Article

How Do the First Days Count? A Case Study of Qatar Experience in Emergency Risk Communication during the MERS-CoV Outbreak

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Abstract: This case study is the first to be developed in the Middle East region to describe the timeline of the Middle East Respiratory Syndrome (MERS) epidemic events in Qatar along with the features of the implemented Emergency Risk Communication (ERC) activities. It sought to describe how the performed ERC strategy particularly during the first days (then over the course of the following phases) of the outbreak might have contributed to the authorities' credibility, public trust, and outbreak control measures despite the overwhelming uncertainty. All of the relevant news stories during the period 24 Sep 2012 to 17 Mar 2014 were retrieved from a local daily, then were analyzed and interpreted before they were compiled and matched with the issued press releases, records of response activities and the public reactions along the course of the epidemic timeline. Despite the prevailing uncertainty, the health authorities' early preparedness to the epidemic and its commitment to a proactive and open ERC strategy since the first days of the outbreak favored the authorities' credibility and allowed for the quick initiation of the national response efforts during the course of the outbreak. However, there was some pitfalls as the print media reported some conflicting messages and paternalist approach during the early phases of the epidemic. Reliance solely on the print media is an acknowledged limitation to this study. Yet, it might be useful for emergency planners regarding what communication challenges to expect during the first days of a novel virus or similar threats.

Keywords: MERS; Emergency Risk Communication; Communication and Coordination; Qatar; Media Monitoring; Epidemic

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Authors' contribution:

- Mohamed Nour: has conceived and designed and the methodology of the paper; data collection and analysis, written the paper, and reviewed the final manuscript.
- Elmoubasher Farag: has participated in reviewing the paper design and methodology; data collection; and in reviewing the final manuscript.
- Hamad E. Al-Romaihi: has participated in reviewing the paper design and methodology; data collection; and in reviewing the final manuscript
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- Elena Savoia: has participated in reviewing the paper design and methodology, reviewing the final manuscript, and as a corresponding author.

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Introduction

In May 2013, World Health Organization (WHO) Director-General Margaret Chan warned that a novel coronavirus, Middle East Respiratory Syndrome Coronavirus (MERS-CoV), posed "a threat to the entire world" [1]. Since September 2012, WHO has received notification of 2,040 laboratory-confirmed cases of MERS-CoV, including 712 deaths, from 27 countries [2].

As MERS-Cov is a relatively newly discovered virus, uncertainty regarding its characteristics and treatment complicated the nature of the public health response to this outbreak [3]. Between 2012 and 2017, Qatar reported 19 MERS-CoV cases, including 7 deaths. The source of the infection appeared to be contact with domesticated camels, further complicating the response, as camel husbandry is a deeply rooted aspect of Qatari culture [4].

During emergency situations, the timely announcement by public health authorities of the first case of the disease and the following events is important to restore and maintain public trust throughout the emergency [5,6,7]. Without securing this trust, authorities jeopardize efforts of epidemic control including negative health, political, social and economic consequences [8]. Nonetheless, authorities tend to be hesitant to declare a situation with insufficient information and uncertainty about the evolving situation and the outcome of the recommended measures [5]. It is rather more complicated if the unfolding disease involves children, pets or threatens livelihoods and the social and political norms [9]. Moreover, it might expose organizational weaknesses in handling the outbreak [5]. The MERS-CoV epidemic was no exception to this rule, with the overwhelming uncertainty of the early days of handling a novel virus that was isolated from dromedary camels which not only deemed precious animal, but rather a business and a symbol for socioeconomic status.

This case study is the first to be developed in the Middle East region to provide a description of the key epidemic developments along with the features of the implemented ERC activities as portrayed in the local print media in an attempt to describe how the performed ERC strategy during the first days of the outbreak might have contributed to the authorities' credibility, public trust, and outbreak control measures. While this case study is believed to provide information on the critical role of the ERC particularly during the first phases of an unfamiliar threat where uncertainty prevails, we also think that it might be useful to emergency planners for developing scenarios regarding what communication challenges to expect during the first days of a novel virus or in similar situations. This case study should also be seen as an example of how practitioners involved in the response to an outbreak can engage in ERC evaluation efforts, such efforts are very much needed in public health emergency preparedness as recently pointed by several literature reviews [10,11,12,13] in this case the evaluation focuses mainly on process measures and can be considered as one of the potential ERC efforts to be performed during an emergency situation as outlined in a recently published evaluation model for ERC. [11].

