

# Development of Disaster Nursing as Solutions to Global Issues from Japan

Sakiko Kanbara  
RN, PHN, Ph.D.  
University of Kochi, Japan



**Disaster Nursing in Japan**

**Care for DRR( 減災ケア)**

**EpiNurse**

**Public Health Self Caring  
Flood, Mabi town, 2018**

# Disaster and Nursing in Japan

## Characteristics of Disaster

- ✓ Natural and man-made disasters
- ✓ Composite, diversified, prolonged

## Death Toll in Asia from Disaster

→ more than half of the world (2011)

## Disasters in Japan

- ✓ Unresolved issues from the Great East Japan Earthquake
- ✓ Imminent Nankai (South Sea) Earthquake
- ✓ Climate Change
- ✓ Tokyo Olympic 2020

## Nurses

- Approx. 19.3 million nurses in the world
- 1.5 million employed in Japan

## Education in Japan

- 234 universities offer nursing degrees (out of 800 total public and private universities)

## Research

- Japan Society of Disaster Nursing
- World Society of Disaster Nursing
- WHOCC

**HUMAN SECURITY MEASURES**  
Now or Never

# Background of Disaster Nursing in Japan



1854–56 Crimean War

1890 Red cross Nursing in Japan launched

Many work but **No report**



1995 :Hansin Awaji Earthquake  
Sarin gas attack on the Tokyo subway system

Disaster Nursing Network funded by national research grant

1997 **Japan Society of Disaster Nursing** launched

2003-2006 Center of Excellence (COE) program "Disaster Nursing in a Ubiquitous Society in Japan", University of Hyogo  
⇒ WHO Research Collaborating Center for Disaster Nursing and Emergency Management

2007 International Council of Nurses Develop the Framework of the Disaster Nursing Competencies

2010 World Society of Disaster Nursing And held first conference (Chair H. Minami)



2011: Great East Japan Earthquake



# Japan Society of Disaster Nursing

和歌山大学 - University of Kochi  
www.u-kochi.ac.jp

災害看護に関する知識・情報に即応、災害看護の活動領域・国際的協定ネットワークを構築。その他、災害看護に関わる諸様の課題に取り組む。

日本災害看護学会  
Japan Society of Disaster Nursing

> English

HOME 本学会について 活動 災害看護情報 お問い合わせ

平成を紐とき、次代に挑む災害看護

JSDN 一般社団法人  
日本災害看護学会 第21回 年次大会  
2019年9月5日(木)・6日(金) **会期が変更になりました**

日本赤十字北海道看護大学 / 国立大学法人 北見工業大学  
北海道北見市曙町664-1 / 北海道北見市公園町161番地

尾山 とし子 成人看護学助産 教授  
日本赤十字北海道看護大学

> 平成30年7月豪雨関連

> 平成28年熊本地震関連

> 東日本大震災関連

> 日本災害看護学会の掲示板

> オンライン会員管理システム

> 学会誌データベース

> 災害看護関連用語

お知らせ (タイトルをクリックで各記事にとびます) > 一覧を見る

2019年4月30日  
> 『平成30年7月(西日本)豪雨』募金による助成事業の企画が採択されました

2019年3月23日

Message

# Development of definition of disaster nursing



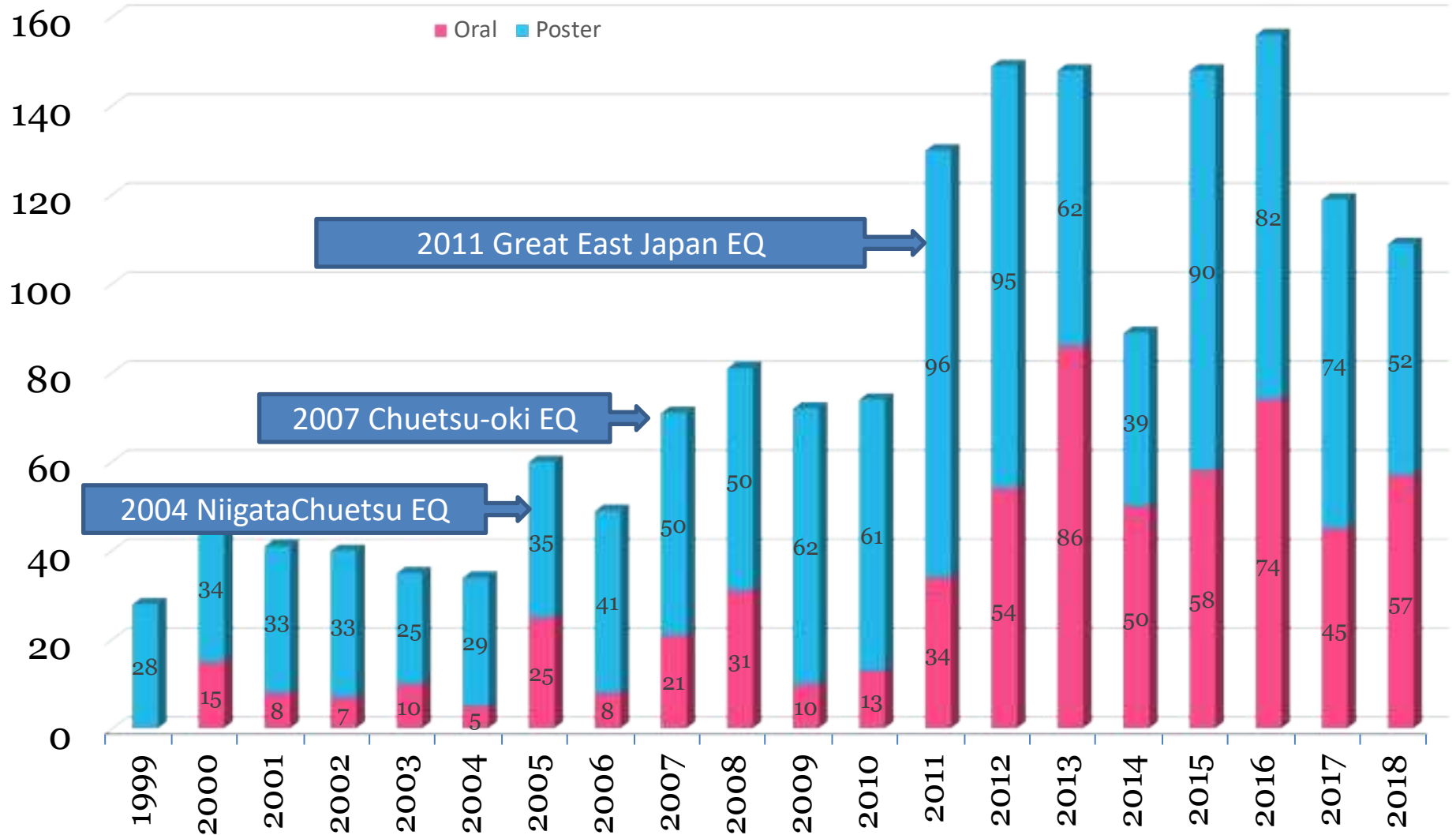
The systematic and flexible utilization of knowledge and skills specific to disaster-related nursing, and the promotion of a wide range of activities to minimize the health hazards and life-threatening damage caused by disasters, in collaboration with other specialized from disaster prevention, initial and medium and long-term.







# Number of Abstract Annual Conference of Japan Society of Disaster Nursing



(Kanbara et al., 2019)

# World Society of Disaster Nursing



The image is a screenshot of the World Society of Disaster Nursing website. The top left features the organization's logo and name. Below it is a navigation menu with links to Home, Greeting from Chairperson, What's New, Members, By-Law, Academic Conference, Activity Reports, Membership Application, and Contact Us. The main content area is titled "UNWCDRR Public Forum 3.15.2015" and includes a "What's New" section with several news items. A purple banner at the bottom right contains the website URL.

**World Society of Disaster Nursing**  
Establishment of an international society of disaster nursing, to promote the promotion of international academic exchange and collaborative research.

