Rapid Assessment in Disasters

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Maya ARII*1

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Why Conduct a Rapid Assessment?

A rapid assessment is conducted immediately after the onset of a disaster in order to locally assess the disaster-affected areas and the needs of disaster victims. As medical providers, when one is faced with catastrophic disasters such as the Great East Japan Earthquake, the first urge is to immediately go and provide assistance. However, one must fight that initial impulse, and first conduct an initial rapid assessment. This is separate from immediate life saving activities of the emergency search and rescue teams or disaster medical assistance teams. As indicated in the *Sphere Standards*, the first step in humanitarian response is to assess the needs of the affected population, and design a prioritized plan of action based on those needs. By doing so, this improves the quality and speed of response. Without a rapid assessment, significant gaps or overlaps in assistance may occur, which not only wastes precious resources at a time of great need, but can also be a cause of further burden to the affected population.

The initial rapid assessment is conducted as early as a few hours after the onset of a disaster, and should be completed within 3 days at the latest. The purpose of this assessment is not to conduct a detailed survey, but to perform a broad assessment of the disaster and basic needs of the population in order to identify priorities for assistance. When performing the assessment, it is advised to collect information from as many sources as possible, and to perform direct observation in order to verify the data. Due to time, resource, and/or security constraints, one is often forced to rely on reports from different sources. However, when one relies too much on secondary information, significant gaps can be missed. For example, a local public health center may report that 20 latrines have been distributed, but upon direct observation, one may find that they were all out of use. This is why it is important to perform direct observation and confirm with one's own eyes as much as possible. There are other limitations of the initial rapid assessment that responders need to keep in mind, and these are discussed in a later section.

What Information Needs to Be Collected During a Rapid Assessment?

The checklist for a rapid assessment is shown in **Table 1**, which includes access and security, demographics of the affected population, community resources, health, water, sanitation, food and non-food items, and shelters (including temporary housing). In the past, the United Nations and various NGOs have prepared their own rapid assessment forms. Public health specialists with expertise in humanitarian response at Harvard University, Johns Hopkins University, and the American Red Cross also prepared a rapid assessment form when responding to Hurricane Katrina. Shown in **Fig. 1** is the rapid assessment form that was modified specifically for use in Japan.

The first section on the form, access and secu-

*1 Harvard Humanitarian Initiative. Lecturer, Brigham and Women's Hospital, Harvard Medical School, Boston, USA (maya.arii@mail.harvard.edu).
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Table 1 Rapid assessment checklist

1. Security and Access
   - Route(s) to the location
   - Damage severity
   - Road accessibility, building collapse
   - Secondary disaster: chemical disaster, fire
   - Pipeline damage: gas, water, sewerage
   - Ongoing safety and security concerns
   - Weather conditions
   - Phone/internet connectivity

2. Population Affected
   - Population before disaster
   - Number of populations displaced
   - Estimated sex ratio
   - Age profile: children under 5 years of age
   - Vulnerable groups with special needs
     - Dialysis patients, oxygen-dependent patients, immobile elderly, unaccompanied minors, pregnant women, etc.

3. Community resources
   - Community disaster infrastructure
     - Emergency warning system
     - Community disaster plan and drills
     - Pre-designated shelters
   - Means of transportation
   - Means of communication
     - Mobile phones, landlines, internet, television, radio

4 to 7. Mortality and Health Impact
   - Mortality (crude mortality rate, under 5 mortality rate)
   - Main diseases and morbidity
   - Damage and impact to medical facilities, staff, and supplies
   - Public health infrastructure (surveillance, immunization)
   - Damage to emergency medical services
   - Child health
   - Reproductive health (emergency obstetric care, prevention of sexual violence)

8. Water
   - Water source
   - Water distribution system
   - Water storage
   - Distance from homes to water source
   - Water testing system

9. Sanitation
   - Toilet facilities
     - Types
     - Number
     - Location (distance from shelter/housing)
     - Lights, locks
     - Maintenance
     - Menstrual hygiene materials
   - Sanitation
     - Lavatories, buckets, warm water, shower
     - Privacy in bathing/washing space

10. Food and Non-food items
   - Food supply and calorie intake
   - Cooking (self-preparation, communal kitchen)
   - Food sources, staples, and food storage methods
   - Essential items for daily living
     - Water containers, blankets, bedding/mattresses, soaps, cooking tools and equipment (e.g., utensils, stoves, etc.), lighting, heating/air-conditioning equipment
     - Electricity, gas, and gasoline supplies

11. Shelter (including temporary housing)
   - Status and need for temporary shelters
   - Number of shelters and each capacity
   - Covered area
   - Availability of partitions (family-based or for different sex)

rity, assesses how safely disaster relief teams can access the affected areas. This includes accessibility and safety of roads as well as the risk of secondary damage from chemicals and fires, and the connectivity of phones and the internet.

