

Resilience in Healthcare Systems: Research on the USVI Following 2017 Hurricanes

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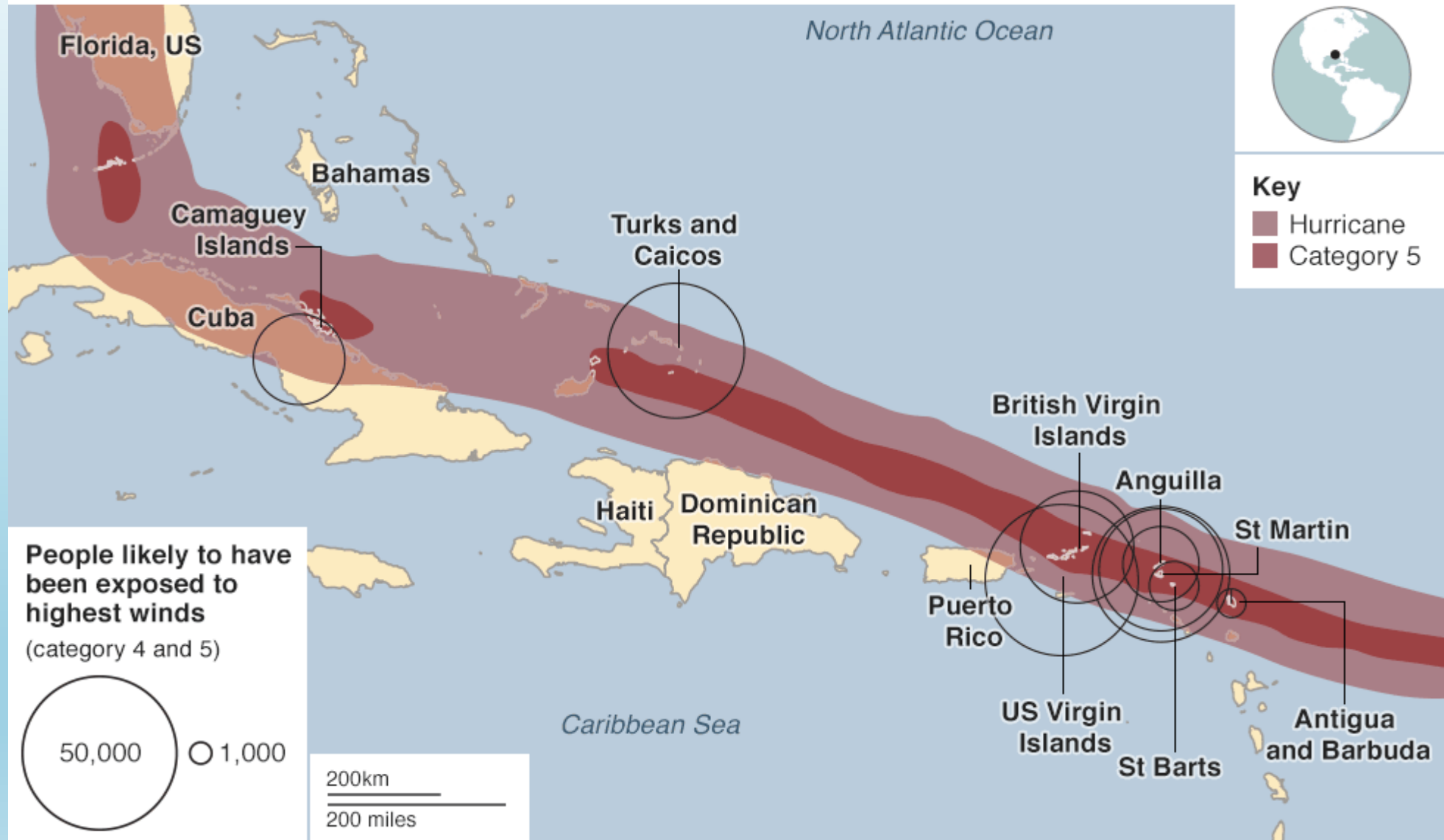
Introduction

In the light of the unprecedented ferocity of the hurricanes of 2017 and the destruction caused both to the economies (the basis of our healthcare financing models) and to our healthcare systems,

- How resilient are our Healthcare Systems to natural disasters?
- Do we adequately consider the perceptions of Healthcare Professionals and Patients?
- How can we apply lessons learned so that our Healthcare Systems can better respond to disasters?
- How can we build the cost of Resilience into our Healthcare Financing models?

