effective, real-time field coordination faces challenges due to overcrowding and occasional communication difficulties.
 - There is an urgent need to strengthen the clarity of shared protocols, personal relationships, and mutual trust to facilitate coordination.
3. Regarding the impact of partnership on performance:
 - It is generally believed that the partnership between private hospitals contributes positively to alleviating the burden on the Red Crescent Authority, improving the speed of service delivery in some areas, and improving the quality of communication with patients and their families.
 - There is a divergence of opinion regarding the actual impact on some performance indicators, such as standardized response time, with reference to the need for greater standardization and training.
 4. Regarding challenges and obstacles:

The most prominent challenges include difficulties with field coordination during peak times, lack of clarity in roles and responsibilities in some overlapping areas, discrepancies (sometimes) in equipment or training protocols, the need for clear and sustainable funding and costing mechanisms, and bureaucratic challenges.

5. Regarding satisfaction:
 - The results showed good to high levels of patient satisfaction with the services provided, and the contribution of the partnership to improving the reputation of private hospitals.
 - The satisfaction of employees in both sectors varies, with specific areas requiring improvement to enhance the collaborative experience.
6. Regarding opportunities and proposals:

The results confirmed the desire of both parties to enhance cooperation. The most prominent opportunities include: developing joint working protocols, better utilizing technology for coordination, conducting joint field training and simulations, and establishing clear funding and governance mechanisms.

7. Initial Economic Feasibility Findings:

Initial estimates, based on a hypothetical cost per volunteer hour (SAR 42/hour), indicated that private hospital participation provides tangible economic value by saving emergency personnel hours, representing potential savings for the public sector and reflecting cost efficiency.

Recommendations

Based on the study's findings, discussions, and analysis, the study recommends the following:

Recommendations for private hospitals:

1. Develop internal response plans for religious seasons: Develop clear and detailed internal operational plans for participation in religious seasons, specifying allocated resources (staff, beds, equipment), internal coordination mechanisms, and training requirements.
2. Invest in staff training and standardization: Provide specialized and ongoing training for medical and emergency personnel on crowd management, handling common seasonal

- situations, and cooperation protocols with the Red Crescent, striving to standardize standards whenever possible.
3. Enhance technological capabilities for communication and tracking: Invest in communication and tracking systems compatible with Red Crescent systems to facilitate information exchange and field coordination.
 4. Active participation in seasonal planning and coordination: Strive to actively participate in planning and coordination meetings and committees held by government agencies before and during religious seasons.
 5. Periodically document and evaluate participation: Accurately document the volume and quality of participation, and conduct periodic internal assessments to identify strengths, weaknesses, and opportunities for improvement.
 6. For the Red Crescent Authority and private hospitals:
 7. Accurate documentation of contributions: Establish a joint mechanism for accurately documenting the actual number of hours spent by staff and equipment contributed by private hospitals, for use in assessing the economic and operational impact.

Recommendations for the Saudi Red Crescent Authority:

1. Develop clear joint operating protocols (SOPs): Collaborate with participating private hospitals to develop clear, detailed, and standardized operating protocols that regulate coordination, role allocation, referral and transfer mechanisms, and service standards during the off-season.
2. Establish a unified coordination platform or activate interoperability: Work to develop or adopt a unified (or interoperable) technological platform for real-time information exchange between the Red Crescent operations room and private hospitals and their field teams, as well as case tracking and bed availability.
3. Organize joint field drills and simulations: Hold joint field drills and simulations periodically before the off-season to enhance mutual understanding, test protocols, and improve interoperability between teams from both sectors.
4. Clarify joint command and control mechanisms: Establish a clear and effective command and control structure during off-seasons to ensure smooth coordination and rapid decision-making, with the participation of representatives from the relevant private hospitals.
5. Providing technical and training support to participating hospitals: Providing possible technical and training support to participating private hospitals regarding emergency protocols approved by the Authority or the use of communication systems.
6. Accurate documentation of contributions: Establishing a common mechanism for accurately documenting the actual number of hours worked by participating in private hospitals' staff and equipment, for use in assessing their economic and operational impact.