The second section is demographics of the affected population. This includes the total population affected, number of displaced population as well as gender breakdown and the number of children under the age of 5. The size of vulnerable populations such as unaccompanied minors, pregnant women, immobile elderly, and dialysis or oxygen dependent population is also included in this section. The protection of unaccompanied minors is a major issue especially in developing countries, as they may fall victim to kidnapping and human trafficking, and international agencies such as UNICEF are specifically assigned to account for and protect these children during disasters.

As for disaster-related community resources, Japan has in place highly functioning disaster-resistant infrastructures such as emergency warning systems. However, especially during major disasters, assessing shelters and evacuation plans, as well as transportation and communication

Site name: _____

Rapid Assessment Form

Date of visit:	Compiled by:	Team:
Location (Address/GIS coordinates):		

1. Access and security Information source _____ Contact _____

Main routes to location: _____

Road access: Yes / No Building collapse? Yes / No Chemical concerns? Yes / No Fires? Yes / No

Damaged pipelines: Gas: Yes / No Water: Yes / No Sewage: Yes / No

Security concerns? Yes / No Specify: _____ Climate: _____

Satellite phone? Yes / No Mobile phone? Yes / No Internet access? Yes / No

2. Population Information source _____ Contact _____

Local population before event: _____ Displaced population: _____

Estimated sex ratio: _____% women Children <5 years: _____%

Unaccompanied minors: ____ # Pregnant women: ____ # HD-dependent: ____ # O_2-dependent: ____

Unaccompanied/immobile elderly: ____ Other vulnerable groups: _____

3. Community resources Information source _____ Contact _____

Emergency warning system functioning? Yes / No If yes, what type? _____

Other available disaster infrastructure: _____

Method(s) of transportation accessible to the affected population: _____

Available communication infrastructure: Mobile phone ___ Landline ___ Internet ___ TV ___ Radio ___

4. Mortality Information source _____ Contact _____

Estimated # deaths within 24 hours of event: _____ Estimated # missing: _____

Estimated # deaths (past week): <5 years: _____ ≧5 years: _____

Overall mortality rate (all ages): _____ deaths per _____ persons per _____ (recent time period)

Mortality rate in children <5: _____ deaths per _____ children <5 years per _____ (recent time period)

$$\text{CMR} = \frac{\text{total \# of deaths during time period}}{\text{total population}} \times \frac{10{,}000 \text{ persons}}{\text{\# of date in time period}} = \text{deaths/10,000/day}$$

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Site name: _____

5. Health facilities Information source _____ Contact _____

Health facility name: _____ Structure OK: Yes / No Distance from shelter: _____

Hours open: _____ Overnight stay: Yes / No # Doctors: _____ # Nurses: _____

Running water: Yes / No Toilet: Yes / No Electricity: Yes / No Food supply: Yes / No

IVF: Yes / No X-ray: Yes / No Dialysis: Yes / No Respirators: Yes / No Medication supply: Yes / No

Visits/wk: _____ # Deaths/wk: _____ # Referrals/wk: _____ Referral destination: _____

Ambulance service: Yes / No Air-lift service: Yes / No

Incidence (past week): ARI _____ Diarrhea _____ MI _____ Stroke _____ Respiratory _____

Trauma: _____ Types of trauma: _____

Psych: _____ Fear in population: Yes / No Reason: _____

Drowning: _____ Burns: _____ Other major diagnosis: _____

Outbreaks? Yes / No Type: _____ Epidemic control plan: _____

Provider stated needs: _____

6. Child health Information source _____ Contact _____

Do children have appropriate access to healthcare/caretakers proactively seeking care? Yes / No

7. Reproductive health Information source _____ Contact _____

Is there access to an emergency obstetric care center in the area? Yes / No

Systems to prevent sexual violence in place? Yes / No

- Well lit facilities (living space, latrines, walking paths)
- Adequate privacy (living space, bathing facilities)
- Promotion of awareness

