

How to make a healthy resilient community

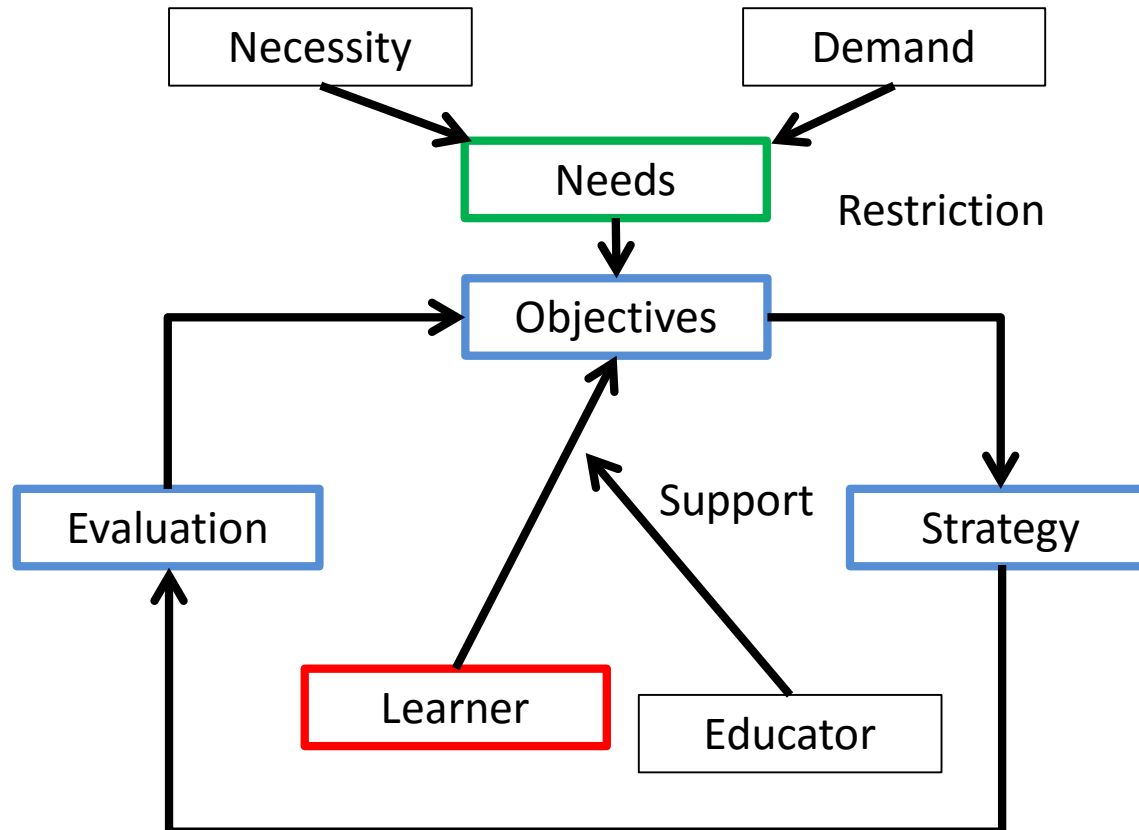
Shinichi Egawa, MD, PhD, FACS
IRIDeS, Tohoku University

Agenda

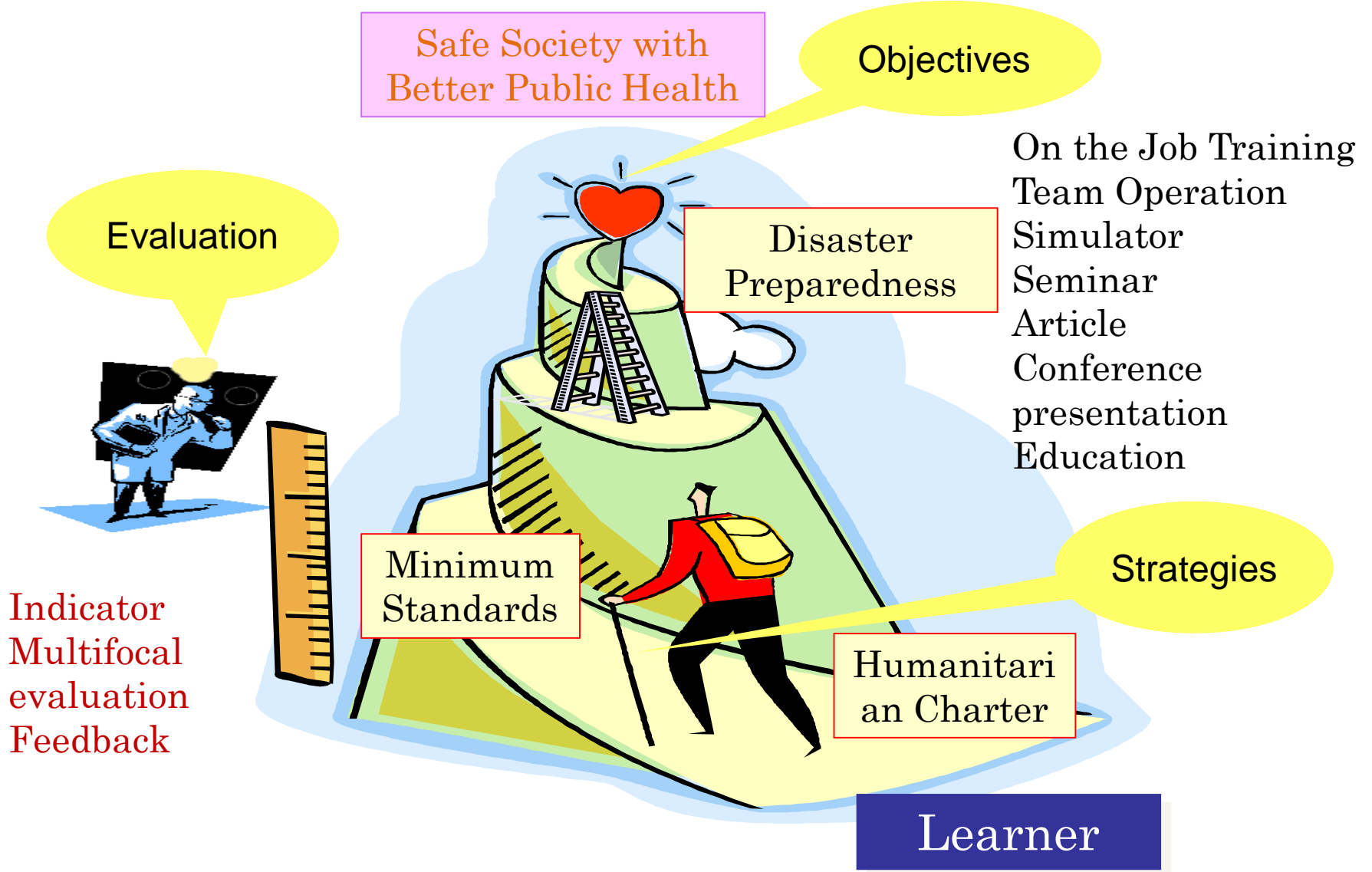
1. Learning process
2. How to measure community health
3. Change of Health Risks in disaster.
4. Health facilities and functions in mega-disasters.
5. Health in SFDRR.
6. How to make a healthy resilient community.

Learning process

- Learning is a process to alter the action of the learner.
- Educator supports the process.
- Curriculum is actual planning of the whole process.



Three elements of educational process

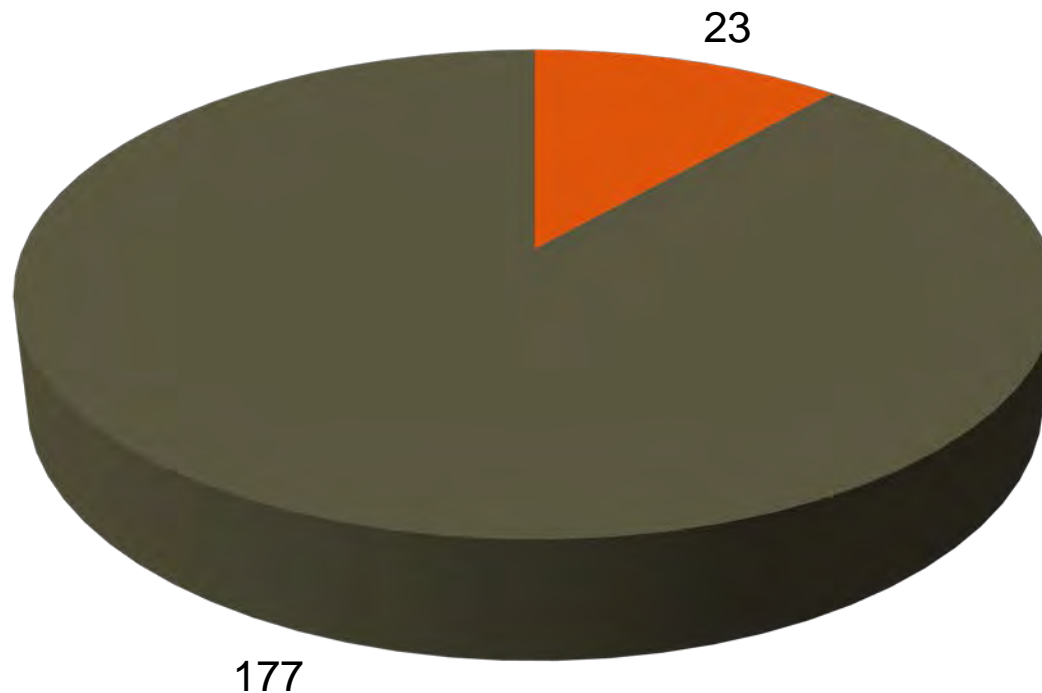


Answer Pad

- * Anonymous data collection
- * NOT intended for research purpose, a strategy to keep you actively learning.
- * Feel free to answer

Sign In

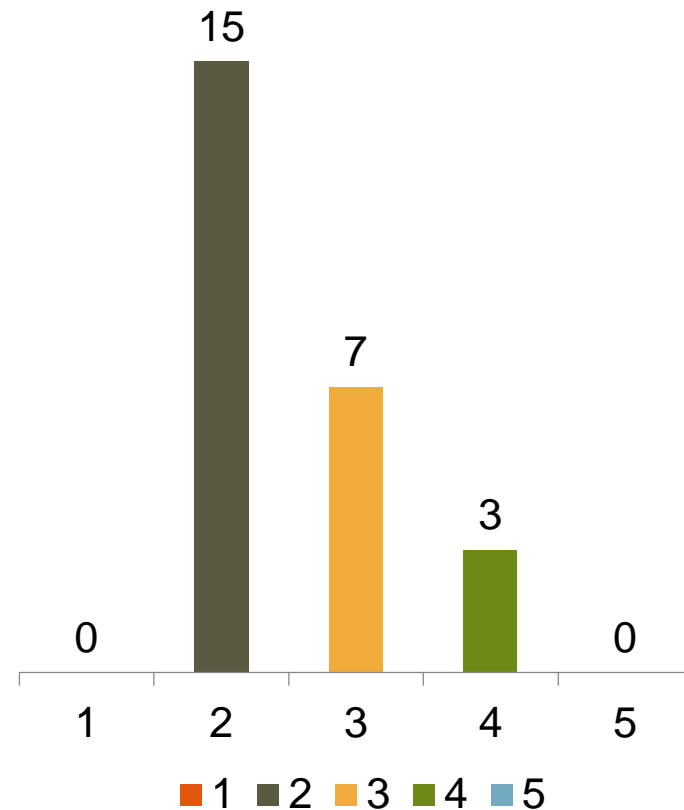
Press any number and OK



■ Sign In ■ Not

Select your age

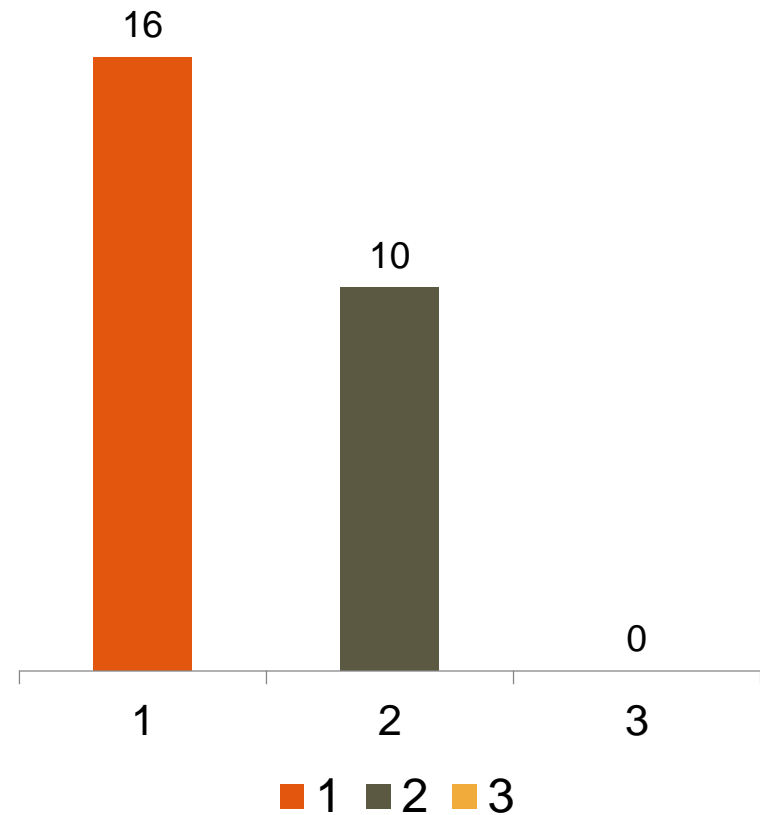
1. Age 20 or younger
2. Age 21-30
3. Age 31-40
4. Age over 40
5. Not disclosing



投票数: 25

Select your gender

1. Male
2. Female
3. Not disclosing

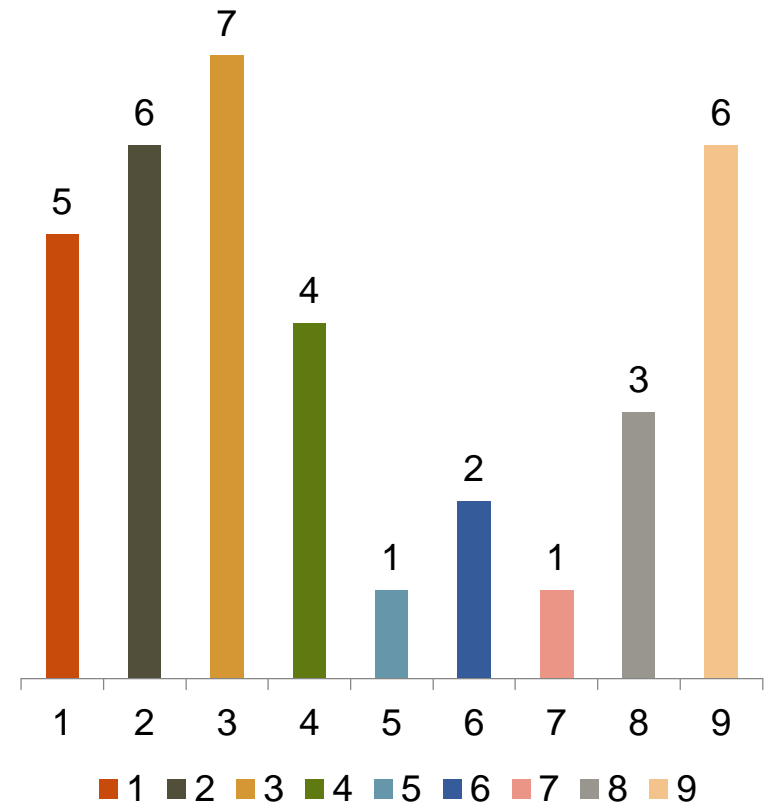


投票数: 26

What are you going to be?

1. Business
2. Teacher
3. Scientist
4. Engineer
5. Artist
6. Writer
7. Politician
8. Health Professional
9. Other

Multiple answer
Select any numbers
and press OK

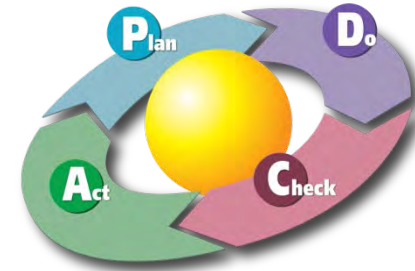


投票数: 24

How to make a healthy resilient community

How to measure community health.

William Edwards Deming



PDCA cycle (Deming Wheel)

You cannot improve what
you cannot measure.

Statistician, writer, lecturer and consultant.

Who transduced quality management to Japanese industry after WWII.

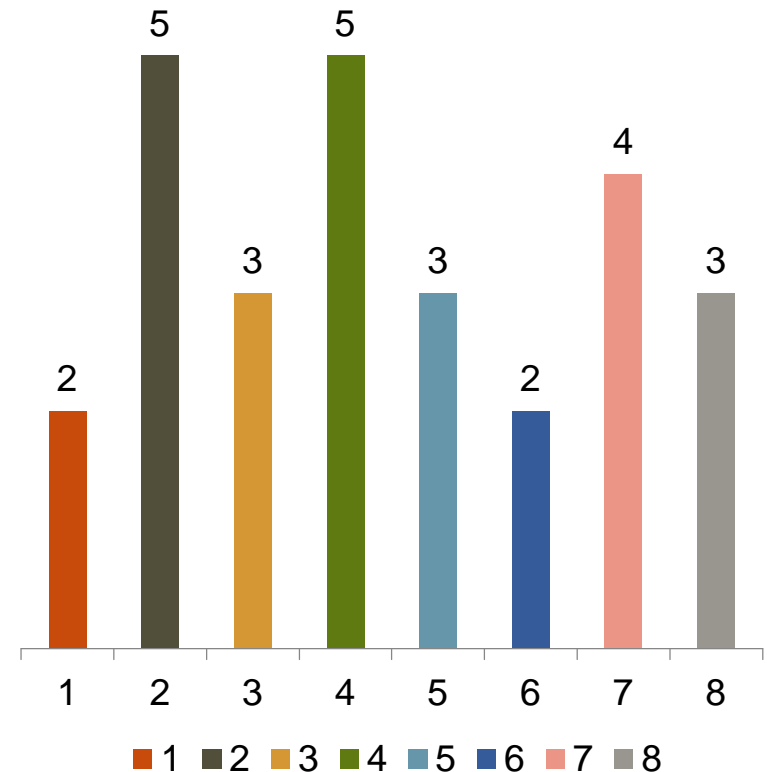
Deming Award in Japan is given to excellent total quality management.

What are the TOP5 causes of death in Japan?

2015 Jul Ministry of Health, Labour
and Welfare, JAPAN

Whole Population

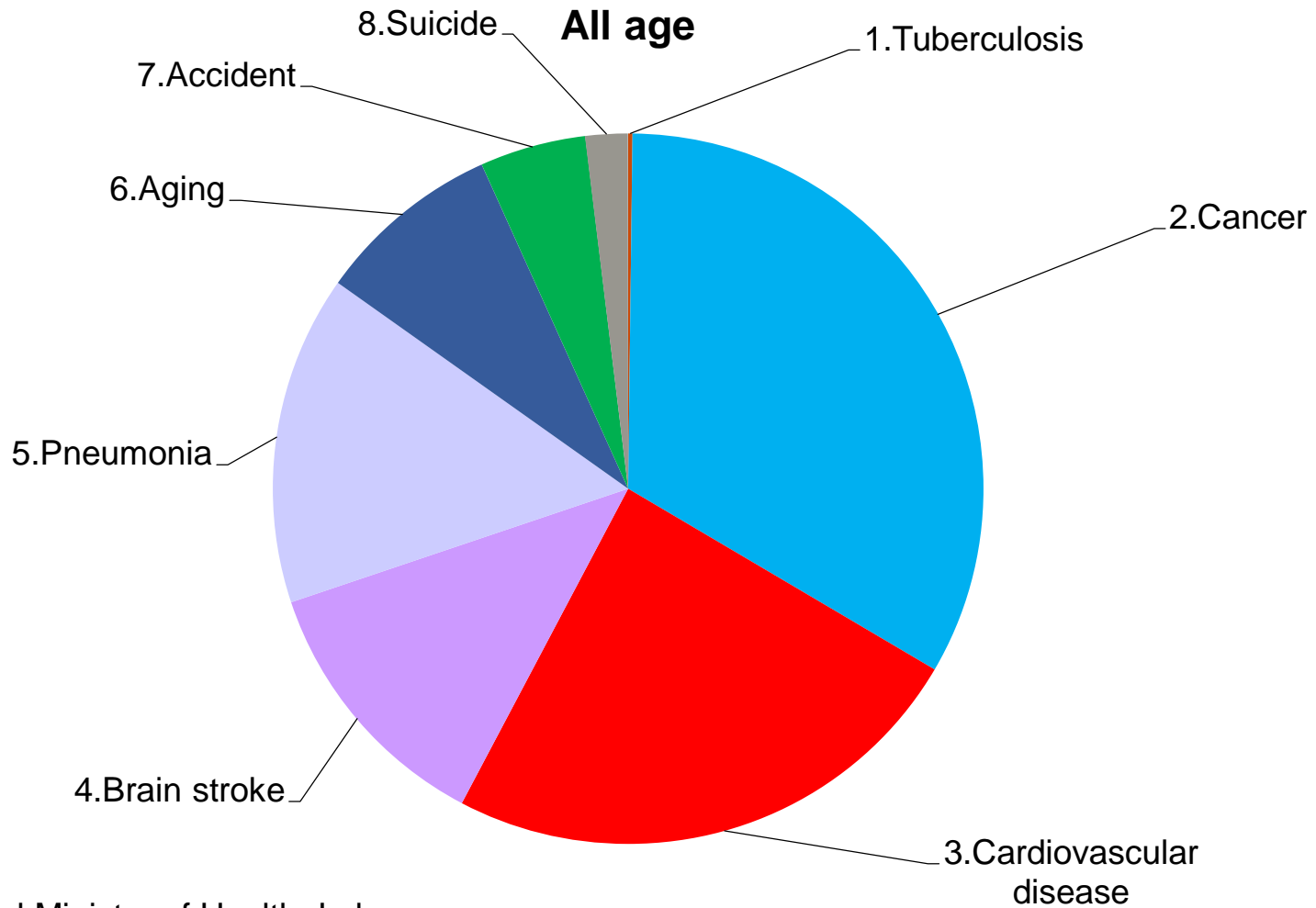
1. Tuberculosis
2. Cancer
3. Cardiovascular disease
4. Brain stroke
5. Pneumonia
6. Aging
7. Accident including Disaster
8. Suicide



