Basic Survey

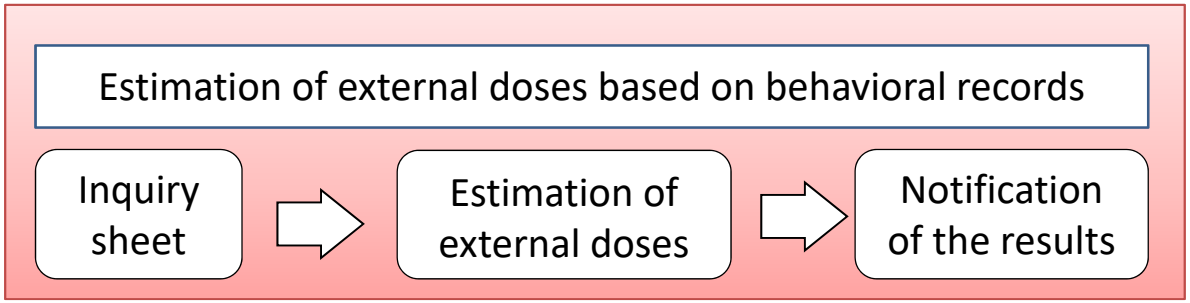
Basic Survey: Purpose

A survey to obtain data that is to serve as the basis for monitoring and protecting residents' health

In order to estimate external doses, individuals were asked to keep and submit a record of their behavior.

Based on collected behavioral records for the four months from March 11 to July 11, 2011, each individual's external dose was estimated using the External Dose Estimation System developed by the National Institute of Radiological Sciences.

[Survey scheme]



Estimated results and the period for estimation are reported to participating individuals to let them know their own external doses, and at the same time, the obtained data are utilized in the Detailed Surveys and individuals' health management to be continued for the long term.

Basic Survey

Basic Survey: Outline

[Period for estimation]

Behavior during the four months from March 11 to July 11, 2011

[Coverage]

Approx. 2.06 million people

- Residents of the prefecture:

  People with residence registration in the prefecture from March 11 to July 1, 2011

- People residing outside the prefecture:

  (1) People who were registered as residents in other prefectures but were residing in the prefecture from March 11 to July 1, 2011

  (2) People residing outside the prefecture who commuted to work or school in the prefecture from March 11 to July 1, 2011

  (3) People residing outside the prefecture who temporarily stayed in the prefecture from Mar. 11 to Mar. 25, 2011

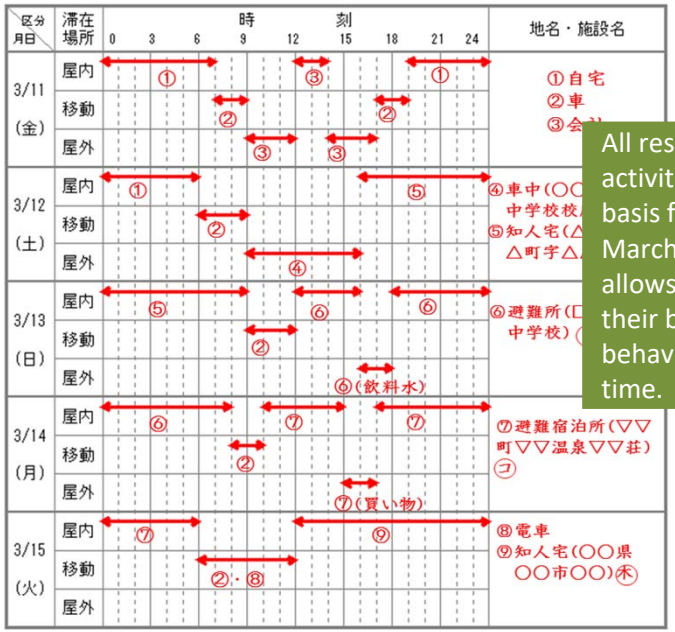
(For people residing outside the prefecture, inquiry sheets were sent upon their request.)