**UNWCDRR Public Forum**  
**3.15.2015**

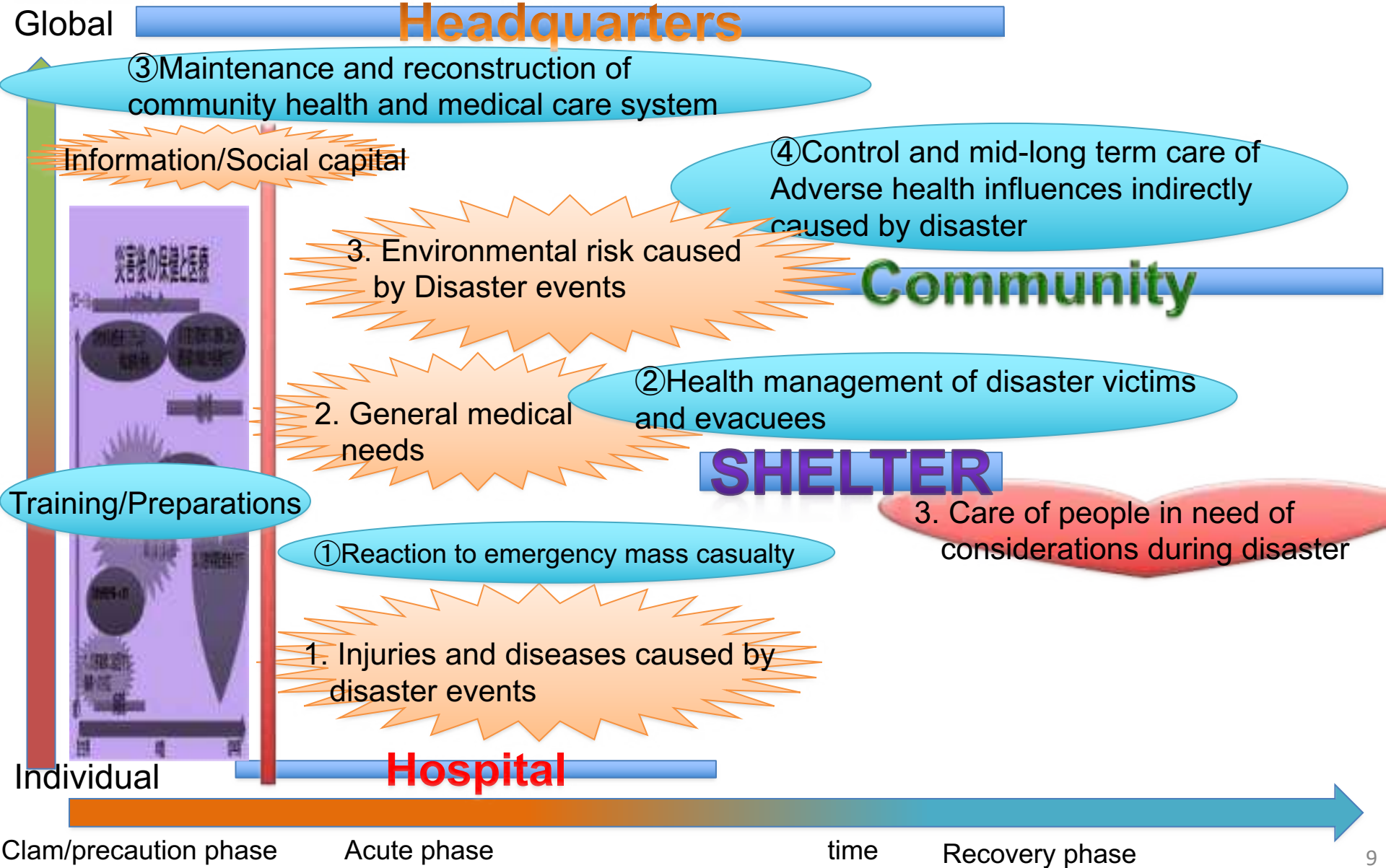
**What's New**

- ▶2015.4 [Report] Public Forum on the Third UN World Conference on Disaster Risk Reduction (WCDRR)  
> more
- ▶2015.4 At the UN World Conference on Disaster Risk Reduction in Sendai, Japan, a new global "Sendai Framework" for Disaster Risk Reduction over the next 15 years is adopted.  
Sendai Framework for Disaster Risk Reduction 2015-2030  
[http://www.wcdrr.org/uploads/Sendai\\_Framework\\_for\\_Disaster\\_Risk\\_Reduction\\_2015-2030.pdf](http://www.wcdrr.org/uploads/Sendai_Framework_for_Disaster_Risk_Reduction_2015-2030.pdf)  
Sendai Declaration  
[http://www.wcdrr.org/uploads/Political\\_Declaration\\_WCDRR.pdf](http://www.wcdrr.org/uploads/Political_Declaration_WCDRR.pdf)
- ▶2015.1 Public Forum on the Third UN World Conference on Disaster Risk Reduction (WCDRR) will be held on March 15th 2015 (SUN) by WSDN and ICN.  
> more > flyer
- ▶2014.1 The 3rd International Conference of WSDN, 2014  
PDF : [wcdn2004.pdf](#)  
URL : <http://www.iccnwcdrr.org/>
- ▶2011.3 Thank you very much Japan.  
World Society of Disaster Nursing

[www.wsdn2008.com/](http://www.wsdn2008.com/)



# Health and Medical Care Needs in Disaster



# Research Priority by Delphi study (Kanbara, 2010)

		Urgent(%)	important)	important)
Q03	Disaster nursing support for vulnerable people	82.5	33	119
Q18	Inventory of electric generators in the community (for the use of artificial respiratory equipment in the field)	72.5	29	82
Q24	Developing a manual for nursing support during actue disasters	67.5	27	95

Q17	System of cooperation during non-disaster times and support systems during times of disaster	60.0	24	36
Q20	Disaster preparedness education in general hospitals	57.5	23	44
Q50	Co-operation between hospitals, universities and bodies in the community that are concerned with disaster relief effort	57.5	23	24
Q32	Post disaster telephone triage system	50.0	20	15
Q52	Creating a support network for displaced people who have lost their homes	45.0	18	62
Q51	Establishing a cooperative system between hospitals	45.0	18	39
Q21	Contents and methods of disaster prevention drills according to health condition	45.0	18	41
Q55	Proposal for policy making that reflects experience in the field	42.5	17	51
Q40	Information management in times of disaster	42.5	17	34
Q11	Reduction of fatigue and improvement of efficiency among nurses in the disaster area	40.0	16	56
Q06	Support for children and their family	40.0	16	28
Q39	Establishing a system for sharing information for inquires about the welfare of victims of disaster	37.5	15	39
Q56	Comparison of awareness between nurses with disaster experience and those without	32.5	13	40

## <Past Achievements>

Immediate Response  
Relief in Acute Phase  
DMAT • Training Dispatched Nurses  
Lesson learned from Past Disaster"  
based Relief Work



## Challenges & Tasks

Trans disciplinary work  
Long-term Recovery  
Community-based  
Seamless & Continuous Support  
Comprehensive approaches  
Policy Recommendation  
Disaster Ethics

University of Kochi Graduate School  
Cooperative Doctoral Program for  
Disaster Nursing Graduate School of Nursing



*For our Future,  
For our Life,*



fb DNGL, University of Kochi

DNGL  
Disaster Nursing  
Global Leader  
Degree Program

Disaster Nursing  
Global Leader  
Degree Program -  
DNGL, University of  
Kochi

ホーム  
投稿  
写真  
動画  
ページ情報

フォロー中 シェア 保存 ...

投稿を作成...

写真・動画 友達をタグ付け チェックイン ...

Disaster Nur-  
Program - D  
よう

\*この学校の  
\*この学校に

Examination Schedule  
First Application: **September 9, 2018**



# Inter-curriculum

Thesis examination

【Step 3】

research paper / dissertation

Qualifying Examination

【Step 2】

- ✓ Business development model
- ✓ Industry and government internship
- ✓ System reform project
- ✓ Overseas participation programs and projects
- ✓ Courses in senior nursing and practical training; disaster research
- ✓ Global leader in disaster training exercises

Preliminary Examination

【Step 1】

- ✓ Knowledge about current research and issues
- ✓ Hands-on exercises at base hospitals and disaster sites
- ✓ Foundation courses in nursing, disaster nursing, interdisciplinary subjects

course work through online and offline systems

Enrollment

Simulation Lab

Disaster Base Hospitals and social welfare council

Public office · JICA

WHO Cooperation Center, Japan Society of Nursing Academies,  
Japan Association of Nursing Programs in Universities

World Society of Disaster Nursing, International Council of Nurses,  
International Red Cross, United Nations, WHO



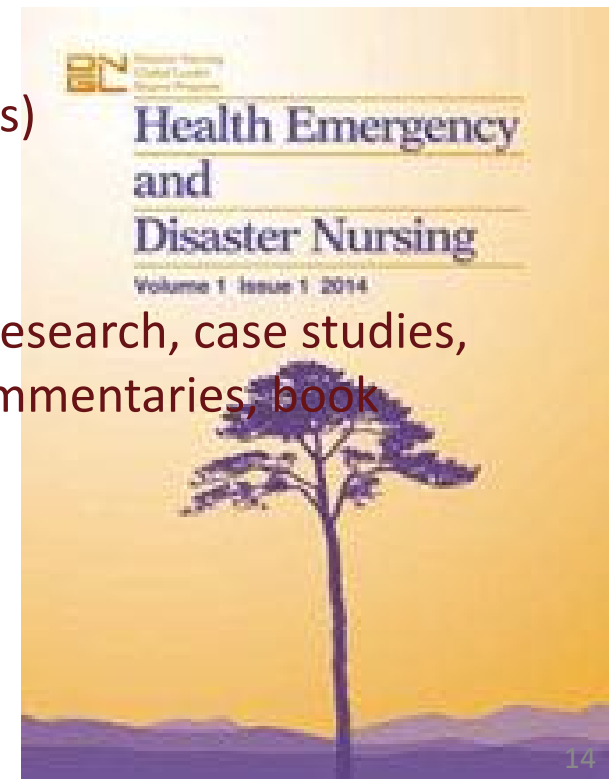
# Health Emergency and Disaster Nursing (HEDN)

- the world's first journal on disaster nursing
- Online-based
- From people engaged in disaster nursing in various fields

(educators, researchers, clinicians, students, and activists)