Multiple answer
Select five numbers
and press OK

投票数: 27

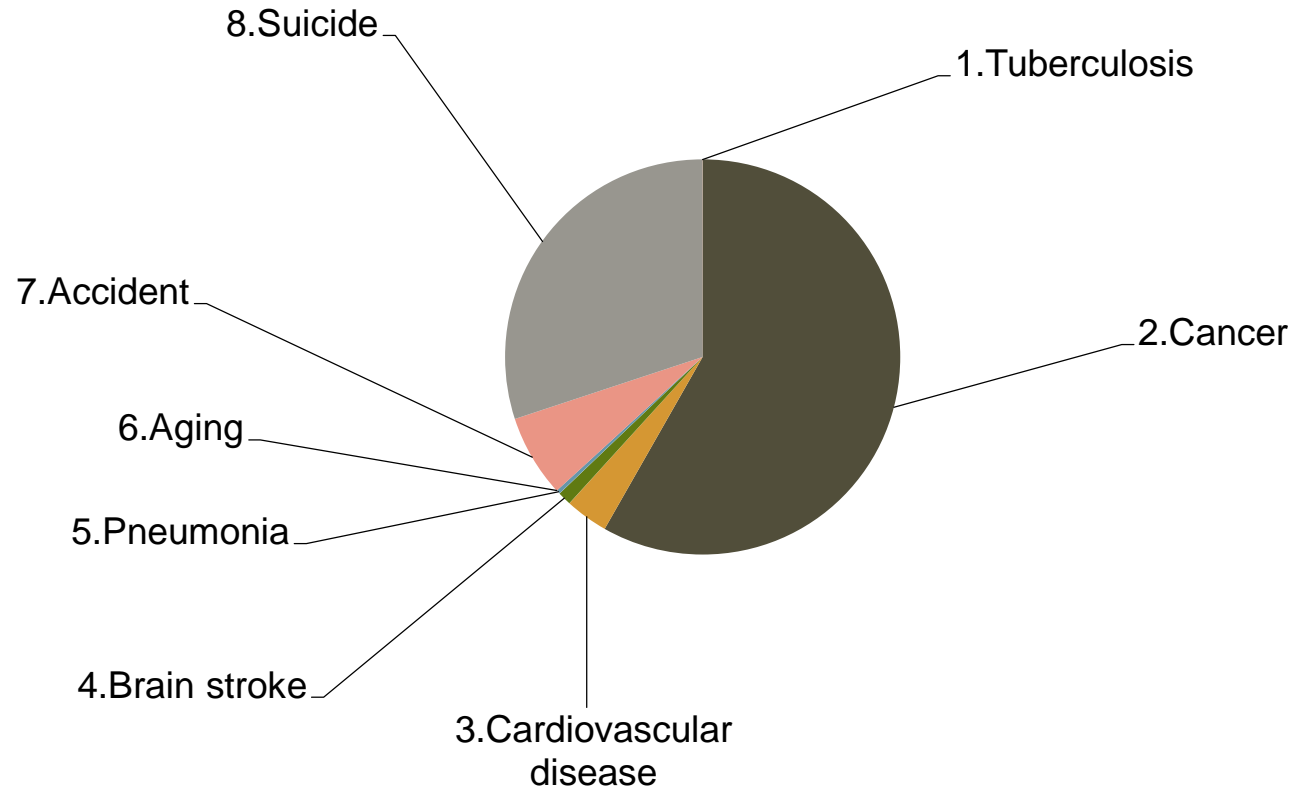
Cause of death in Japan



2015 Jul Ministry of Health, Labour
and Welfare, JAPAN

Cause of death in Japan

Age 20-29



2015 Jul Ministry of Health, Labour
and Welfare, JAPAN

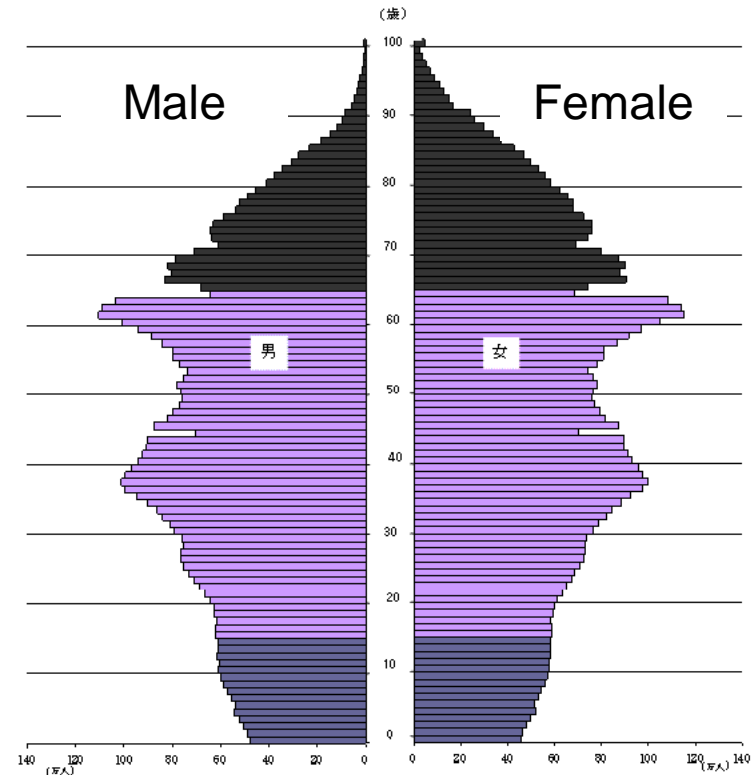
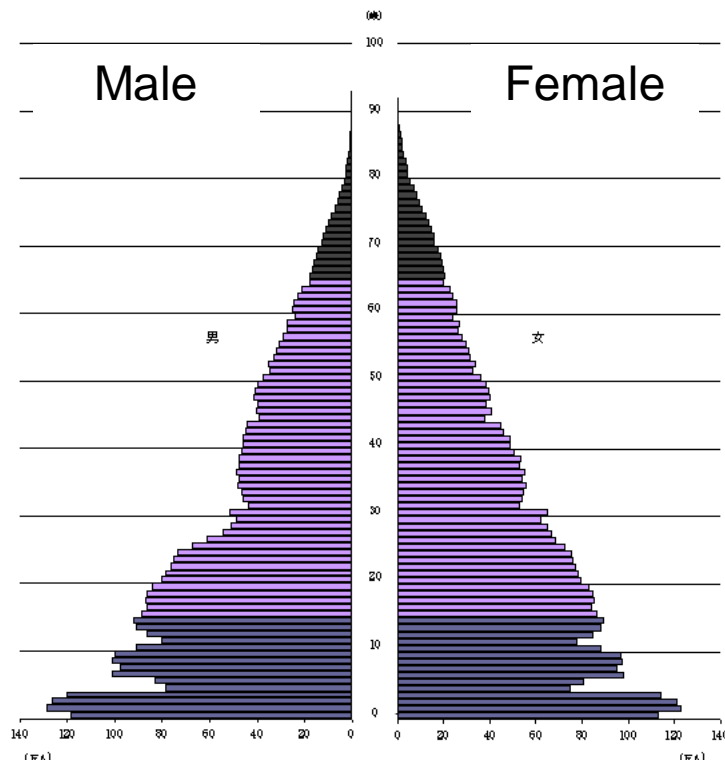
Age distribution in Japan

Statistics Bureau Japan

1950

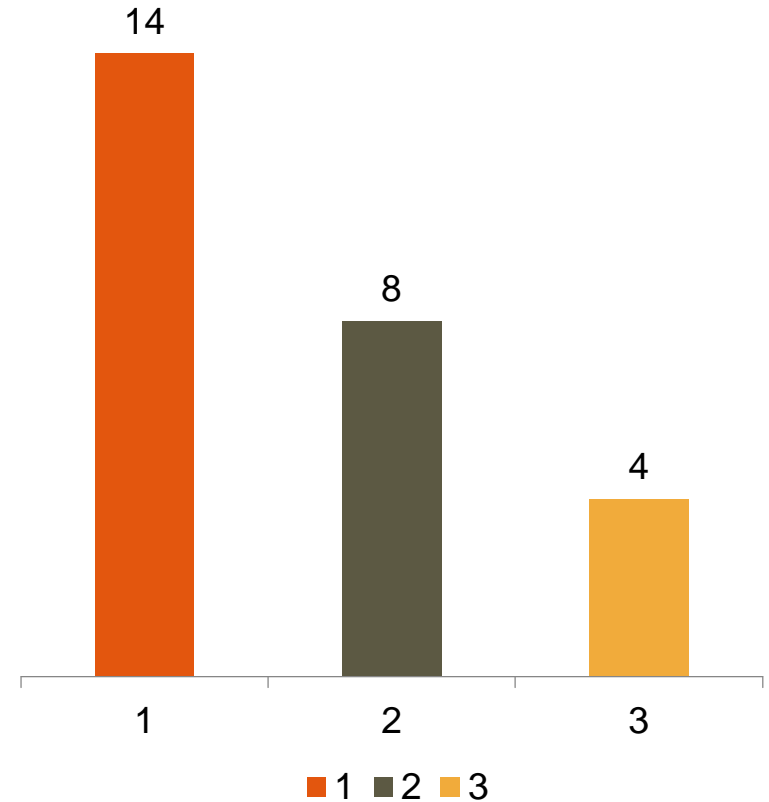


2010



Do you think a community with a long life expectancy is a resilient community to disaster?

1. Yes
2. No
3. Don't know

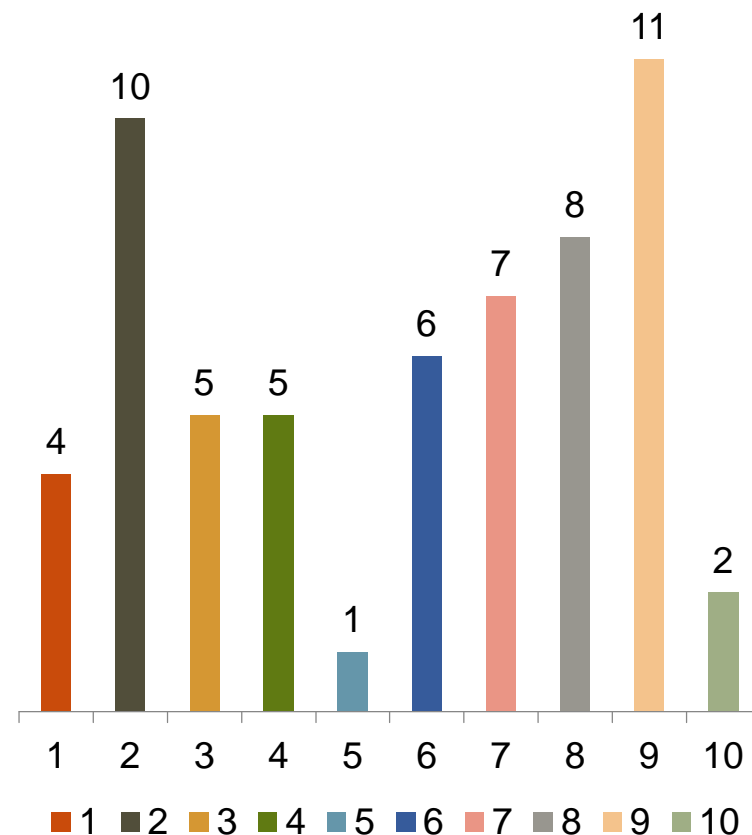


投票数: 26

Longevity = Resilience ?

If you said YES or Don't Know, why?

1. Longevity itself means resiliency
2. Built back better from disaster
3. Good food and water
4. Good houses
5. Good clothes
6. Less hazard exposure
7. Less vulnerabilities
8. Better health care system
9. Better community
10. Other



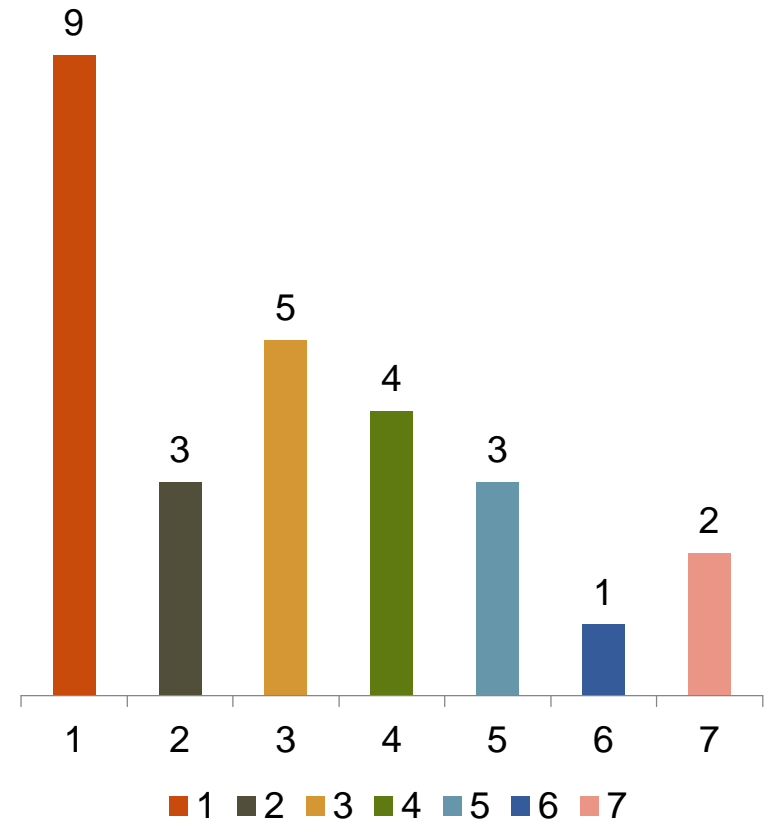
Multiple answer
Select any numbers
and press OK

投票数: 21

Longevity = Resilience ?

If you said No or Don't Know, why?

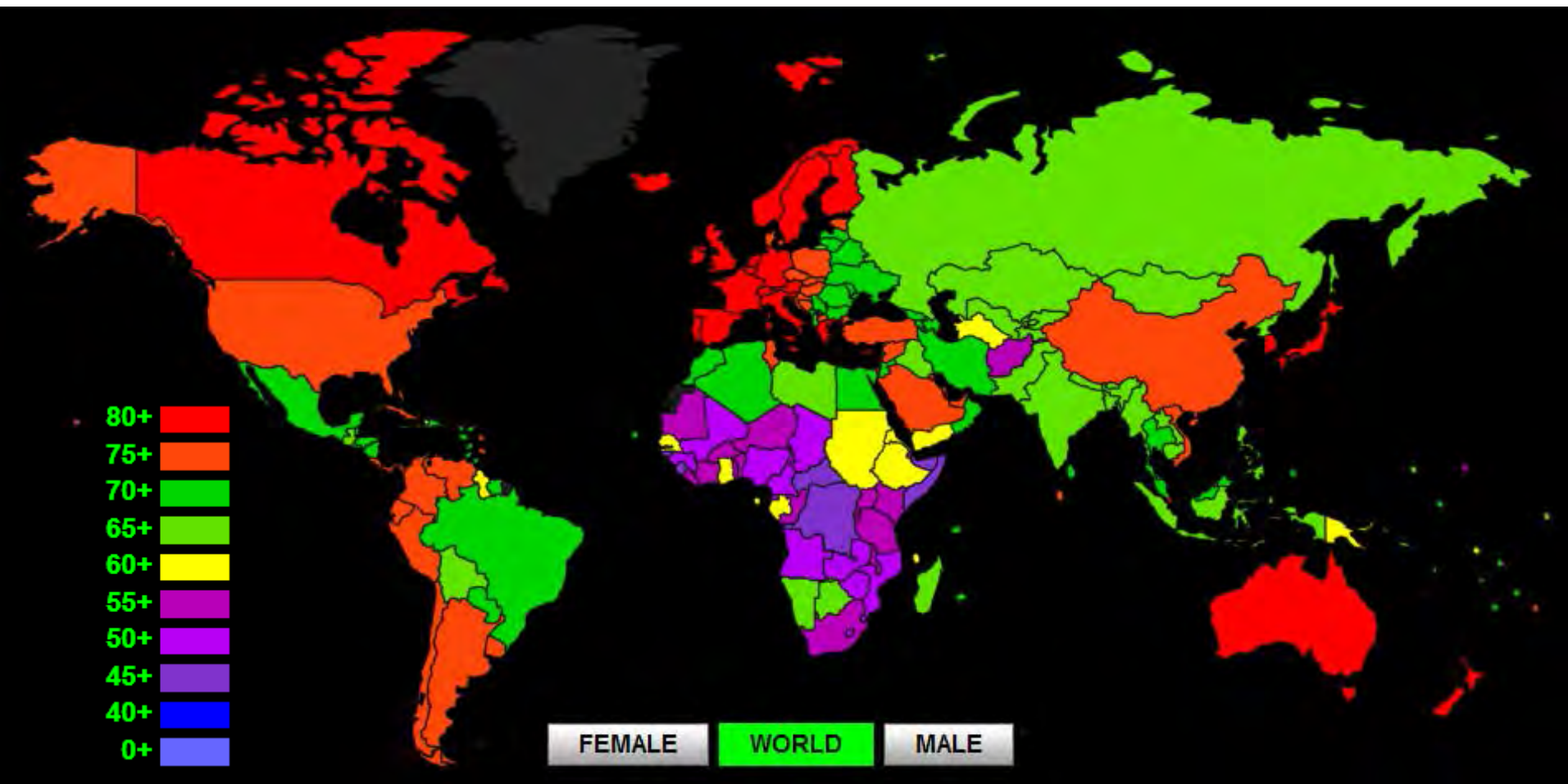
1. Aging itself is a vulnerability
2. No relation between longevity and resilience
3. Hazard attacks everywhere
4. Disaster risk is not reduced by health system
5. Longevity can be achieved in poor environment
6. Longevity is an inherent mechanism
7. Other



Multiple answer
Select any numbers
and press OK

投票数: 20

World Life Expectancy Map



Data Source : World Health Organization 2011
<http://www.worldlifeexpectancy.com/world-life-expectancy-map>

Age distribution in Japan, Philippines and Nepal

50 years

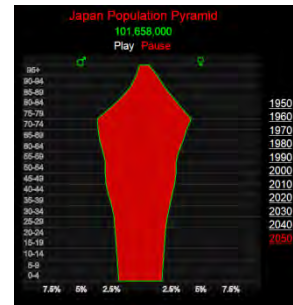
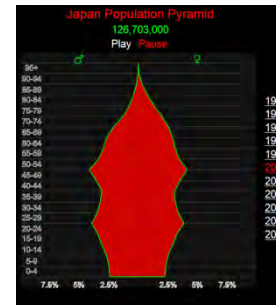
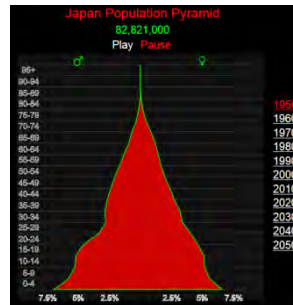
50 years

1950

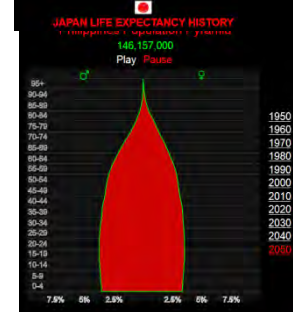
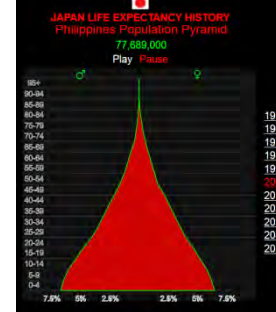
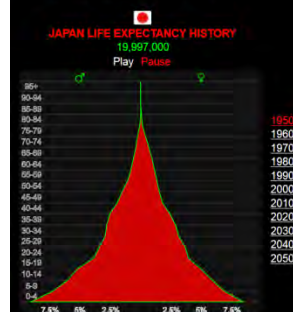
2000

2050

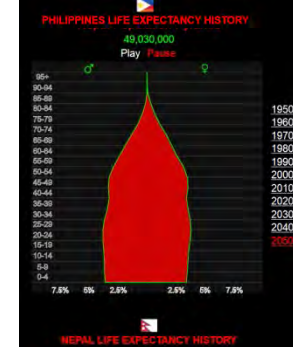
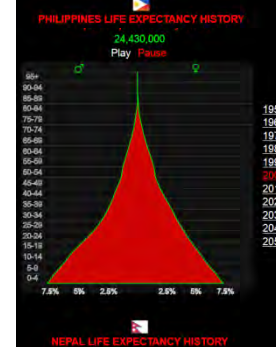
Japan



Philippines



Nepal

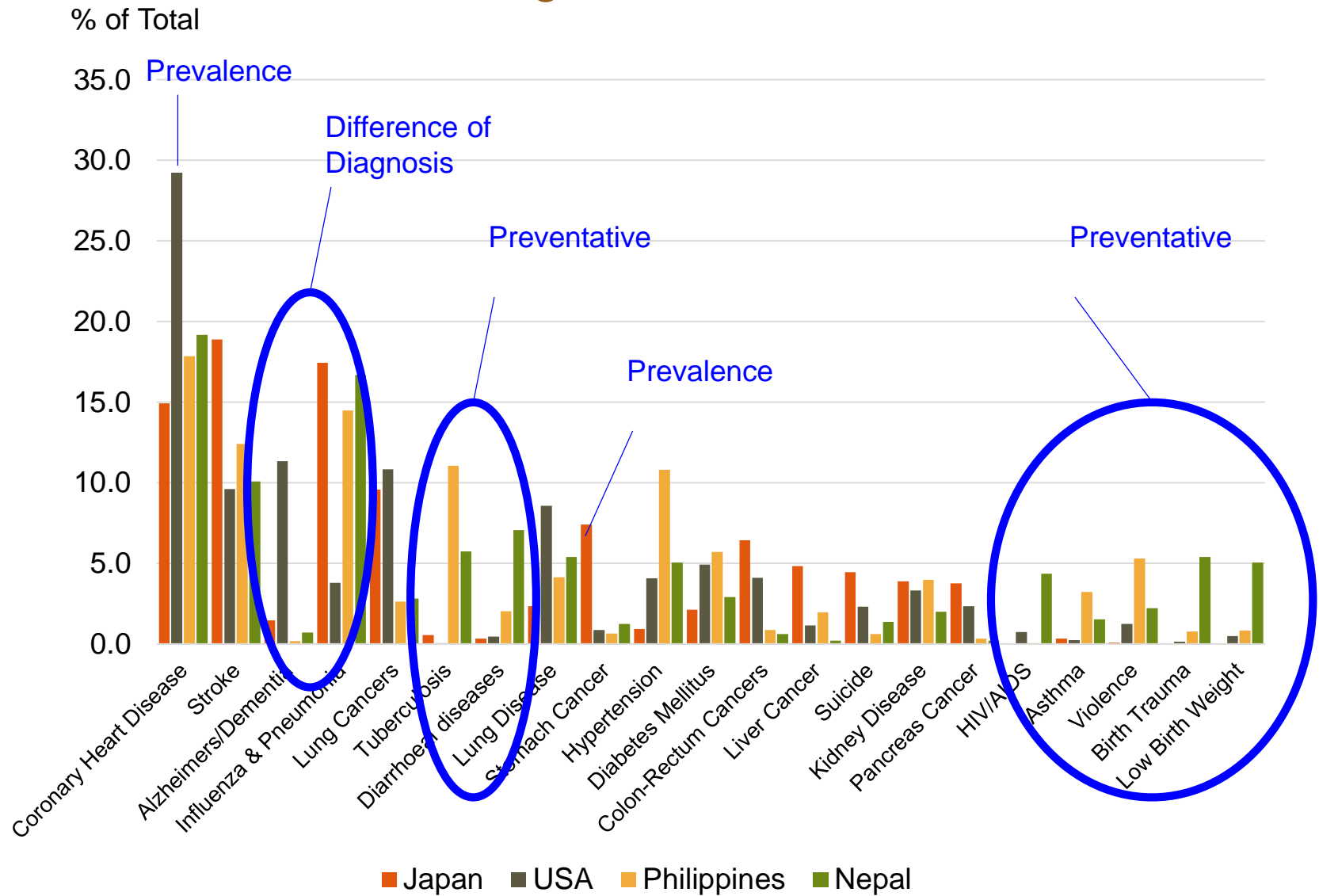


World Health Rankings

<http://www.worldlifeexpectancy.com/country-health-profile/nepal>

Division of International Cooperation for Disaster Medicine

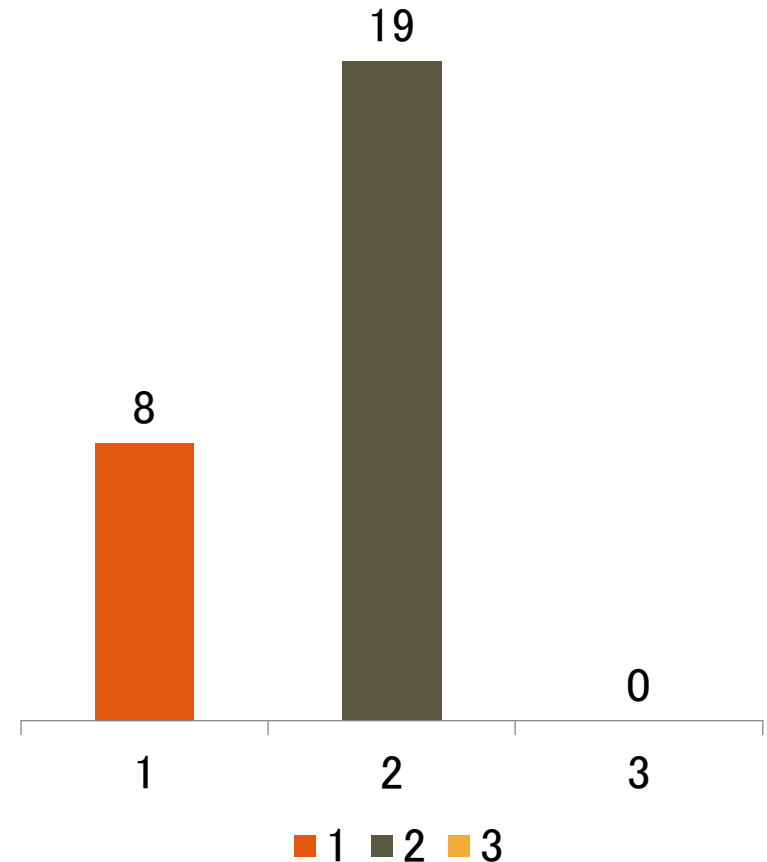
Leading causes of death



Source: WHO 2011, World Health Rankings
<http://www.worldlifeexpectancy.com/country-health-profile/nepal>
 Division of International Cooperation for Disaster Medicine

Do you think you can control how you die?

