New Zealand Acute and Emergency Services:
Analysis and Comparison with the Japanese System from a Medical Student Perspective

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Case

Mrs Smith is a 70 year-old New Zealand European who has a sudden onset of chest pain while at home. She lives by herself in a rural town in New Zealand and has no previous cardiac issues. She feels uncertain about the possibility of having a ‘heart attack’ and is wondering whether to go to her usual General Practice (GP), which is 15 minutes away, or to call 111 for an ambulance service, which may or may not be available immediately in that area. What should Mrs Smith do?

The situation above is an example of common dilemmas faced by many New Zealanders during acute and emergency situations. To analyse this problem, it is vital to first understand the general health care system in this country. The health services are provided by both publicly funded and private facilities. The public system consists of 3 agencies; the District Health Boards which manage the inpatient, outpatient and emergency units in the public hospitals, the Primary Health Care which provides out-of-hospital services such as General Practice, and the Primary Health Organisations which coordinates various primary health services in the community. The private system mostly consists of specialist services, which provides elective non-urgent treatments especially for patients with private insurance. There is also the Accident Compensation Corporation which is an insurance scheme provided by the government to anyone who becomes injured while in New Zealand. Through this scheme, patients will not be charged for follow-up checks or treatments; however, they relinquish their right to sue other people for compensatory damages following the injury.

Below, we discuss the complex acute and emergency services in New Zealand, which includes the ambulance service and the health provider.

1. Ambulance Service

Emergency ambulance services are provided by 4 organisations, with St John contributing around 95% of total services, transporting approximately 400,000 people every year. St John ambulance officers can be divided into 4 levels of training; the First Responder, Emergency Medical Technician (EMT), Paramedic and Intensive Care Paramedic. First responders are mostly volunteers who have undergone a comprehensive first aid course and are
able to perform CPR and use automated defibrillation, but have no authority to administer medications. EMT, Paramedics and Intensive Care Paramedics have intensive training with Diploma in Ambulance or Degree in Paramedicine and thus have certain skills and authorities to administer medications. As a result, the role of an ambulance officer in pre-hospital care may differ on a case-to-case basis. To assist with this, there is a trained officer at St John Clinical Control Centre who is responsible for coordinating every 111 call by dispatching the most appropriate person. St John is actually a private organisation which operates independently as an organisation but is 70% supported by the government for its funding. Remainders are collected from patients (NZD98 per ambulance use), donations, fundraising and other sources. St John also relies heavily on volunteers’ involvement, as there are currently about 3,600 volunteer ambulance officers as compared to 1,654 paid workers (http://www.stjohn.org.nz/What-we-do/).

2. General Practice (GP) and Emergency Department (ED)

In New Zealand, primary health care practitioners such as GPs are the main provider for both routine and urgent medical care, while ED provides episodic ‘crisis’ care for people with serious injuries or illness who are perceived to need urgent or invasive interventions, often requiring hospital admission. The Ministry of Health aims to keep New Zealanders healthy and out of hospital by providing faster and more convenient health services which are closer to home. Hence, more health services that used to be provided solely in hospitals are now available in the community such as the administration of intravenous antibiotics and minor surgeries. GPs are responsible for coordinating the care for their enrolled patients including following up on patients after their discharge from the ED or the hospital. All clinical information obtained in the hospital will then be available to the patient’s usual GP (http://www.health.govt.nz/our-work/primary-health-care).

In addition to the usual GP role, the Primary Response in Medical Emergencies (PRIME) Service was introduced in 1999 in order to provide an integrated pre-hospital and acute management system for people in rural areas. This service involves specially trained rural GPs and/or nurses, whose role is to assist the emergency ambulance service in rural areas where response times may be longer or when advanced paramedics are not available. The PRIME practitioners will provide appropriate on-site care before the arrival of an ambulance and thus help improve patients’ overall outcomes. It is fully funded by the Ministry of Health and ACC, and is coordinated by St John via the 111 Clinical Call Centres.

