

# The International Workshop on Radiation and Thyroid Cancer: Tutorial Session

## “Overview of the Fukushima Health Management Survey”

Time and Date: 14:10-14:55, February 21, 2014

Venue: Shinagawa Prince Hotel, Tokyo



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# Today's topic

1. Overview of the Great East Japan Earthquake in Fukushima
2. Situation of evacuation and evacuees
3. Overview of the Fukushima Health Management Survey
4. Concluding Comments

# “Great East Japan Earthquake” Triple Disasters in Fukushima

1,652 deaths were “disaster-related deaths”. No one died due to NPP accident.

1,603 died and 207 are still lost due to Earthquake and/or Tsunami.

Earthquake



Fukushima City

Tsunami



Minami-soma City

Nuclear Power  
Plant Accident



Fukushima Dai-ichi  
Nuclear Power Plant

# Evacuation Status of Residents in Fukushima

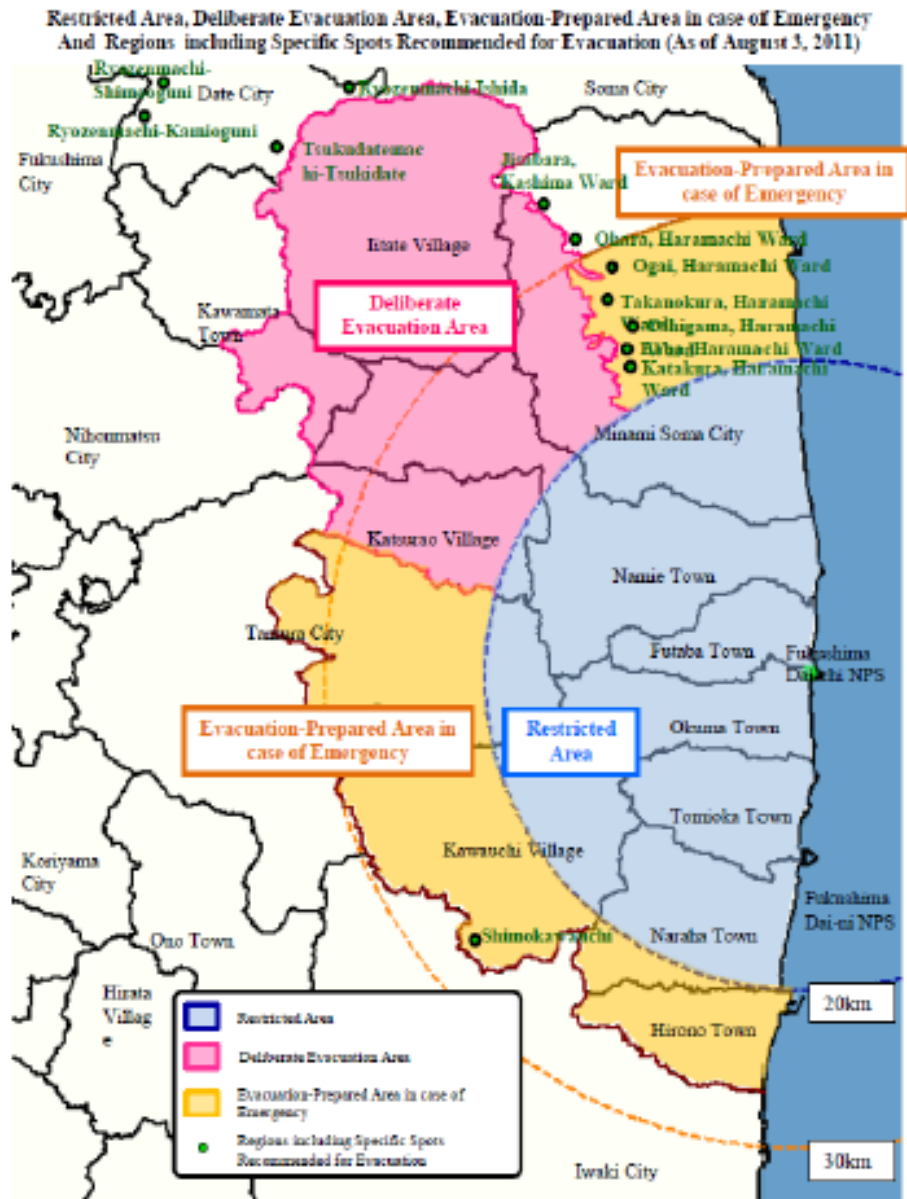
**Number of residents who were living in evacuation area: 105,000**  
(2011, Reconstruction Agency)