Methods

We have chronologically tracked MERS-CoV related events and the practiced ERC activities over the course of three phases of the epidemic in Qatar (1st phase September 23rd – November 19th 2012; 2nd phase November 20th 2012 – August 19th 2013; 3rd phase August 20th 2013 – March 17th 2014) coupled with the relevant stories published in a major newspaper during the same time frame. Despite cases and deaths continued to be reported beyond the selected time frame, however, these

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three phases were chosen because: (1) they represented the very critical time over the course of the epidemic where overwhelming uncertainty prevailed, (2) they were characterized by intensity of communication activities and media attention that accompanied the emergence of cases and/or the ensued public health response, (3) each phase roughly resembled the curve of an epidemic lifecycle (pre epidemic, epidemic, and post epidemic), and (4) each phase contained new breakthroughs or significant events that caused remarkable turn in the course of the epidemic.

Our description is based on (1) data obtained from governmental documents and reporting of other MERS-CoV related events by regional and international agencies and (2) the relevant stories published in the local print media, namely Al-Raya Newspaper, the most read among the four Arabic dailies in Qatar based on circulation statistics.

The print media was chosen because it was the prime media outlet used by the SCH to publish updates on the epidemic and it was the form of media that massively covered the development of the epidemic (a total of 134 news stories were identified as follows: 108 news articles, 19 press releases, 3 press conferences and 2 interviews). As such, we believed that in Qatar the Al-Raya newspaper can be fairly reflective of the mainstream media. In Qatar narratives across the local newspapers are largely the same, particularly in publishing the official press releases, Al-Raya newspaper was leading daily in terms of readership compared to other newspapers. However, we also acknowledge that this study does not intend to report a comprehensive media content analysis that exhausts all types of media and compares narratives.

An electronic search was run for the word "corona" in the online archive of Al-Raya Newspaper to retrieve all relevant news stories. The extraction of news articles was performed by four research team members who independently reviewed each article and performed a content analysis of the selected news stories, comparing results, and discussing disagreements. These stories were then compiled and matched with the issued press releases, records of activities performed by the national response authorities and public reactions in addition to the "rumors" detected by the Governmental Health Communication Centre within the Supreme Council of Health (SCH), in Qatar through monitoring of news covered by the major newspapers.

Results

Pre-Epidemic Phase:

During the emergency preparedness planning phase, the SCH and the Animal Health Department (AHD) agreed to establish a joint leadership response to the MERS-CoV outbreak, including a unified communication approach. In Qatar, public health actions taken in emergency situations are based on the National Early Preparedness and Response (EPR) plan, guided by the International Health Regulations (IHR 2005). Qatar's EPR plan states that "*any verified public health event of national and/or international concern will transparently be announced.*" In keeping with this regulation, designated spokespersons were identified to be in charge of delivering messages to the public. The plan states that all messages need to be jointly approved by the SCH and AHD.

First Phase of the Epidemic (September 23rd to November 19th), 2012: The emergence of the first case as Hajj season was approaching

September 23rd 2012: On this date the first laboratory case of MERS-CoV in Qatar (Q1) was confirmed by UK health authorities [5]. A press conference was held the following day, September 24th, 2012, by the SCH's designated spokesperson, during which the case was confirmed. During the press conference, the SCH admitted the lack of knowledge on how to best clinically manage the case. While acknowledging the lack of clinical experience, emphasis was placed on the extensive efforts the medical team undertook in attempting to treat the patient. During the press conference, the SCH also emphasized that there was *"no need to panic,"* and explained that the surveillance system had been reinforced nationwide and was capable of identifying any similar cases. Simultaneously, Al-Raya Newspaper published a full report detailing what was known about the disease, as sourced from the WHO website.

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Public health officials at the SCH, including members of the EPR team, engaged in intensive consultations with WHO and the Health Protection Agency (HPA) in the United Kingdom (UK) over the three days following the first confirmed case. The primary purpose of these consultations was information sharing, including: providing updates on the clinical status of the patient, assessing the potential risk for the spread of the disease, and informing decisions regarding the national alertness level and appropriate disease control strategies, as based on a set of potential scenarios of how the outbreak could evolve.