1. Yes
2. No
3. Don't know



投票数: 27

Healthy resilient community

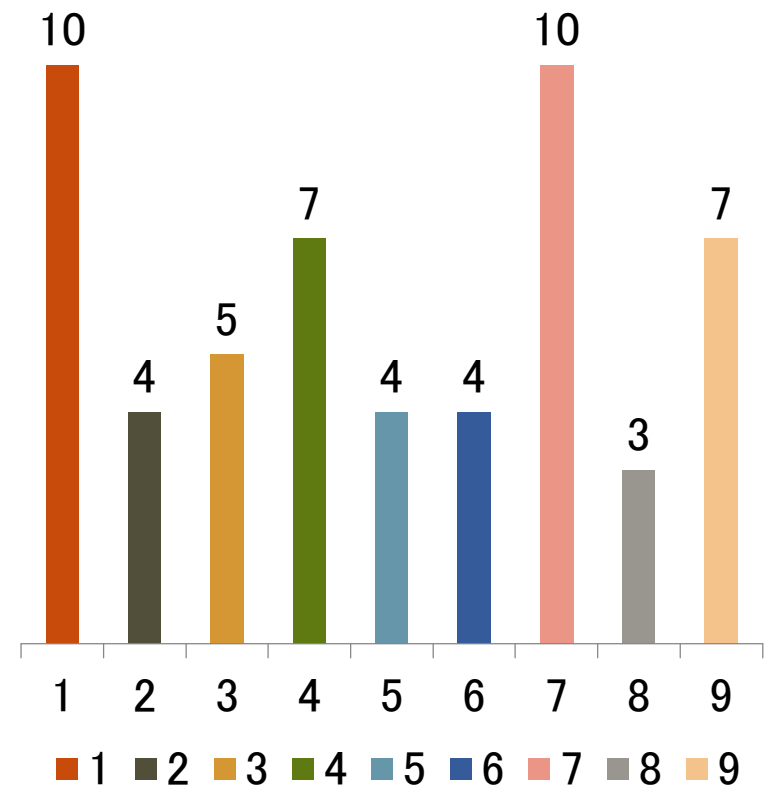
Terminology

What do you think life is?

1. Reproduces itself
2. Dies
3. Breathes
4. Eats
5. Excretes
6. Has gene
7. Has soul (or spirit)
8. Evades physics
9. Distinguishes self and non-self

Choose as many as you like.

If you choose 1,2 and 5 then press
125 and OK.



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What is life?

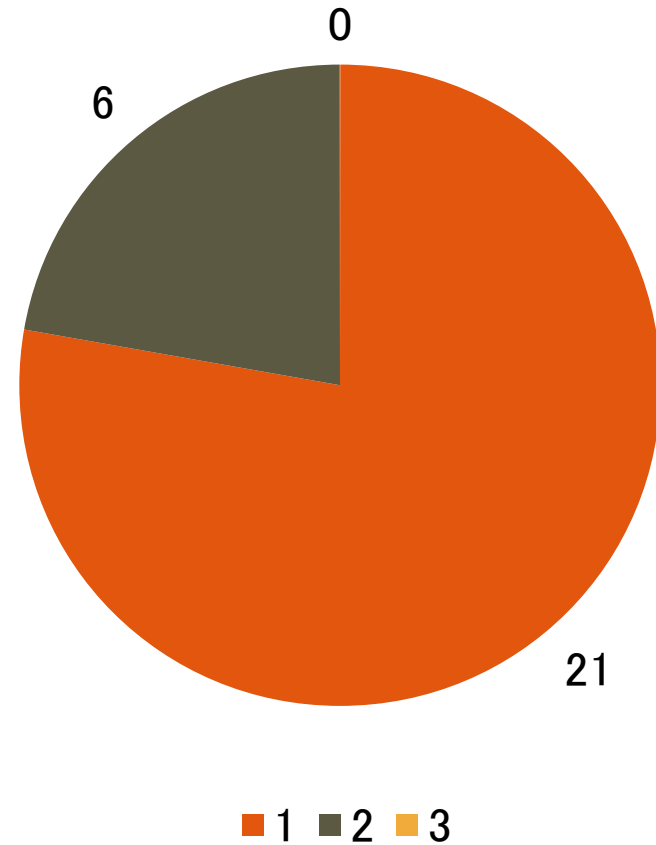


Erwin Schrödinger

Living matter evades the decay to thermodynamical equilibrium by homeostatically maintaining negative entropy in an open system. (in “What is Life” 1944)

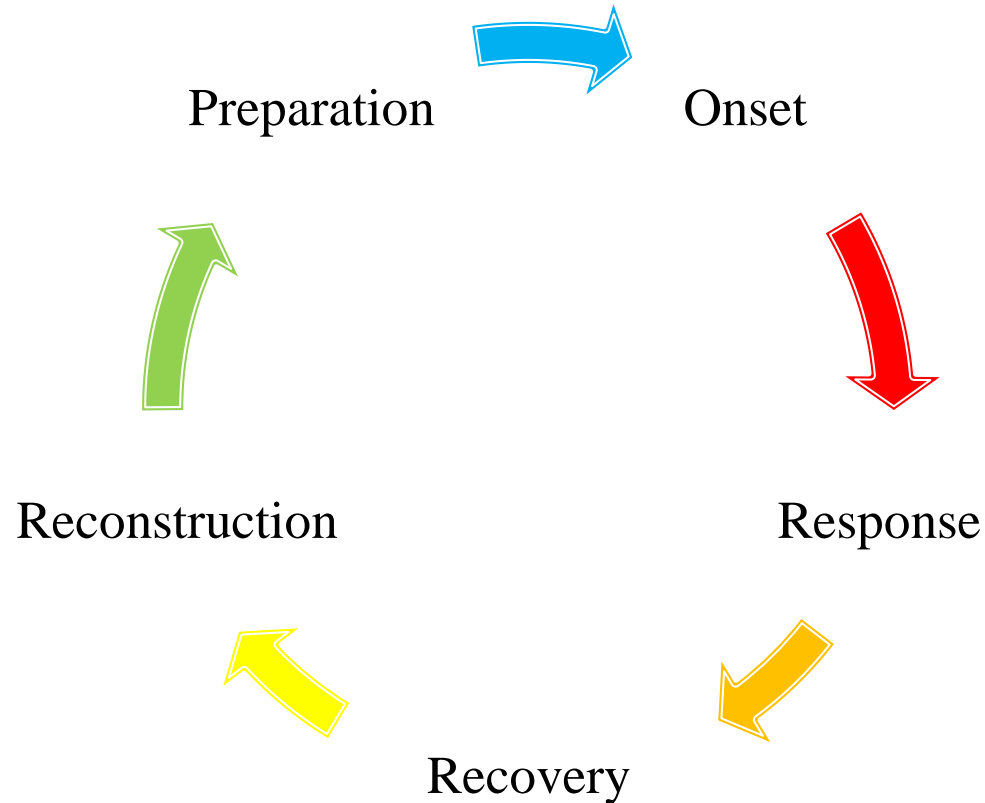
Do you think the universe and the earth are living?

1. Yes
2. No
3. Unknown



投票数: 27

Disaster Cycle



Hazards

NATURAL	SOCIETAL	TECHNOLOGICAL	BIOLOGICAL
Typhoon Earthquake Flood Landslide Volcanic Activity Tornado Tsunami El Niño Snow storm	Explosion Mass Gathering Armed Conflict Stampede Ambush Hostage taking War Terrorist Attack	Fire Transportation Accident (Land, Sea, Air) Chemical Spill /Leak Infrastructure Accidents	Food Poisoning Disease Outbreak Increasing cases of disease Red Tide

- Know your risk
- Reduce your risk
- Prepared to act



$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacities}}$$

Similarity of disease and disaster

Genetic factor



Environmental factor



Disease



Courtesy of
Prof. Masayuki Yamamoto
Tohoku Medical Megabank Organization

Division of International Cooperation for Disaster Medicine

災害科学国際研究所
IRIDeS
International Research Institute of Disaster Science

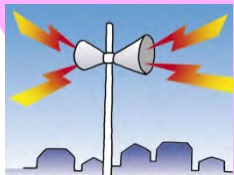
HOPE
がんぼう
TOHOKU

TOHOKU
UNIVERSITY

Similarity of disease and disaster



Vulnerability & Capacity



Hazards



Disaster

- Life, Health
- Properties
- Family
- Community



Disaster Risk Reduction

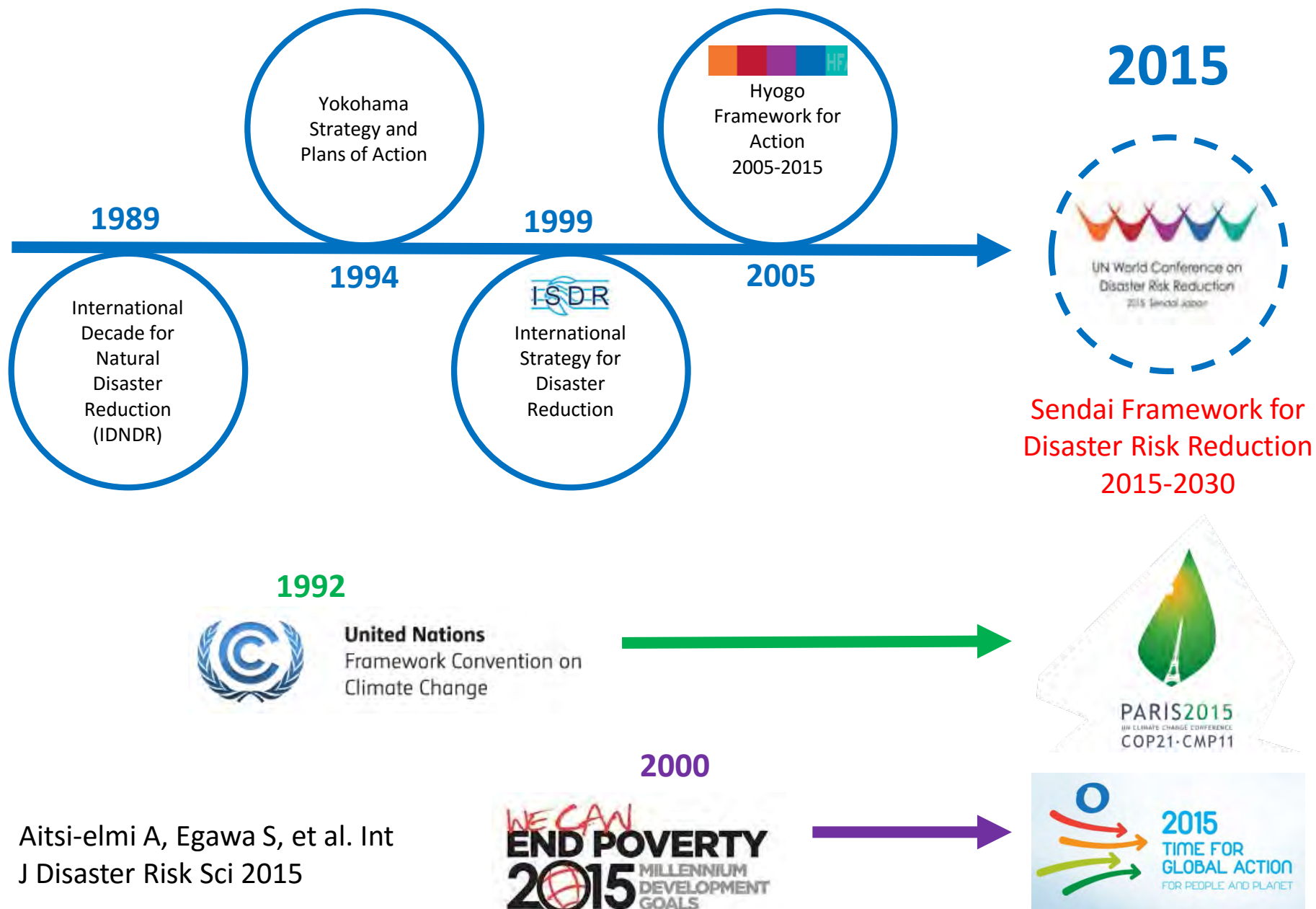


- Know your risk
- Reduce your risk
- Prepared to act

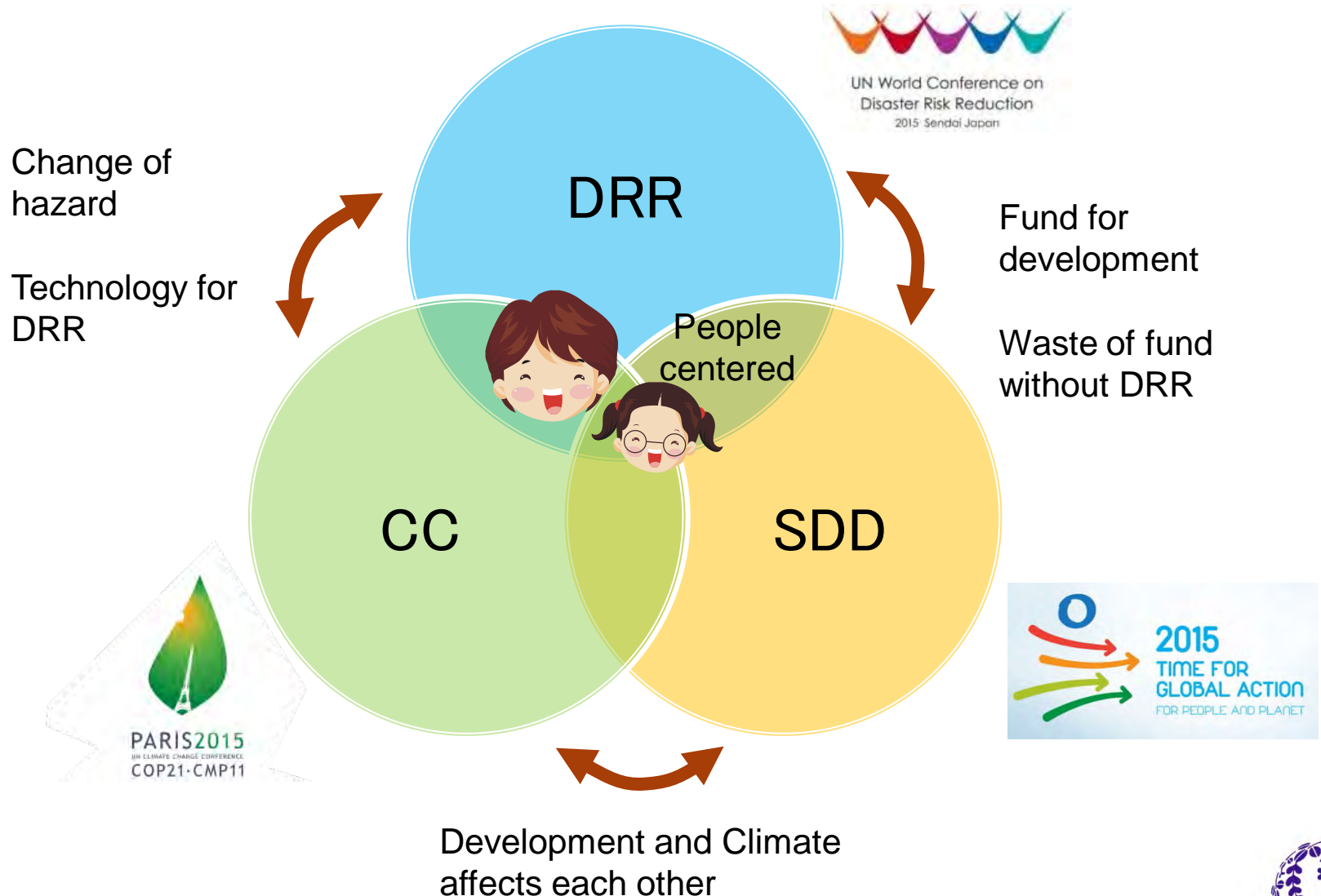
To reduce the disaster risk,

$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacities}}$$

25 Years of International Commitments to Disaster Risk Reduction



DRR·CC·SDG closely relates with each other



Strengthen of response (treatment) and preparedness (prevention)

1960

General assembly statement for rescue
earthquake in Iran, Yugoslavia, Hurricane in
Caribbean Sea

1970

GA for more preparedness rather than response
Establishment of Disaster Relief Office

Strengthening
of
preparedness

1989

Yokohama
Strategy

1999

1994

International
Decade for
Natural
Disaster
Reduction
(IDNDR)

ISDR

International
Strategy
for Disaster
Reduction

1998

Strengthening
the response

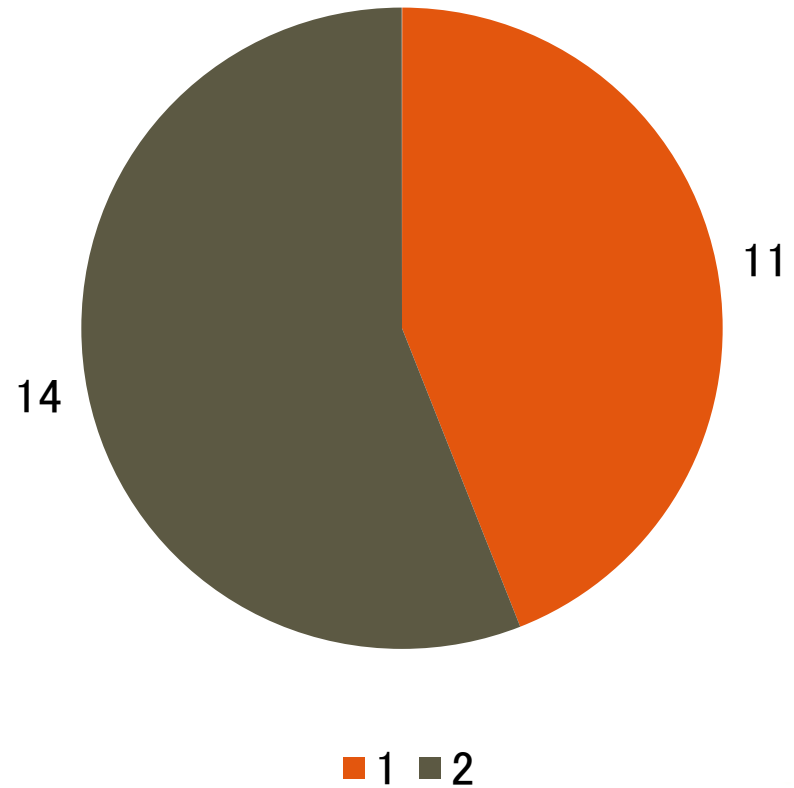
Human Security
Sadako Ogata

OCHA

State Security

Have you ever heard of HFA?

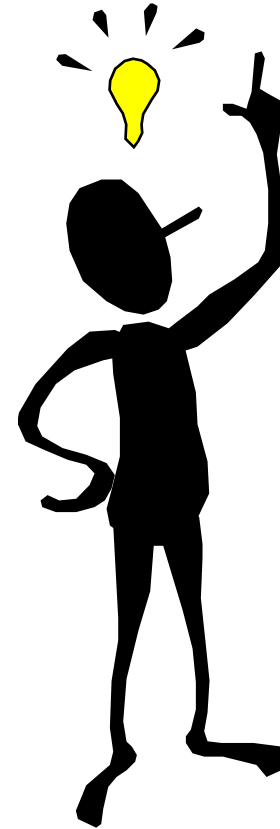
1. Yes
2. No



投票数: 25

Framework for action

- Know your risk
- Reduce your risk
- Prepared to act





International Strategy for Disaster Reduction

HFA



Hyogo Framework for Action 2005 - 2015: Building the Resilience of Nations and Communities to Disasters

<http://www.unisdr.org/eng/hfa/docs/HFA-brochure-English.pdf>

Health in HFA

- Only three words and one paragraph of “health” in 10,130 words of HFA.
 - (e) Integrate disaster risk reduction planning into the **health** sector; promote the goal of “**hospitals** safe from disaster” by ensuring that all new **hospitals** are built with a level of resilience that strengthens their capacity to remain functional in disaster situations and implement mitigation measures to reinforce existing **health** facilities, particularly those providing primary **health** care.