- Accepts a wide range of papers

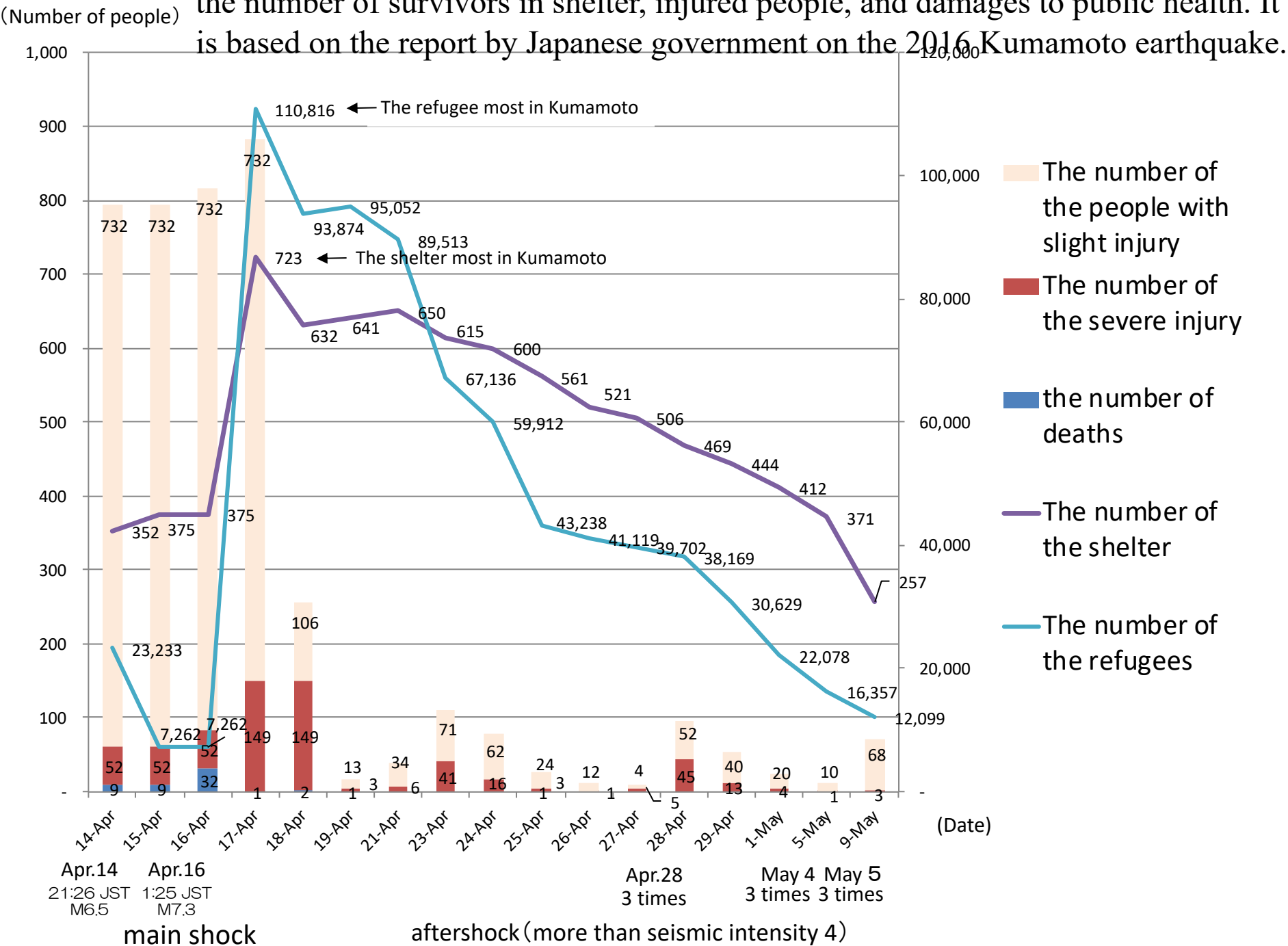
Original research (qualitative, quantitative, historical research, case studies, literature reviews etc.), activity reports, editorials, commentaries, book reviews, and videos

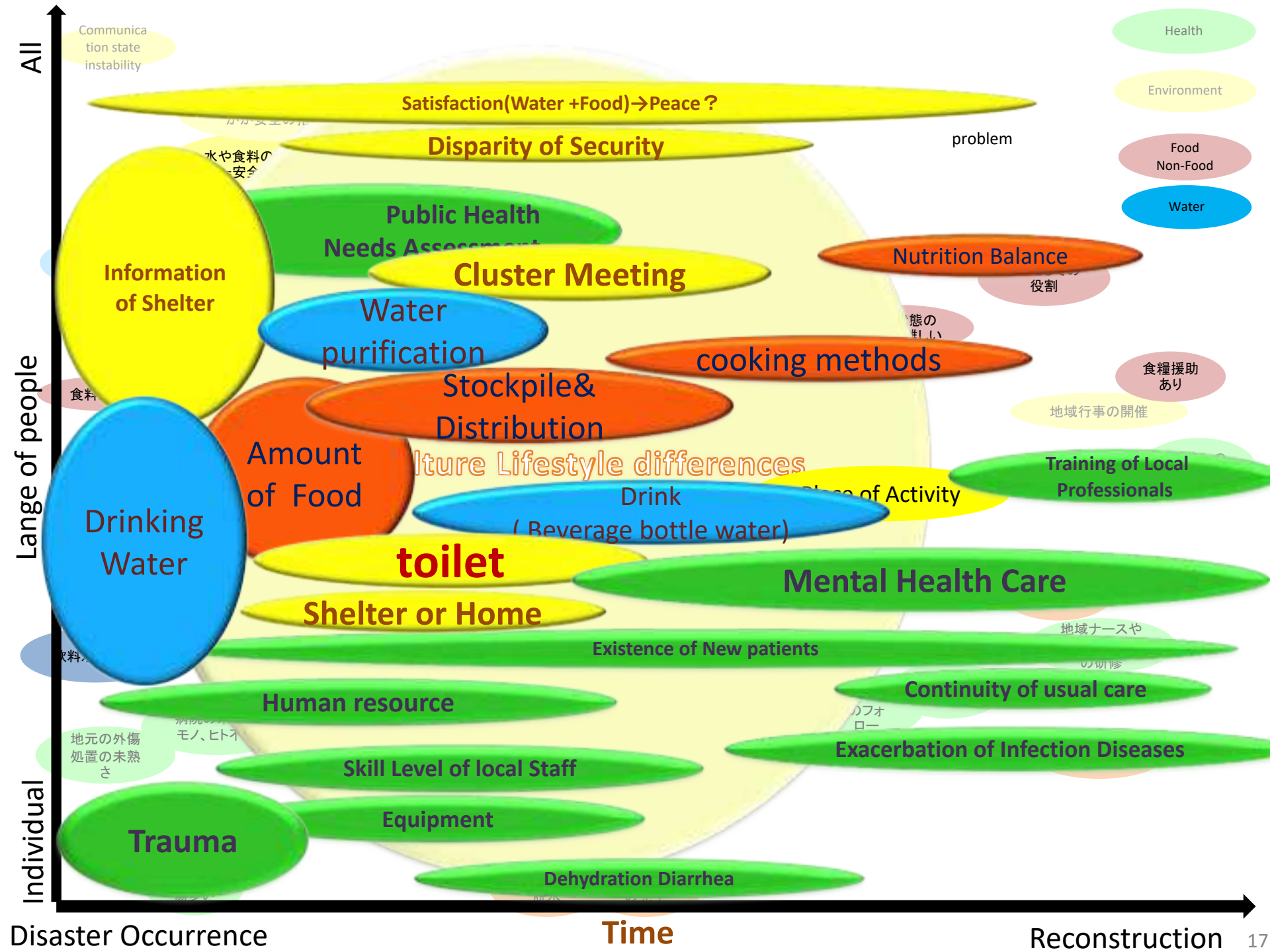


Next

# **CARING FOR DISASTER RISK REDUCTION, 減災ケア**

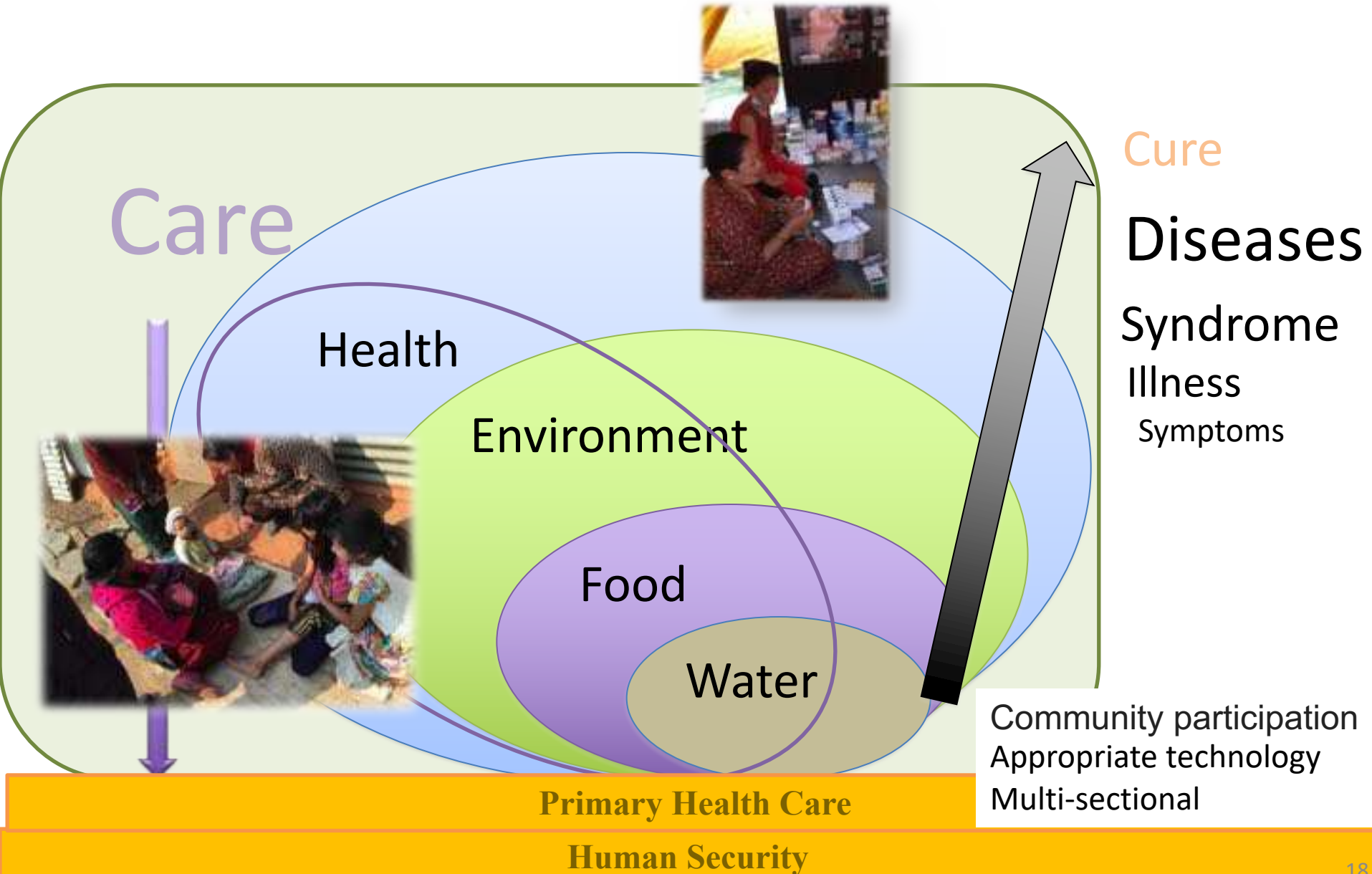
the number of survivors in shelter, injured people, and damages to public health. It is based on the report by Japanese government on the 2016 Kumamoto earthquake.