8. Water Information source _____ Contact _____

% of population using the following as main water source:

Piped system: _____% Bottled water: _____% Well: _____% River: _____%

Distance of main water source from homes: _____m

Portable water bags: Yes / No _____liters/person/day

Water-testing system functioning? Yes / No Chlorination: Yes / No Coliforms/dl: _____ (0)

Turbid: Yes / No Color: Yes / No Odor: Yes / No

- >15 liters/person/day (>3 liters/person/day for drinking and food)
- <500 m from household to water point
- <30 minutes queueing time

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Fig. 1 Rapid Assessment Form

Site name: _____

9. Sanitation Information source _____ Contact _____

% of population with access to: None ____ Latrine ____ Inside toilet ____ Other (specialty) _____

____ persons/latrine Functioning latrine ___% <50 m from home ___% Internally lockable: Yes / No

- <20 people/toilet
- Toilets <50 m from dwellings
- Trench latrines >30 m from groundwater source, >1.5 m above water table

Water at latrines: Yes / No Cleaning supplies: Yes / No Maintenance teams: Yes / No

Printed health messages: Yes / No Clean latrines: Yes / No Material for menstrual hygiene: Yes / No

Waste drums: Yes / No Wash bucket: Yes / No Hot water: Yes / No Showers: Yes / No

Private bathing area for women: Yes / No

10. Food and non-food items Information source _____ Contact _____

Specify what distributions have occurred

- >2,100 kcal/person/day
- Safe, accessible distribution system

Food	Yes / No
Self-preparation	Yes / No
Communal kitchen	Yes / No
Staples: _____, _____ kcal/person/day	
Water containers	Yes / No
Bottled water	Yes / No
Blankets	Yes / No
Mats/mattresses	Yes / No
Soap (bathing + laundry)	Yes / No
Cooking utensils	Yes / No
Lighting (flashlights)	Yes / No
Stoves	Yes / No

Availability: Electricity: Yes / No Cooking gas: Yes / No Fuel for vehicles: Yes / No

11. Shelter Information source _____ Contact _____

Estimated % of population living in following:

None/Exposed: _____% Makeshift materials: _____%

Own homes: _____% Shelter buildings: _____%

Percentage of homes non-habitable: _____%

- >3.5 m^2/person covered area
- >45 m^2/person usable surface area
- Floor to ceiling height >2 m

Specify number of shelters and each capacity: _____ shelters

Capacity for _____ people at _____ Space partitions: Yes / No _____m^2/person

Capacity for _____ people at _____ Space partitions: Yes / No _____m^2/person

12. Main needs Prioritize needs from 1–6

Water _____ Sanitation _____ Food _____ Health care _____ Shelter _____ Non-food items _____

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Site name: _____

13. Priority recommendations

1. _____
2. _____
3. _____
4. _____

Notes

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Fig. 1 Rapid Assessment Form (continued)

infrastructure immediately available to the disaster affected population is a crucial part of the rapid assessment.

Sections 4 through 7 on the form concerns mortality and impact on the affected population's health and healthcare infrastructure. The crude mortality rate (deaths/10,000 persons/day) is the most useful health indicator to monitor and evaluate the severity of the disaster. It is vital not only to calculate the crude mortality rate of the entire affected population, but also age-aggregated data for the under 5 population. This is because in general, during humanitarian emergencies, small children are affected more heavily, and the under five mortality rate (deaths/10,000 children under age 5 years/day) is a more sensitive indicator than the crude mortality rate. Both the crude mortality rate and under 5 mortality rate must be aimed to be kept at less than twice the baseline crude mortality rate. Damage to healthcare infrastructure as well as available human resources, equipment, medication, transport and referral system, and volume and types of patients seen at the facilities are assessed through direct observation and communication with healthcare providers.

Water, sanitation and food and non-food items are assessed separately for each area based on the *Sphere Standards*. The same approach should also apply when examining situations of shelters.

Sources and Methods of Data Collection

Information gathering starts moments after the onset of the disaster, even before the assessment team leaves to go to the affected areas. While the rapid assessment team is preparing to leave, other staff should be delegated to collect information from reports from first responders, relief workers through ReliefWeb (http://reliefweb.int/) and other means including existing professional networks, as well as the media, and official announcements released by the government. Background data of the affected population is also collected through existing official records, national census, maps, as well as websites such as the CIA World Factbook in cases of international humanitarian response.