Risk Reduction



Health sector

- Know your risk
- **Reduce your risk**
- Prepared to act



Proposal to HFA2

Health sector



Risk Reduction



- Know your risk
- Reduce your risk
- Prepared to act



Know your risk

Change of Health Risks in disaster

UN-ISDR statistics

Number of Climate-related Disasters Around the World (1980-2011)

 **3455**
FLOODS

 **2689**
STORMS

 **470**
DROUGHTS

 **395**
EXTREME TEMPS

 **UNISDR**

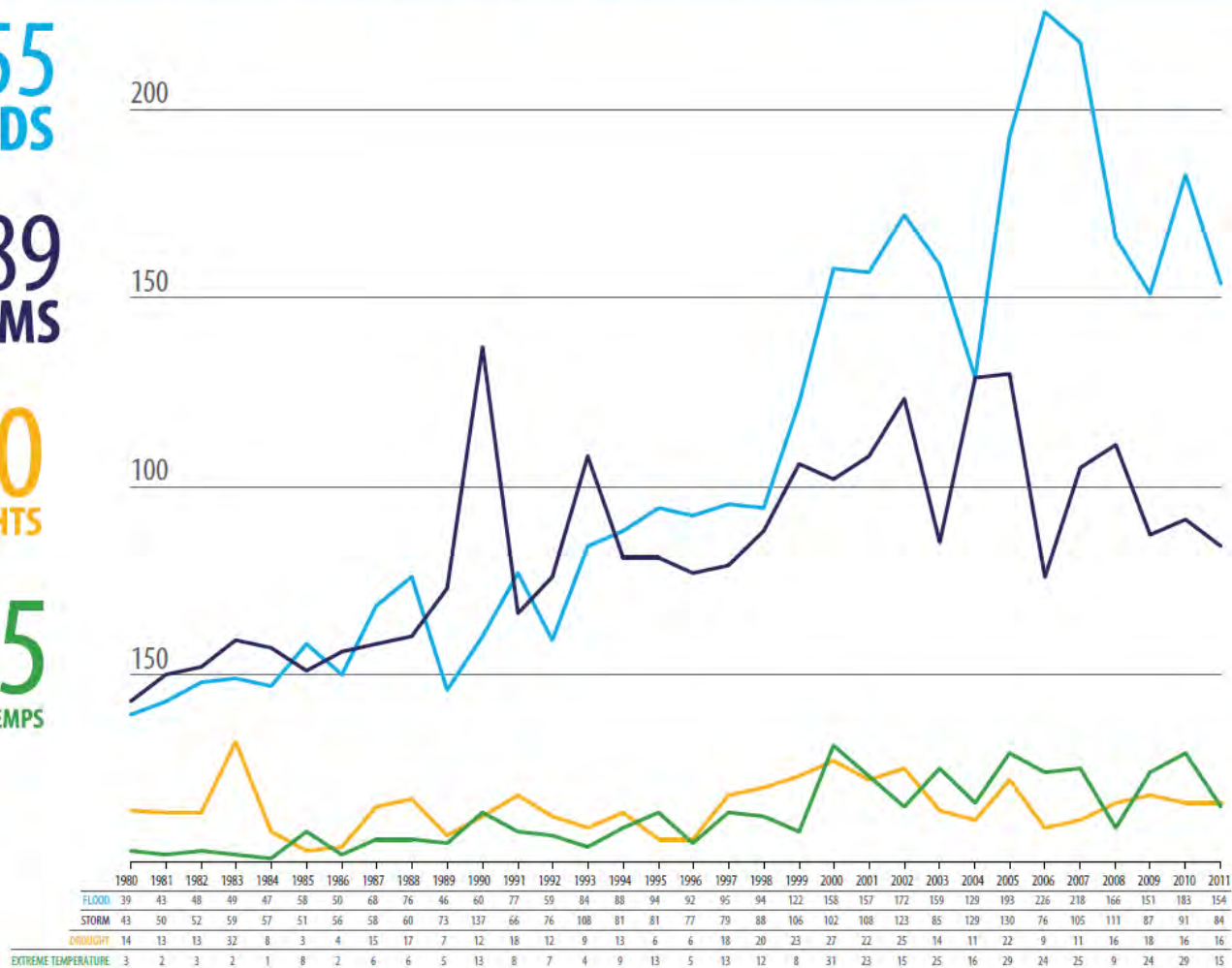
The United Nations Office for Disaster Risk Reduction
<http://www.unisdr.org>

Created on 13 June 2012

DATA SOURCES

EM-DAT - <http://www.emdat.be/> - The OFDA/CRED International Disaster Database; Data version: 13 June 2012 - v12.07

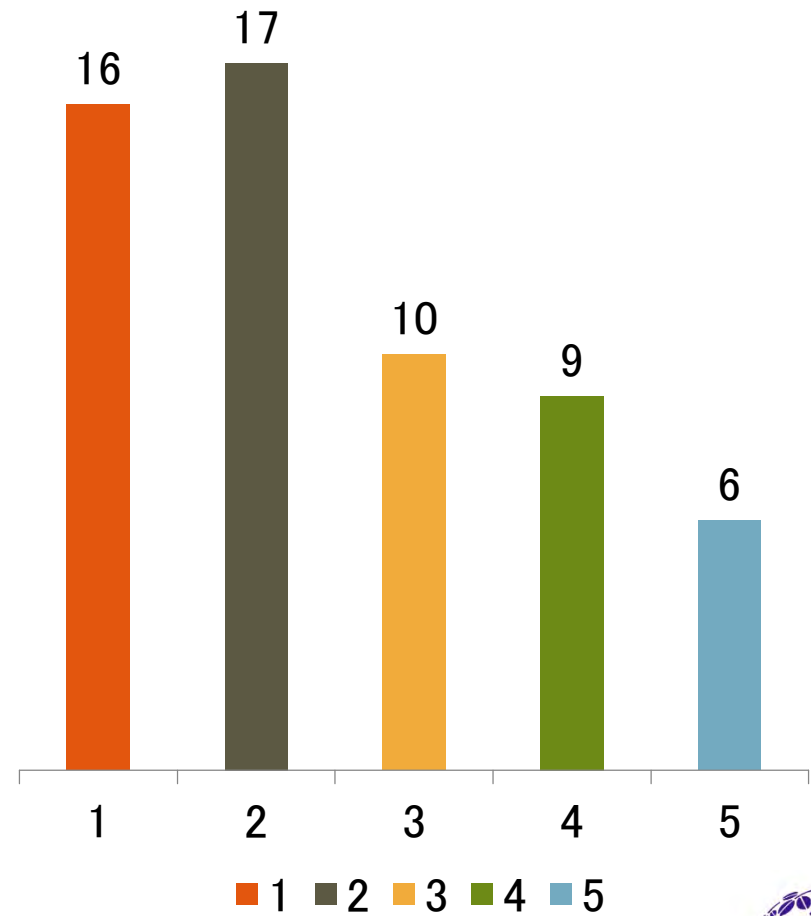
Humanitarian Symbol Set (2008):
<http://www.wangwang.org/map/guideline.php>



http://www.preventionweb.net/files/20120613_ClimateDisaster1980-2011.pdf

Why are the disasters increasing?

1. Global climate change
2. Urbanization of population
3. Combined technological problems
4. Increase of reports and statistics
5. Else



Multiple (ex 1, 2, 4 press OK)

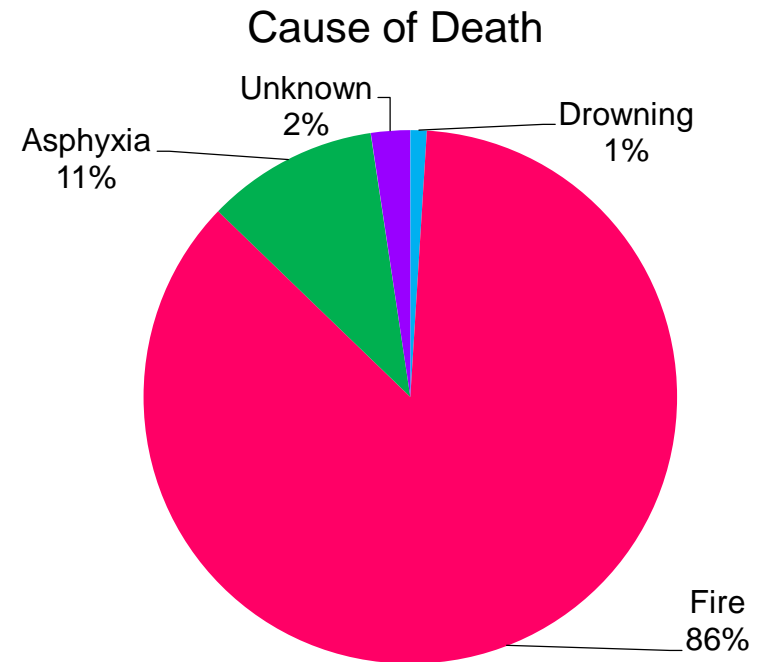
投票数: 26

Lessons from 1921 Great Kanto Earthquake

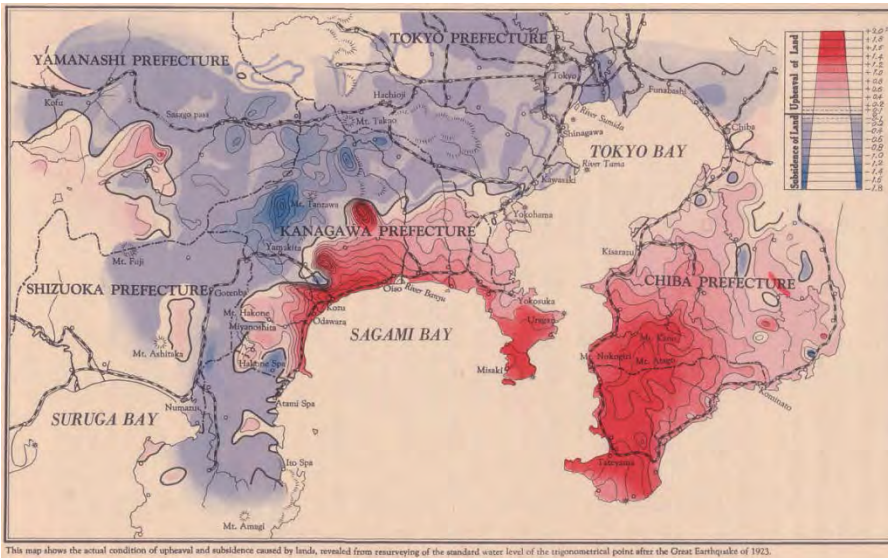
September 1, 1923

11:58:32

M7.9



The buildings should be fire-resistant
Every Sept. 1 is the Disaster Drill Day



This map shows the actual condition of upheaval and subsidence caused by lands, revealed from resurveying of the standard water level of the trigonometrical point after the Great Earthquake of 1923.

Lessons from 1978 Miyagi Earthquake

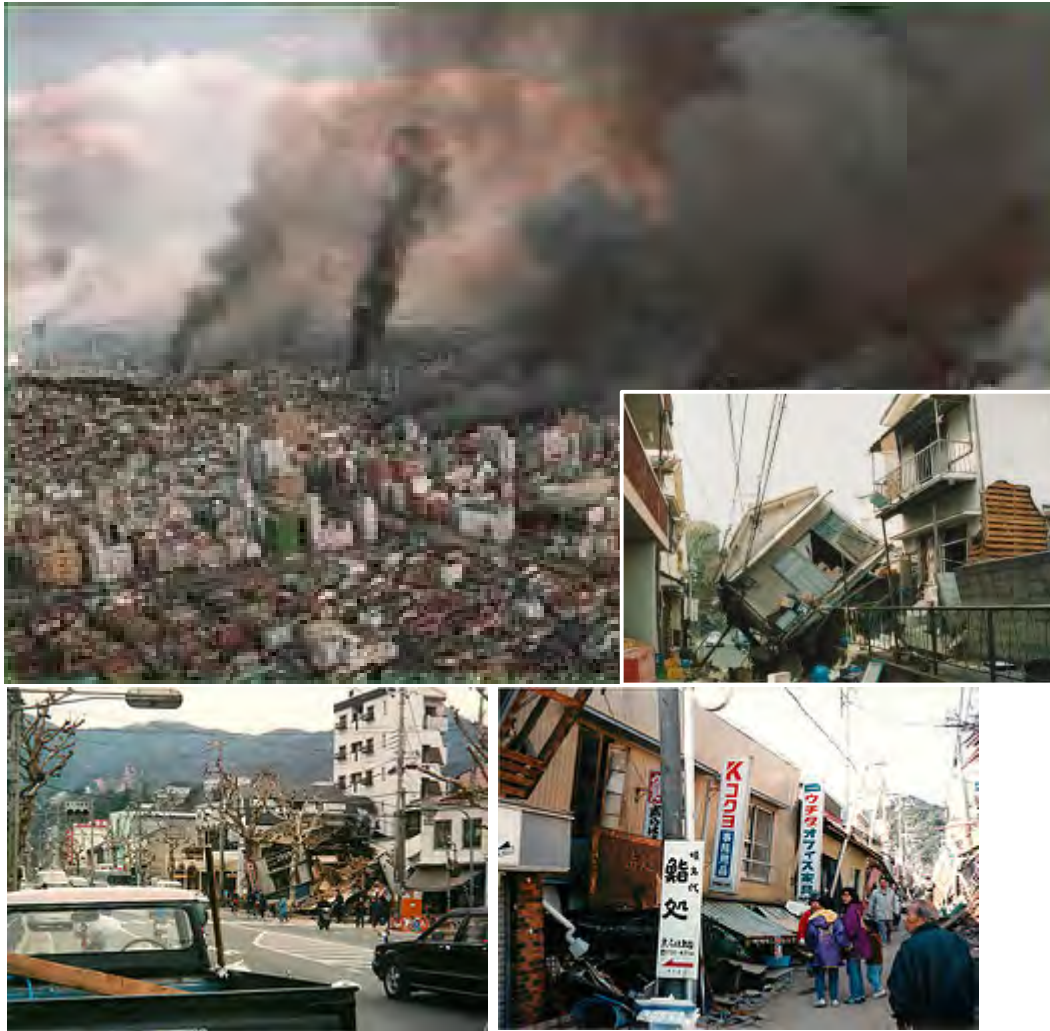


Lessons from 1995 Great Hanshin Awaji Earthquake

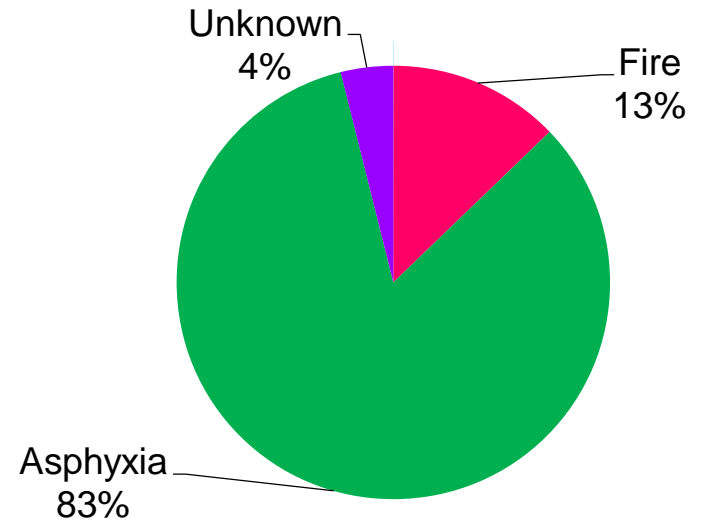
January 17, 1995

05:46

M7.3



Cause of Death



The buildings should be quake-proof
Japanese Association for Disaster
Medicine was established

Three **life-saving** lessons from past disasters

1. Legal enactment of building codes for hazard proof to prevent death from fire and collapse.
2. National establishment of disaster medical management
3. Early warning and evacuation



Reduce your risk

Capacity building of disaster medicine in Japan

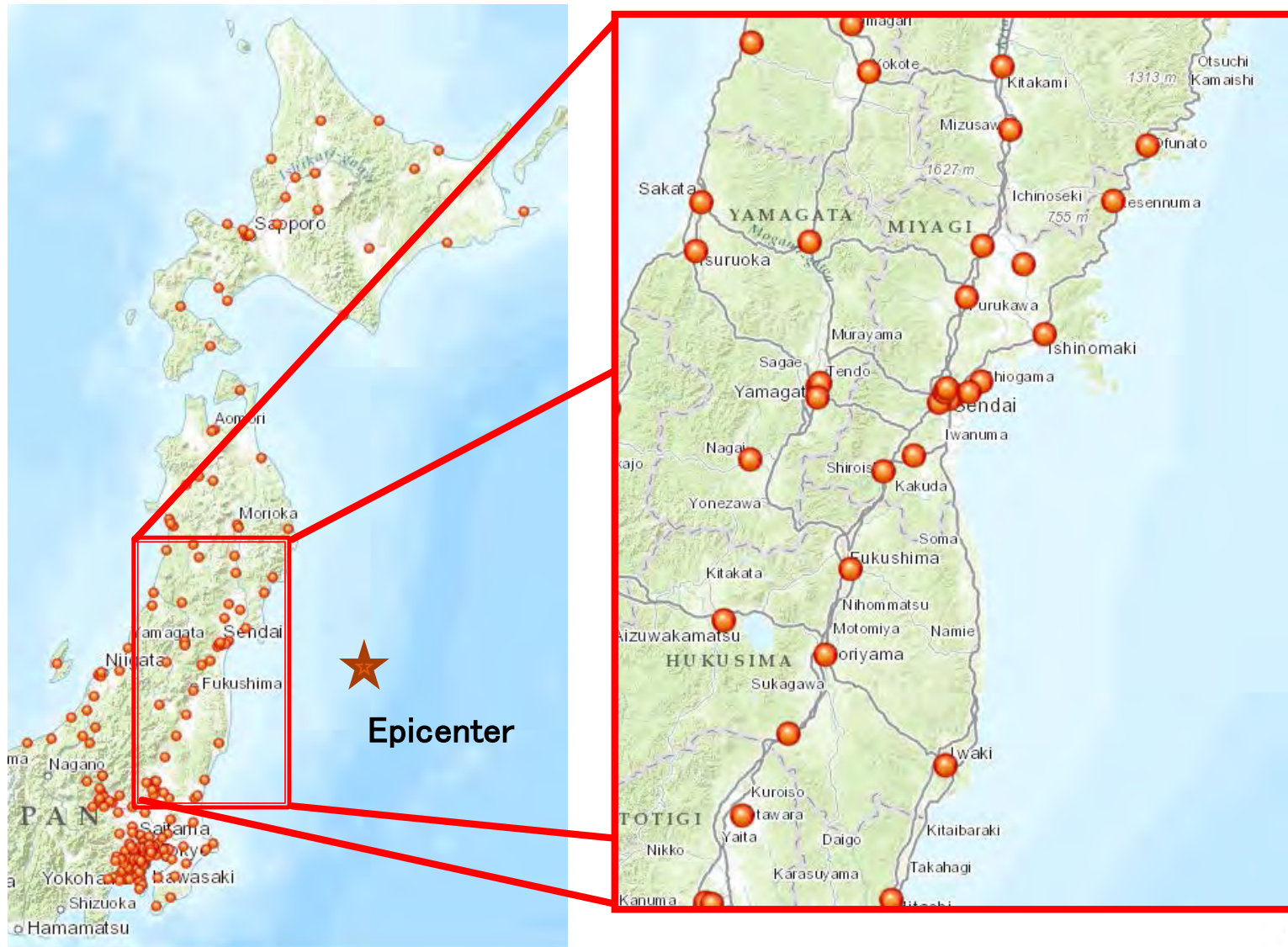
Lessons from Great Hanshin Awaji Earthquake in Medial Management in Japan

- No disaster specific hospital
 - **Establishment of Disaster Base Hospitals**
- Lack of medical care within 72 h
 - **Establishment of DMAT**
- No wide area transportation
 - **Establishment of Staging Care Unit (SCU) and Wide Transportation Network**
- No disaster medical information system
 - **Establishment of Emergency Medical Information System (EMIS)**
- No disaster medical coordinator
 - **Establishment of Disaster Medical Coordinator**

Disaster Base Hospital

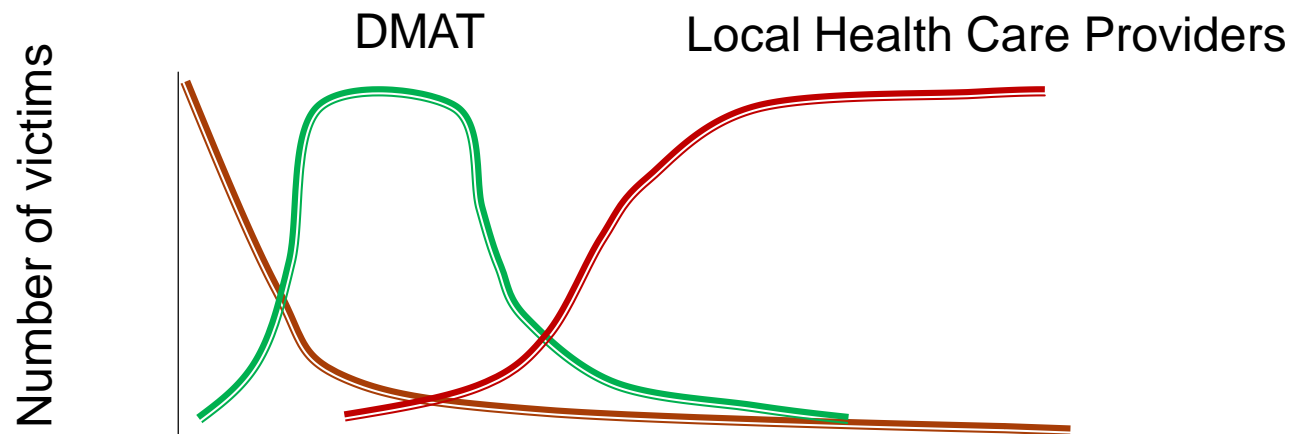
- Provides intensive care of multiple injury, crash syndrome and severe burn in disaster.
- Responds to incoming and outgoing wide-area patient transportation
- Provides DMAT
- Provides medical resource to affected hospitals
- 609 DBHs in Japan
 - 1 National Disaster Medical Center
 - 55 Central DBH
 - 378 DMAT providing DBH
 - 214 Emergency Center

Disaster Base Hospitals in East Japan



Disaster Medical Assistant Team (DMAT)

- More than 1000 teams were trained in Japan after Hanshin Awaji Earthquake
- Arrives in the affected area within 24 hours and save the lives from preventable death until 72 hours when the local health care recovers.
- Consists of a medical doctor, a nurse, a pharmacist and a logistician with self-standing materials and vehicle.
- Specific training for confined space medicine and wide area transportation.



J-DMAT: Japan Disaster Medical Assistance Team on Training



Staging Care Unit



DMAT not only provide medical care, but also assists the local HQ and Staging Care Unit (SCU) in medical coordination.