**Number of evacuees (including voluntary evacuees)**

- Inside Fukushima Prefecture: 88,416
- Outside Fukushima Prefecture: 48,364

**Total: 136,780**

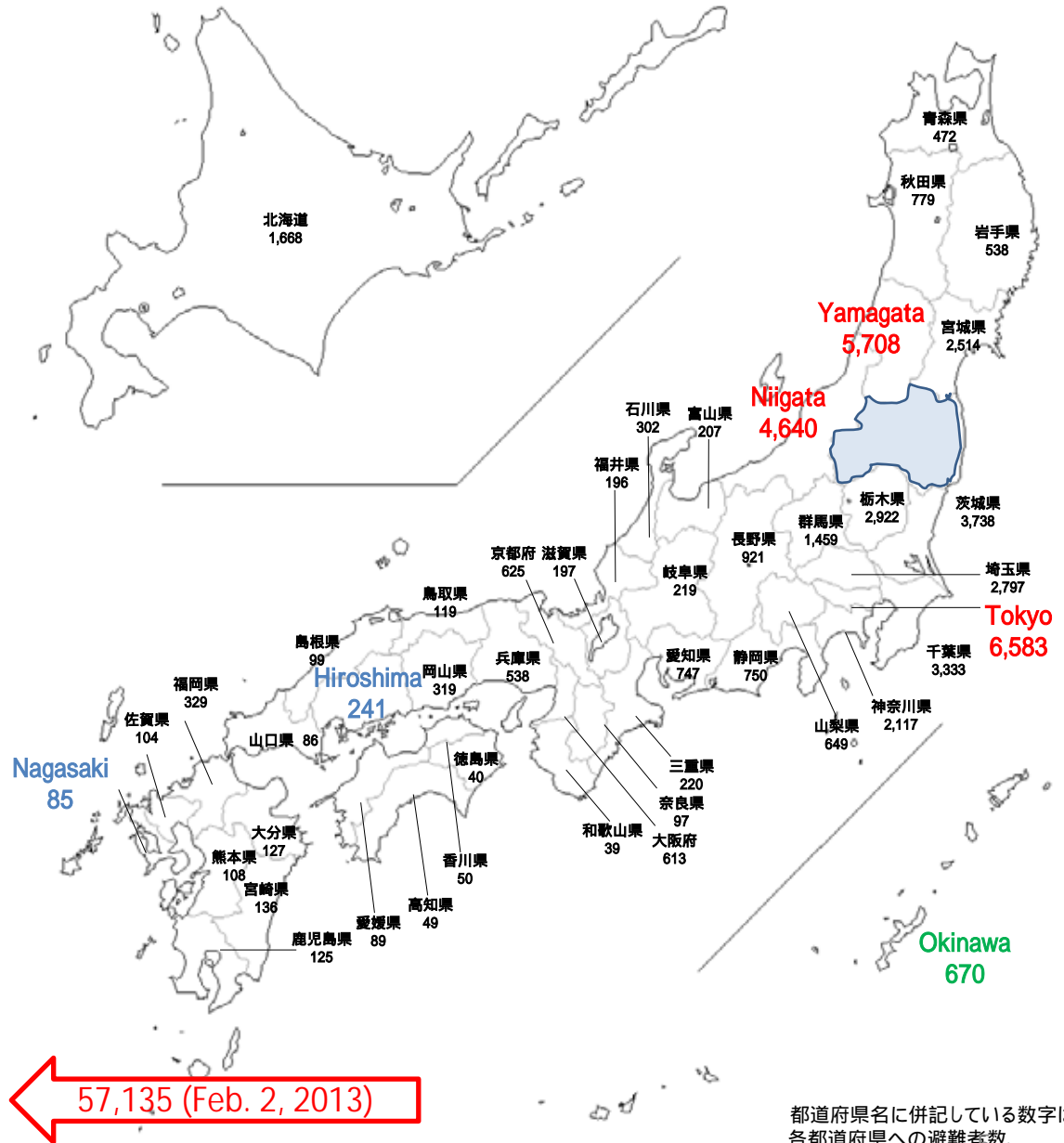
(January, 16, 2014, Fukushima Prefecture)