When conducting the rapid assessment in the field, it is important to involve the affected population from the outset. They should be treated not just as receivers of assistance, but a participatory approach must be taken in order to truly understand the needs of the affected population and to design a response that meets those needs. It is also important to collaborate with other relief teams in order to avoid repetitive or redundant activity, and lessen the burden to the affected population. The data obtained from the affected areas needs to be recorded along with the source and contact information, and its contents should be cross-checked as much as possible. Officials at the local city hall, community leaders, public health centers, providers at hospitals, and other responders are important sources of information, and key informant interviews should be conducted with these people. However, these sources may overlook the needs of vulnerable populations such as small children, immobile elderly, and physically or mentally disabled, therefore it is necessary to collect data from various sources as much as possible.

In addition to key informant interviews, other sources and methods of collecting information include an aerial survey of the affected areas from a helicopter or an airplane, community mapping, or a transect walk conducted by walking straight across the central part of the affected area while making careful observations—watching, listening, asking questions—and taking notes and drawing a cross-section of the visited area along the way. Direct observation is performed, for example, by checking the level of the water tank with one's own eyes, or observing inside of a temporary shelter. In the process, the evaluator should focus on the following 5 points.

1. Assess the general layout
2. Estimate the number of affected people and local infrastructures and resources
3. Living conditions, sanitation, water supply, food supply, health and healthcare services, and level of insecurity
4. The degree to which "normal life" and social structure have been disrupted
5. How well the affected population is coping

Limitations and drawbacks of a rapid assessment

When conducting a rapid assessment, evaluators must understand its limitations and drawbacks. Because speed is a priority, the accuracy of the data may be compromised, and the information obtained is often prone to bias. In addition, certain areas may not have been assessed due to

Table 2 Materials for Rapid Assessment

- ☐ Food
- ☐ Water
- ☐ Fuel
- ☐ Tents/sleeping bags
- ☐ Climate appropriate clothing
- ☐ Compass/GPS unit
- ☐ Maps (plastic, if available)
- ☐ List of contacts
- ☐ Camera
- ☐ Flashlight
- ☐ Backpack
- ☐ Batteries
- ☐ Chargers/adapters
- ☐ Communication devices
  - ○ Satellite phone
  - ○ Mobile phone
- ☐ Data entry supplies
  - ○ iPhone/smartphone + applications
  - ○ Paper
  - ○ Clipboard
  - ○ Note pads
  - ○ Pens/pencils
  - ○ Calculator
  - ○ Stapler

issues of access or security. Lastly, during the rapid assessment, members of the assessment team are often faced with the dilemma of providing care to people in need of medical assistance in the face of needing to complete the assessment as quickly as possible. While it is important to provide information to the affected population on available resources, such as where one can go to receive medical care or shelter, the assessment team should not be focusing on providing direct medical assistance unless it is for a life-threatening emergency. It is best to have contact information for the DMAT team or local medical providers so that cases can be referred in such situations.

Things to Consider Before Conducting a Rapid Assessment

In terms of travel logistics, the following points needs to be kept in mind.

The assessment team should consist of disaster experts, staff familiar with the local area, and relevant specialists (public health, epidemiology, logistics, etc.), and it is imperative that they have a full understanding of the *Sphere Standards*. Before conducting the assessment, it must be decided which teams will cover which areas, and these teams should collaborate to carry out the survey. The survey should be completed within 3 days at the longest. Information on local health concerns, security, safety, and communication infrastructure is also essential from a logistical standpoint.

Common items necessary for conducting a rapid assessment are listed in **Table 2**.

At the End of a Rapid Assessment

The collected information should be triangulated from different sources as much as possible, and promptly reported to headquarters. When reporting, it is important to consider "what is most important in disaster relief" based on the *Sphere Standards* and create a prioritized list of recommendations for response, as well as areas in need of more in-depth assessment. It is also important to recognize that the rapid assessment is not meant to be in-depth, and incomplete information is expected due to time and/or security and safety constraints. In addition to reporting back to the organization's headquarters, the results of the assessment must also be shared with other disaster relief organizations and relevant sections of the local governments to cross check information and to appropriately coordinate the response.

Reference

1. The Sphere Project. Humanitarian Charter and Minimum Standards in Humanitarian Response, 2011. http://www.sphere handbook.org/. Accessed March 2012.