# Paradigm of Care for DRRs "GENSAI" care

(Kanbara 2015)





# Pathogenesis & Surveillance system



Shelter

Mobile clinic

Hospital

outcome

Preparation

Environment

Behavior

Symptom

Syndrome

Disease



Public Health Center

Ministry of Health

(C) SPEED

Example

- Fever
- Cough
- Eye irritation
- Loose stools
- Fractures
- Edema ...

SPEED

緊急援助に限定

(D) Early Warning Alert and Response System (EWARS)

Example

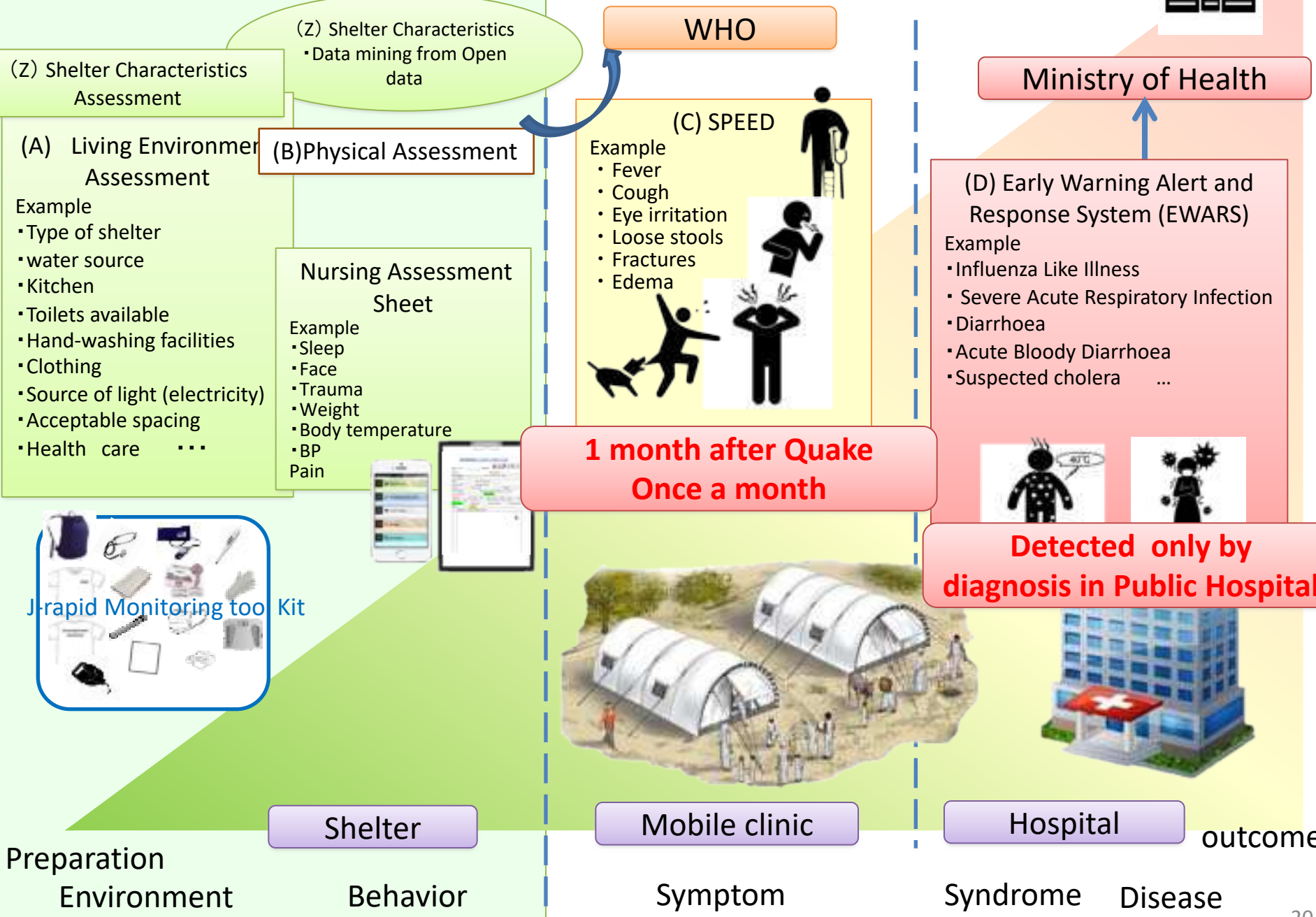
- Influenza Like Illness
- Severe Acute Respiratory Infection
- Diarrhoea
- Acute Bloody Diarrhoea
- Suspected cholera

EWARS

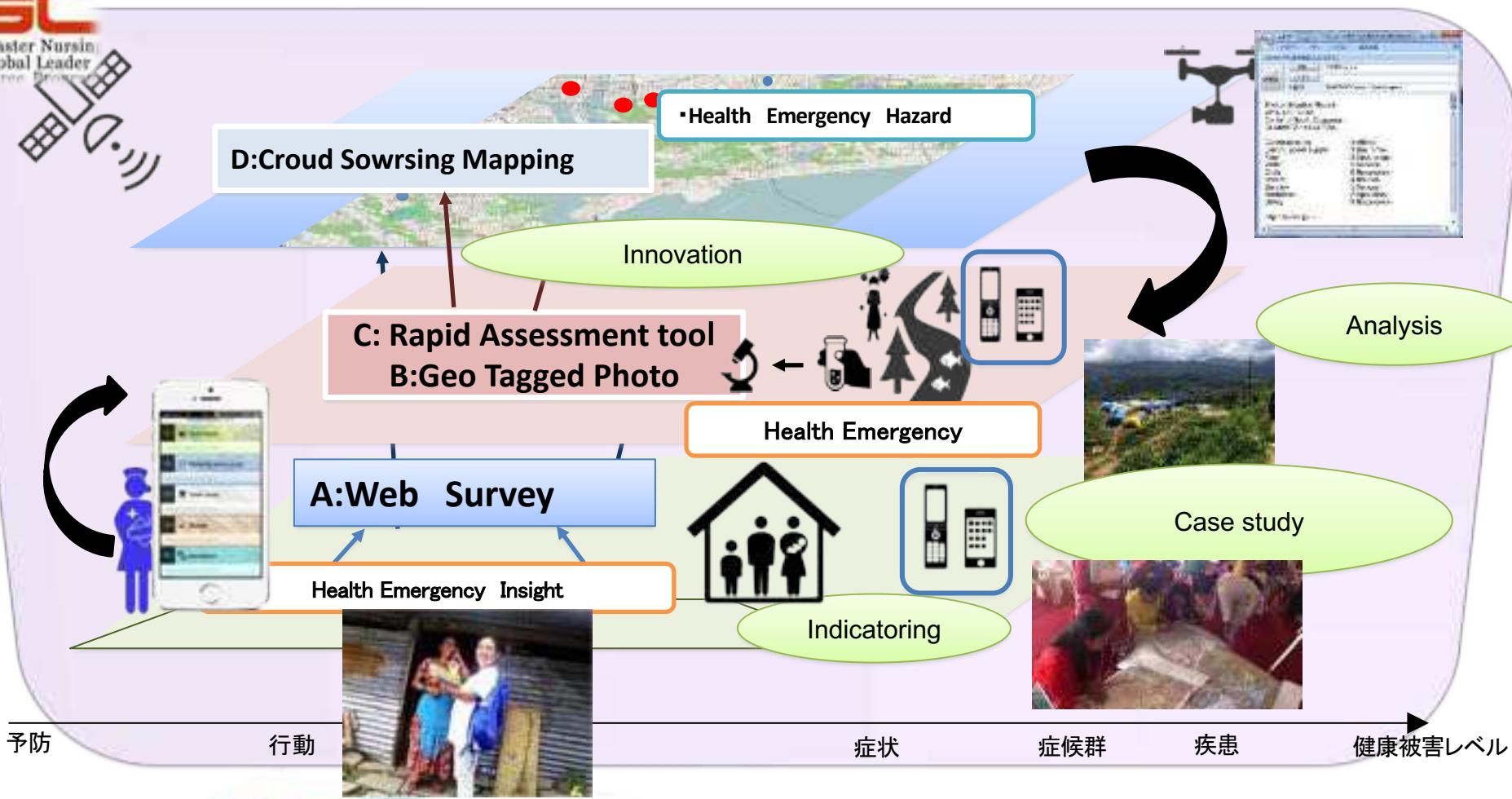
病院の診断  
発見



# Pathogenesis & Surveillance system



# Spatial Information mofor Gensai Care Model



**Market Validation**

**Globalization**

イスラエル

EpiNurses use **ICT Toolkit to assess living conditions** and provide crucial yet hard-to-collect evidences of health threats on disaster site.