Looking Back, Hurricane Irma 2017

The Caribbean islands worst-affected by Hurricane Irma



Source: National Hurricane Center, UNITAR/UNOSAT (preliminary estimates 12 Sep 2017)

BBC

Hurricanes Irma and Maria target the USVI in 2017



Participatory Action Research, Ph.D in Creative Leadership for Innovation and Change, University of the Virgin Islands (UVI)

- While the entire USVI was devastated and life totally disrupted by two Category 5 hurricanes, one shining example of resilience was the University of the Virgin Islands (UVI) which resumed classes within a matter of weeks. (In 1989, Hurricane Hugo closed UVI for 4 months).
- In UVI's cutting-edge Ph.D program (which is now truly global with Cohort 3 students in Guam, Marshall Islands, as well as the USA and Caribbean), Dr. Mohomodou Boncana, who was teaching a course in Participatory Action Research, showed great innovation and had his graduate students "learn by doing" in actually conducting such research in the USVI among those affected by the two Category 5 hurricanes.
- Research was conducted in 4 areas: Healthcare; Consumerism; Humanitarian Efforts; and Student Wellbeing. The results of 3 of these research studies are being published shortly. The Paper produced from the research in Healthcare forms the basis of this presentation.

Participatory Action Research – Ph.D in Creative Leadership for Innovation and Change, U.V.I.

This presentation is based on a research paper which the presenter co-authored, based on research conducted during his PhD studies:

Exploring Patients’ and Healthcare Professionals’ Perceptions of the USVI Healthcare System after Hurricanes Irma and Maria: A Participatory Action Research Project

by

Mohomodou Boncana, Ph.D., Jarelle Berkeley, Andre’a Dorsey, Olusola Ewulo, Aaishtu Glover, Timothy Hodge, Shauna Matthew, Christa-Ann Molloy, Gary Molloy, and Neville Williams, Graduate Students, University of the Virgin Islands.*

*Janice Hodge, Graduate Student, also participated in the initial stage of the paper.

Participatory Action Research – Ph.D in Creative Leadership for Innovation and Change, U.V.I.

The other Papers were:

- **Humanitarian Efforts during Hurricanes Irma and Maria:
A Participatory Action Research Project** by

Mohomodou Boncana, Ph.D., Correen Celestine, Stacy Creque, ViJonet Demero, Matthew King, Michell Lindo, and Ilive Peltier, Graduate Students, University of the Virgin Islands;

and

- **Planning for Students Well-Being, Before, During and After a Hurricane:
A Participatory Action Research Project** by

Mohomodou Boncana, Ph. D., Jennifer Palmer Crawford, Michell Albany-Crispin, Verna Rivers, Ilive Peltier, Correen Celestine, Graduate Students, and Barbara Flemming, Ph.D., Paul Flemming, Ph.D., University of the Virgin Islands

Statement of the Problem

- While there has been a focus on highly developed countries on the impact of disasters on the healthcare system which have presented strategies and recommendations that would allow for immediate relief and support systems as preventative measures for medical needs of patients post natural disasters, there have been limited studies in healthcare services and disaster risk management in the Caribbean region and particularly focused on the unique characteristics of the USVI community. There is also limited documentation to outline the impact of natural disasters and the effectiveness of the disaster risk management plan as it relates to healthcare services. As a result, owing to the limited data-driven sources of information or an understanding of the effects of natural disasters to the infrastructure of systems, there appears to be some disconnect relating to appropriation of legislative funding and policy development in these areas.

Statement of the Problem (ctd.)

- To improve and ensure quality and equitable services to USVI residents, a clear depiction of the historical trends of natural disasters and changes over time relating to healthcare services both locally and amongst highly developed nations would be critical to guide efforts for future direction in the areas of disaster preparedness.

The Purpose of the Study

- To share the lived experiences of the healthcare professionals and patients in USVI and to explore the disaster risk management plan as it relates to the availability of health practitioners, resources, and facilities.
- To present the current conditions of the healthcare system and provide recommendations to improve adequate and equitable services for the people of USVI post natural disasters.

The Research Question

In light of the factors listed, what improvements to the healthcare system can be made in order to provide adequate and equitable services to the people of USVI?

Sub-Questions:

1. How do residents perceive the access to health care services after Hurricanes Irma and Maria?
2. What are their experiences regarding health care services post natural disasters?
3. In what ways have healthcare practitioners provided services to dialysis patients?