# Evacuees outside Fukushima Prefecture (Jan. 16, 2014)

福島県外への避難状況一覧 (単位 人)

北海道	1,668	滋賀県	197
青森県	472	京都府	625
岩手県	538	大阪府	613
宮城県	2,514	兵庫県	538
秋田県	779	奈良県	97
Yamagata	5,708	和歌山県	39
茨城県	3,738	鳥取県	119
栃木県	2,922	島根県	99
群馬県	1,459	岡山県	319
埼玉県	2,797	Hiroshima	241
千葉県	3,333	山口県	86
Tokyo	6,583	徳島県	40
神奈川県	2,117	香川県	50
Niigata	4,640	愛媛県	89
富山県	207	高知県	49
石川県	302	福岡県	329
福井県	196	佐賀県	104
山梨県	649	Nagasaki	85
長野県	921	熊本県	108
岐阜県	219	大分県	127
静岡県	750	宮崎県	136
愛知県	747	鹿児島県	125
三重県	220	Okinawa	670
		Total	48,364



都道府県名に併記している数字は各都道府県への避難者数。

# Objectives of the Fukushima Health Management Survey

1. To monitor residents' long-term health and to promote their future well-being.
2. To confirm whether a long-term low-dose radiation exposure has an effect on health.

# Fukushima Health Management (FHM) Survey

## External Exposure Estimation

### Basic Survey

Subjects: Residents (2 million) as of March 11, 2011  
Method: Self-administered questionnaire survey  
Content: Details of whereabouts and daily routine from March 11 onwards to estimate exposure.

## Follow-ups

### 'Health Management File'

- ☆ To keep health checkup records
- ☆ To provide information on radiation

### Database

- ◆ To provide long-term monitoring of residents' health
- ◆ To guide treatment
- ◆ To inform and guide future generations

- Whole Body Counter  
- Dosimeter

## Health Status Assessment

### Detailed Surveys

#### Thyroid Ultrasound Examination

Subjects: Residents aged 18 years or younger  
Content: Ultrasound examination      Survey period: Three years

#### Comprehensive Health Check

Subjects: Residents in evacuation zones  
Content: General health checkup items with differential leukocyte count

Subjects: Residents outside evacuation zones  
Content: General health checkup items

Promotion of municipal and workplace health checkups

Additional health checkups to reach residents not included in current services

#### Mental Health and Lifestyle Survey

#### Pregnancy and Birth Survey

Consultation and support

Follow-up

Treatment

Table 1 Estimated external radiation doses (preceding and full-scale survey)