Basic Survey

Basic Survey: Inquiry Sheets

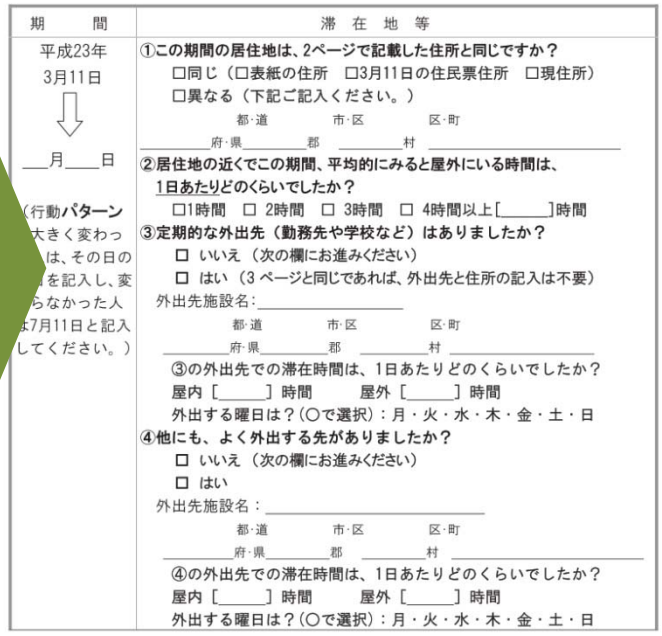
In November 2013, a simplified inquiry sheet was introduced.

● Detailed version (conventional version))



All respondents were asked to record the activities they conducted on an hourly basis for the period from March 11 to March 25, but the simplified inquiry sheet allows some respondents to summarize their behavior and only enter basic behavioral patterns for a certain period of time.

● Simplified version



[Requirements for using the simplified inquiry sheet]

People who have experienced none or only one significant behavioral pattern change (such as a change of residence, school or workplace due to evacuation or moving) in the four months following the earthquake

Examples

1. A person who was residing in Fukushima City at the time of the earthquake, evacuated to Kanagawa on March 15 and continued staying in Kanagawa until July 11 → Moved once → **Simplified version**

2. A person who was residing in Fukushima City at the time of the earthquake, evacuated to Aizuwakamatsu on March 18 but returned to Fukushima City on June 10 → Moved twice → **Detailed version**

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, "Information on the Fukushima Health Management Survey"

Basic Survey

Basic Survey: Analysis Methods
(Behavioral Pattern Survey and Dose Rate Map)

Behavioral pattern survey

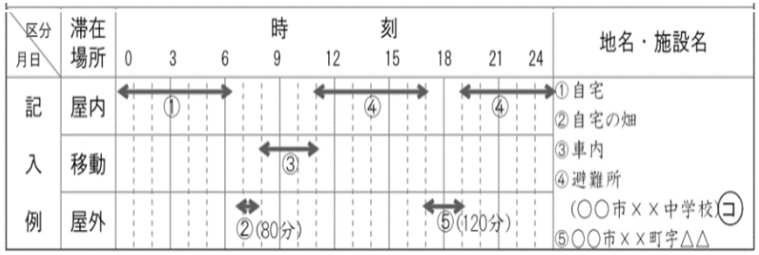
Examine behavioral patterns based on inquiry sheets of the Fukushima Health Management Survey

Survey period

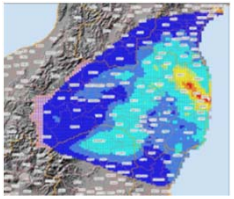
Four months from March 11 to July 11, 2011

Surveyed items

- Stays (places, hours and building structures)
- Moves (places and hours)



Dose rate maps



Prepare maps showing average daily effective dose rates based on data of SPEEDI and the Ministry of Education, Culture, Sports, Science and Technology (MEXT)

- March 12 to 14 — Evaluation results by SPEEDI (effective dose rates)
- From March 15 onward — Monitoring data released by MEXT (at that time) (ambient dose equivalent rates)

↓

Convert ambient dose equivalent rates to effective dose rates by multiplying by 0.6

↓

- Divide into 2 km × 2 km grids
- Interpolate discrete data using software to create a map