Rationale for Choosing Participatory Action Research

Participatory action research (PAR) is a qualitative research method which offers meaning to a community-based issue by utilizing the experiences of affected persons to craft the appropriate solutions. According to Baum, MacDougall, and Smith (2006), PAR is needed in public health research by detailing the lived experiences and provide an opportunity for empowerment for persons directly impacted. PAR provided the researchers with a social context and an understanding of the health-related challenges that both patients and medical professionals were confronted with as a result of Hurricanes Irma and Maria.

Philosophical Assumptions

According to Creswell (2016), interpretive constructivism helps researchers gain deeper knowledge of the interpretation of participants' perceptions and lived experiences. In this PAR, lived experiences of healthcare professionals and patients were gathered using semi-structured interviews. Dialogue with participants yielded findings framed within the interpretive context of medical preparedness related to Hurricanes Irma and Maria.

Participants

The participants consisted of 38 medical practitioners and administrators, community activists, and patients. The medical practitioners included physicians, pharmacists, nurses and administrators within the public sector of the healthcare industry in USVI. The participants were mainly located on St. Thomas and St. Croix. Only participants were 18 and above and who were directly affected by the two hurricanes were selected to take part in this study.

Emerging Themes

Six primary themes and seven secondary themes were common to all participants.

The primary themes included the following:

- challenges;
- lack of communication;
- participants' perspectives on frustration;
- dialysis patients' perspectives on suffering;
- destruction and sustained damage to medical facilities; and
- sense of helplessness.

Emerging Themes (ctd.)

The secondary themes, stemming from the primary ones, included:

- transportation difficulty;
- lack of resources;
- challenge associated with the access to and delivery of medical services;
- lack of electrical power and fuel for generators, which rendered computer systems inoperable;
- lack of access to internet and telephone services;
- lack of communication among medical professionals; and
- lack of communication between the medical professionals, Federal government, and patients.

Transportation

The geographic position of the islands appeared to be a big obstacle in the delivery of medical services. The secluded or isolated nature of the islands made it extremely difficult for Federal government officials to operate properly. The destruction of the infrastructure (e.g., buildings, roads, power, and supplies) negatively impacted the medical professionals' ability to import medicines needed to help dialysis patients. Patients were moved between the USVI and Puerto Rico and then to several states in the US mainland; some healthcare professionals expressed concerns with respect to coordinating such transportation. due to the urgency of the medical conditions of certain patients, decisions needed to be made expeditiously under very stressful circumstances in order to address their needs. What seemed to have been a real challenge was that the medical professionals had no control over the entire situation.

Delivery of Services

Many of the medical services available before the hurricanes were no longer accessible after their impact. The services included pharmaceutical, dialysis, hospital care, doctor's visits, and ambulance services.

Electrical Power and Fuel for Generators

As a result of the lack of electrical power immediately following Hurricanes Irma and Maria, pharmacies and healthcare providers were not able to access patient records to determine medical histories and prescription-related information. In addition, new prescriptions written prior to the hurricanes could not be transmitted electronically to pharmacies. For pharmacies that were able to fill prescriptions, they did so at great financial loss, as some miscalculated the co-payment of patients.

Lack of Resources

Many health professionals viewed the lack of resources (e.g., in this context: medications) as a serious challenge that may lead to individual fear and frustration from both the health professionals and the patients. This fear and frustration can be the sources of extreme emotions and distress, as illustrated by the following health professional's supporting statement,

“For the first time as a pharmacist I was threatened [by customers]. My job was to solve customer problems, and when I get threatened [by some customers wanting to kill me]... the wait time no longer was 20 minutes, it was now 3 hours and when you have people waiting for 3 hours and coming up to the counter and then tell them that I don't have it [prescription medication] created a serious challenge. It got to the point I did not want to come to work”.

Destruction or Serious Damage to Facilities

Many healthcare providers including hospitals, doctors' offices, clinics, and pharmacies sustained heavy damages to their facilities. Many of them (including the St. Thomas hospital) were either forced to close down, provide limited services, or relocate their staff and practices to the mainland USA. The sum total of destroyed healthcare facilities caused a constriction in the delivery of health care services to the residents in the face of a massive surge in healthcare demands following the hurricanes. This can be seen as the root cause of the mass evacuation of dialysis patients and other critically sick patients to health facilities on the mainland.

Communication

Effective communication is believed to be critical especially during times of natural disasters such as hurricanes. Not only does effective communication allow health professionals and patients to get an update about the problems associated with the medical services in a timely manner, it also enables them to come up with the adequate solutions.

Participants identified three secondary themes related to communication in the aftermath of Hurricanes Irma and Maria:

- access to internet and telephone;
- lack of communication among health professionals; and
- lack of communication between health professionals and patients.