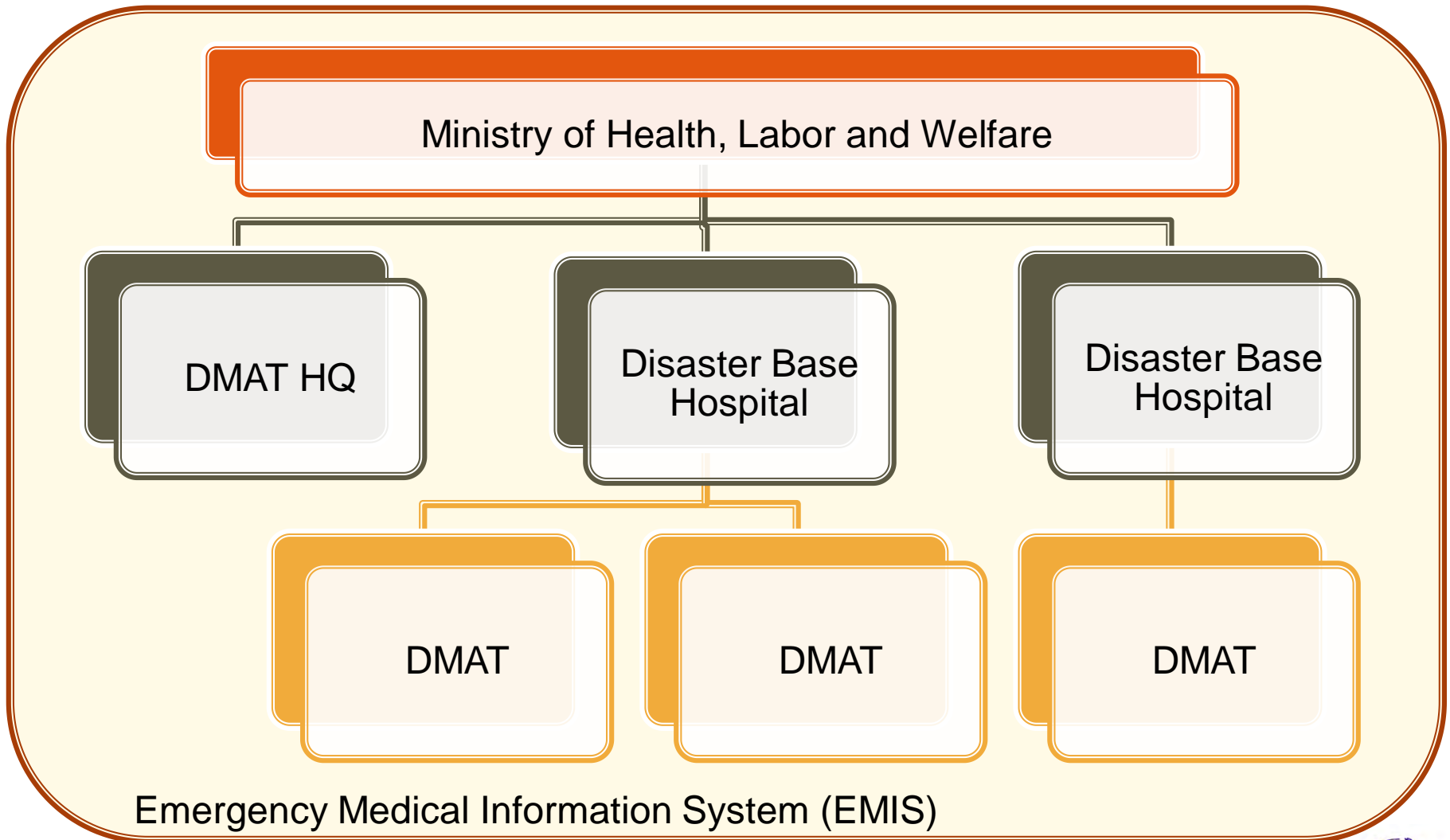


Confined Space Medicine

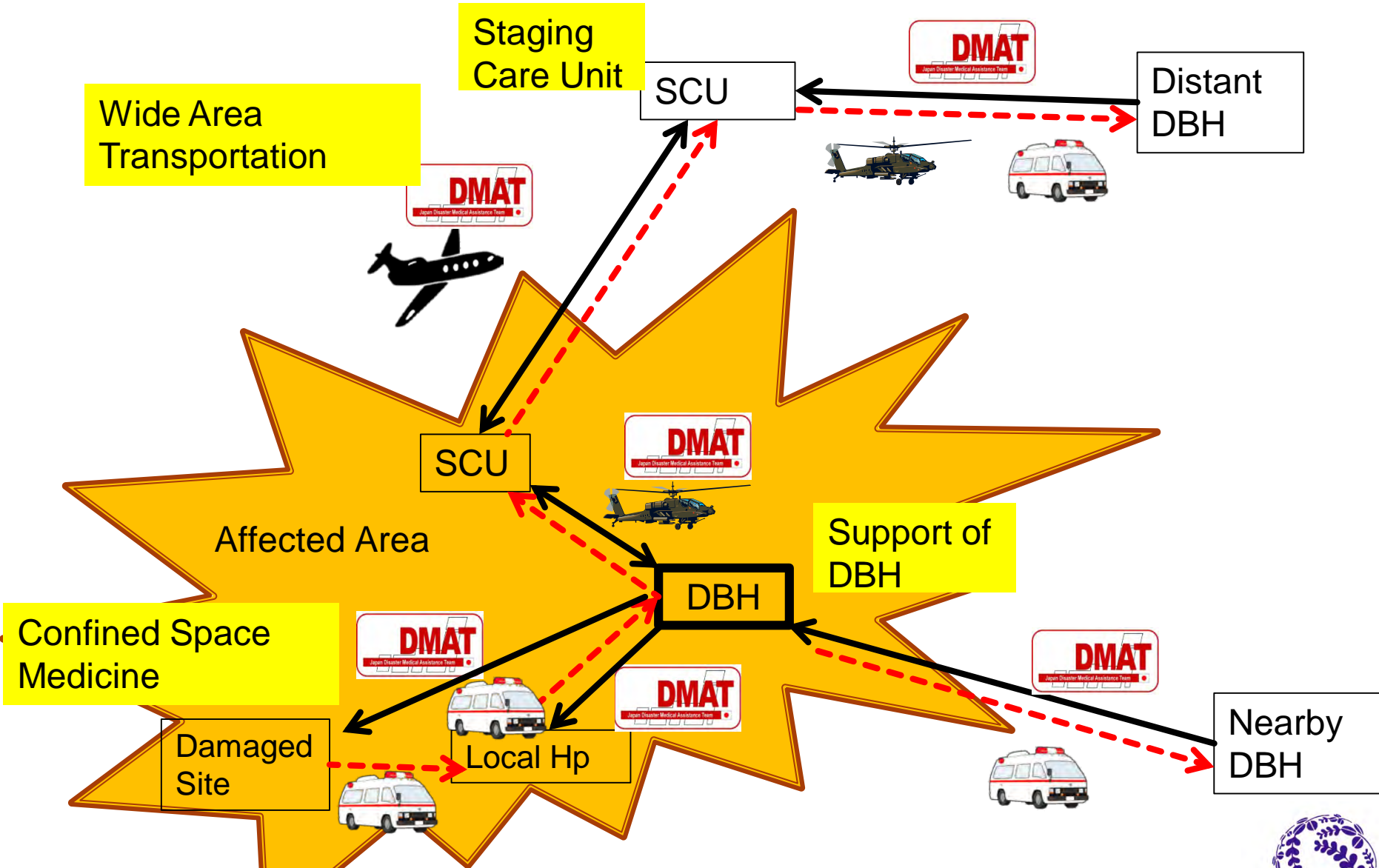


Wide Area Transportation

Medical Management System



Role of DMAT before 3.11



Aircrafts for Wide Area Transportation



C1 (Self Defense Force)



C130 (Self Defense Force)



CH-47 (Self Defense Force)
Division of International Cooperation for Disaster Medicine

Capacities

8 Patients with stretchers in C1 and C130

4 Patients with stretchers in CH-47

SCU triages

Multiple injuries, Head injury, Crash syndromes and Severe burns that require intensive care in Life saving emergency center outside the affected area.

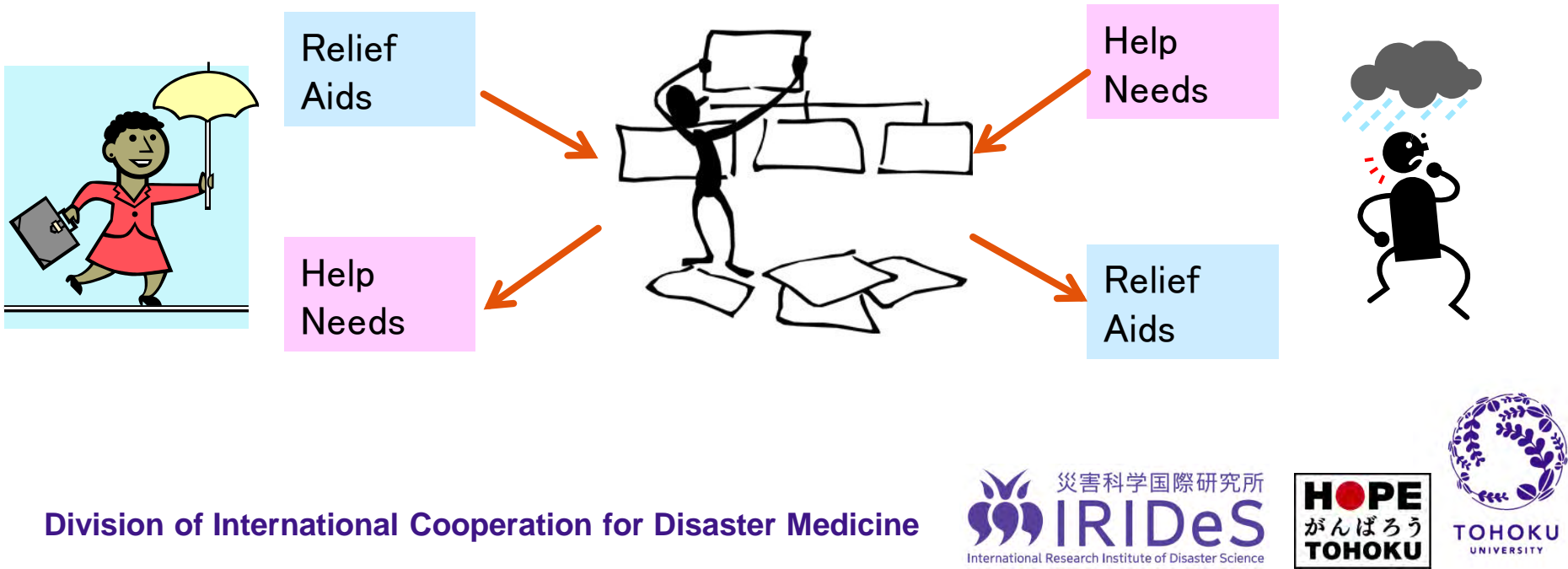
Emergency Medical Information System (EMIS)

- Database of Regional Hospitals
 - Capability of EU, Nuclear medicine, DMAT, Drs, ICU beds, ORs, Acceptable number of severely injured patients.

宮城県																
医療機関名	種別	勤務医師数		病棟情報		年間救急患者数				災害時受入重症患者数 (人)	平常時の診療能力			更新日時		
		医師総数 (人)	救急科医師数 (人)	I C U病床数 (床)	手術室数 (床)	救急外来患者数 (人)	受け入れ救急車数 (台)	緊急入院患者数 (人)	三次救急患者数 (人)		者数	多発外傷を同時に 根本治療できる患 者数	広範囲熱傷を同時 に根本治療できる 患者数		を同時に根本治療 できる患者数	クラッシュ症候群 を同時に根本治療 できる患者数
公立刈田総合病院	災害医療 DMAT	25	0	4	4	7561	1168	420	0	1	1	1	1	2010/11/09 10:51		
みやぎ県南中核病院	災害医療 DMAT	68	1	6	5	15000	3100	2500	10	2	1	1	2	2012/08/30 18:17		
坂総合病院	災害医療 DMAT	2	2	6	4	20000	3000	860	0	2	2	受入不可	2	2013/01/06 13:01		
仙台医療センター	災害医療 救命 被災 DMAT	152	4	6	11	5224	4317	4099	1111	3	2	1	1	2012/11/26 14:20		
仙台市立病院	災害医療 救命 DMAT	89	7	16		11763	5529	4957		3	1	1	1	2011/05/12 09:22		
仙台赤十字病院	災害医療 DMAT	76		0	7	3776	841	1666	0	1	1	1	1	2010/12/06 09:31		
東北厚生年金病院	災害医療 DMAT	89	0	8	7	3834	1722	1429	0	3	1	受入不可	2	2010/11/09 17:20		
東北大学病院	災害医療 救命 被災 DMAT	543	20	30	18	6296	2038	841		10	2	2	2	2013/01/06 12:57		
東北労災病院	災害医療 DMAT	102	0	0	8	3383	1430	601		1	受入不可	受入不可	受入不可	2010/11/09 17:02		
大崎市民病院	災害医療 救命 DMAT	89	1	9	8	4373	3853	2305	497	3	1	1	1	2011/10/03 15:40		
栗原市立栗原中央病院	災害医療 DMAT	29	0	6	4	4151	1730	1145	0	0	受入不可	受入不可	受入不可	2012/08/29 21:16		
登米市立登米市民病院	災害医療	22	0	6	5	6226	976	401			1	受入不可	受入不可	2012/09/25 16:25		
石巻赤十字病院	災害医療 救命 被災 DMAT	99	2		7	21841	4274	3494	483	5	3以上	1	3以上	2010/11/09 10:52		
気仙沼市立病院	災害医療 DMAT			0		10120	1801	1957		1	受入不可	受入不可	受入不可	2010/11/09 17:51		
合計	14件	1385	37	97	88	123548	35779	26675	2101	35	-	-	-	-		

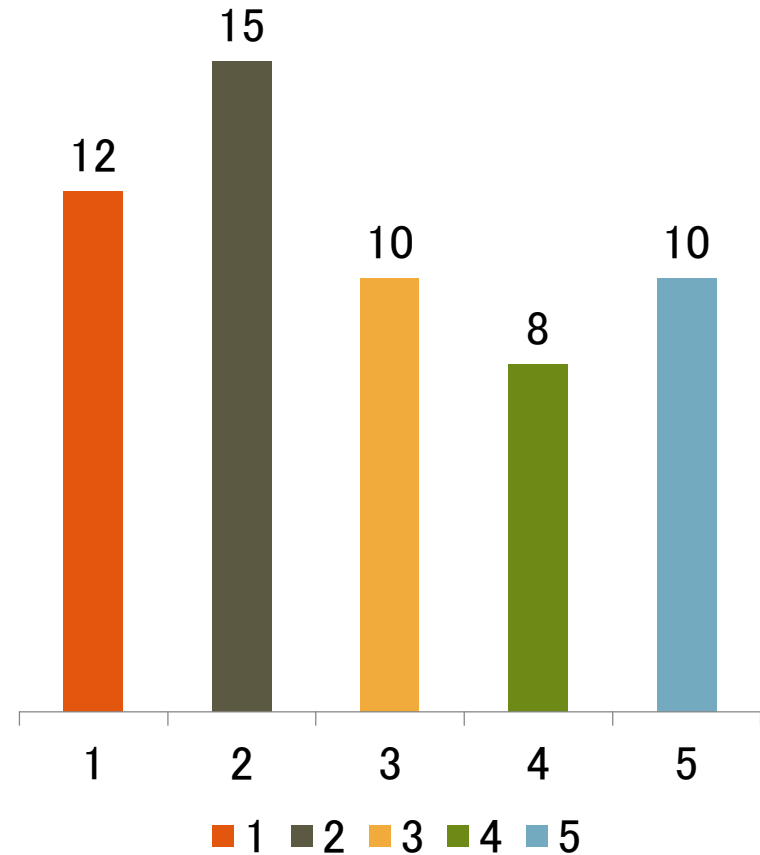
Disaster Medical Coordinator

- First established in Hyogo in 1997
- Four out of 47 prefectures (10.6%) had designated medical coordinators before GEJE.
- Miyagi prefecture assigned 6 coordinators, but Iwate and Fukushima did not.



Which are you interested in Japanese disaster medical system?

1. Disaster Base Hospital
2. DMAT
3. SCU and wide area transportation
4. EMIS
5. Medical and public health coordinator



Multiple (ex 1, 2, 4 press OK)

投票数: 23



Prepared to act

Change of Health Risks in disaster

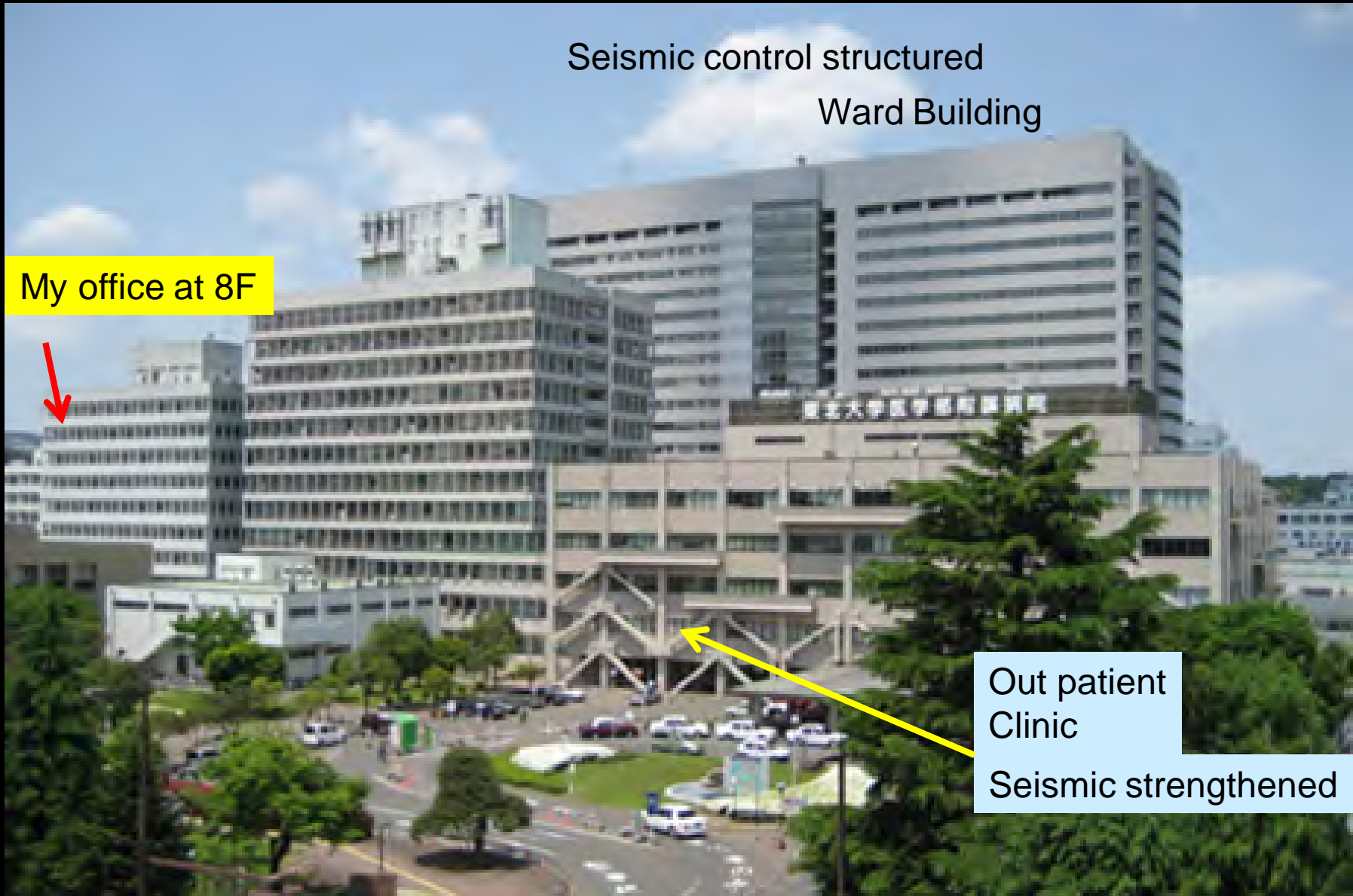
From the hospital worker view point

Seismic control structured
Ward Building

My office at 8F

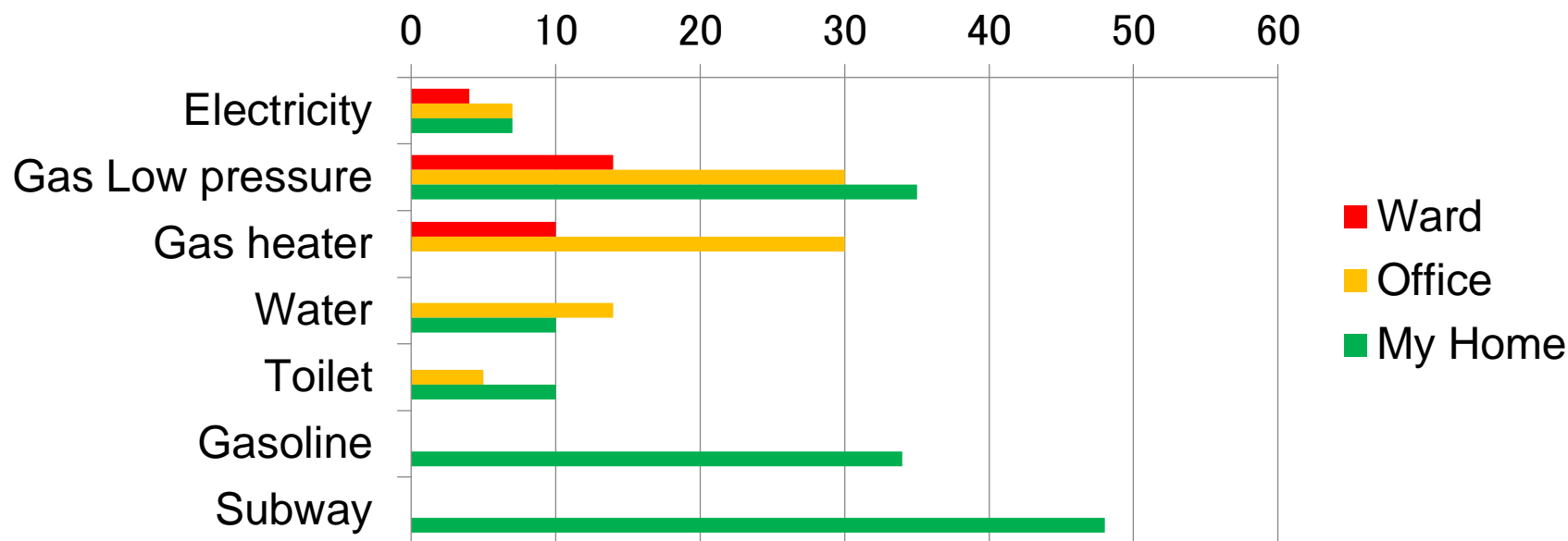
Out patient
Clinic

Seismic strengthened



Structural damage of Tohoku University Hospital

- Buildings: Non-structural damage, all building is reusable.
- Ward building was built with dumping seismic control structure and was intact.



My Office, March 11, 2011



Lab, March 11, 2011

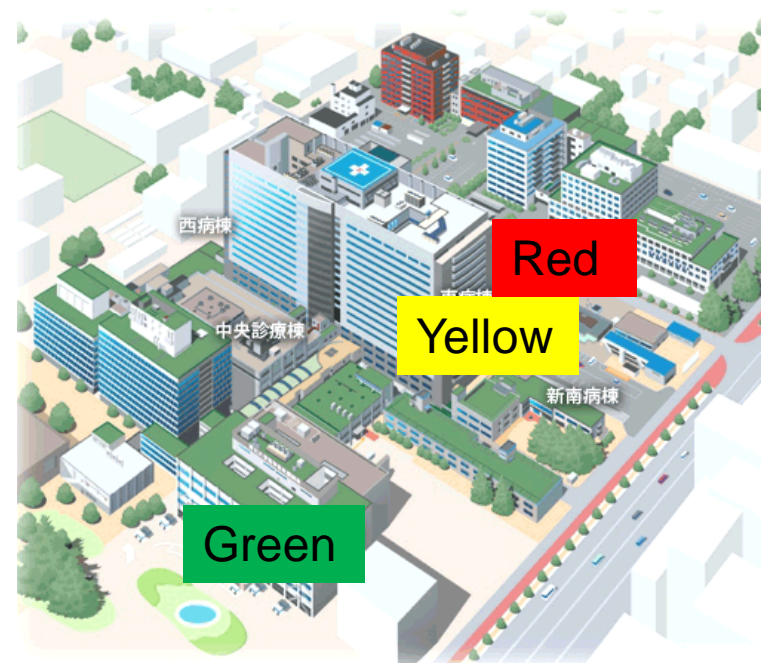


Human damage in Tohoku University Hospital

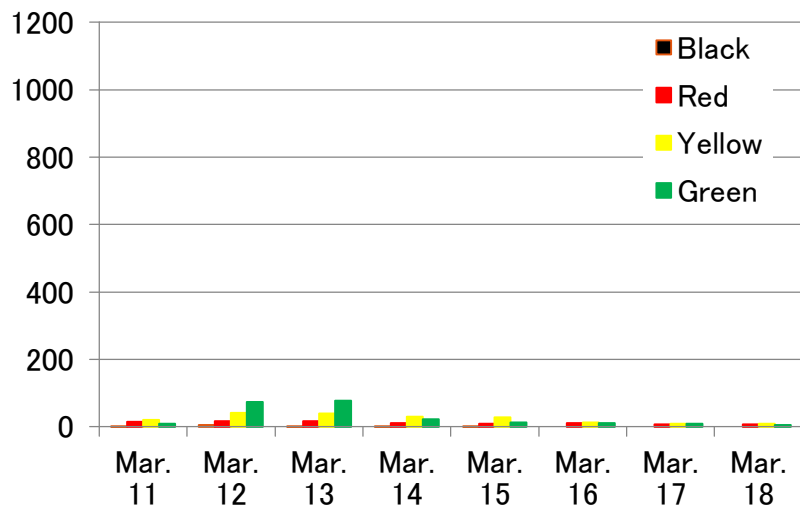
- Inpatients: **none** was injured.
- Medical personnel: **none** was injured.
- **OR: Seven operations were on-going.** Two were at awakening, two were at recovery. Four of seven were completed. Others were interrupted.
 - Water was on, Electric power was immediately changed to emergency supply. O₂, compressed air and vacuum was working
 - Due to the lack of gas supply, air conditioner (heater) and autoclave was out of use until Day 10
 - Patients were carried on stretcher by human-wave due to the elevator power down until Day 7.