Meanwhile, media interest was growing. The condition of the afflicted patient was making headlines on the front pages of local newspapers. Journalists established a direct communication channel with a relative of the patient and clinical updates were regularly published over the course of the week. The patient's relative expressed dissatisfaction with the medical care provided, and the family opted to transfer the patient to the UK. The patient's relative acknowledged that they had received support from the Emir, who covered the medical expenses abroad, and that the SCH was engaged in monitoring the patient's clinical status. Ultimately, Al-Raya newspaper reported that no new cases were identified and that preventive measures had been initiated.

Approaching the Hajj season (Oct 16th –Nov 5th 2012): The timing of this outbreak, three weeks prior to Hajj season, made it of particular interest to the media, as there were fears the virus may be of particular risk to pilgrims. Media reports focused on updates on the virus, preventive measures and on a WHO report, which acknowledged the severity of the disease but communicated that there was no intention to impose restrictions on travel and trade, in alignment with the Kingdom of Saudi Arabia's (KSA) official policy.

By October 2nd, 2012, media reports described the outbreak by focusing on three different topics: 1) the role of the SCH in following up with the UK-transferred patient, 2) the potential risk of greater spread during the approaching Hajj, and 3) similarities between MERS and Severe Acute Respiratory Syndrome (SARS).

A press release was issued by the SCH three days after the detection of a rumor saying the SCH did not undertake appropriate efforts to support the UK-transferred patient. The press release was timed for weekday release, in order to reach a larger readership, and detailed the nature of SCH's monitoring of the patient's condition. In order to address fears regarding the risk of spread during the Hajj season starting on October 12th, the KSA Minister of Health released a statement emphasizing that, in the regional and religious context of the evolving disease, the situation was not of particular concern, as the novel virus did not seem to spread easily among humans. A SCH spokesperson was interviewed regarding Hajj preparations on October 3rd, 2012. During the interview, the spokesperson reassured the public by focusing on the following two facts: (1) seasonal flu immunization is mandatory, as per KSA health regulations for pilgrims, and that (2) the health situation was being monitored through information sharing with the KSA and WHO.

The ERC network of decision makers, professional partners, and interested parties:

The National Outbreak Control Taskforce (NOTC): There was an urgent need for information to support the decision making process of the NOCT, which was formed by the SCH to respond to the outbreak. As there were only a small number of reported MERS-CoV cases, the main information sources used by the decision-makers were WHO, KSA, HPA in the UK, and the media. This information served as a basis for the development of the risk assessment plan and the roadmap for response. The roadmap was developed by WHO and the Food and Agriculture Organization of the United Nations (FAO) officials providing technical support in response to Qatar's request. The roadmap emphasized: enhanced surveillance; case management, isolation, infection prevention and control; health education; and risk communication. Despite these efforts, public fear was palpable due to the approaching Hajj season. Therefore, a significant part of the technical discussions that took place with the Medical Committee for the Hajj considered potential epidemic scenarios.

Assessing the potential risk was a critical component of the WHO experts' mission, and the roadmap they developed eased securing the resources required for investigation and response measures. Thus, decision makers approved the proposed roadmap despite the overwhelming

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uncertainty regarding both the nature of the epidemic and the outcomes of the ratified proposed actions.

Technical meetings and exchange of emails constituted the primary mechanisms for information sharing between the NOCT network and relevant stakeholders. Since the beginning of the epidemic, daily and weekly surveillance reports were communicated among the NOCT and the leaders of the represented institutions as part of stakeholder communication. Public health experts were able to respond quickly to requests for clarification on surveillance. This allowed for a national consensus on the anticipated risk of MERS-CoV and the recommended course of action, and ensured a collective understanding among risk communicators, minimizing the amount of contradictory messages given to the public.

ERC played a critical role in community engagement to explain control measures to the public and persuade community based organizations, including the Camel Race Association, to participate in investigation efforts. For example, epidemiologic investigations necessitated the engagement of people at risk (some of whom had no symptoms), isolation of suspected cases at the hospital for three to five days until receipt of laboratory results, and screening of contacts (frequently requiring the availability of a list of relatives, friends and coworkers) who were tested and were afraid of being infected until the laboratory results were unveiled.