2011 東日本大震災-----

# Sherepo!



2013 台風ヨランダ(フィリピン)----

Official report



Structured Data



Unofficial report



Shelters



HOW DOES eBAYANIHAN WORK?

OBSERVE REPORT VISUALIZE



HOW TO REPORT A DISASTER



To report a disaster event, text **POST** (SMCC) + keywords (CONNA) + Urgency (CONNA) + Barangay (SMCC) + City/Municipality (CONNA) + details

POST flood, urgent, Laya Heights, Quezon City, hanggang tulod



-----2016 熊本地震

MANUAL

HOW TO SUBSCRIBE

To subscribe to the eBAYANIHAN Service:

# Global and Trans-disciplinary Team Work

From Japan Lesson learned

Interdisciplinary

Nursing Science  
Epidemiology

Geography  
Information Technology  
Health Informatics  
Anthropology  
Disaster Science

Philippine

Globally

Nepal

Congo  
Indonesia







# EpiNurs<sup>e</sup> Project

Epidemiology + Local Nurses  
for Disaster Risk Reduction

# Objective

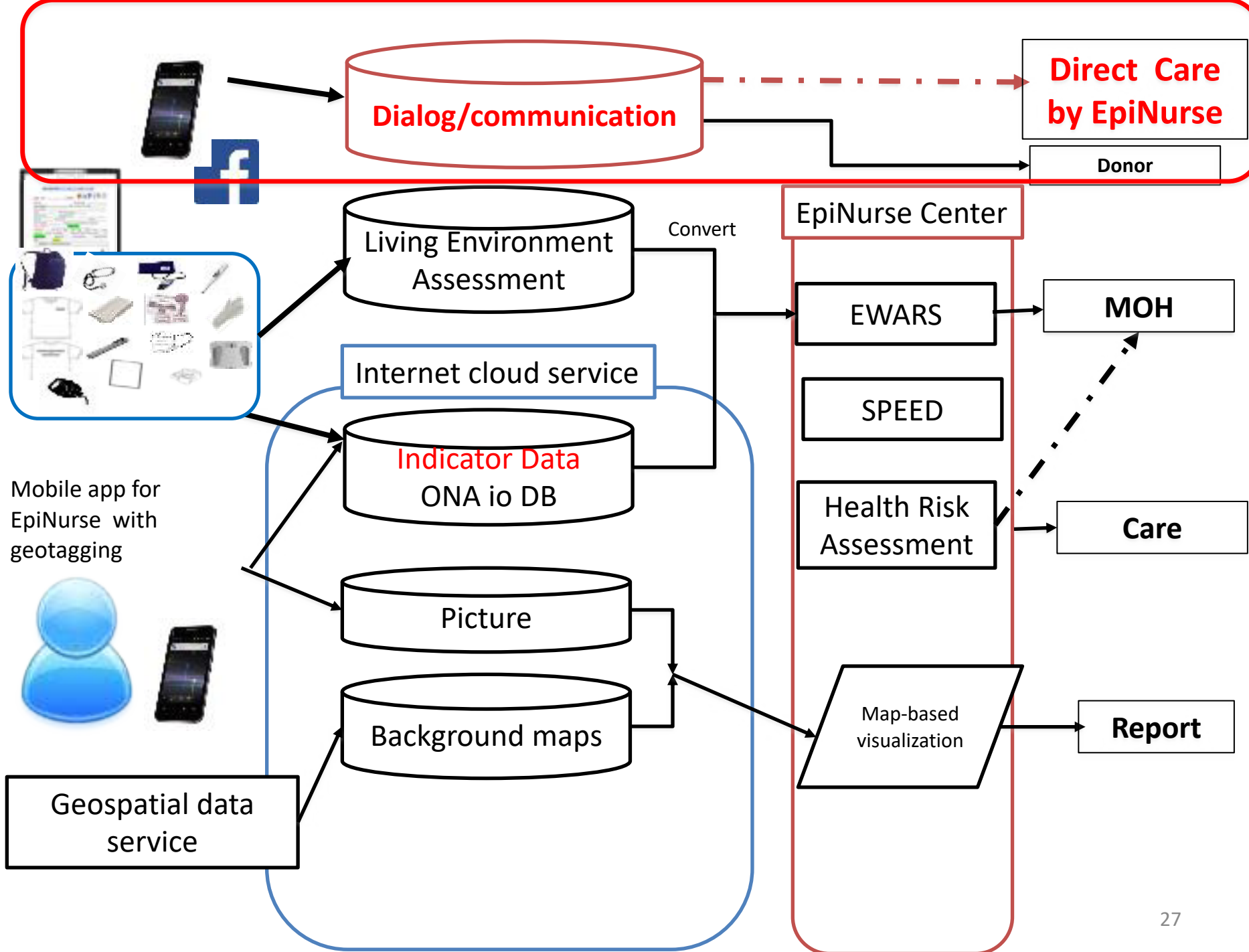
- To provide an open framework that can easily provide information for data sharing with other sectors
- For nurses to assess the extent of the emergency in living environment and the communicable disease threats to the population in disaster camp





## Activities

- Rapid Assessment
  - a. Location
  - b. Care needs (WASH, Food, Non Food, Shelter, Health)
  - c. vulnerability and hazard
- Data information sharing (Plug into WHO-MDS)
- Minimum First aid & nursing care







**Damgade**

Population: 510  
 (under 5): 146  
 (Male): 227  
 (Female): 284  
 Total number of families: 131

**Golda**

Population: 62  
 (under 5): 18

**Padma Tower**

Population: 256  
 (under 5): 127  
 (Male): 115  
 (Female): 115  
 Total number of families: 40

**Dhading Damgade**

Population: 264  
 (under 5): 73  
 (Male): 96  
 (Female): 204  
 Total number of families: 85

**Dhading Damgade**

Population: 264  
 (under 5): 73  
 (Male): 96  
 (Female): 204  
 Total number of families: 85

**Manakul**

Population: 342  
 (under 5): 70  
 (Male): 177  
 (Female): 153  
 Total number of families: 50

**Manakul**

Population: 183  
 (under 5): 8

**Lapa basti**

Population: 22  
 (under 5): 1  
 (Male): 11  
 (Female): 11  
 Total number of families: 54

**Phulpingkatti**

Population: 320  
 (under 5): 71  
 (Male): 159  
 (Female): 150  
 Total number of families: 70

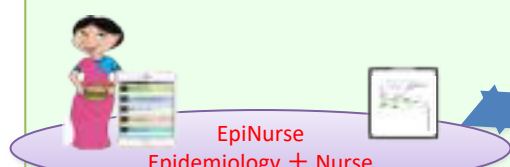
**Plykarkhana**

Population: 47  
 (under 5): 2  
 (Male): 32  
 (Female): 13  
 Total number of families: 10

**Nepal Earthquake 2015**



# Visualization of "EpiNurse information"



**EpiNurse Center**  
Nepal Nursing Association

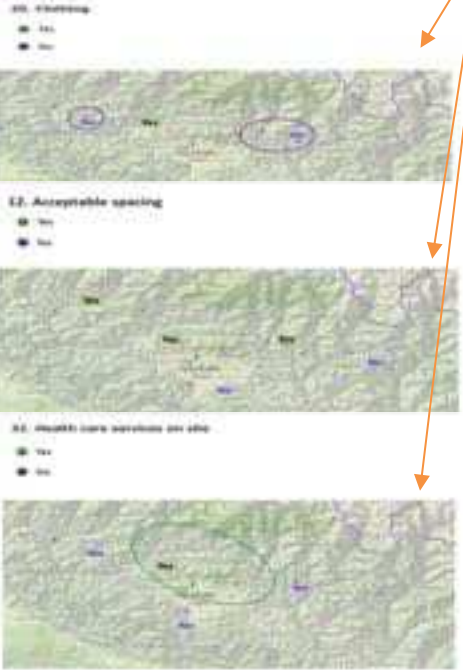


Capacity Development of Local Nurses



- Literacy of Disaster Risk Reduction
- Primary Health Care (PHC)
- Network for Social Capital

GIS Mapping of Primary Health Care



**(A) Living Environment Assessment**

Example

- Type of shelter
- water source
- Kitchen
- Toilets available
- Hand-washing facilities
- Clothing
- Source of light (electricity)
- Acceptable spacing
- Health care ...