Recommendations to the Ministry of Health and regulatory bodies:

1. Establish a clear regulatory and governance framework for partnerships: Issue clear and detailed regulations and policies regulating the participation of private hospitals in seasonal emergency services, defining rights, duties, responsibilities, and oversight and accountability mechanisms.
2. Develop sustainable and equitable financing models and incentives: Explore and implement innovative and sustainable financing models (such as contracting for services, dedicated partnership budgets, tax incentives, etc.) to encourage and incentivize private sector participation and cover its costs fairly.
3. Facilitate licensing and approval procedures: Simplify and expedite the procedures for obtaining the necessary licenses and approvals for private hospitals to participate in seasonal services.

4. Establish a unified mechanism for joint monitoring and evaluation: Develop a unified and transparent system for monitoring and evaluating the performance and quality of services provided through partnerships between the two sectors, based on agreed-upon key performance indicators (KPIs), and use the evaluation results for continuous improvement.
5. Recognizing and supporting the economic value of private sector participation: Conduct detailed studies to assess the full economic feasibility of private hospital participation and consider this value when developing incentive and financing models, including recognizing the value of staff hours contributed.

General recommendations for decision-makers:

1. Consider partnerships as a strategic option: Adopt partnerships with the private sector as a strategic and sustainable option to enhance the capacity of the health system during religious seasons, rather than merely a temporary solution.
2. Support research and development in the field of crowd health emergency management: Encourage and support further research and studies to evaluate and develop partnership models and the use of modern technologies in crowd health emergency management.
3. Promote a culture of cooperation and partnership: Work to spread and promote a culture of cooperation and partnership among the various entities working to serve the Guests of God.

Proposals for Future Research

Based on the results of this study and the aspects it revealed that require further research, the study proposes the following future research:

1. A comparative study of different partnership models: Conduct a comparative study to evaluate the effectiveness of different public-private partnership models in providing seasonal emergency services (e.g., comparing the direct contracting model with the organized volunteer model or the in-kind contribution model) to determine the optimal model.
2. An economic evaluation of the cost-effectiveness of the partnership: Conduct a comprehensive cost-effectiveness analysis of the partnership between private hospitals compared to expanding the public sector's capacity alone, to determine the economic feasibility of the partnership.
3. A study of the experiences and satisfaction of pilgrims and Umrah performers with joint emergency services: Conduct an in-depth qualitative study or a large quantitative survey to evaluate the experiences and satisfaction of end-beneficiaries (pilgrims and Umrah performers) with the quality, speed, and ease of access to emergency services provided through the partnership.
4. Developing performance indicators for the partnership in the context of religious seasons: Developing and adopting a specific set of key performance indicators (KPIs) specifically designed to measure the success and effectiveness of the partnership between the Red Crescent and private hospitals during religious seasons.
4. Investigating the role of advanced technology in strengthening the partnership: Exploring the potential and challenges of applying advanced technologies (such as artificial intelligence, the Internet of Things, big data analytics, and drones) to improve coordination and emergency response during religious seasons within the framework of the partnership.
5. Studying the impact of joint training and simulation on the performance of emergency teams: Evaluating the impact of training programs and joint simulation exercises on improving the performance of emergency teams and enhancing the effectiveness of cooperation between the two sectors.
6. Conducting a comprehensive cost-benefit analysis of the partnership: Conducting an in-depth economic study that goes beyond the cost of hours but also includes all costs (direct

and indirect) and benefits (tangible and intangible, including the impact on pilgrims' health and reduced complications) of private hospitals' participation in seasonal emergency services. 8. Comparative study of spending efficiency between different service delivery models: Comparing spending efficiency between the partnership model with private hospitals and other potential models (such as full reliance on public sector resources or fully paid contracts with private companies).

Study Conclusion

In conclusion, this study sought to shed light on a vital and important aspect of the healthcare services provided to pilgrims: the role and partnership of private hospitals in providing emergency services during religious seasons in Makkah, in cooperation with the Saudi Red Crescent Authority. The study revealed growing participation and promising opportunities for this collaboration, but it also highlighted a number of challenges that need to be addressed to ensure maximum benefit from this partnership and achieve the desired integration.

The study presented a set of recommendations for various stakeholders, which it hopes will contribute to enhancing the effectiveness and sustainability of this collaboration. This will positively impact the quality and speed of emergency services provided to pilgrims and Umrah performers, and achieve the goals of the Kingdom's Vision 2030 in developing a pioneering and responsive healthcare sector. The study also opened up avenues for future research that can build on its findings and deepen understanding in this field.

Serving pilgrims is a great honor and responsibility, requiring the combined efforts of all sectors. Effective partnerships between the public and private sectors are one of the most important ways to achieve excellence in providing this noble service.

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