Comparison with the Japanese system

1. Ambulance service

“The emergency ambulance service in Japan is a public service provided by trained paramedics through the fire department. A qualified paramedic has received both theoretical and practical training before passing the National Board Examination” (Mr Kamada, Paramedic, Hongo Fire Department, 2017)

There are many challenges in the emergency ambulance service, especially due to the increasing burden of health from an ageing population. In New Zealand, it has been shown that there is a relatively high incidence of ambulance use by elderly patients for medical problems that could have been avoided by better primary care. Besides, the increasing number of emergency calls requiring advanced care is a major problem in rural areas as ambulance officers are mainly volunteers. Therefore, the PRIME service plays a crucial role in the management of patients in these areas. In addition, as compared to the Japan ambulance service that is fully funded, the ambulance service in Zealand requires patients to pay part of the charge, which may create another barrier in accessing health care. However, the advantage of this is that it helps to prevent unnecessary use by patients with non-critical problems and provides fewer burdens to the public health, which may be an issue in the Japan ambulance system (http://www.health.govt.nz/our-work/primary-health-care). The vast number of volunteer workers and the relatively huge funding from charities are proof that the community is willing to actually support this service, though this method may be unsustainable, especially in the long-term.
2. General Practice (GP) and Emergency Department (ED)

Quality care - GPs providing acute and emergency services will allow timely movement of patients to the inpatient specialty unit without the need for undue delays or duplication of clinical assessments in the ED. In addition, GPs have ongoing doctor-patient relationships and thus are more likely to be familiar with their patients and are able to refer them to the most appropriate service. However, it is also important to ensure that GPs have the required skills to manage acute and emergency services. In rural areas, GPs who work for PRIME service are required to complete official PRIME training with a three-yearly update of their skills. There is less information provided regarding the training of GPs in urban areas, but some GPs in urban areas may choose to obtain training in urgent care and work in urgent care facilities, managing accident and trauma cases. This is significantly different in Japan where primary care practitioners are often physicians who have left their hospital practice in order to set up a primary care centre. They are not required to receive further training, and therefore the quality of care in general practice cannot be standardised and may vary according to physician’s experience and training.

Equity/access - In New Zealand, it is often easier to access the GP than the ED especially for people in rural areas due to the distance. In addition, there are also more GPs than EDs with around 1,029 GPs available as compared to 43 EDs in 2014. New Zealand also has a high number of GP specialists, with a ratio of GPs to other specialists of 2:3, one of the highest in the world. However, despite this, many patients still choose to bypass their GP resulting in ED overcrowding. One of the reasons behind this choice involves various issues with the GP services such as their cost, time constraints, the limited numbers for appointments available and so on. In a study conducted on patients who self-present to the ED in Middlemore Hospital, one of New Zealand’s main secondary hospitals, 20% were told that the practice was too busy for them to be seen on the same day. In contrast, Japan has freedom of access to health care with no strict gatekeeping mechanism by a primary health care provider. Patients can choose any clinic or hospital without specific requirements and still be covered by public insurance.

Sustainability - Financial sustainability of the publicly funded health system has always been one of the main focuses of the government. In 2013, the total spending for health care by the New Zealand government was 9.5% of GDP, with tax-payers providing 79.8% of the total spending on health. The other 20% came from private health insurance, the Accident Compensation Corporation (ACC) and co-payments by patients for services such as GP, ambulance and medications. This is very similar to Japan where 10% of GDP was spent on health and 83% was funded through the publicly financed health insurance. Currently, both New Zealand and Japan have relatively high health status by international standards and high life expectancy at birth. However, the ageing population has put unsustainable pressure on the public health system, especially with the increase in age-related emergencies and chronic diseases.