Registration process to the Hajj: Before registering for the Hajj, prospective pilgrims were advised to check their health and vaccinations status. The elderly, those with co-morbidities, and people with a compromised immune system were denied registration, as these groups were believed to be the most vulnerable to the novel virus. Religious Affairs echoed the public health message and reiterated the recommendation to take appropriate precautions when participating in the Hajj. All medical and public health preparations, including coordination with the KSA health authorities, were regularly communicated with the public. Compliance of the prospective pilgrims with the recommended actions was close to 100%.

Role of healthcare workers: As part of the response, healthcare workers (HCWs) received training on what was known about the novel virus. The training informed HCWs on the evolving epidemiological situation, the updated WHO risk assessment, the appropriate infection prevention and control measures, and their role within the national response system. Staff working at Emergency Room Departments (ERD), isolation rooms, and intensive care units were prioritized to receive the training, and were asked to share their knowledge with colleagues. Regular reminders about Infection Prevention and Control (IPC) were sent to the HCWs at Infectious Diseases departments across the healthcare facilities in Qatar. Each HCW was viewed as playing a critical role in information sharing in their public networks, and thusly, each HCW received regular updates on the situation and the national response via e-mail. IPC measures were strictly monitored, and suspected cases were rapidly identified, isolated, and reported.

The HCW were engaged in communicating the risk with patients and their families. Whenever a suspected case was identified as a Qatari national, a Qatari senior physician was called upon to explain the protocol of medical isolation, the medical and public health investigation procedures, and the expected prognosis. This policy was adopted to ensure greater openness, trust, and collaboration. Consequently, neither refusal nor lack of compliance with the control measures, including isolation, were reported, even as a greater number of cases were identified.

On October 4th, the media reported that the first Qatari case (Q1) had been cured and that the patient was recovering. The media also reported on a press conference held by the Medical Committee of the Qatar Hajj Commission stating that *"all clinical and preventive preparations for the Hajj season were in place and that there was no concern of the insurgence of an outbreak as no scientific evidence was available on human-to-human transmission up to that point in time."* Despite the concern, no cases of the novel corona virus were reported among the 3.2 million pilgrims, the citizens of the KSA, or the citizens of Qatar until after the end of October, 2012.

The ERCs Activities during the Second Phase of the Epidemic (Nov 20th, 2012 to Aug 19th 2013):
Reporting of second Qatari case as further cases including deaths continued to be reproted in the region involving healthcare workers:

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On November 24th, 2012, the SCH issued a press release reporting that a second case of the novel virus had been confirmed. The case was detected four days prior to the press release. The press release stated the following: 1) the patient was admitted to the hospital at the end of October and was diagnosed with the novel virus on Nov 20th, 2) the patient was recovering but transferred abroad upon the request of his family, 3) all the patient's suspected contacts were screened and tested negative by a qualified external laboratory, 4) WHO was officially notified of the case, which counted as the sixth worldwide (Q2), 5) intensive consultations were held over conference calls with several scientific entities, such as WHO, on the day following the confirmation of the case (November 21st). The media reacted by circulating a WHO report on the disease mentioning that MERS-CoV belongs to the same family as SARS, and that an alert was issued to reinforce surveillance globally as more information was needed to understand MERS-Cov's virology.

At this point in time a hypothesis on the possible animal source of the contagion had arisen from the epidemiological investigation, which reported that the last patient admitted to the hospital was taken directly from his camel barn. Subsequently, it was acknowledged that two of the six known cases had some exposure to camels. A decision was made by the NOCT to visit the patient's camel barn and interview potential contacts. This visit was difficult, because the owners were concerned about social stigma, and visitors could face a risk of infection.