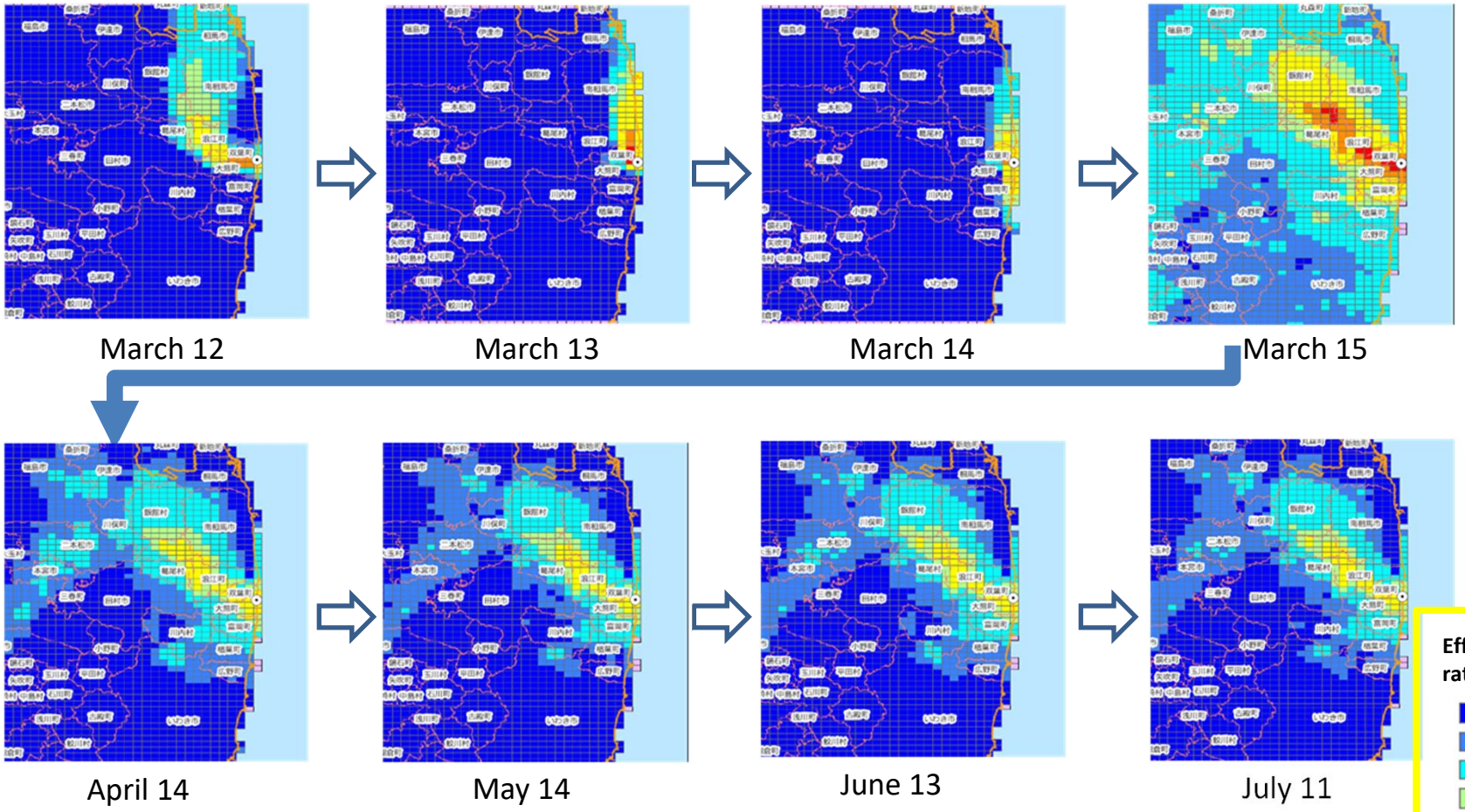
* Values of natural radiation are not included.

Calculation of cumulative effective doses → **Evaluate effective doses based on behavioral patterns and dose rate maps**

Prepared based on the website of Fukushima Prefecture, "Estimation of External Doses (Outline of the External Dose Estimation System and Estimation Results by Model Pattern of Evacuation Behavior), National Institute of Radiological Sciences" (December 13, 2011)

Basic Survey

Basic Survey: Analysis Methods
(Time-Series Dose Rate Maps)



(μSv/h: microsieverts per hour)

Prepared based on the website of Fukushima Prefecture, "Estimation of External Doses (Outline of the External Dose Estimation System and Estimation Results by Model Pattern of Evacuation Behavior), National Institute of Radiological Sciences" (December 13, 2011)

Basic Survey: Responses

The response rate was 27.6% for the entirety of Fukushima Prefecture

Table 1 Responses to the Basic Survey

As of June 30, 2017

Coverage		2,055,258	
Number of responses	Detailed version	493,584	24.0%
	Simplified version	73,189	3.6%
	Total	566,773	27.6%

* Response rates are rounded off for each category.