Efficacy - A GP is often the first contact of a patient with the health system due to the well-established doctor-patient relationship and their availability in the community, which makes them easily reachable and accessible. Using their skills as generalists, GPs decide whether to keep patients in the community or to send patients to the hospital for urgent interventions. As a result, the GP is an effective ‘gatekeeper’ to prevent overcrowding and misuse of hospital and specialist services. However, the main problem with the current system in New Zealand is the often overlapping role of GP and ED, which can cause patient confusion. Furthermore, the insufficiency in the interface between the ED and GP services especially through the electronic databases may also delay sharing of important information. This leads to a further influx of patients to ED, as they would prefer simpler, faster and well-integrated health services. Despite this problem, ED in New Zealand is not designed to refuse patients or to ‘close their doors’ once the maximum capacity is reached, unlike many major hospitals in other countries including Japan where a hospital ED is able to request a bypass or diversion of an ambulance towards other more suitable hospitals.
Perspectives and ideas

There is no single magic solution to solve these problems, as they are multifactorial. However, the establishment of a universal health database will help create a more integrated health services, which will avoid delays in information transfer and patient management, thus improving patients’ satisfaction and producing better outcomes. In addition, patient education is also very important to reduce patient confusion regarding when and what circumstances are appropriate for the use of emergency ambulances and the GP or ED services. Many brochures are available in various health care facilities, but more extensive nation-wide advertisements may be needed to continue educating the people (http://www.waitematadhb.govt.nz/patients-visitors/where-should-you-go/). To further assist with this, the government has recently introduced the HEALTHLINE so that patients who are unsure about their condition are able to call and receive advice from a nurse (http://www.waitematadhb.govt.nz/patients-visitors/where-should-you-go/). To further assist with this, the government has recently introduced the HEALTHLINE so that patients who are unsure about their condition are able to call and receive advice from a nurse (http://www.waitematadhb.govt.nz/patients-visitors/where-should-you-go/). To further assist with this, the government has recently introduced the HEALTHLINE so that patients who are unsure about their condition are able to call and receive advice from a nurse (http://www.waitematadhb.govt.nz/patients-visitors/where-should-you-go/).

Table 1 Summary of the strengths and weaknesses of New Zealand’s acute and emergency services

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<th>Strengths</th>
<th>Weaknesses</th>
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<tr>
<td>1. GP as main health care provider</td>
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<td>• Long-term and on-going relationship with patients as compared to ED</td>
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<td>• Most familiar with patients so are able to refer to the most appropriate services</td>
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<td>• Keep all medical records electronically</td>
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<td>2. Rural Emergency Service (PRIME service)</td>
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<tr>
<td>• Assist the emergency ambulance services in rural areas</td>
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<td>• Allows quick assessment and intervention to improve outcomes</td>
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<td>1. Overlapping role of GP and ED</td>
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<tr>
<td>• Complicated system</td>
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<tr>
<td>• Patients get confused and unsatisfied</td>
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<tr>
<td>2. Lack of interface of electronic records between hospital and GP</td>
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<tr>
<td>• Difficult to access information quickly during acute/urgent situation</td>
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<td>3. Costs</td>
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<td>• ED is fully funded but GP is partially funded thus patients self-presented to ED to avoid the costs</td>
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<td>4. ED overcrowded with primary care patients</td>
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Ideas

1. Integrated health services with universal database
2. Patient education
3. Telephone triage system (HEALTHLINE)
4. Use of guidelines and clinical pathways

Conclusion

In conclusion, both New Zealand and Japan have reasonably high quality acute and emergency services. There are many differences, which can be observed, but these are inevitable due to the differences in the population involved, the patient demography and also the geography. Despite this, the main focus of the emergency system is the same, which is to provide high quality and efficient care at the right timing with appropriate speed in order to ensure patient safety and good outcomes.
Acknowledgement

1. Dr. Toshiaki Iba, Department of Emergency Medicine, Juntendo Hospital
2. Kamada Genziro, Paramedics, Hongo Fire Department

References