First response of Tohoku University

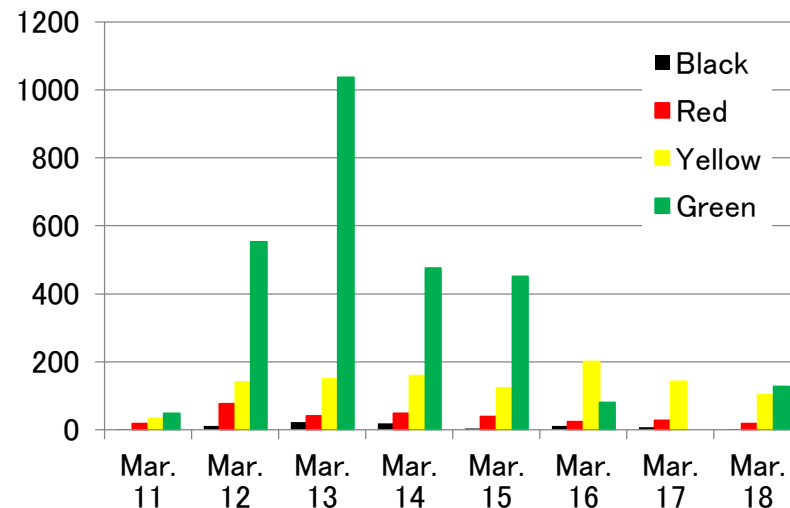
- Disaster Response Headquarters within 15 min. It was confirmed that none of the patients and medical staff was injured.
- National Information System estimated >1,000 deaths.
- Triage area was set within 60 min.
 - **Green**: Hospital entrance
 - **Yellow**: ER out patient unit
 - **Red**: ER intensive care unit
 - Black:
- DMAT supported HQ and coordinated with Prefectural government
- Information was insufficient in the center of the stricken area to grasp the whole picture.



Number of patients within a week



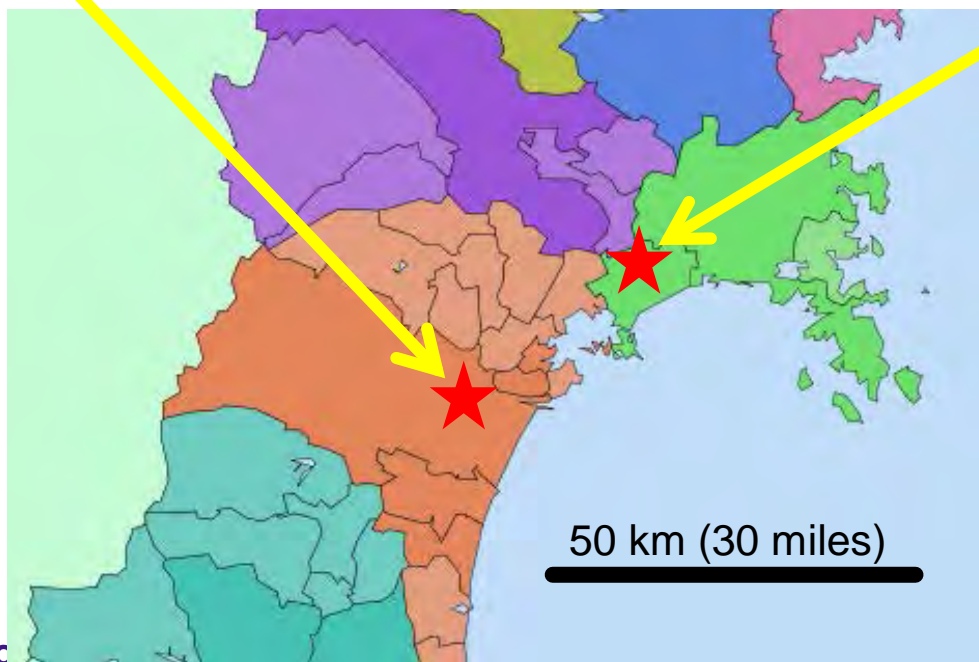
Tohoku Univ. Hp.



Ishinomaki Red Cross Hp.

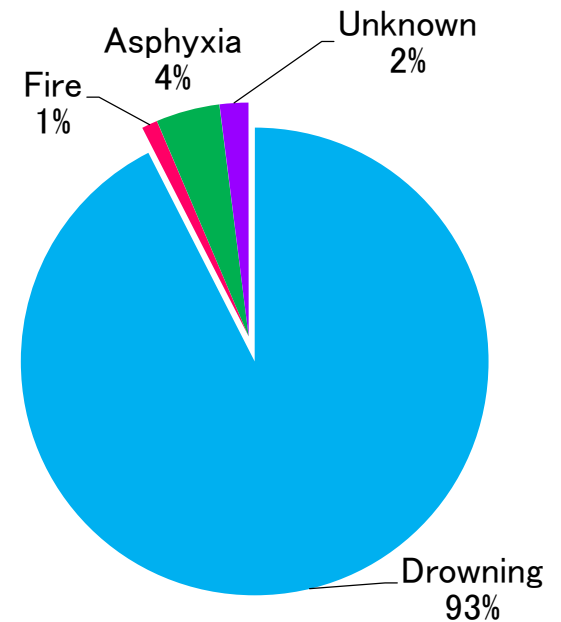
1199 beds
Drs. >1,000
Ns. >2,000
Population 1,5M
Age >65 21%

452 beds
Drs. 50
Ns. 300
Population 0.25M
Age >65 25%



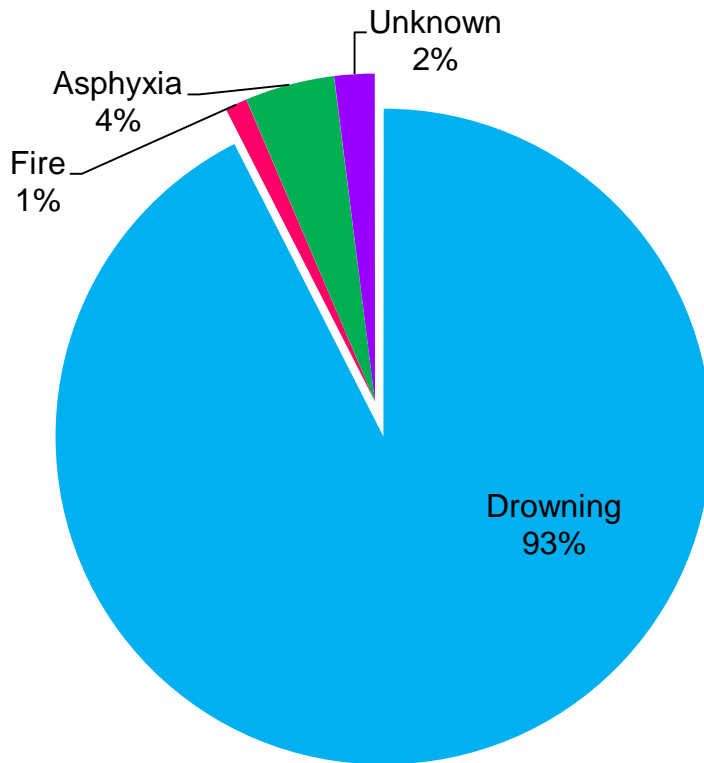
Lessons from 2011 Great East Japan Earthquake

Mar. 11, 2011, 14:46 M9.0

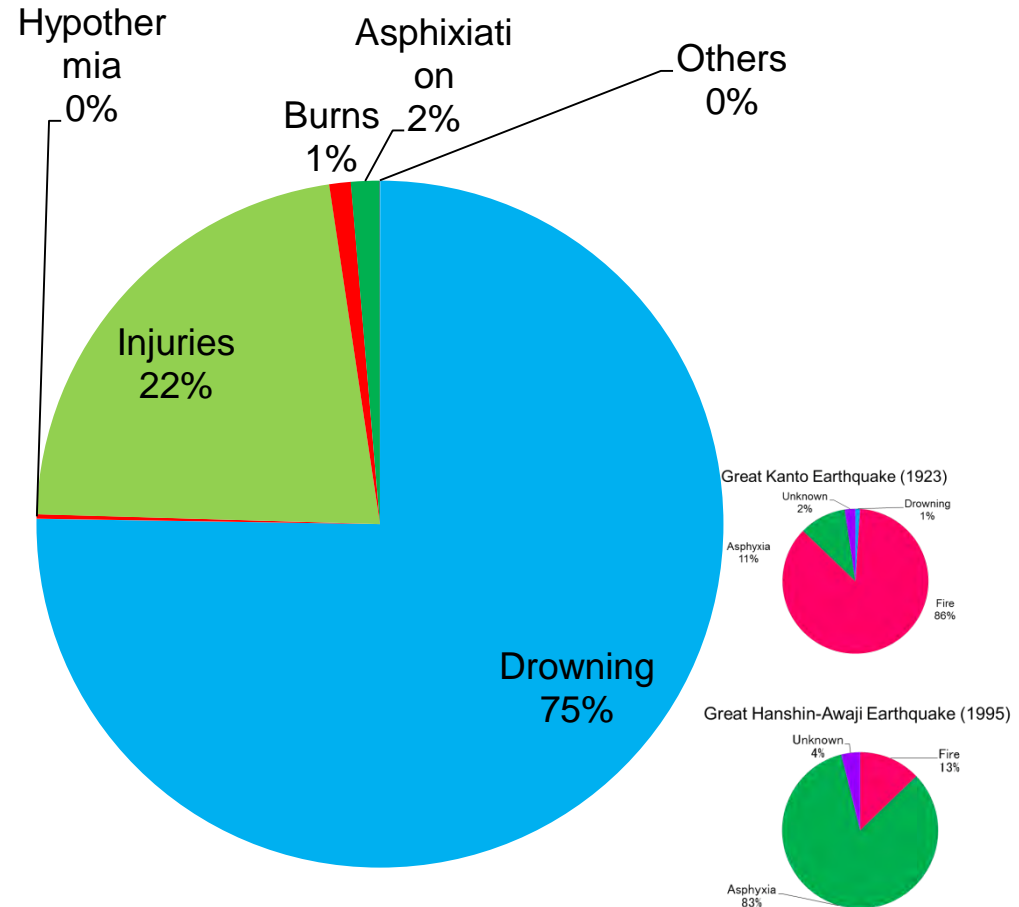


2011 White pages,
Japan Gov.

Difficulty of statistics in disaster



2011 White pages, made by Cabinet Office according to the police data



Population statistics
2012 Ministry of Health Labor and Welfare according to ICD-10

S00-T98	Injury, poisoning and certain other consequences of external causes	18 877	100%
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Change of health risks in Great East Japan Earthquake

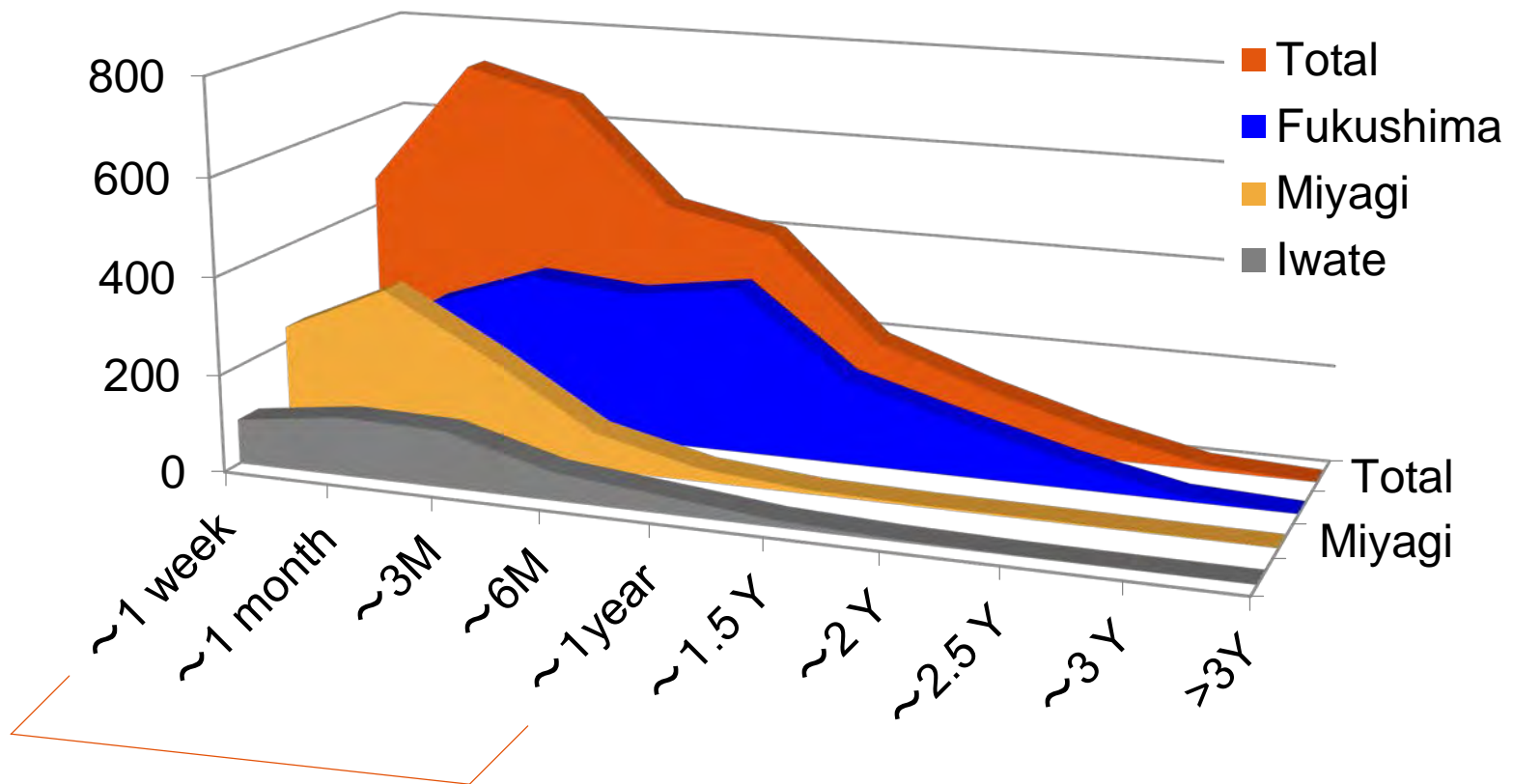
	Injured	Dead and lost	Displaced
Hanshin-Awaji Earthquake 1995	43,800	6,433	307,200
Great East Japan Earthquake 2011	5,942 ↓	19,582	488,000

- Less injuries, but different medical needs laster longer
- Disruption of traffic and communication made health sector paralyzed
- Complicated radiological disaster
- Mental health of affected people was devastated
- Health facilities were also destroyed by disaster
- Education of disaster medicine was not generalized in health professionals

Disaster related deaths

Ministry of Reconstruction, Mar. 31, 2014

Total 3, 089



Cause of disaster related deaths

Ministry of Reconstruction Aug 2012

- 1263 people in the towns and cities of remarkable disaster related death and the areas close to the nuclear power plant.
- More than 90 % are over 70s. Equal gender.
- 60% had some co-morbidity (some disease)
- Cause of death (including 13 suicides)
 - Physical and mental expiration during the evacuation centers.
 - Physical and mental expiration during transportation to the evacuation centers.
 - Latency of primary care because of hospital unavailability.
 - Physical and mental stress from the earthquake and Tsunami.
- Location of death
 - Hospital and health care facilities 30%
 - Home 30%
 - Evacuation shelter 10%

Age of victims

Great East Japan
Earthquake 2011

18,877 Deaths

1 000

2 000

3 000

Unknown

100s

90s

80s

70s

60s

50s

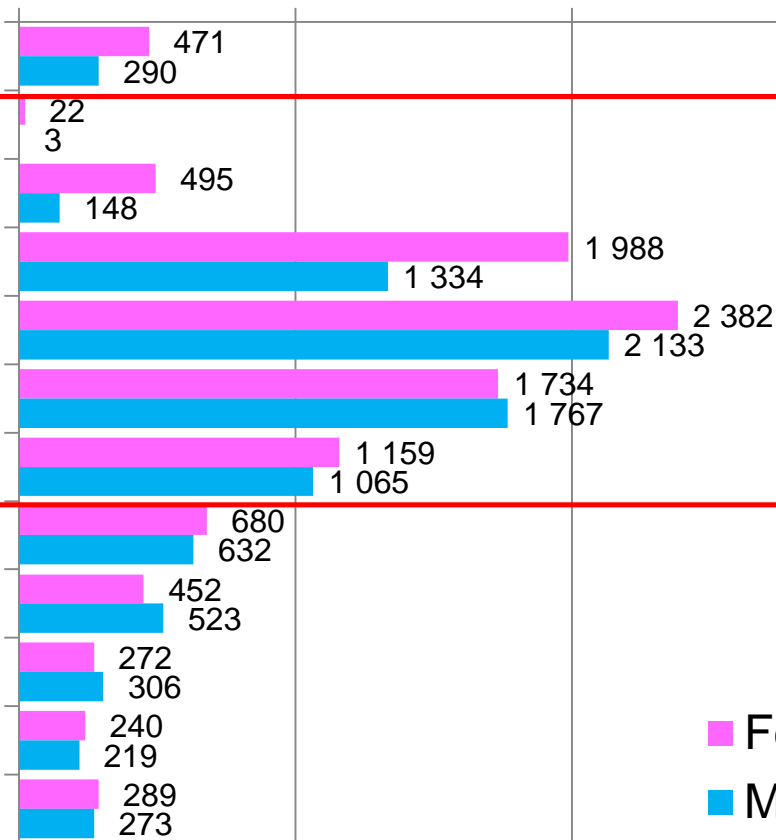
40s

30s

20s

10s

<10



Female

Male

Great Hanshin Awaji
Earthquake 1995

6,393 Deaths

0

500

1000

Unknown

80s

70s

60s

50s

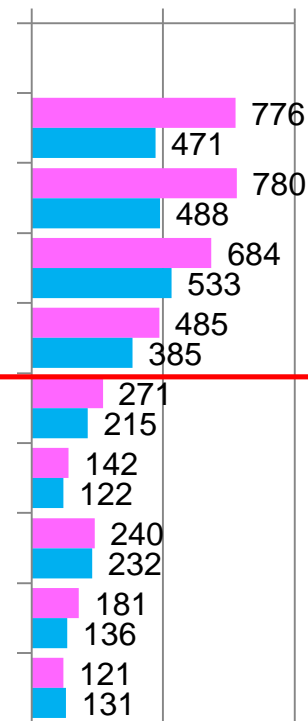
40s

30s

20s

10s

<10



Population statistics

2012 Ministry of Health Labor and Welfare, Japan Gov.

Vulnerability of elderly in disaster

Because they

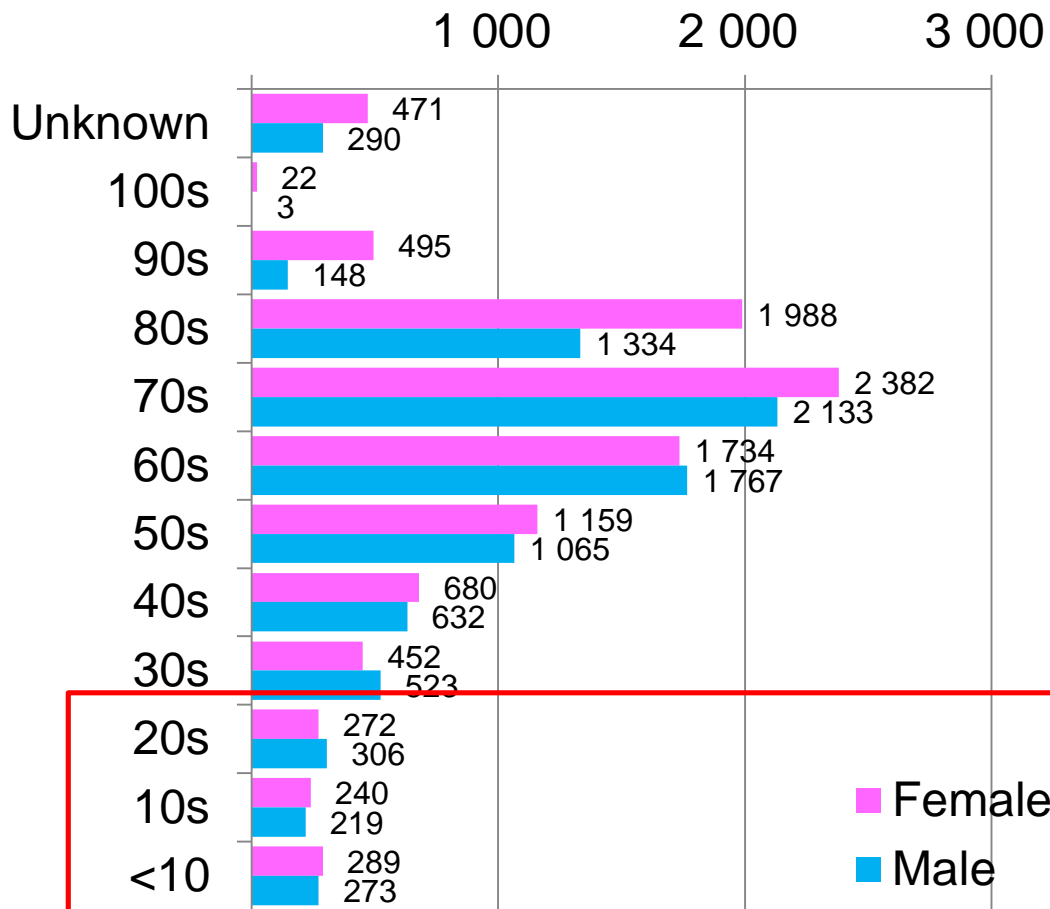
- Often have poorer limited mobility
- Often live in smaller, high density or poorer quality housing
- Are more socially isolated
- Less likely seek assistance (fear of being placed “in care”)
- Reduced financial resources
- Rely on others for cares
- Less service access

Leigh Wilson DrPH
Aging Health and Work Research Group
Faculty of Health Sciences
University of Sydney

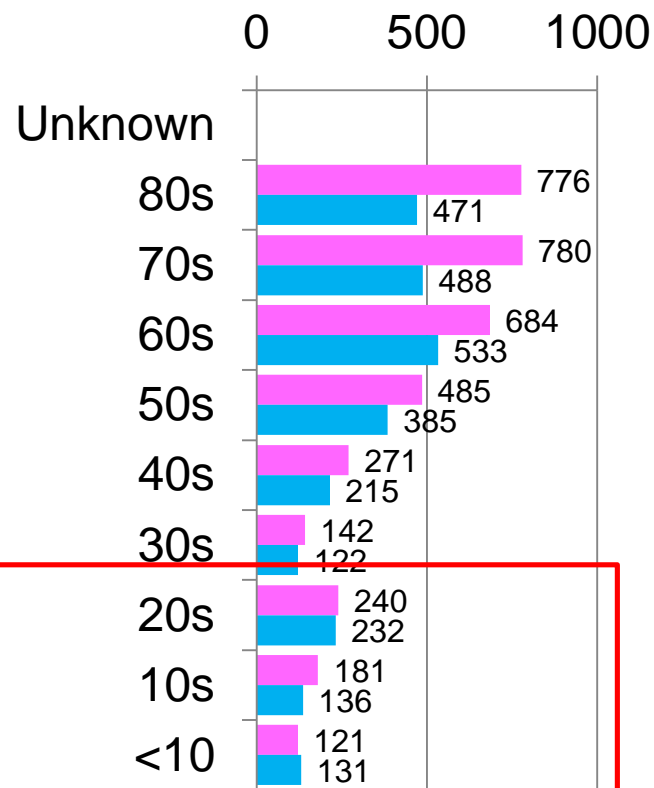
Presentation at IRIDeS Friday Forum 2013 Jan