**(B) Physical Assessment**

Monitoring tool Kit

**(B) Nursing Assessment Sheet**

Example

- Sleep
- Face
- Trauma
- Weight
- Body temperature
- BP
- Pain



**(C) Surveillance in Post Extreme Emergencies and Disasters (SPEED)**

Example

- Fever
- Cough
- Eye irritation
- Loose stools
- Fractures
- Edema ...

SPEED

Only Emergency Phase

Mobile clinic

**(D) Early Warning Alert and Response System (EWARS)**

Example

- Influenza Like Illness
- Severe Acute Respiratory Infection
- Diarrhoea
- Acute Bloody Diarrhoea
- Suspected cholera ...

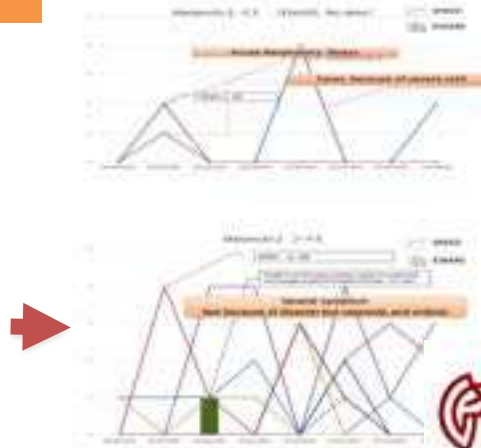
EWARS

Detected only by diagnosis in Public Hospital

Hospital

Total Number EpiNurse reported

Health Issues	Total cases : Under 5 years	Total cases : Above 5 years
Fever (FEV)	352	536
High blood pressure >140/90 (HBP)	0	242
Difficulty in breathing and wheezing (AAA)	135	212
Fever with headache, muscle pains and any of the following: eye irritation, jaundice, skin rash, scanty urination (LEP)	38	122
Loose stools with visible blood (ABD)	39	52
Yellow eyes or skin with or without fever (AJS)	15	15
Known diabetes (KDM)	0	83
Fever with spontaneous bleeding (i.e. nose bleeding, gum bleeding) (AHF)	6	15
12 months and over: sudden onset of fever (>38° C) with severe headache and stiff neck; <12 months: fever (>38° C) with bulging fontanel, or refusal to suckle (MEN)*	4	0
Animal bites (ANB)	7	9
Spasms of neck and jaw (lock jaw) (TET)	2	2
Loose stools, 3 or more in the past 24hrs with or without dehydration (AWD)	206	270
Fractures (FRS)	6	22
Eye itchiness, redness with or without discharge (CON)	104	247
Skin disease (SDS)	136	261
Open wounds and bruises/burns (WBS)	36	142
Fever with other symptoms not listed above (FOS)	13	36
Fever with rash (MEA)	44	64



Shelter name	Melamchi 2
population	1363
male	688
female	675
families	320
shelter/type of shelter	Temporary
safety security assured	no
drinking water/drinking water type	tap water
drinking water/adequate water supply	no
safe clean food items provision	no
kitchen	yes
appropriate waste storage	no
toilets available	48
adequate number of toilet	yes
hand washing facility	yes
soap available	yes
non food item	no
source of light	yes
acceptable spacing	no

## EpiNurse as informant

Working experience on site: 16 years

She can speak local language and know their culture

## EpiNurse as monitor

Mapping

Health and Environmental Assessment

She said

Emergency Drill Experience **No**

Disaster experience **thunderstorm and accident in the hospital.**

**WASH training by WHO** one year before Quake

### Aftermath of Disaster

Doctors, CMA and nurses were so busy.

No foods to cook.

**PHC knows** about the **disaster management** but they are **not prepared**, didn't know whom to coordinate

We have very **less manpower**

Daily there are about 150 patient and 4 to 5 critical patient to bed.

We have about 45 delivery cases

**Other hospitals are difficult to** due to geographical reason.

Toilet **4**

Adequate number of toilets **Yes**

Hand-washing **Yes**

Soap **Yes**

clean food **No**

Kitchen **Yes**

waste storage **No**

Acceptable spacing **No**

Acceptable cleanliness **No**

Blanket **No**



## EpiNurse works as care giver

Need not report up and in hospitalization but need direct care and common medication

# 2017



- **Innovative PROJECT** that uses modern communication technologies and
- Offer **tailor-made solutions** for **disaster risk** problems
- Take **people-centered** approaches
- **Combination** of bottom-up approaches with top-down frameworks.
- **Multi-stakeholder partnerships** (different sectors, different sizes, different organizational background, PPPs).

# REASONING why EpiNurse

- **Trust:** Calls to get to safety have a profound impact on people's everyday lives.
- **The best and most innovative technology is of little use if messages are not taken seriously by the recipients.**
- **The target group – the people at risk,** must be prepared so that they can understand and use the new technology
- **Critical mass:** an Information Communication Technology (ICT) must reach a large number of people in the target region.

Warnings should be reliable and that there is trust between the sender and the recipient.



**Positioning**

**Vulnerability/Protection**

**WASH**

- Water source
- Water distribution system
- Water storage
- Toilet facilities
- Sanitation –

**Food**

- Food supply and calorie intake

**Non-food items**

- Essential items for daily living
- blankets, bedding
- lighting, heating/air-conditioning equipment

**Shelter**

- Status and need for temporary shelters
- Covered area

Photo

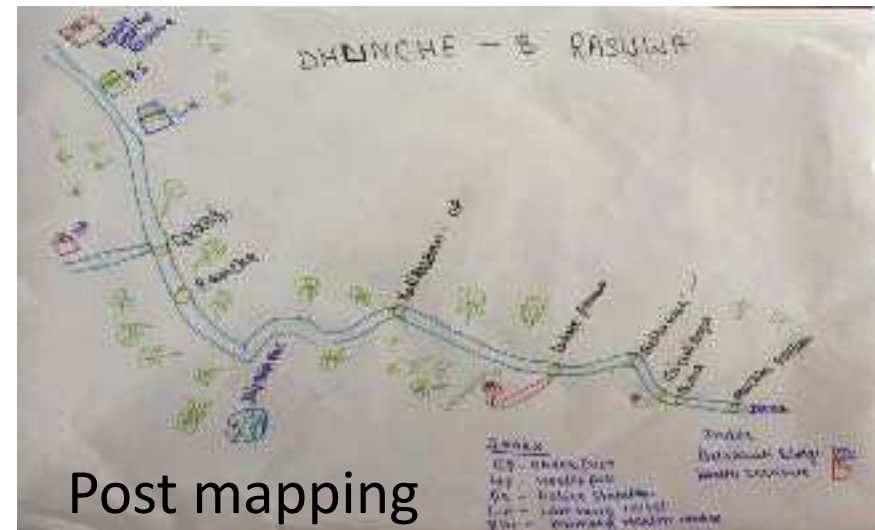
# Critical issue faced on Community Monitoring

(Difficulties of People centered & bottom up approach)

- Geographic information of Tentative migration point
- Minimum Indicator for health security
- Availability of access to data
- Visualize uncountable data
- Update fluid situation
- Statistics disaggregated by characteristics relevant in community
- Ensure that no one is left behind