On November 25th, 2012, the media portrayed the public fear, and showed that the public demanded a scaling up of the healthcare response in terms of the following: 1) raising public awareness on the virus, 2) alerting the surveillance system to monitor the situation more vigilantly and to promptly detect any possible hidden cases, and 3) developing advanced diagnostic and treatment capacities to enable the prompt confirmation of suspected cases and offer optimal medical care domestically, with the implied training of medical staff. The media quoted a senator stating that "*I will file an urgent request to discuss the disease in the upcoming senate session.*" A healthcare professional from 'Hamad General Hospital' HGH, the national referral hospital, also reported: "*as of now no evidence indicating that the situation is worrisome and the disease does not seem to be outbreak-prone according to the WHO, so no need to panic. I think authorities will not hesitate to taking all required measures if the risk proved to be genuine.*" Newspapers persistently framed the novel virus as being as fatal as SARS, as both belong to the same family of corona viruses and present with similar clinical features.

On November 27th, 2012, the SCH disseminated a press release disclosing the minutes from a meeting that detailed the response efforts undertaken upon the confirmation of the second Qatari case. The press release proclaimed that most of the measures that the public demanded were already in place, and that consultation with the WHO was ongoing. The media accounts provided basic information about the disease, but mostly focused on the personal story of the second Qatari patient.

The ERCs during the Third Phase of the Epidemic (Aug 20th –March 17th h, 2014): Fresh Qatari cases and deaths reported and the isolation of the virus from camels:

Between August and November, 2013, the KSA continued to report cases and deaths caused by the virus now known as MERS-CoV. The hypothesis that MERS-CoV infection was related to camels resurfaced when the local media covered a British study suggesting that camels may have a possible role in MERS-CoV transmission to humans. This finding was considered very controversial because of the high esteem with which camels are held in Qatari society.

On August 20, 2013 the SCH published a press release stating that a third MERS-CoV case (Q3) had been confirmed. This third patient was a Qatari national who was diagnosed abroad and his status was reported as stable. The press release re-emphasized that the authorities were aware of and responding to public demands, and stated that monitoring of all acute respiratory illnesses was ongoing, the diagnostic capacity was locally available, and that the SCH had established a helpline and created a webpage dedicated to allow for up to date information about MERS-CoV.

On August 22nd, 2013 the SCH launched an awareness campaign on MERS-CoV, which publicized the newly established webpage and helpline services. This campaign coincided with the Hajj season on the second year of the epidemic.

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By August 27th, 2013 the SCH announced in a press release that another new MERS-CoV case was detected in Qatar (Q4), and that the patient was in critical condition. The newly detected patient had been in contact with a previously confirmed MERS-CoV case, and had comorbidities which were potential aggravating factors for the disease.

On September 7th, 2013, the newly confirmed MERS-CoV case (Q4), who had previously been in critical condition, was declared dead and the antecedent case (Q3) was announced as cured. Meanwhile, MERS-CoV cases were still being reported in the KSA, and the Qatari public feared that the disease could spread during the approaching Hajj season. In order to respond to the concerns of the public, a senior SCH spokesperson held an interview **on September 29th, 2013.** During the interview, the spokesperson reiterated the preventive measures and preparations taken by the government, and provided recommendations for ensuring the safety of Qatari Pilgrims. The interview also provided the public with the most up-to-date information on MERS-CoV.

On October 18th, 2013, the SCH proclaimed that they had detected a new MERS-CoV case (Q5) in a Qatari citizen. A statement from the KSA health authorities was published in a local newspaper reporting that *"Hajj season had passed without reporting a single MERS-CoV case among pilgrims."* However, MERS-CoV cases continued to be reported from other parts of the KSA after the Hajj was concluded and the total number of reported cases reached 120, among which 51 perished.

On October 27th, 2013, the SCH revealed in a press release that a new MERS-CoV case had been detected (Q6). The patient was symptom-free but had been in contact with a subject, who was a laboratory-confirmed case. The press release also reported that the previously declared case (Q5) had been cured and was discharged from the hospital. The Sultanate of Oman declared its first confirmed MERS-CoV case and the KSA continuously reported new cases, with casualties mounting to 53 deaths; no new cases were reported in Qatar until November 8th, 2013. School principals in Qatar voiced their concern that there were an insufficient number of school nurses to meet the course of action recommended by the health authorities. These recommendations focused on respiratory diseases, including MERS-CoV. It was only 7 days until another MERS-CoV case (Q7) was confirmed in Qatar in a patient with chronic illnesses.

