research is to: a) Identify approaches to supporting evidence informed decision-making in health systems serving Syrian refugees, b) understand some of the barriers and facilitators to using these approaches in health systems serving the Syrian refugee crisis. The first study of its type done as an integrated KT, where it was completed in close partnership with the ultimate users Médecins Sans Frontières, also known as Doctors Without Borders (MSF).

Background: Providing essential healthcare is becoming a huge undertaking requiring a multifaceted approach for over four million Syrian refugees. The scarcity of available resources makes it imperative that resources are used based on research evidence, to maximize the health outcomes among vulnerable populations. The challenge is that there is still a gap on how to best utilize research evidence to inform decision making in the field.

Methods: Document analysis and key informant interviews utilizing semi-structured questions at Médecins Sans Frontières, to identify some of the barriers and facilitators by using Knowledge Translation (KT) approaches in health systems serving the Syrian refugee crisis.

Results: Facilitators to MSF's use of research evidence in decision-making include MSF uses surveys to assess and identify research gaps in the field. Barriers to MSF's use of research evidence in decision-making include lack of a receptive climate for research remains a barrier to the utilization of research knowledge in decision-making and lack of a formalized process for field staff to acquire research evidence.

Conclusion: Understanding the findings of the above research questions would enhance the quality, effectiveness and coverage of healthcare programme delivery for Syrian refugees and enable the health system to be more responsive to the healthcare needs of the Syrian refugees.

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Verification of an Area Disaster Resilience Management System Model for Healthcare During the 2016 Kumamoto Earthquake

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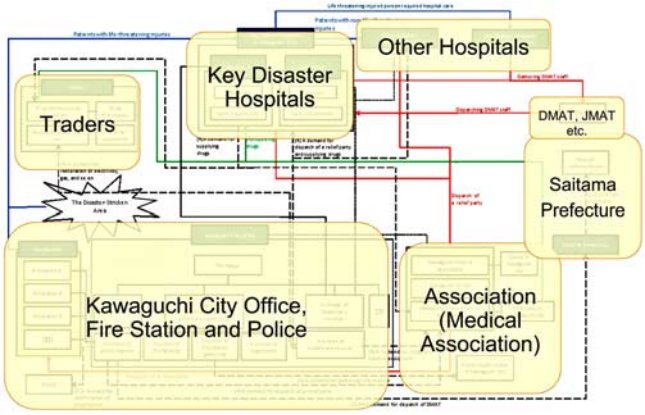
Study/Objective: The research group is developing an Area Disaster Resilience Management System Model for Healthcare (ADRMS-H), composed of municipal and health care organizations, to enhance the health care resilience of a community (Figure 1). This model is an extended form of a Business Continuity Management System for a single organization. We are introducing the model to Kawaguchi City in Saitama Prefecture. In this study, we investigate successes and failures of disaster medicine during the Kumamoto Earthquake in April 2016, with the intent to verify the ADRMS-H model.

Background: Japan faces a high risk of natural disasters such as earthquakes, during which it is urgent that countermeasures are taken to secure business continuity. To enhance the health care resilience of a community, ADRMS-H must be established.

Methods: We interviewed the medical staff of the Japanese Red Cross Kumamoto Hospital, and other disaster-based hospitals, to investigate successes and failures of disaster medicine performed during the Kumamoto Earthquake. We also interviewed medical assistance teams, such as the Disaster Medical Assistance Team (DMAT), the Disaster Psychiatric Assistance Team (DPAT), and so on. We investigated if a function to achieve a positive result or a function to overcome negative results has been incorporated in the ADRMS-H.

Results: In disaster medicine during the Kumamoto Earthquake, "information collection," "chain of command," and "provision of relief supplies" were the main failures. The functions to overcome these issues have already been incorporated in the ADRMS-H model. On the other hand, the successes of assistance by the DMAT command headquarters outside of the disaster area (Tokyo and Osaka in this case) were effective. The organizational plan and function to achieve similar success in the future have not been incorporated.

Conclusion: We confirmed that the ADRMS-H model is valid for disaster management, and, to improve it, we must add a medical assistance team headquarters.