## Capacity building: Map Reading and Map Making



# Capacity building: ICT training and system (app) orientation





# Community nurses, field training



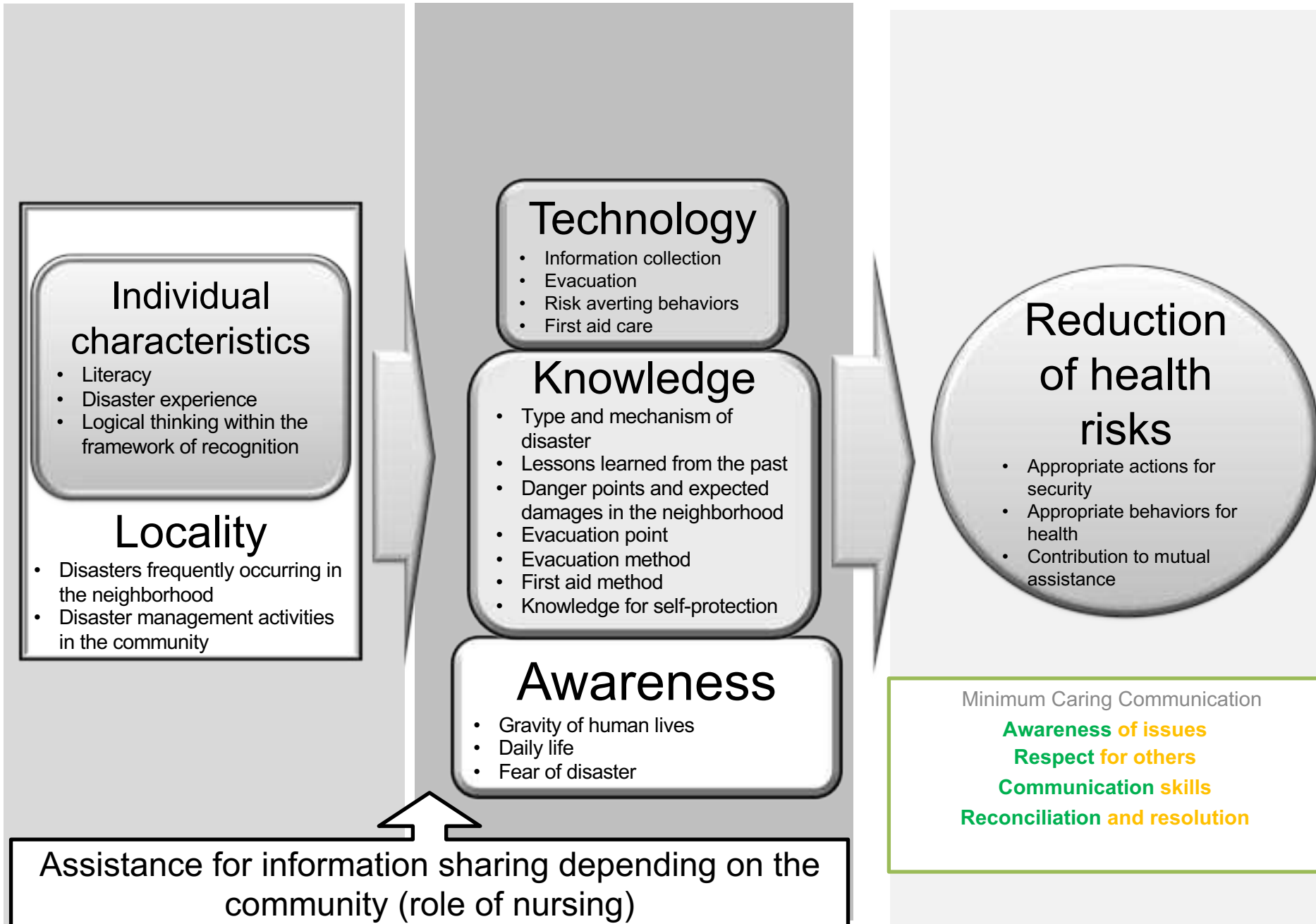
# www.epinurse.org

## FB page: EpiNurse



The screenshot shows the EpiNurse website homepage. At the top left is the EpiNurse logo with the tagline "Epidemiology+ Nursing for Disaster Risk Reduction". To the right is a Facebook icon and the email address "info@epinurse.org". A red navigation bar contains the following links: "Project", "Our Team", "Get involved", "Contact", and "Blog". Below the navigation bar, the main heading reads "We care universally!". Underneath this heading are four menu items: "MEET THE TEAM", "FAQ", "OUR CHALLENGE", and "PARTNERS". A large photograph shows a group of people in a meeting room, some wearing red shirts, gathered around a table with laptops. At the bottom left, there is a red button that says "Make an Appointment".

# Concept Analysis of Gensai/ Bosai literacy (減災/防災リテラシー) in Japan





3

# **FLOOD IN WEST JAPAN 2018**

# West Japan Flood, July 2018



# Evening July 8th Google Map

Daytime  
temperature 37 C  
Water shortage  
Cable TV break up  
Passing off

44.08km<sup>2</sup>  
9006 households 22,797  
(As of June 30,)



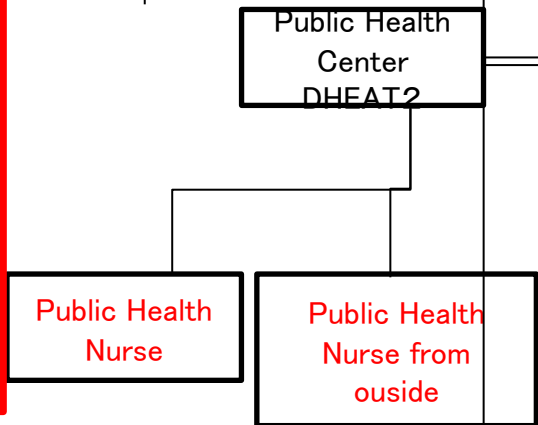
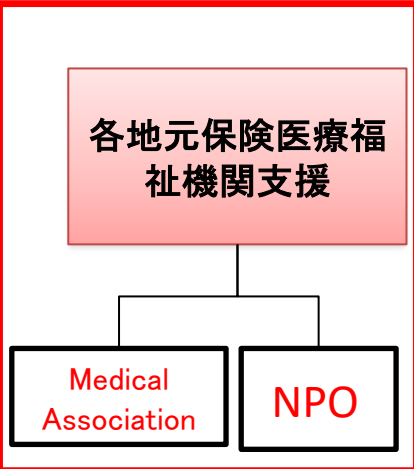
Flood damage:  
Medical institution  
10/11 Pharmacy  
8/8 Drugstore 3/3  
Super 5/5  
Convenience store  
6/7

Total number of  
deaths: 51 22 men  
and 29 women  
More than 90% of  
the causes of death  
are drowning  
Average age 73.8

About 2350 evacuees → Shelter  
outside the town → Relatives home

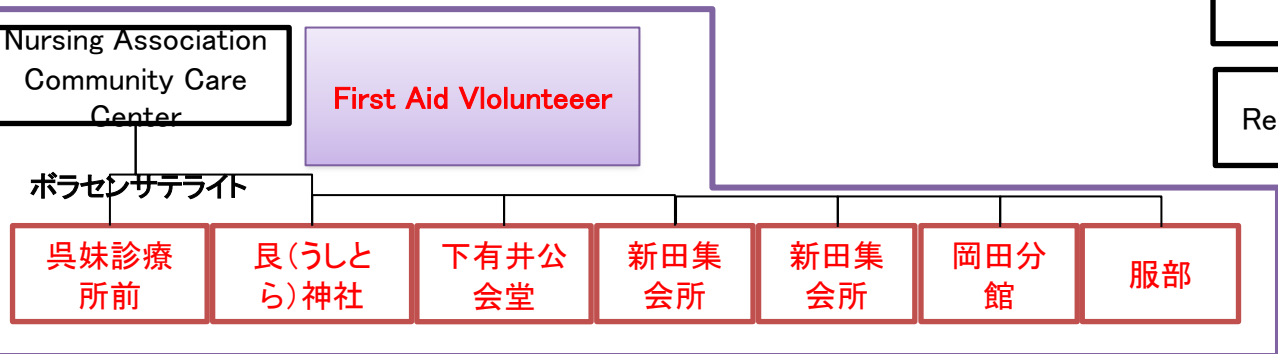
**Health Response and Nurse**

8月上旬まで



- DWAT Up to end of August
- JRAT Around August
- JDA-DAT 8/3 withdraw
- JMAT 7/31 withdraw.
- Hospital Nearby shelter
- NPO Insurance practice upto 7/31
- Pharmacist Association
- Acupuncture, Massage Continue outside the shelter
- Nurse Upto Mid august
- Red cross End of July

**Social welfare council**



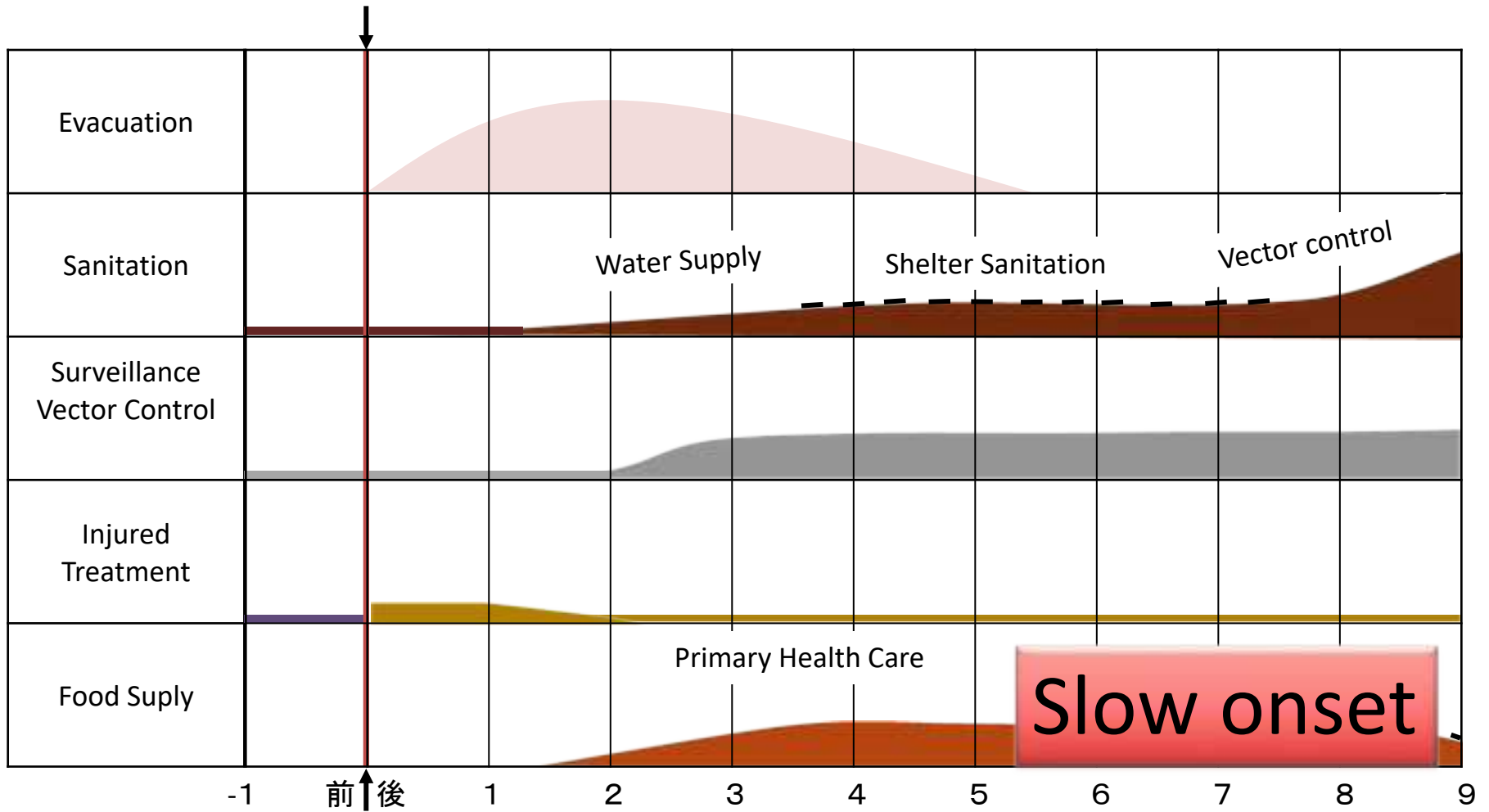


# Day3 Medical Sector Meeting




# Health Needs on Flood

洪水発生



Day

(WHO/PAHO : Short-term effects of major disasters ; Natural Disasters : Protecting the Public's Health,2000




Daytime:  
A reception slip/ necessary meal  
(supplies)

800 people?