By November 13th, 2013 the State of Kuwait also reported two cases, one of which had just returned from the KSA, while the Sultanate of Oman reported its first MERS-CoV related death. The KSA then released a report confirming that the virus had been isolated in seven camels, bringing the zoonotic nature of the disease to light for the first time and Qatar reported the death of two MERS-CoV cases on **November 19 and 21, 2013,** respectively, bringing the total MERS-CoV related deaths in the country to three, whereas number of those killed by the virus in KSA reached 55 out of 130 reported cases.

On November 25th 2013, the Qatari national senate held a special debriefing session to discuss the MERS-CoV epidemic and the prevention and control measures being taken by the Qatari government. Media coverage of the event highlighted the senators' demands for a reinforced national prevention and control strategy.

On November 28th 2013 the SCH announced that the virus was isolated from two camels in a barn where two of the previously confirmed human cases were reported. This news coverage attracted the attention of the camel owners who constituted the immediately affected stakeholders. When interviewed by the media, the camel owners criticized the Ministry of Environment (MOE) for the lack of proactive measures and for withholding information.

On December 2nd, 2013, SCH and MOE organized a joint press conference to address the concerns of the public. The organizations hoped to disseminate the messages that, firstly, the MERS-CoV epidemic in Qatar was not spreading, and secondly, the recent detection of the source of the virus would have contributed to a greater understanding of the nature of the disease and its mode of transmission. A national plan to screen camels for the disease was announced; nonetheless the SCH and MOE explained that there was no intention to restrict camel movement, as there was insufficient evidence of the role camels play in the disease transmission pattern.

On December 6th 2013, the MOE stated that Qatar is "safe" from the virus, as ongoing screening was being jointly performed with SCH.

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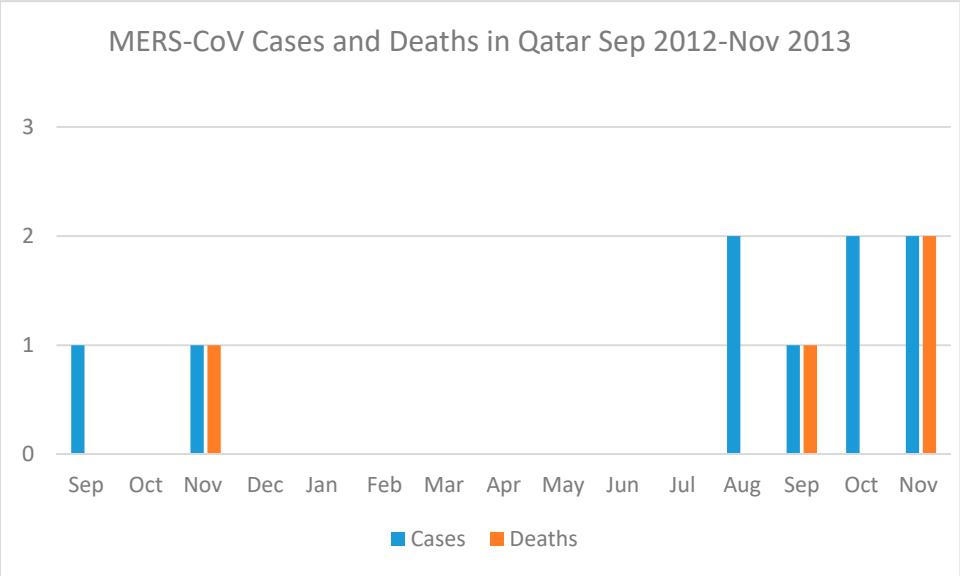
On March 17th 2014 Qatar announced the isolation MERS-CoV in camels. No other significant events occurred and no further new cases were reported in the country until November, 2014. Nevertheless, confronting MERS-CoV remained a top public priority, as cases and deaths continued to be reported in neighboring countries.



Discussion:

This manuscript aims to document what happened during the response to the MERS outbreak in Qatar by describing the sequence of events and monitoring of articles from "Al-Raya newspaper" in regards to the emergence and development of the outbreak and main actions taken by public health authorities to communicate to the public. This constitutes a basic evaluation effort of the ERC strategy adopted by the SCH during the 2013 MERS-CoV outbreak. Our data have several limitations mainly that they rely on one source of mainstream print media. We are aware that there is a need to adopt more comprehensive media monitoring methods, including social media monitoring, surveys and focus groups, to gauge real time public opinions. However, we believe that even a simple timeline of events, such as the one we developed, may contribute to deriving lessons learned from this incident.