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Changes in the Functions for Continued Healthcare Services during a Disaster

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Study/Objective: This study aims to identify the organizational functions that are needed to ensure continued health care services during a disaster. Moreover, this paper reveals the roles

of each organization, and their relation to each other, by creating a matrix of the functions and organizations.
Background: When a natural disaster or mass-casualty incident occurs, a large number of injured people visit hospitals. During these times, hospitals need to provide additional services. Thus, it is necessary for various related organizations such as hospitals, municipalities, medical associations, and trade associations, to collaborate. There is a pressing need to establish an Area Disaster Resilience Management System for Healthcare (ADRMS-H) to increase medical resilience. It is necessary to identify the functions of, and coordination between, organizations needed to develop ADRMS-H.
Methods: We identified the medical care requirements during a disaster and the functions that guarantee ongoing health care by investigating disaster records and interviewing several doctors who provided health care services during the Great East Japan Earthquake. In addition, we analyzed the changes in the functions by the hour, and divided the phases based on the changes. Furthermore, we identified the organizations that are needed to fulfill each function and created a matrix between the functions and organizations of each phase.
Results: We created the matrix based on each of the seven phases. The functions included those that must be fulfilled by hospitals, such as providing treatment, and those that must be fulfilled by municipalities, and so on, such as establishing aid stations. Some functions are fulfilled in cooperation with various organizations.
Conclusion: When large earthquakes occurred in Japan, it was difficult to understand the functions needed to ensure continued health care services. Creating the matrix of each phase enables us to understand the changing roles of each organization by the hour. This facilitates in the establishment of ADRMS-H.

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A Systematic Review of Human Health following Flood and Storm Disasters

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Study/Objective: The objective of this review was to elucidate the health problems over time, following flood and storm disasters.
Background: The health care response to a flood or storm disaster should be guided by the expected health needs of the affected population, for both existing conditions and those caused by the disaster. It is essential to know how the burden of disease varies during different phases after the disaster, but there are few studies on the quantifiable changes in health, or in comparing the difference between floods and storms.
Methods: A literature search of the databases Medline, Cinahl, Global Health, Web of Science Core Collection, Embase, and PubMed was conducted in June 2015, for English-language research articles on morbidity or mortality and flood or storm disasters. Articles on mental health, interventions, and health care workers were excluded. Data were extracted from articles that met the eligibility criteria and analyzed by narrative synthesis.
Results: The review included 113 studies. Poisonings, wounds, gastrointestinal infections, and skin or soft tissue infections all increased after storms. Gastrointestinal infections were more frequent after floods. Leptospirosis and diabetes-related complications increased after both. The majority of changes occurred within four weeks of floods or storms.
Conclusion: Health changes differently after floods and after storms. There is a lack of data on the health effects of floods alone, long-term changes in health, and the strength of the association between the disaster and health problems. An analysis of how contextual factors affect health problems would be a useful complement to the results. The review highlights areas of consideration for medical response, and the need for high quality, systematic research in this area. The study was funded by the Swedish National Board of Health and Welfare.

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Mass Fatality Management in the US

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Study/Objective: This study was conducted to assess the infrastructure's capacity and capability to effectively respond to Mass Fatality Incidents (MFI).
Background: In recognition of the increasing incidence of Mass Fatality Incidents (MFI), a large and complex multi-level infrastructure has been developed in the US to prepare and respond to these types of disaster events.
Methods: In 2013, anonymous online surveys were distributed to representatives of 5 key sectors comprising the MFI infrastructure (medical examiners/coroners, the death care industry, health departments, faith-based organizations, and offices of emergency management). Three new metrics were developed to measure "preparedness:" (1) organizational capacity, (2) operational capability, and (3) resource sharing capability (between response partners).
Results: A total of 879 respondents reported highly variable organizational capacity: 15% had previously responded to mass fatality incidents (MFI); 42% reported staff trained for MFI, but only 27% for complex MFI (ie. involving hazardous contaminants). Less than half (48%) participated in jurisdiction-wide MFI drills. An estimated 75% of staff would be willing and able to report to duty for MFI, but that declined to 53% if contaminants were involved. Most perceived their organization as "somewhat prepared," but 13% indicated "not at all." Fewer than 25 additional fatalities in a 48-hr period would exceed