Who can stay? By Arrival  
time ? Priority? Care needs?



Vulnerability<>Resilience=  
Coexisting



Night :  
Abrasion, fatigue, anxiety  
Dementia wandering







Food:  
Nutrition balance <> Hygiene  
Required number << Vender Limited

Nutrition Balance >> Hygiene

Heat Attack....







Well and clean cloth for  
Water outage

# Heat Attack Prevention

Everyone "taking a rest", to stop emergency transportation

>>> Individual efforts of health care >> Primary health care · Public health





# Mapping (difficulty)



# Bottleneck of “Operation”

---

“I never imagine that .....

---

“I think it is a good idea, but I can not decide”

---

“I can not decide, because of my first experience.”

---

”.....Because of personal information”

Disaster Risk  
Creation

---

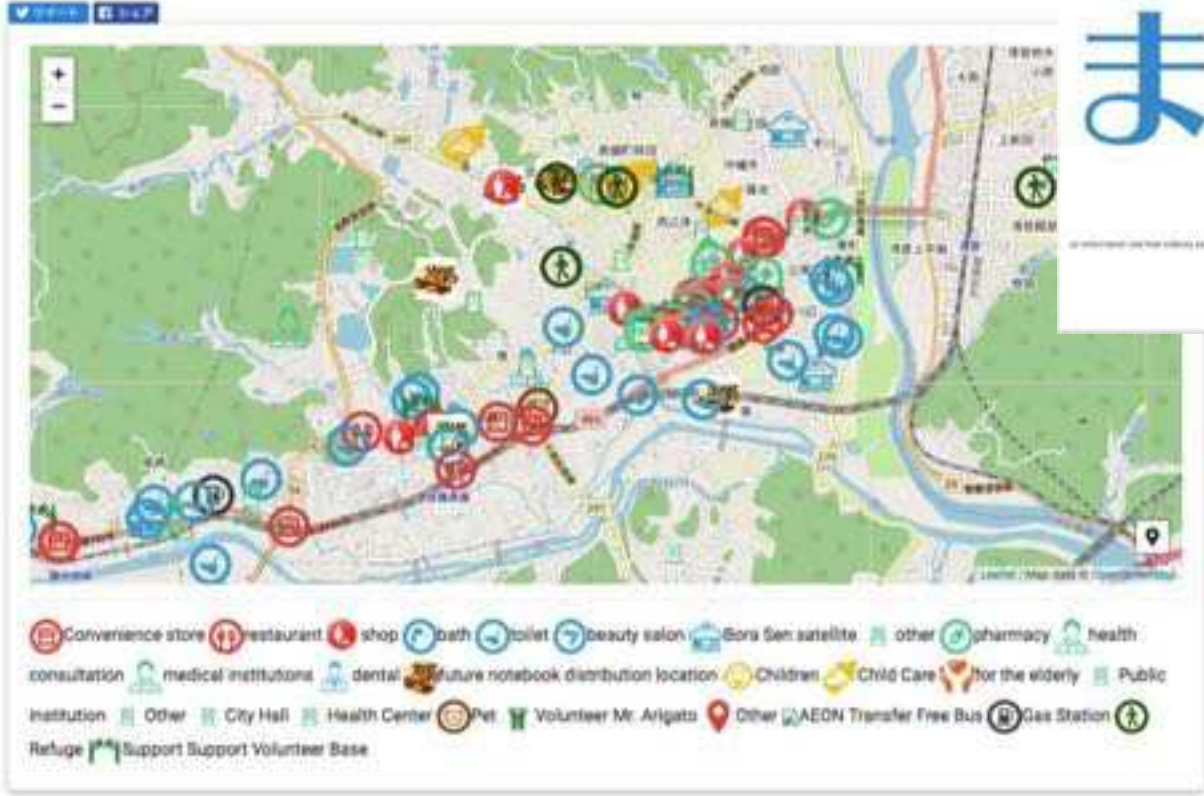
I do not do because the neighbor do not do.

How to promote selfcare?



# DISASTER RECOVERY MAP MABI CARE

🐾 Search from map



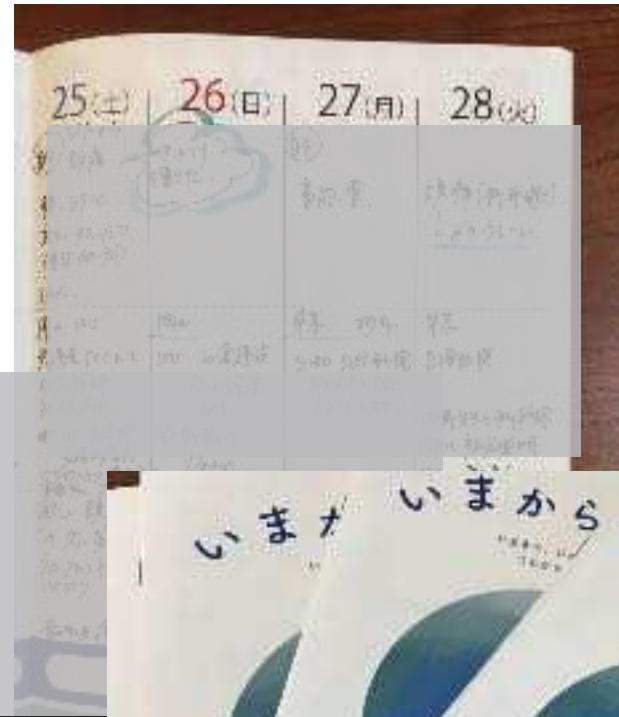
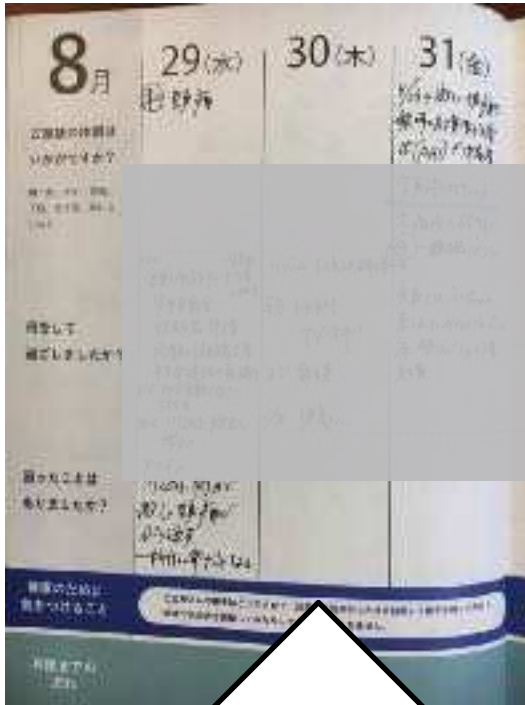
# まびケア

- 被災のための情報ポータル -



Access to live a healthy life  
In chaos disaster affected area....

# Disaster Log Book



Health Record/Medical Chart  
Diary

Reminder of Administrative procedures  
Calendar of Seasonal Health problem & Consciousness  
Telephone directory

# Challenge during Disaster Research as Human Science

Design thinking  
Hypothesis for uncertainty

Pre-disaster data  $\Delta$   
Pilot study  $\times$   
Disaggregated Information  
Hypothesis planning  
Connect to counterpart  
Budgeting

Ethical considerations  
Implementation  
Reliability  
Validity  
Publication for  
Revitalization

Human Security

減災ケア(in Japanese)  
**Gensaicare.com**

EpiNurse  
**Epinurse.org**

まびケア (in Japanese)  
**Mabi-care.com**

The screenshot shows the header of the Gensaicare website. It features a purple circular logo with the text '減災 Lab' (Gensaicare Lab). To the right of the logo are navigation links: HOME, ABOUT, ACTIVITIES, Contact & Reference, ファイルシェア, and Members. Further right, there is a logo for '高知県立大学 災害看護グローバルリーダー養成プログラム' (Kochi University of Health Sciences Global Disaster Nursing Leader Training Program) and a 'LOG' button.

## Caring for Disaster Risk Reduction

### 減災ケアの構築

「減災ケア」とは、人間の安全保障を基盤とした、「水・食糧・生活環境・健康」のセルフケアによって、あらゆる災害に関する健康リスクを減らす活動です。

高知県立大学×災害看護では、予め「Health Emergency」（健康の緊急事態）による医療不足あるいは格差を想定し、地域の産官学民が、それぞれの強みを生かしながら、持続可能な開発目標(SDGs)が掲げる「誰も一人取り残さない (No one will be left behind)」のための「減災ケア」を高知というフィールドの「リサーチステーション」と位置付けて活動しています。