Despite the overwhelming uncertainty during the early days of the MERS-CoV epidemic, the SCH's commitment to a proactive and open risk communication strategy, which included sharing of information in a timely manner and acknowledging the lack of experience in responding to the cases, supported the SCH's image as a credible source of information and allowed for the quick initiation of the overall response efforts. However, the response was not without error. The inherent uncertainty and lack of sufficient information caused the government spokespersons and the media to provide conflicting messages, which contributed to raising public concern. On the very first press conference held on Sep 24th, 2012, the spokespersons called on the public "*not to panic*" despite of the unknown path the "*novel virus*" could have taken and the media persistently focused on the resemblance of MERS-CoV to SARS [3]. Similarly, another official spokesperson announced on Dec 6th, 2013 (after almost one year) that Qatar is "*safe*," despite the fact that MERS-CoV's mode of transmission remained unclear and neighboring countries continued to report new cases and deaths. We believe that the acknowledgement of MERS-CoV's uncertain nature since the beginning of the response allowed the SCH to increase awareness among the public and responding agencies and that close consultation with international institutions of reference (i.e. WHO) contributed to the image of a competent governance and a unified communication strategy.

Selection of the communication medium when communicating with the public was based on advice provided by SCH media professionals who knew the local context and could foresee potential public reactions. Obviously it did not rely on prior studies for media preferences [6]. The timing of the implementation of ERCs activities was critical. While it was necessary to respond to rumors in a

timely manner, when possible official responses were purposely delayed to guarantee that the communication would reach the greatest number of viewers. We believe that having trained and experienced persons assigned as spokespeople positively contributed to the ERCs activities, as these spokespeople were prepared to respond to questions from the media, and in doing so they helped maintain the image of the SCH as an accountable and credible organization and potentially minimized the chance for conflicting messages.

The bilateral agreement between the SCH and the ARD to have one-national unified message further bolstered a unified official response.

The involved parties, particularly MOE and Ministry of Municipalities (MOM), were able to freely access and communicate the information as it evolved and make decisions based on the previously agreed upon roles and responsibilities as stated in the national emergency plan.

Similarly, in the healthcare setting, physicians were able to openly explain the nature of the disease and discuss its clinical prognosis with MERS-CoV patients and their families. The HCWs were regularly updated on IPC measures and important strategies to prevent MERS-CoV infection. Counselling and medical advice were offered to suspected cases and those who they had been in contact with via several avenues, including the creation of a webpage that was established to disseminate MERS-CoV information. Educating and engaging the public through mass media and across other community settings was one of the major objectives of the response.

The available communication capacities within the SCH, in particular the media and public relations communication center, allowed for monitoring of both mainstream and social media. Nevertheless, as communication activities were not based on audience analysis and media preferences, we acknowledge that it is difficult to assess the effectiveness of the message in a conclusive way. Denial of MERS-CoV constituted a major obstacle in response efforts and is still an issue. Yet, public compliance with public health measures could be demonstrated through several ways, including the acceptance of individuals considered suspected cases to be isolated and tested, a willingness of those with symptoms to be hospitalized, as well as the openness of camel owners to the joint MERS-CoV field investigation teams visiting their barns.

Conclusion

This manuscript described key events that occurred during the response to the MERS outbreak in Qatar by using government documents and media monitoring. This constitutes a basic monitoring effort to document the SCH's ERC strategy during the 2013 MERS-CoV outbreak. Based on our analysis, we believe that SCH's early preparedness to the epidemic and its commitment to a proactive and open risk communication strategy, which included actions during the first days of the outbreak such as sharing of information in a timely manner, and acknowledgement of the uncertainty of the situation, favored the establishment of the SCH's image as a credible source of information and allowed for the quick initiation of the overall response efforts and effective rumor control during the course of the outbreak. Yet, further work is needed to develop more rigorous and comprehensive monitoring and evaluation strategies to assess the impact of ERC during MERS or any other emergency situation.

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