Age of victims

Great East Japan
Earthquake



Great Hanshin Awaji
Earthquake



Damage to the children

- 466 death in age 0-9
- 419 death in age 10-19
- 241 orphan and 1,372 lost their parents
- 25,751 children had to move to other schools
 - Kindergarten 4,466
 - Elementary school 14,071
 - Junior high school 4,760
 - High school 2,307
 - Special Needs school 137
 - Total 25,751 (Distant pref. 13,933) as of Sep. 2011

Children in disaster

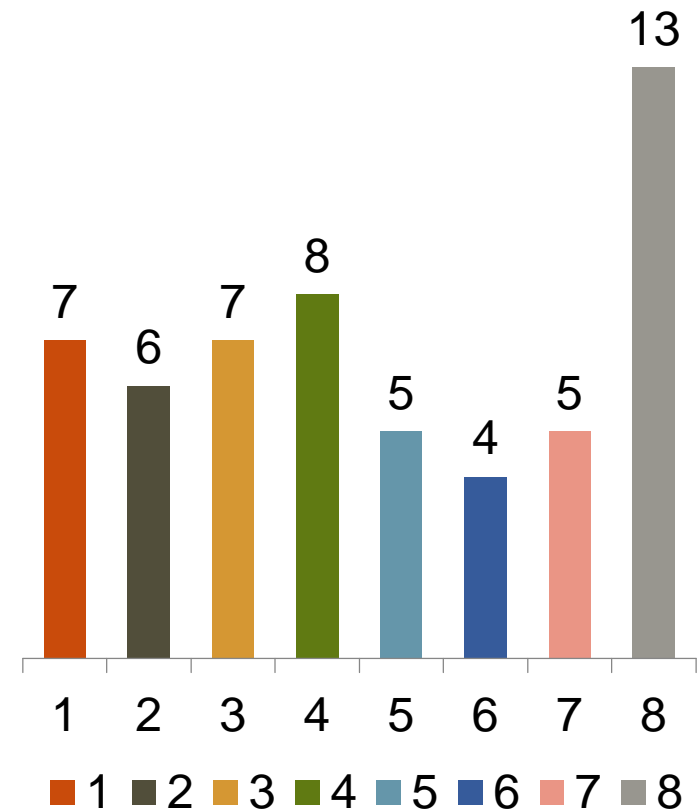
- Rely on adults
 - Loss of family
 - Family unification
- Difficult to diagnosis
 - Patient cannot always declare symptoms
 - Not always typical
 - Discrepancy of symptom and severity
 - Depression and PTSD
- Poor physical and mental margin and rapid change
- Different normal limit according to age, development and growth

Unmet medical needs

- Chronic illness
 - Home Oxygen Treatment: Lack of O₂ tanks
 - Hemodialysis: Lack of dialyzers and fluids
 - Hypertension, DM: Loss of daily drugs and insulin
 - Loss of glasses, teeth brushes
 - Crowded shelter without enough heat, food and water
 - Fear of outbreak of diarrhea and pneumonia
 - Loss of privacy
 - Quarrel and harassment
 - Loss of family and job
 - Psychological depression, alcoholism
 - PTSD
 - Loss of gas supply: Sleeping in a car to wait fuel
 - Deep vein thrombosis
 - Lack of substitutes of local medical staff
- Non Communicable Disease (NCD)
- Non Communicable Disease (NCD)

Who do you think vulnerable in disaster?

1. Elderly people
2. Children
3. Pregnant women
4. People with disability (physical and mental)
5. Patients with chronic disease
6. Foreigners
7. Travelers
8. Every one

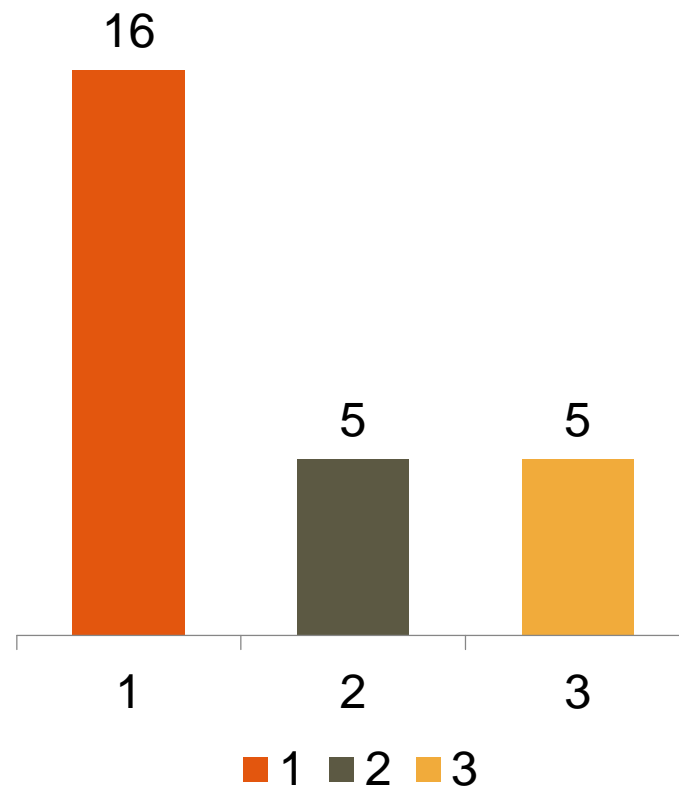


Multiple choice
Press OK after your choice

投票数: 24

Do you think it is recommended to register vulnerable people?

1. Yes
2. No
3. Don't know



Single choice

投票数: 26

Safe Hospital

Health facilities and functions in mega-disasters

Hospital Evacuation

Futaba Hospital
Forced to evacuate
Misinformation created
unattended patients
45/440 Pts died during Tx



Nucl.
PP



Rikuzen Takada Hospital
Four story was inundated
12/51 Pts, 8/82 Medical
Staff were killed
170 Isolated people



Shizugawa Hospital
67/109 Pts, 4 Medical
Staff were killed
7/150 Isolated people
died of hypothermia



Ogatsu Hospital
Three story was inundated.
40/40 Pts, 66/70 Medical Staff were killed

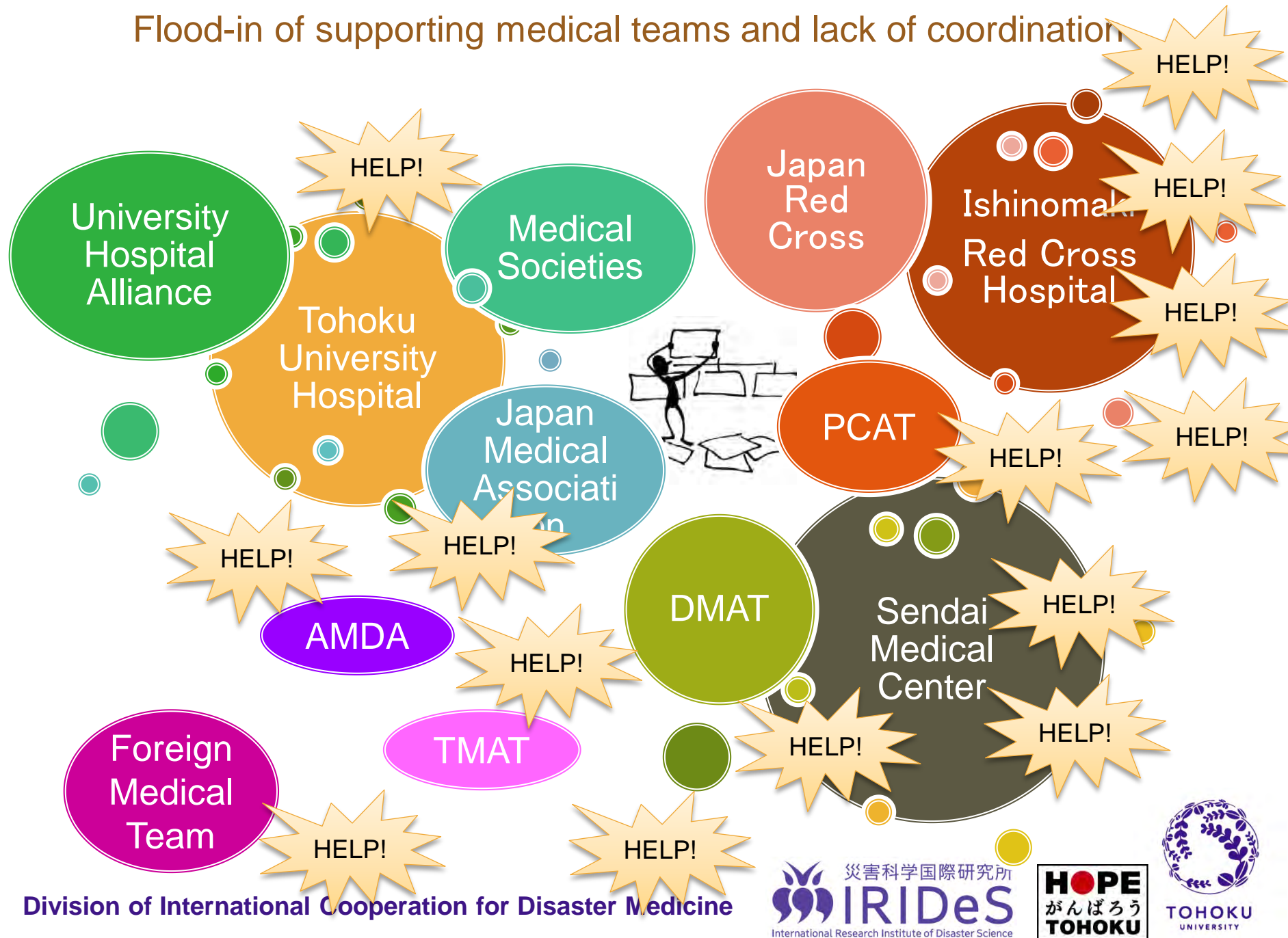


Ishinomaki Municipal
Hospital
120 Pts, 250 Medical
Staff were isolated

Isolated patients and medical staff in a hospital



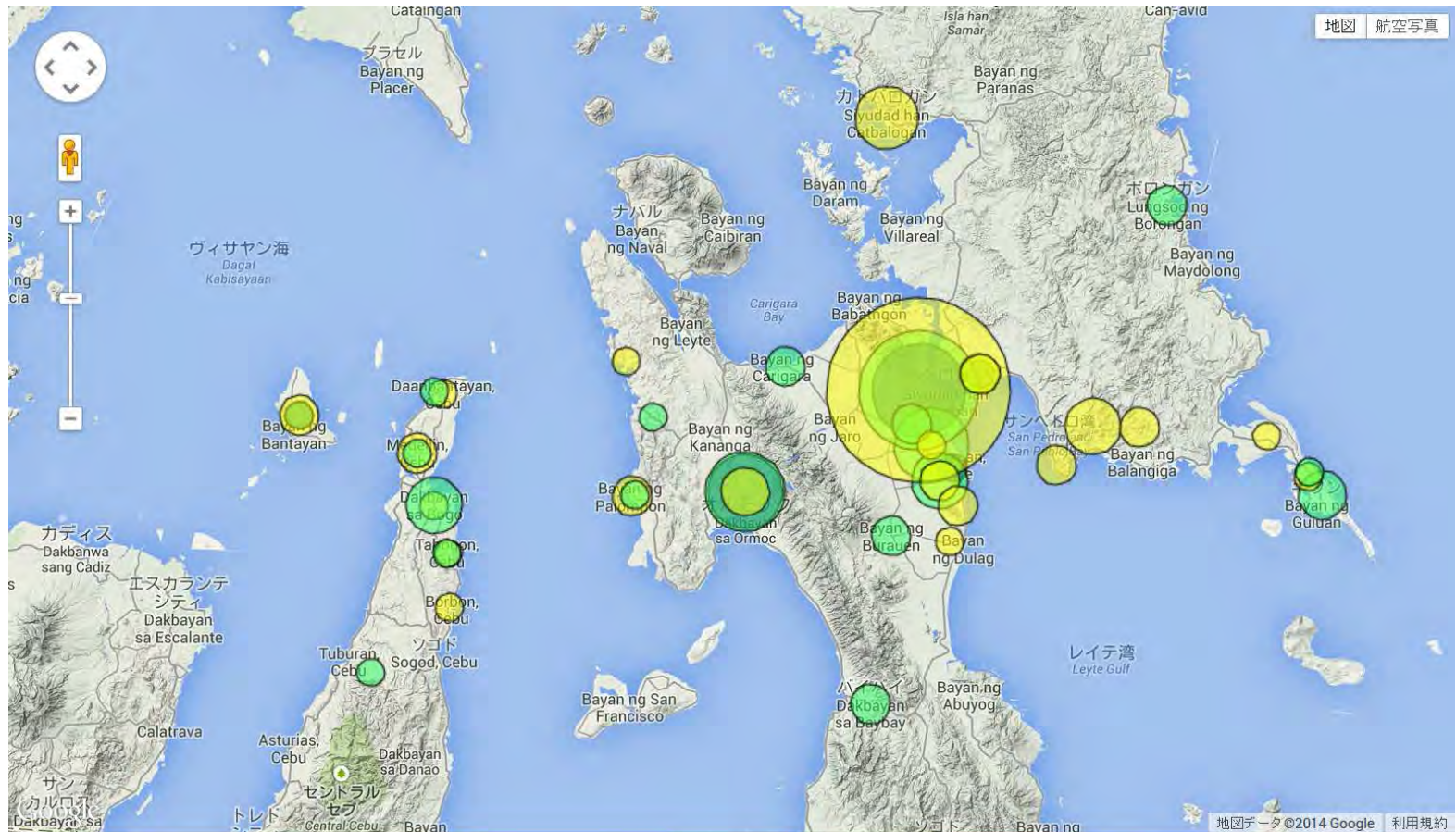
Flood-in of supporting medical teams and lack of coordination



Safe Hospital

Health facilities and functions in Typhoon Haiyan

Typhoon Yolanda Medical Missions as of January 14, 2014

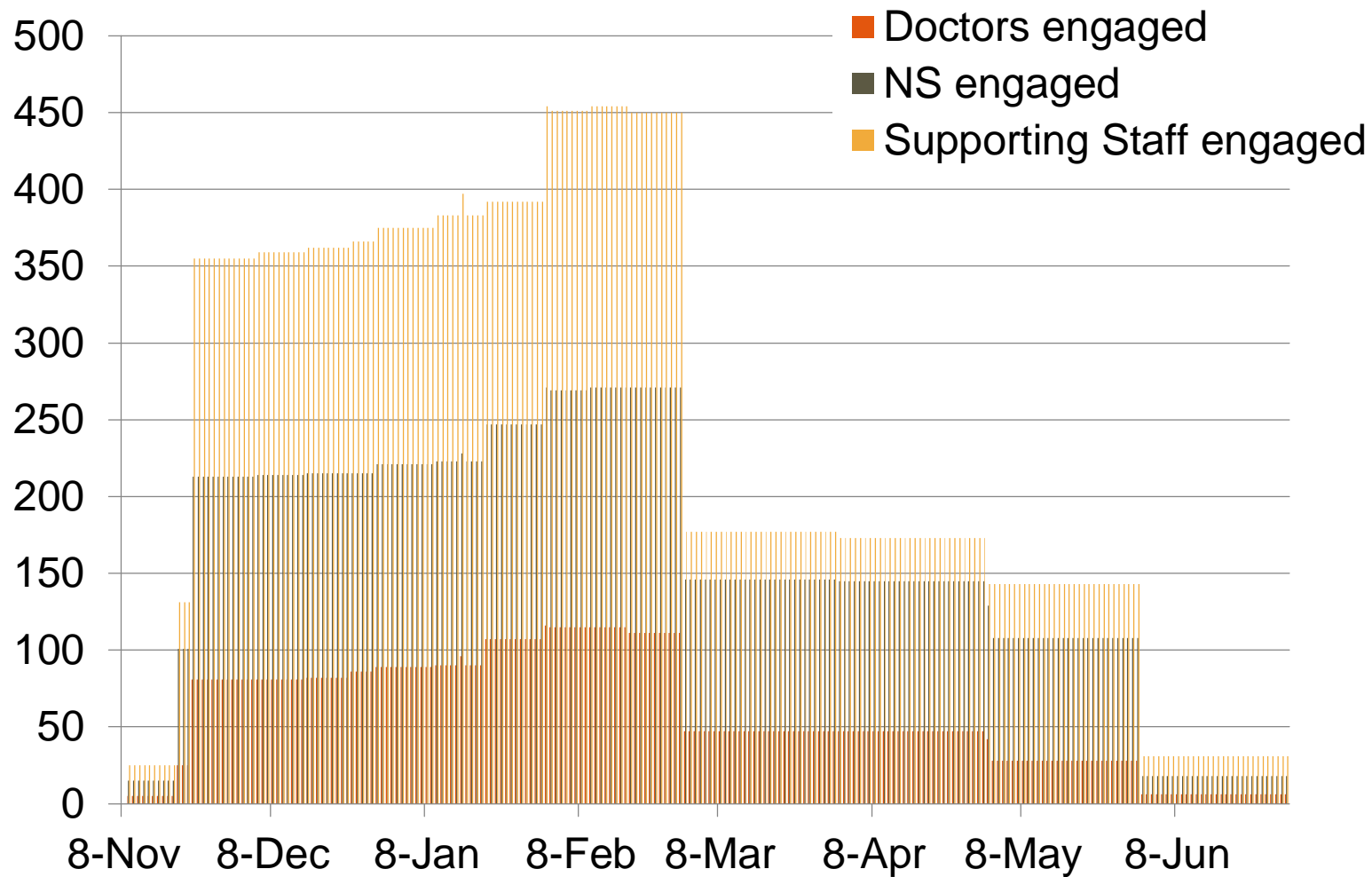


- DOH Teams: 129
- Foreign Medical Teams 91
- Local Teams: 27

Total missions: 247 (Jan, 2014) and more

Source: DOH Health Atlas

Medical Professions in Tacloban



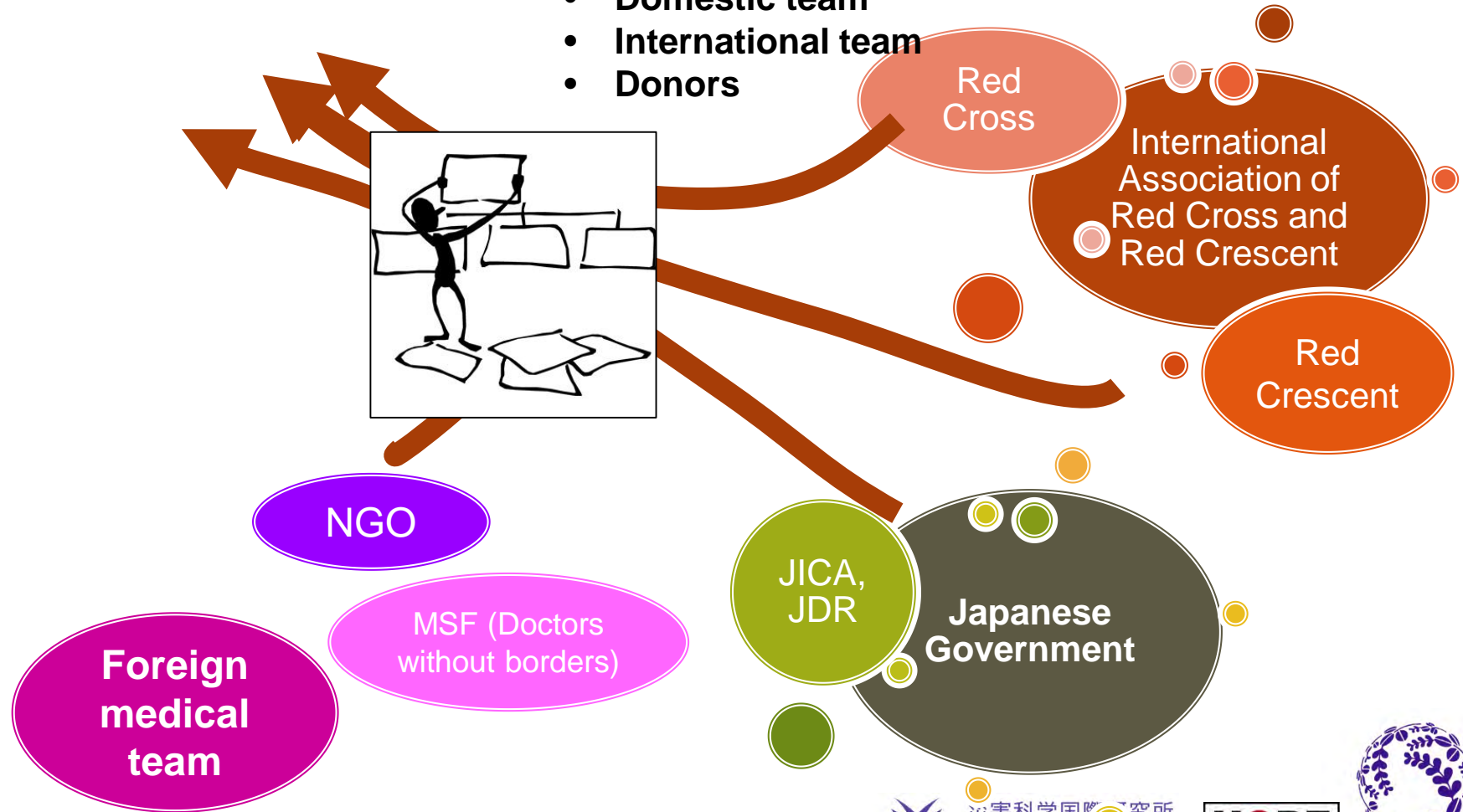
Source: Lester Gelay, WHO WPRO

Coordination of domestic/international relief aids

Health Sector Meeting

- DOH
- WHO
- Domestic team
- International team
- Donors

Affected people



Medical Response

- Treatment
 - Injury
 - Tetanus, leptospirosis, dengue fever with vector control
 - Respiratory disease
 - Pediatric disease
 - Mental health and psychosocial support
- Hospitainer “Clinic-in-a-Can”
 - 37 C-sections
- Governance
 - Coordination of domestic and FMTs
 - Freezing of drug price
- Vaccination
 - Pneumonia, Polio (with Vit. A), Measles
 - Cold Chain (Refrigerator)
- Instruction to affected people
 - WASH
 - Breast feeding
 - Prevention of discontinuation of drugs for TB, HIV
- Rapid instruction to local staff
 - Tetanus
- Identification of victims (Forensic Medicine)