Participants' Perspective on Frustration

The frustration resulting from the lack of collaboration among the medical professionals and the lack of clear definition of the roles and responsibilities of each player is quite apparent in an operations manager's account of her experiences. She complains that despite their expertise in management operations, their recommendations were not taken into account by their leadership, thus their community ended up not being served according to well-established preapproved protocols as a result.

Several descriptions were provided concerning the events, activities and contexts from the perspectives of participants. One of the main post-hurricane processes was the distribution of medical supplies and prescriptions. Because there was no contingency plan in place for dispensing medicine or medical supplies after the territory experienced a hurricane, patients experienced the brunt of this frustrating shortfall.

Patients' Perspectives on Suffering

While some of medical professionals claimed that patients did not suffer physically, they recognized that the majority and their families had been experiencing psychological and emotional trauma. The immediate separation from their families and loved ones contributed to the distress experienced by patients. Additionally, major events such as childbirth and vaccinations were often endured solely by the pregnant mother or child respectively. Some patients, however, did not seem to have experienced the same amount of suffering as those who had been moved off-island with respect to receiving their medications because a collective effort was initiated by patients to support each other in the aftermath of the hurricanes. Arguably, the solidarity that patients showed toward each other was the main reason they were able to survive the challenge posed by the shortage of medication.

Sense of Helplessness

The quality of the infrastructure seems to be critical in facilitating the delivery of healthcare services. The decision-makers faced many challenges when trying to ensure vital necessities of the population were provided with other accessible medical needs. The lack of personnel, along with minimal financial pipelines, created a shortage of medical supplies. As a result, the helplessness was felt across the board by those primarily responsible for providing aid and assistance.

Discussion and Conclusion

The themes and events highlighted are consistent with previous quantitative and qualitative studies. The participants in this study commented on how the quality of healthcare services has been impacted as a result of the insular nature of the territory. In the aftermath of Hurricanes Irma and Maria, the infrastructure and the medical facilities had been completely damaged, thus hampering the ability of medical professionals to render medical services to patients in the territory. The findings suggest that hospitals were not sufficiently prepared to deal with the large-scale public health emergency issues that participants experienced. Finally, participants indicated that since medications were imported into the island and the ports were not operational in the aftermath of the storms, it became extremely difficult for medical professionals to address the needs of their patients.

Implications of the Study

The groups or individuals that may benefit from the findings of this study include researchers in the healthcare field, policy makers, government officials, practitioners in the healthcare system, community leaders, and residents of USVI. Researchers in the medical field will be able to participate in the co-creation and transmission of knowledge through the transformative experiences that encourage collaboration of the community in order to engage in solving challenges within a localized setting. This would allow for the bridging of research and practice through a democratic process that would lead to empowerment of under-represented groups through a systematic organized approach.

The researchers believe that the study's findings and recommendations are generally transferrable to other Caribbean islands.

Implications of the Study (ctd.)

Legislators of USVI will be able to use the recommendations from this study to evaluate the existing medical policies related to disaster management. Consequently, such an evaluation may allow them to put in place new policies that better respond to people's needs in case of disaster. The findings of the study may also influence legislation to appropriate funding in the areas of resources, training, and recruitment of healthcare personnel.

Implications of the Study (ctd.)

Another benefit of this study is that its findings may help the government and its respective agencies, especially health services, develop more effective and efficient strategies that will enable them to be more prepared in terms of providing its constituents with the necessary care after natural disasters. Moreover, this study can serve as a catalyst for the government in establishing and strengthening new alliances with the healthcare professionals geared toward serving residents in need of medical attention. The recommendations from this study may provide the personnel of USVI healthcare system with some insights into alternative ways of creating accountability in the delivery of healthcare services that may enable them to meet the medical compliance standards.

Implications of the Study (ctd.)

The study will foster discussions in the local community about the current conditions of the healthcare system which will encourage community participation and foster individual empowerment. The process will allow the community to engage in the democratic process of becoming contributing members in the construction and transfer of knowledge through the use of community-based partnerships. Finally, this study will increase an awareness within the community concerning the scope of issues relating to the conditions of the healthcare system and contribute to change leading to sustainable and feasible solutions that will continue to enhance quality and equitable service to USVI community.

JUST A REMINDER OF THE OPENING QUESTIONS!

In the light of the unprecedented ferocity of the hurricanes of 2017 and the destruction caused both to the economies (the basis of our healthcare financing models) and to our healthcare systems,

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- 4) How can we build the cost of Resilience into our Healthcare Financing models?

THANK YOU!