Effective Dose (mSv)	Total	Excluding radiation workers				By region (excluding radiation workers)													
						Kempoku *		Kenchu		Kennan		Aizu		Minami-aizu		Soso **		Iwaki	
<1	311,567	305,286	66.3%	94.9%	99.8%	40,908	31.6%	66,257	59.0%	23,376	90.6%	37,403	99.4%	3,768	99.4%	61,995	78.0%	71,579	99.2%
1-2	134,002	131,606	28.6%	4.7%		75,564	58.5%	39,548	35.2%	2,410	9.3%	223	0.6%	23	0.6%	13,260	16.7%	578	0.8%
2-3	20,795	20,403	4.4%			12,265	9.5%	6,135	5.5%	12	0.0%	8	0.0%	0	—	1,963	2.5%	20	0.0%
3-4	1,541	1,457	0.3%	0.2%		443	0.3%	296	0.3%	0	—	1	0.0%	0	—	714	0.9%	3	0.0%
4-5	622	578	0.1%			44	0.0%	6	0.0%	0	—	0	—	0	—	526	0.7%	2	0.0%
5-6	496	437	0.1%	0.1%		25	0.0%	2	0.0%	0	—	0	—	0	—	409	0.5%	1	0.0%
6-7	297	258	0.1%			8	0.0%	0	—	0	—	0	—	0	—	250	0.3%	0	—
7-8	166	128	0.0%	0.0%		1	0.0%	0	—	0	—	0	—	0	—	127	0.2%	0	—
8-9	124	82	0.0%			0	—	0	—	0	—	0	—	0	—	82	0.1%	0	—
9-10	78	46	0.0%	0.0%		0	—	0	—	0	—	0	—	0	—	46	0.1%	0	—
10-11	78	45	0.0%		0	—	0	—	0	—	0	—	0	—	45	0.1%	0	—	
11-12	54	32	0.0%	0.0%	1	0.0%	0	—	0	—	0	—	0	—	31	0.0%	0	—	
12-13	40	14	0.0%		0	—	0	—	0	—	0	—	0	—	14	0.0%	0	—	
13-14	35	13	0.0%	0.0%	0	—	0	—	0	—	0	—	0	—	13	0.0%	0	—	
14-15	32	11	0.0%		0	—	0	—	0	—	0	—	0	—	11	0.0%	0	—	
15≤	307	12	0.0%	0.0%	0	—	0	—	0	—	0	—	0	—	12	0.0%	0	—	
Total	470,234	460,408	100.0%	100.0%	100.0%	129,259	100%	112,244	100%	25,798	100%	37,635	100%	3,791	100%	79,498	100%	72,183	100%
Max	66mSv	25mSv	/	/	/	11mSv	/	5.9mSv	/	2.6mSv	/	3.6mSv	/	1.6mSv	/	25mSv	/	5.9mSv	/
Mean value	0.8mSv	0.8mSv	/	/	/	1.2mSv	/	0.9mSv	/	0.5mSv	/	0.2mSv	/	0.1mSv	/	0.7mSv	/	0.3mSv	/

\* Including Yamakiya of Kawamata.

Percentages have been rounded and may not total to 100%.

\*\* Including Namie and Iitate.



# The comprehensive health check in Date City



# Results

The proportion of abnormal test results (obesity, glucose metabolism, lipid metabolism and liver function) was higher in the study population compared with the reference populations; the trend was more pronounced in males.

This may be due to possible lifestyle changes (such as less exercise and excessive alcohol consumption) caused by psychological distress and sleeping disorder after forced evacuation.

# The pregnancy and birth survey

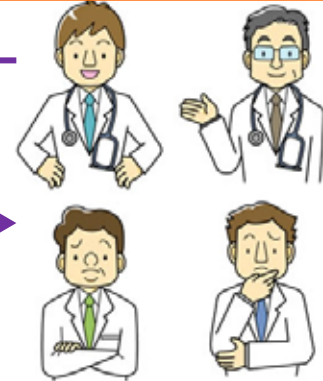
15,972  
Subjects



Telephone  
consultation if needed

E-mail /Telephone  
consultation

Mid-wife, Doctors



Send a questionnaire

Letter of thanks

Feedback of the  
consultation

Transmit the  
information

Data company

Check  
questionnaire

Confirm the answers, especially items  
of depression, and decide whether  
telephone consultation is needed or not

Order of  
data entry

Report of  
the result

Research Office

# Result of the 2011 survey

## 1. Response Rates

A total of 15,972 questionnaires were distributed in January 2012 and 9,298 (58.2%) were returned by 31 August 2012

## 2. Support after the Survey

Invalid answers and spontaneous abortions were excluded, and telephone counseling was provided by midwives and public health nurses for respondents who were identified as respondents requiring support on the basis of the survey.

The proportion of miscarriage in Fukushima Prefecture was 0.79% and that of induced abortion was 0.09% in 2012, no different from the previous fiscal year. The proportion of premature delivery in 2012 was 5.86% which was higher than the previous fiscal year (4.75%).

# Concluding Comments

## Our greatest achievement:

There are so many problems caused by the nuclear power plant accident now. Fukushima residents more concerned about their health than ever and feel anxiety of their own health.

Under such circumstances, we implemented the presented multifaceted Fukushima Health Management Survey within one year after the Great East Japan Earthquake.

## In collaboration with:

Radiation Effects Research Foundation, Hiroshima University, Nagasaki University, National Institute of Radiological Science, and Fukushima Medical Association.

## Our best efforts continues;

1. To outreach as many residents as possible.
2. To implement further detailed investigations.
3. To disseminate obtained results.

We hope for your continued concerns and collaboration.



Future From Fukushima.