Table 2 Response rate by age bracket As of Jun. 30, 2017

Age bracket	0-9	10-19	20-29	30-39	40-49	50-49	60-	Total
Response rate	46.6%	35.8%	18.1%	24.7%	22.4%	23.0%	27.9%	27.6%

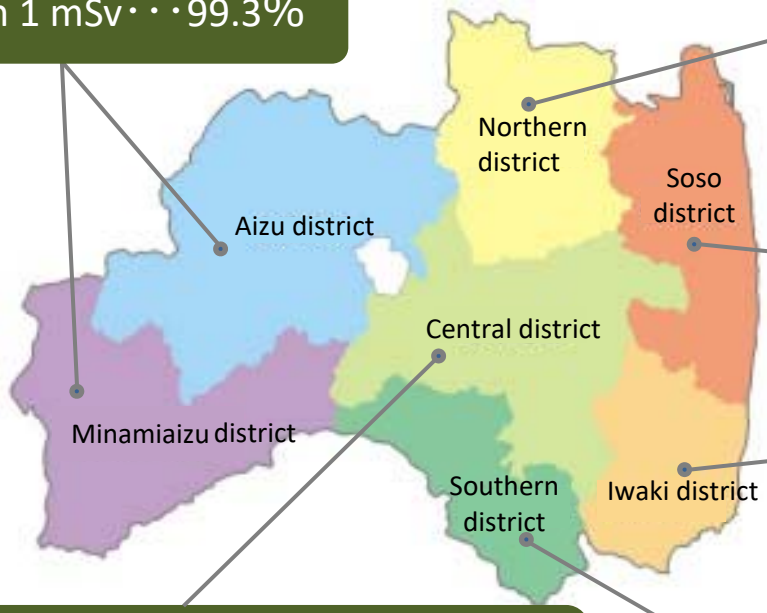
Basic Survey

Basic Survey: Results

Latest Survey Results: http://www.pref.fukushima.lg.jp/site/portal/kenkocyosa-kentoiinkai.html (in Japanese)

Results of estimated external effective doses by district

(for 464,420 people excluding radiation workers)



Lower than 1 mSv・・・99.3%

Lower than 1 mSv ・・・20.0%
Lower than 2 mSv ・・・87.0%

Lower than 1 mSv ・・・77.3%
Lower than 2 mSv ・・・94.9%

Lower than 1 mSv ・・・99.1%

Lower than 1 mSv ・・・51.5%
Lower than 2 mSv ・・・92.4%

Lower than 1 mSv ・・・88.2%

Evaluation of estimated effective doses

Past epidemiological studies have not confirmed clear health effects of radiation below 100 mSv. Therefore, the estimated external effective doses, though covering only four months, can be evaluated as values that are unlikely to show any health effects caused by radiation.

Prepared based on the material for the 28th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey

Basic Survey

Basic Survey: Examination on the Representativeness of Dose Distribution

Latest Survey Results: http://www.pref.fukushima.lg.jp/site/portal/kenkocyosa-kentoiinkai.html (in Japanese)

[Purpose]

In light of the fact that the response rate of the Basic Survey was approximately 27%, this examination aims to ascertain whether the dose distribution based on the data obtained so far through the Basic Survey correctly reflects the actual status for all residents of the prefecture and is not biased (representativeness of the dose distribution).

[Method]

In FY2015, a group of people was selected at random for each of the seven districts in the prefecture, and the selected people were classified into those who had already responded to the Basic Survey and those who had not in each district. Staff visited people who had not responded to the Basic Survey to ask them to make responses, and a comparison was made between estimated doses for these people and estimated doses for people who had responded to the Basic Survey earlier.

[Results]

In each district, the dose distribution based on the data obtained so far was found to be unbiased and to properly represent respective districts.