#13 Zystostomiosis Research Institute



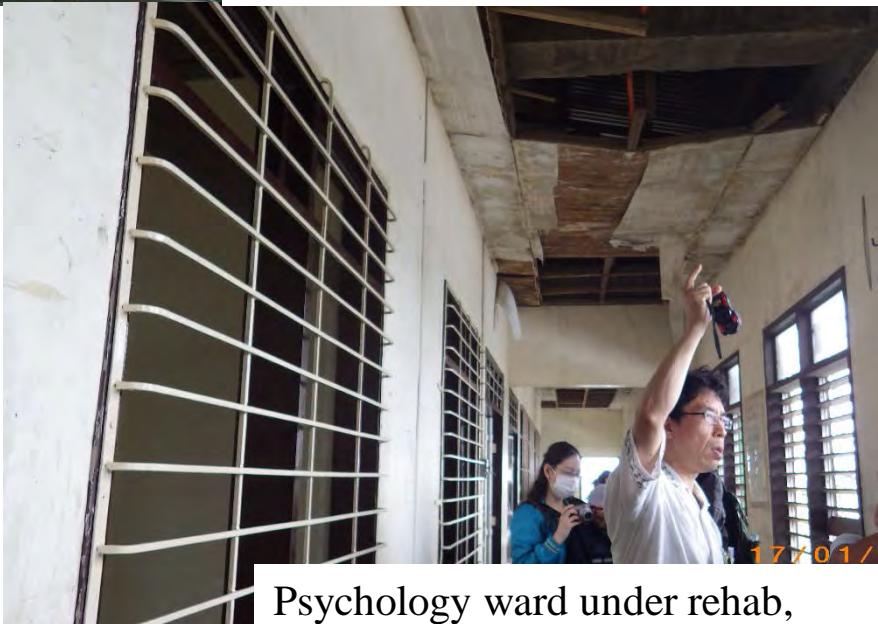
Most of the roof tops were damaged



Open out patient

Damage by wind

- Only this hospital had psychiatry ward in this region
- Out patient was restarted two months later and few numbers of in-patient
- In the process of rehabilitation



Psychology ward under rehab,

#11 Leyte Provincial Hospital



Newly built operation room



Newly build meal facility

Damage by surge and wind

- Three months old new buildings and facilities were broken. Some of them were even before use,
- Medical and reconstruction aid from China and Korea
- Out patient was continued
- In-patients in the emergency area

#5 Tacloban Doctors Medical Center



5th floor with roofs blown out



Glass windows in the front



CT was saved at the center of building

Damage by wind

- Kept running out patient and in-patients
- Only functional CT in the region
- Aid from parental group
- Emergency power generator was functional

Affected people living on the sea shore



Cooking by burning the debris



House built on wrecked container



Toilet on the sea

Possible threat to the health

- Water and food supplies periodical
- Mass vaccination for tetanus and measles were provided
- No lunch provided in school
- Cooking by burning woods and coals polluted the air
- Direct sewage to the sea

Affected people living in the tent



Information varies by the community



Tents were right behind the sea wall



No floor in the tent

Possible threat to the health

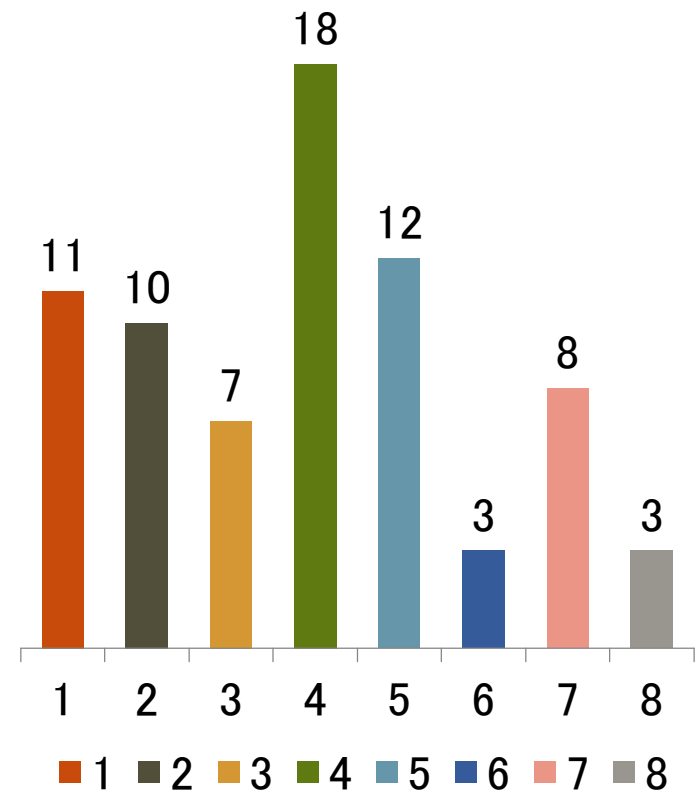
- Food supplies periodical but lack of information was remarkable
- No lunch provided in school
- Increasing diarrhea and asthma
- Tent has no floor and only limited space of ground cover. Several families live in one tent

Lessons from mega scale disasters

- Prepared disaster medical system is effective
- Be aware the change of needs in physical and mental health, and emerging problems for “preventable deaths”.
- Medical and public health coordinators and sufficient information sharing are necessary
- Hospitals, patients and workers are also the victims of disaster, but have to be exposed to;
 - Loss of family and friends
 - Physical and mental load of stress
 - Surge of medical and public health needs after evacuation
 - Request from “supporting” teams.

What do you think important in disaster medical and public health coordination?

1. Common Language
2. Leadership
3. Sector meeting
4. Information sharing
5. Governmental leadership
6. Foreign aids
7. Money
8. Other than above



Multiple choice

Press OK after your choice

投票数: 24

Healthy resilient community

Health in SFDRR

Change the concept of Risk Reduction

Needs

Top 3 priorities for communities (UN Survey)

1. A good education
2. Better healthcare
3. An honest and responsive government

Paradigm Shift



Climate Change
Rapid urbanization
Poverty
Lack of resource
Loss of biodiversity

Change of Risk



Better access

Resilient
Community

Safe Hospital

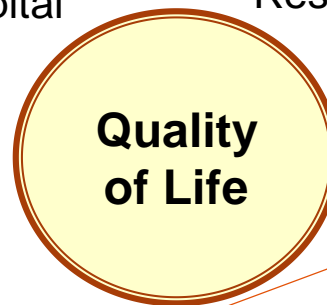
Effective
Response

Safe School

Mental and
Physical

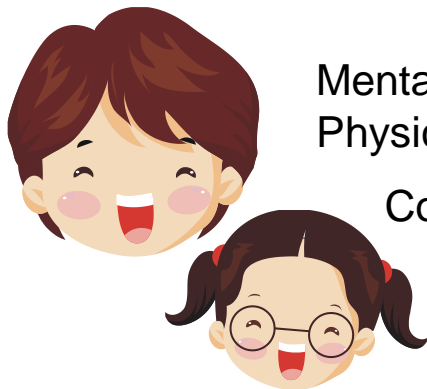
Communication

Funding and
Development



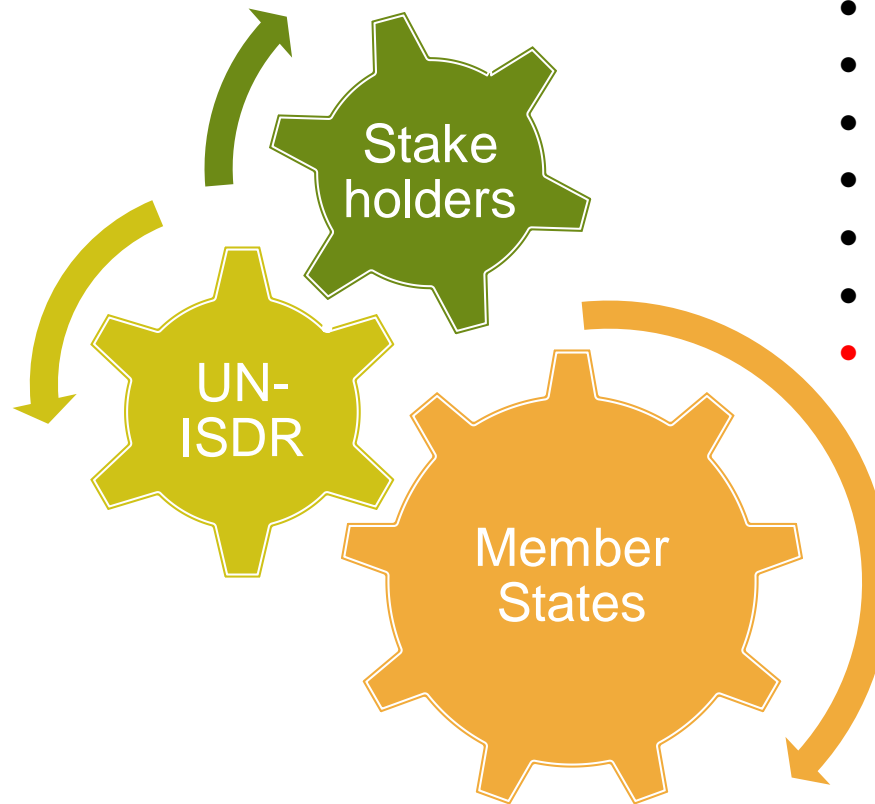
Hazard-proof
Structure

Early Warning



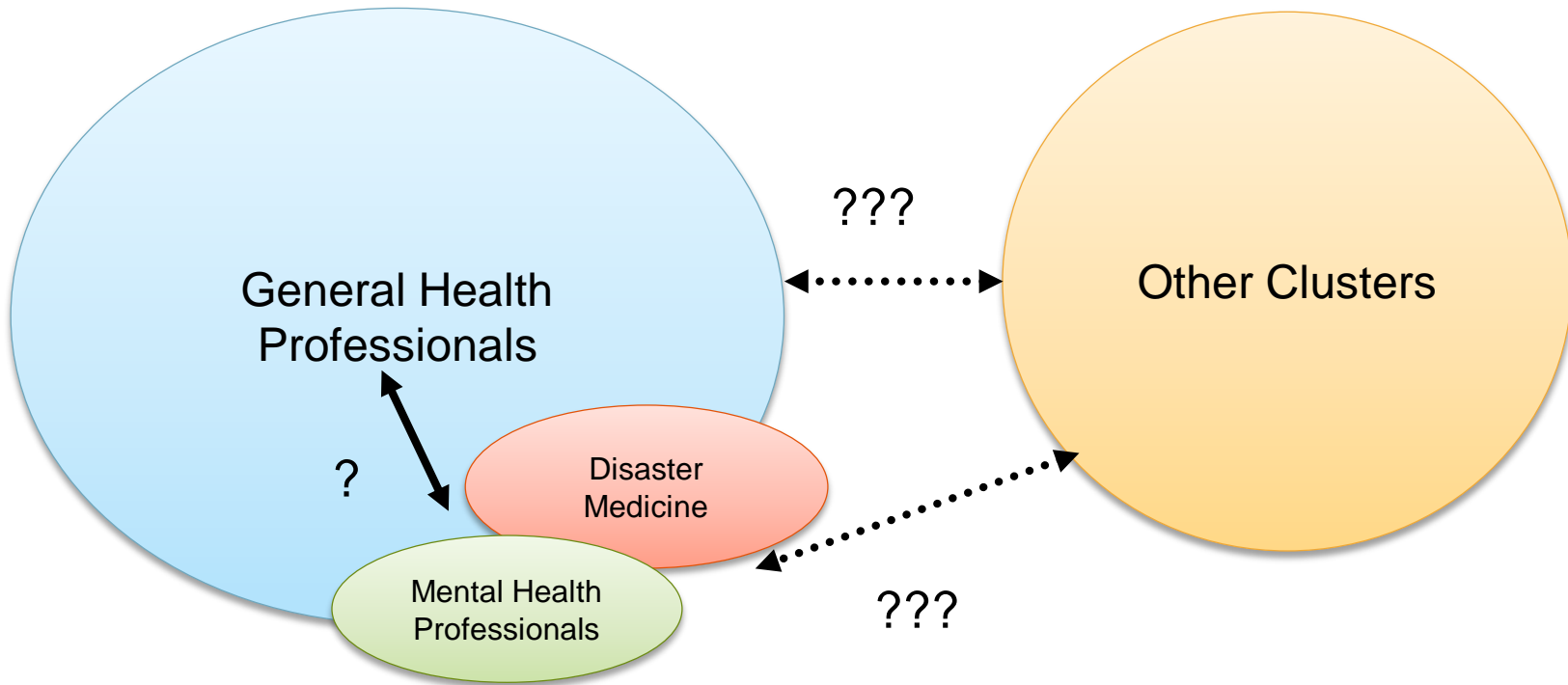
Health in evaluation and reviewing process

- Preparatory Committees (2013-2014)
- Technical meetings and network development



- Donors
- Private Sectors
- Academia
- People with disability
- Women
- Children and Youth
- **Responders?**

In reality



We have to better understand and collaborate with other clusters.

IRIDeS Review Report



Download from
www.irides.tohoku.ac.jp

Voice from Health Sector

International Symposium on Disaster Medical and Public Health Management: Review of the Hyogo Framework for Action

May 21-22
Washington, DC



School of Medicine
& Health Sciences
THE GEORGE WASHINGTON UNIVERSITY



Base Camp

Breakout Group and
Plenary Session

Outreach



- Framework and Policies
- Vulnerable Populations
- Mental Health
- Infrastructure and Resources
- Education and Training

- AMCDRR (Bangkok)
- IDRF (Davos)
- APCDM (Tokyo)
- IRDR (Tokyo; here)
- WCDRR (Sendai)

Proposal to HFA2

Health sector



Risk Reduction



- Know your risk
- Reduce your risk
- Prepared to act



3rd WCDRR Public Forum



Cancer Treatment in Disaster
Tohoku University Hospital Mar. 14



Medical and Public Health Preparedness
for Large Scale Disaster
IRIDeS, JICA Mar. 16



Increasing health resilience to impact
large scale disasters and building back
better
CDHAM, IRIDeS Mar. 16

PUBLIC FORUM
PROTECTING PEOPLE'S HEALTH
FROM DISASTER RISKS

Protecting People's Health from Disaster Risks
WHO Mar. 17

SFDRR now includes Health

34 Words of “health”

- disasters losses with a significant economic, social, **health**, cultural and environmental impact
- their livelihoods, **health**, cultural heritage
- social, **health**, cultural and educational resilience of person
- more explicit focus on people and their **health** and livelihoods
- food security, **health** and safety
- strengthening of economic, social, **health** and environmental resilience
- **health** and safety standards
- environment, agriculture, **health**, food and nutrition
- access to basic **health** care services, including maternal, newborn and child **health**, sexual and reproductive **health**,
- Enhance cooperation between **health** authorities and other relevant stakeholders to strengthen country capacity for disaster risk management for **health**, the implementation of the International **Health** Regulations (2005) and the building of resilient **health** systems;
- social, **health** and economic well-being

Health in SFDRR

Target (d)

Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them **health** and educational facilities, including through developing their resilience by 2030.

Local Level

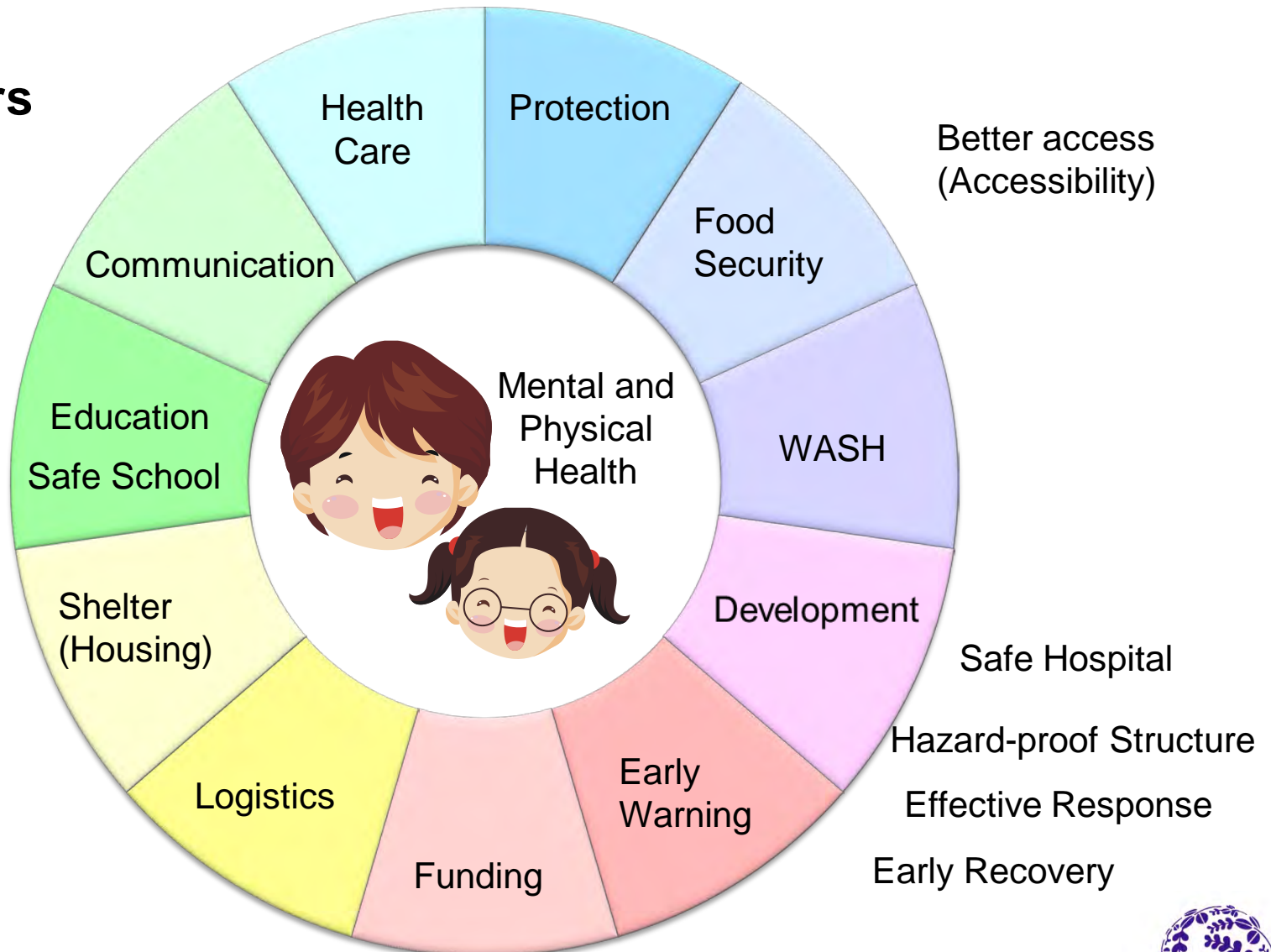
- (i) Enhance the resilience of national **health** systems, including by integrating disaster risk management into primary, secondary and tertiary **health** care, especially at the local level; developing the capacity of **health** workers in understanding disaster risk and applying and implementing disaster risk reduction approaches in **health** work; and promoting and enhancing the training capacities in the field of **disaster medicine**; and supporting and training community **health** groups in disaster risk reduction approaches in **health** programmes, in collaboration with other sectors, as well as in the implementation of the International **Health** Regulations (2005) of the World **Health** Organization;

Global and Regional Level

- Enhance recovery schemes to provide **psychosocial** support and **mental health** services for all people in need

Human Security in Disaster

Clusters

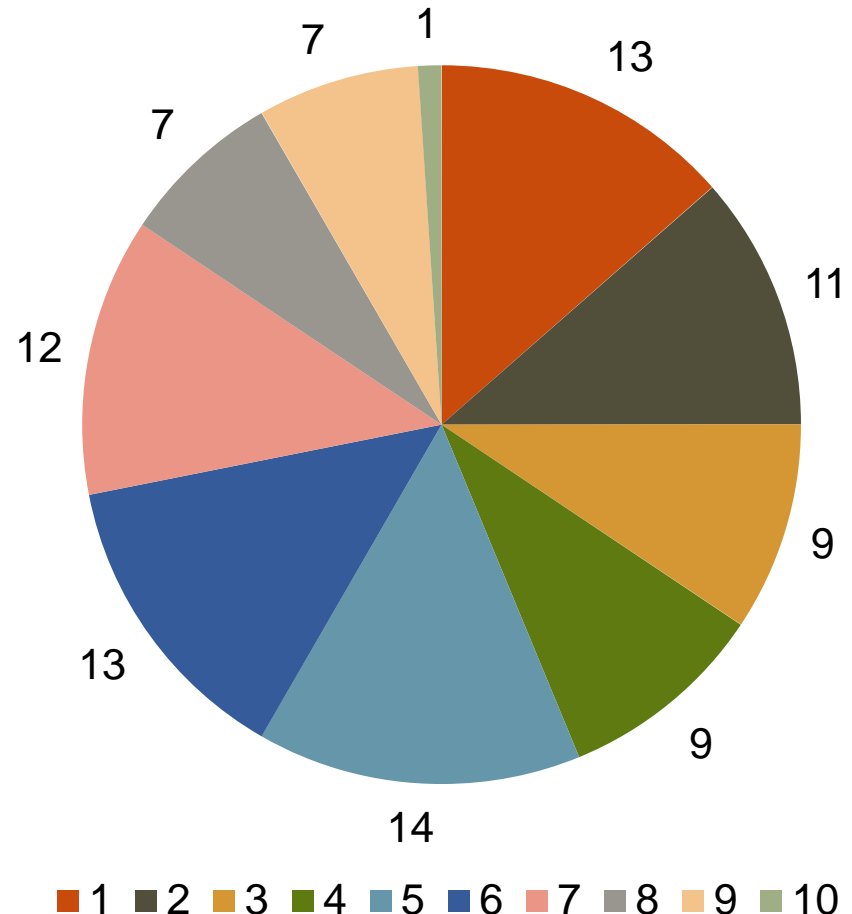


People-centered approach is important

Division of International Cooperation for Disaster Medicine

How can you make a healthy, resilient community?

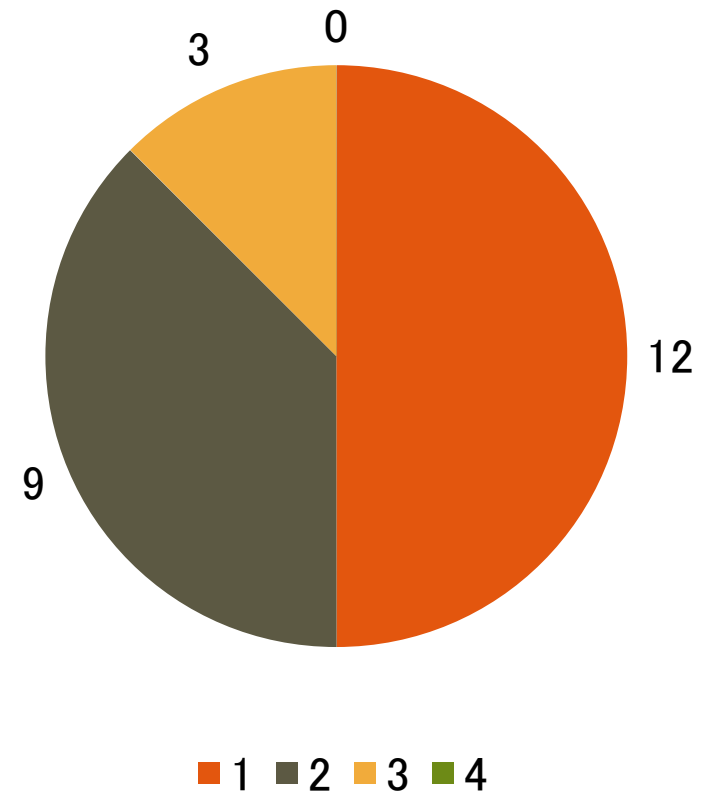
1. Hazard proof infrastructure
2. Improve basic health level
3. Safe school and hospital
4. Trans-cluster coordination and collaboration
5. Good education
6. Community capacity building
7. Reduce the vulnerability
8. Enhance psychosocial accessibility
9. Inclusive disaster risk reduction
10. Other



投票数: 24

Evaluation of the lecture

1. Very interesting
2. Interesting
3. Difficult
4. Boring



投票数: 24